Netspar

DISCUSSION PAPERS

Netspar DISCUSSION PAPERS

Matthew Rutledge

Point of No Return
How Do Financial Resources Affect the Timing of Retirement after a Job Separation?

POINT OF NO RETURN: HOW DO FINANCIAL RESOURCES AFFECT THE TIMING OF RETIREMENT AFTER A JOB SEPARATION?

Matthew S. Rutledge

BC13-010214F4

Date Submitted: October 2013
Date Revised: January 2015

Center for Retirement Research at Boston College
Hovey House
140 Commonwealth Ave
Chestnut Hill, MA 02467
Tel: 617-552-1762   Fax: 617-552-0191
http://crr.bc.edu

POINT OF NO RETURN: HOW DO FINANCIAL RESOURCES AFFECT THE TIMING OF RETIREMENT AFTER A JOB SEPARATION?

Matthew S. Rutledge

Abstract/Policy Abstract

This study uses the *Survey of Income and Program Participation* to examine the decision to retire after a job separation among the increasing number of older individuals who leave a job between 55 and 70, and how this decision varies by labor market conditions and the resources available to the unemployed. Among individuals whose jobless spells end in retirement, most do so within a year after separation. The availability of resources like Social Security retirement benefits, high net worth, and defined benefit pensions appear to encourage more rapid labor force exit and retirement, rather than supporting job seekers during a long search. Surprisingly, retirement is less likely when the unemployment rate is high, though the correlation is substantively small, and UI benefits delay retirement. Poor health and work-limiting disabilities are also associated with more rapid labor force exit and retirement. These results suggest little tolerance for long job searches – regardless of labor market prospects – and indicate that those who can afford to retire will do so rather quickly.

Introduction

The Great Recession cut a swath of joblessness through the American workforce that was unprecedented in an important way. In previous recessions, the brunt of the job losses was borne by younger, lower-paid workers, and these workers again suffered the most in this recession. But the Great Recession also left older workers more exposed than ever before (Munnell and Rutledge 2013). The unemployment rate among those 55 and older reached a record 7.3 percent in August 2010, the first time it has surpassed 6 percent since 1950. Even this record unemployment rate among older workers understates the breadth of the suffering: in a slightly younger sample, Farber (2011) finds that 14 percent of individuals over 50 experienced at least one job loss between 2007 and 2009, surpassing the previous high of 10 percent.

Given the other records set in 2009-2010 – a period marked by the longest average duration of unemployment and the highest ratio of unemployed per job vacancy – many older unemployed workers grew discouraged, stopped looking for work, and began to consider themselves retired (Coile and Levine 2011a). Others bore down and continued searching, unable to retire due to losses in their financial portfolios and home values, or motivated by the opportunity to maintain as many as 99 weeks of unemployment insurance (UI) benefits (Rothstein 2011). Among people over 55, the labor force participation rate actually increased by 1 percentage point between 2007 and 2009. But this increase was concentrated among workers who had not yet reached age 62 and were not yet eligible for Social Security retirement benefits (Munnell and Rutledge 2013). Not coincidentally, more than half of the workers who lost their jobs after turning 62 left the labor force within nine months of their separations, as opposed to less than 30 percent of workers age 50-61 (Johnson and Butrica 2012).

The difference in the responses to the recession before and after age 62 implies that the decision to retire depends crucially on the availability of resources to buttress consumption, both during the jobless spell and after retirement. This project investigates the association between retirement timing and the availability of Social Security and UI benefits, financial and pension wealth, and labor market prospects, using high-frequency labor market data from the *Survey of Income and Program Participation* (SIPP) from 1990-2012.

The results indicate that retirement occurs early during one's jobless spell. Surprisingly, the timing of retirement has only a precisely estimated small, negative correlation with the unemployment rate, and UI benefits delay retirement. Rather than using resources like financial

wealth, Social Security benefits, and defined benefit pensions to make ends meet during a long job search, the availability of these resources is associated with a higher probability of retiring in any given period. Jobless individuals in poor health or with work-limiting disabilities also retire sooner.

The loss of income – and, potentially, health insurance coverage – makes retiring earlier than one had planned costly. After a decade-long decline in early claiming, the proportion of 62 year olds claiming Social Security retirement benefits spiked in 2009 (Bosworth and Burtless 2010; Johnson and Mommaerts 2010), decreasing early claimants' benefits by nearly 5 percent each month for the remainder of their lives (Rutledge and Coe 2012). While workers can suspend their Social Security claims (or let Social Security automatically defer any benefits in excess of the earnings test) and re-enter the labor force at any time, finding a new job may prove difficult. Older job seekers have more trouble finding re-employment than younger workers (Valetta 1991, Johnson and Mommaerts 2011); the extra time out of the labor force is likely to make re-employment prospects even worse.[1] Even if they find re-employment, earnings are likely to be substantially lower than before the initial job loss (see Couch and Placzek 2010 for a review), meaning that retirement security prospects may not be helped that much by "unretiring."

The paper is laid out as follows. Section 2 summarizes the existing literature on how personal financial resources affect retirement. Section 3 describes the SIPP data and the four definitions of retirement, and outlines the hazard model. Section 4 describes the results, and Section 5 concludes that, given that the majority of older unemployed workers retire within a year, they appear to have little desire to maintain long job searches.

Previous Literature

This study contributes to the literature in two ways. First, it examines how macroeconomic conditions affect job search among recently displaced older workers. Second, it attempts to measure the correlation between the timing of retirement and resources that can either prolong the unemployment spell or allow the jobless individual to retire, and examines how this relationship changes with labor market conditions.

---

[1] Neal (1995) and Edin and Gustavsson (2008), among others, have examined the negative influence of time out of the labor force after unemployment, but did not focus on older workers.

The previous literature documents that individuals are more likely to exit the labor force after a job separation (Chan and Stevens 1999, 2004; Stevens and Chan 2001; Tatsiramos 2010; Marmora and Ritter 2014).[2] The intensive margin of job search intensity is hard to measure, but on the extensive margin, at least, older individuals appear to reduce their efforts when a new job would be hard to find: the literature documents that higher unemployment rates are associated with earlier retirement (Coile and Levine 2007, 2011a, 2011b; von Wachter 2007; Munnell et al. 2008; Friedberg, Owyang, and Webb 2008).[3]

Still, the overall relationship between macroeconomic conditions and job search among older workers might mask differences between job-seekers with and without financial resources; more well-heeled older workers may be better equipped to persevere through a prolonged job search than job-seekers with few resources at their disposal. Other studies emphasize that financial and personal resources are essential factors in the retirement decision: wealth (Gustman and Steinmeier 2001, 2005), pension coverage type (Friedberg and Webb 2005), the spouse's work status in general (Coile 2004) and her ability to increase her labor supply in response to her husband's job loss in particular (Prowse and Li 2014), and good health (Dwyer and Mitchell 1999). Unemployment insurance has drawn less attention (Reno and Price 1985 is a rare exception), but given that UI is closely related to the decision to drop out of the labor force for workers of all ages (Rothstein 2011, Farber and Valetta 2013), the link should be even stronger for older workers, who are more likely to be on the margin of labor force exit.

The existing literature has not thoroughly examined whether these resources prolong the job search after a layoff. Moreover, little is known about how these resources influence the *timing* of the retirement decision for a jobless individual. Only Hallberg (2011) investigates the timing of the retirement decision in a hazard model framework, but his work focuses on Sweden, which differs from the United States in the structure of its UI and retirement benefit systems.

This project provides the first estimates of the association between the timing of retirement and unemployment duration in the United States, emphasizing how this relationship is

---

[2] An additional strand of the literature finds that non-employed individuals frequently flow between non-participation and unemployment, and that these flows depend in part on the strength of the labor market and access to UI; see Kroft et al. (2014) for a recent example. These studies do not focus on older workers, but these workers are the most likely to be on the margin of labor force participation.

[3] The evidence for a change in the intensive margin of job search is harder to come by, given limited data on job search activity. Shimer's (2004) theoretical model predicts that search intensity is higher when job prospects are strong, but Krueger and Mueller (2010) find a statistically insignificant (though negative, as Shimer predicts) relationship between the unemployment rate and the number of minutes per day spent searching.

influenced by the availability of social insurance benefits, financial assets, pension coverage, and macroeconomic conditions.

Data and Methodology

The *Survey of Income and Program Participation* (SIPP) interviews each individual in a panel of households every four months for a two- to four-year period. The survey covers labor force status, earnings, job characteristics, job search activity among the unemployed, public program participation and benefit levels, health insurance coverage, and household and family structure. These core variables, collected for each month within the four-month wave, are supplemented by routine topical modules regarding assets and liabilities, pension coverage, and health status, among many other topics. New panels began each year from 1990-1993 and in 1996, 2001, 2004, and 2008.[4]

Although the *Health and Retirement Study* (HRS) is more commonly used for analyses of retirement, SIPP provides several advantages. Most important, though SIPP follows households for a shorter period, data are available for each month based on survey questions with a far shorter recall window (four months instead of two years), with more detailed information on job search activity. SIPP began earlier than HRS, which started in 1992, and has released data through late 2013, so the analysis of trends in retirement behavior includes a longer period.[5]

The sample for this study consists of individuals from the 1990-2008 SIPP panels (covering the 1990-2012 period) who are observed leaving a job between the ages of 55 and 70.[6] A job separation occurs in month t if individual i works all weeks in month $t-1$, fewer than four weeks in month t, and no weeks in month $t+1$; thus, i must have had a job for at least one full calendar month, and the jobless spell must last for at least one full month. The main analysis

---

[4] Additional panels began each year from 1984-1989, but these data are not used in this study.

[5] HRS' biggest advantage over SIPP – a long panel lasting up to 18 years for some respondents – is less relevant for this study, because jobless spells among workers 55 and older are likely to end, one way or another, within a year or two of job separation, so relatively few spells are censored.

[6] Age 55 is the first age that many defined benefit pensions allow withdrawal; also, individuals who lose their jobs at or after age 55 can begin to withdraw funds from a 401(k) from a past employer without penalty. It is also far enough from traditional retirement ages that labor force participation rates are still substantial; according to the March 2013 Current Population Survey, 77 percent of 55-year-olds are in the labor force, compared to 63 percent of 60-year-olds. After age 70, employment is rare, and the Social Security system provides no further incentive to delay claiming.

includes only individuals who reported leaving a job involuntarily, though the results excluding only voluntary separations, or including all separations, are also discussed.[7]

In each month following a job separation, i experiences exactly one of four potential outcomes: (1) continuing a job search, (2) finding a new job, (3) censoring, or (4) the outcome of interest, either retiring or permanently exiting the labor force. Job search – i.e., continuing the jobless spell – is the base outcome. Re-employment is the reverse of job separation: i finds a new job in month s if he works zero weeks in month $s-1$, at least one week in month s, and all weeks in month $s+1$; re-employment thus requires at least one full month of work at a new job. Censoring occurs when the individual is not interviewed by the SIPP, either because of attrition or the scheduled conclusion of the SIPP panel.[8]

SIPP has no single established method of determining whether a respondent is retired. This study uses a combination of variables to derive multiple definitions of retirement, based on a sliding scale of stringency.

The most relevant retirement variable is based on i's answer to the question, "What is the main reason [the respondent] did not work at a job or business during the reference period?" The strictest definition of retirement requires the individual to answer "retired" for that wave, while ceasing work and job search for the remainder of i's time in the SIPP.[9] The "quasi-strict" definition of retirement also requires "retired" as an answer, but only requires i to not work or search for a job for at least a four-month period, thereby allowing the individual to "un-retire."[10] The loose definition of retirement also requires i to not work or search for at least four months, but allows other possible answers in addition to "retired": "unable to work because of chronic

---

[7] Approximately one-quarter of separations in the sample are involuntary, defined as being on layoff, discharged or fired, the employer going bankrupt or selling the business, seeing a temporary job ending, or experiencing slack work or business conditions. A larger proportion – 43 percent – leaves voluntarily, even after excluding workers who immediately retire, though (unlike the loose retirement definition) workers who leave because of their own illness or injury are included in this group. The remaining 33 percent do not report the reason for their separation.

[8] Right-censored spells are retained in the hazard sample, contributing variation to the estimation of continued spells, but not contributing to the estimation of the hazard model's "failure" (i.e., retirement, labor force exit, or re-employment).

[9] The respondent is asked the number of weeks he searched for a job in each month of the wave; to qualify as not searching, the number of weeks in the month spent looking for a job must be equal to zero.

[10] The four-month moratorium on work or job search need not coincide with a full wave; for example, i might search for at least a week during each of the first two months of wave w, answer "retired" in the third and fourth months (including at the time of the interview) of wave w, and then avoid work or search for at least the first two months of the next wave, $w+1$.

health condition or disability," "taking care of children/other persons," or "not interested in working at a job."[11]

A similar variable that is of limited use to this study asks the respondent why he left his previous employer. Among those who eventually retire under the definitions in the paragraph above, about half of respondents, when asked why they are not working, report either that they left their job to retire or that they are not working currently because they are retired. Because this study is primarily interested in those who retire only after some period of job search, the regression sample includes only those who do not report retiring at the time they leave their job, and do not consider themselves retired at the first interview month after separation.[12]

An important limitation of this method of defining retirement is that SIPP began asking why the respondent is not working only in the 1996 panel. In order to compare labor market trends among older individuals over a longer period of time (1990-2012), this study also analyzes the decision to exit the labor force. Labor force exit simply requires the end of job search activity, regardless of whether the individual exited due to retirement or discouragement. The respondent is considered to have left the labor force permanently if he has no weeks working or searching for at least four consecutive months within the SIPP panel, consistent with the quasi-strict and loose retirement definitions.[13] As with retirement, the relevant population "at risk" consists of those who do not leave the labor force right away, but do so only after a period of unsuccessful job search. The sample, therefore, is limited to individuals who stay in the labor force for at least one month after separation and keeps only those person-months at least four

---

[11] The other possible reasons, all of which disqualify someone from being marked as retired in that wave, are being temporarily unable to work because of illness or injury, pregnancy or childbirth, going to school, unable to find work, on layoff (temporary or indefinite), or other.

[12] This sample exclusion matches the relevant retirement definition: when the potential outcome is retirement under the strict or quasi-strict definition, only those who report leaving their job for "retirement or old age" are excluded. When the potential outcome is, instead, the loose definition of retirement, those who leave their previous job for "retirement or old age," "other family/personal obligations," "own illness," or "own injury" are excluded, so more people will be excluded for retiring too early under this definition. In each regression with retirement as a potential outcome, the sample further excludes those who are within four months of censoring, because by definition no one is at risk of retiring by the quasi-strict or loose definitions. Though not required by the strict retirement definition, this restriction eliminates the possibility that the strict retirement definition captures people who are not observed long enough to show up as retired by the other two definitions; otherwise, someone who reports being "retired" with only two more monthly observations before censoring would be marked as "strictly" retired, but not "quasi-strictly," even though he could get a job soon after SIPP stops interviewing him.

[13] Note that retirement and labor force exit require zero weeks of working and searching, while re-employment requires at least one full month of work. This definition marks individuals with spotty employment experiences – they never work all four or five weeks in a month – during the remainder of the panel as neither fully re-employed nor fully retired or out of the labor force.

months from the end of the individual's sample window, after which any ongoing spells are considered censored.

Table 1 details how the sample is selected for each outcome. Of the 68,000 individuals in the SIPP working in their 50s, 17,000 left a job between ages 55 and 70, with 11,000 in the 1996-2008 panels.[14] The second and third panels of Table 1 make clear that approximately half of those 11,000 individuals retired or left the labor force immediately. A small number of separations occur too close to the end of their SIPP sample window, but the main source of exclusion is the requirement that separations be involuntary, leaving 2,358 individuals for the strict and quasi-strict retirement regressions, 2,247 individuals for the loose retirement regression, and 1,873 individuals for the labor force exit regression.

The literature on "seam bias" in SIPP suggests that the bulk of job separations will occur in the interview month – the fourth reference month – of the wave (Ham, Li, and Shore-Sheppard 2009). In addition, the variable that identifies retirement varies only by wave. As a result, this analysis uses person-waves as the unit of observation after the job separation.[15] The outcome for a jobless spell that is ongoing as of the fourth reference month of wave *w-1* is re-employment, censoring, or labor force exit/retirement, whichever occurs first in wave *w*.

The key independent variables capture the relationship between retirement or labor force exit and the resources available to the jobless individual, both during the jobless spell and in retirement.[16] Each regression includes the state unemployment rate to capture labor market prospects; some specifications also include interactions with the state unemployment rate to capture the differential labor market prospects by age, remaining UI eligibility, and the duration of the jobless spell.

Perhaps the most important independent variable is the jobless individual's age. Individuals who have reached age 62 can fall back on Social Security retirement benefits, providing a reliable income stream. While Social Security claiming often coincides with retirement, many beneficiaries continue working or searching for a job: 54 percent of SIPP respondents working all weeks in a month at ages 62 to 70 are receiving Social Security

---

[14] The sample restriction excludes those who are already without a job when first sampled by the SIPP, but if SIPP's sampling procedure works properly, their labor market outcomes and use of resources should be no different than those who are observed leaving a job.

[15] Job separations use information from each month, not just the interview month. The 197 person-waves with two job separations use the latter separation.

[16] Summary statistics for all independent variables are reported in Table A1.

7

benefits.[17] This statistic indicates that jobless individuals over 62 often fall back on Social Security benefits either temporarily (with benefits potentially deferred by the "earnings test" if the respondent finds a new job with earnings over $14,640 in 2012 dollars) or to supplement income from an eventual job. The model includes an indicator for whether the individual has reached his 62nd birthday by the end of the wave; this variable avoids the endogenous decision to actually claim Social Security benefits and focuses just on the eligibility to do so.[18]

Unemployment insurance benefits may keep older jobless individuals in the labor force. The regression model includes a categorical variable for remaining UI eligibility: (1) the individual is eligible for UI and does not exhaust his benefits during the interview wave, (2) the individual exhausts benefits at some point during the wave, or (3) the individual is no longer eligible for UI at any point during the wave (the omitted condition). This information is collected from U.S. Department of Labor reports on state UI parameters.[19]

The sample restriction that excludes individuals who retire right away likely excludes most higher-net-worth individuals; they are more likely to report leaving their job for retirement. Still, wealth is a potential source of income to either support a job search or allow for earlier-than-planned retirement, so the model includes information about net worth, which is collected as part of annual topical modules and merged with the person-wave nearest to the wave of collection. The analysis controls for the individual's net worth linearly, as well as a dummy variable for missing wealth information.[20]

Retirement is also easier to manage for those who have employer pensions. SIPP collects information on defined benefit (DB) and defined contribution (DC) pension coverage from the current job and any previous jobs as part of a once-per-panel topical module.[21] The model

---

[17] This calculation is for all workers, not just those who eventually experience a job loss and thus enter the sample.
[18] In the absence of earnings data, the model implicitly assumes that any individual has accumulated enough credits to be eligible for Social Security benefits by his 62nd birthday, which should be true for most workers active after age 55. Estimates from alternative models that instead use categorical variables for age – reaching one's 62nd birthday in the current wave, between one's 62nd birthday and reaching the Full Retirement Age (FRA), reaching one's FRA in the current wave, and after FRA – show similar magnitudes for each category, suggesting that continuing the jobless spell depends only on whether the individual has reached the threshold of initial Social Security eligibility, not any subsequent milestones.
[19] See Rutledge (2012) for more details on the state UI data.
[20] A linear specification is preferred to a log-linear specification due to the 14 percent of individuals with zero or negative net worth. Alternative specifications that include net worth quintiles (by year) show a monotonic pattern in each regression, suggesting little non-linearity in labor market decisions with respect to net worth.
[21] The 2008 panel is the only panel to collect pension information more than once; this information is merged into the closest person-waves. Though the information on DC plans in the current job is quite detailed – including employees' and employers' contributions – information on plans from previous jobs is much more limited, and the

includes two (not mutually exclusive) indicator variables for whether the individual reports any DB or DC pension coverage. As with Social Security benefits, DB pension receipt does not correspond perfectly with retirement; 28 percent of people who are still working at ages 62-70 report income from a DB plan.

Another important factor is the age and work status of one's spouse. Married couples tend to retire together; Gustman and Steinmeier (2002) estimate that having a retired spouse increases the probability of being retired by as much as being about one year older. Thus the model controls for marital status, and includes indicators for whether the spouse is working and whether the spouse has reached age 62.[22]

The model includes a comprehensive set of demographic variables, including gender, race, and Hispanic origin. Categorical variables include citizenship, education, and family income as a percent of the federal poverty line. The model includes year dummies to account for time trends in retirement behavior, including the trend toward later retirement (Muldoon and Kopcke 2008, Bosworth and Burtless 2010). The model also includes two indicator variables capturing the individual's health status in the interview wave: an indicator variable for whether the individual reports fair or poor health and an indicator for whether the individual reports being limited or unable to work due to a health condition.[23] Finally, the model controls for whether the individual had employer-sponsored health insurance before job separation. This is of interest, because people who had been relying on their employment for health coverage likely will aim to take a new job with health benefits relatively quickly or fall back on retiree health insurance benefits from a previous job.

Importantly, the model controls for duration dependence by including a set of indicators for the number of months since the individual left his job. These indicators, when graphed, display the retirement, labor force exit, or re-employment hazard pattern not explained by the independent variables. Indicators are grouped in two-month intervals up to 21 months, with

---

only information collected for DB plans is whether the individual participates, so the model includes only the extensive margin of DB and DC coverage. The topical module information is supplemented with information from the core about pension income and its source (DB or DC).

[22] In alternate specifications, the spouse's real earnings are statistically insignificant and leave the marginal effect for the key variables – including spouse's work status – virtually unchanged.

[23] The information on work-limiting or work-preventing health conditions is collected for each wave in the core. The individual's self-reported health status on a five-point scale is asked multiple times each panel, as part of topical modules on disabilities and health care spending; this information is merged with the nearest interview wave.

grouped indicators for months 22 through 25, 26 through 29, and 30 or more months after job separation.

The model uses SIPP-provided weights that capture the complex survey design. All tables report the mean derivative for each variable, taking into account the non-linearity of the multinomial logit model, including interactions (Ai and Norton 2003). Standard errors for the marginal effects are calculated by the Delta method.

Results

Unconditional Results. Table 2 compares the shares of older workers who retire, find a new job, or are censored by individual characteristic. Compared with 16 years ago, fewer jobless spells have ended in retirement. During the economic expansion surrounding the high-tech bubble, 42 percent of jobless individuals 55 or older who did not retire immediately eventually retired; during the Great Recession, by contrast, only 32 percent eventually retired. Only 16 percent of those not yet eligible for Social Security retired, with 53 percent finding a new job. After Social Security becomes available, 28-42 percent end their jobless spell by retiring. When the end of a jobless spell coincides with the end of UI eligibility, 29 percent retired; when, instead, the end of the spell occurs after UI eligibility is exhausted, only 15 percent retired. The probability that jobless spells end in retirement does not vary much by wealth, spouse's work status, or state unemployment rates, but spells are more likely to end in retirement when the individual holds a DC pension, a DB pension, has a work limitation, or reports being in fair or poor health.

Table 3 reports the average duration of a spell that ends in retirement or re-employment by individual characteristic.[24] As expected, given that fewer spells end in retirement in recent years, the average duration of job search before retirement is longer in 2008-2012. As individuals age, not surprisingly, their time until retirement grows shorter. The widest gap in the duration of spells between retirement and re-employment are in spells that end after UI is exhausted, where retirement spells last nearly four months longer. For individuals in the middle quintile of net worth, spells ending in retirement last two months longer than spells ending in a job. Unmarried individuals wait longer to retire than those supported by a working spouse or

---

[24] Censored spells (not shown), not surprisingly, last longer on average.

with a spouse who is no longer working; the latter finding is consistent with the joint retirement decision.

Retirees in U.S. states with high unemployment rates spend more time searching: the average duration is more than a month longer than those who retire in low unemployment states, and 0.75 months longer than residents of similar states who find re-employment. The time before retirement is 1.5 months longer without a DB plan than with one, but those with a DC pension retire more rapidly than those without; both findings are consistent with the greater mobility allowed by 401(k) plans compared to traditional pensions, but they are reversed in the regression analysis. Finally, while Table 2 indicates that individuals with fair or poor health and work limitations are more likely to retire than healthier individuals, these measures are associated with longer durations before retiring.

One result that stands out from the above summary statistics is the importance of Social Security eligibility after a job loss. But Social Security claiming is not the equivalent of retirement; in fact, collecting Social Security can help sustain a job search by providing job seekers with a source of income. Table 4 examines the Social Security claiming decision of workers who lose their jobs before (Panel A) and after (Panel B) their 62nd birthdays, when Old Age and Survivors Insurance (OASI) first becomes available. Among those who leave their jobs before age 62 but are observed in SIPP at least once after turning 62, just less than half claim OASI within the SIPP window (Panel A). But among those observed claiming OASI at some point, nearly all claim when benefits are first available. Still, Social Security claiming does not imply retirement (and none of the retirement definitions use Social Security receipt explicitly): only 37.5 percent of individuals who leave a job, but eventually find another, claim benefits at 62. Moreover, a little more than half of those leaving their jobs at or after age 62 are already receiving OASI benefits (Panel B). Around 20 percent are not observed claiming OASI, but the plurality of those that do start receiving Social Security benefits claimed them within the same wave that they leave their job. These findings suggest that Social Security is a resource that could help individuals support themselves during a job search, but by no means is claiming Social Security an indicator that job search has ceased.

Multinomial Regression Analysis. Table 5 reports the results of three multinomial regressions, where re-employment is one outcome and one of the three definitions of retirement

(strict, which requires confirmation of retirement and does not allow for return to the labor force; quasi-strict, which allows for a return; and loose, which allows for a return and includes exits for health, caretaking, or lack of interest in working) is the other. The top line reports that, in any given wave, around 18-19 percent of jobless spells ended in re-employment. The probability in a given wave of strict retirement is 6 percent; quasi-strict retirement is 10 percent; and loose retirement is 15 percent.

Perhaps surprisingly, a higher state unemployment rate is associated with a lower probability of quasi-strict or loose retirement; not surprisingly, re-employment by any definition is less rapid when the unemployment rate is high. Although the relationship between retirement and local labor market conditions is statistically significant, the estimated magnitude is quite small: a 1-percentage-point increase in the state unemployment rate is associated with only a 0.8-percentage-point decrease in retirement (loose definition), or about 5 percent of the mean retirement probability of 15.3 percent. The relationship between strict retirement and the unemployment rate is negligible.

In contrast to macroeconomic conditions, retirement's relationship with age is substantial. Being eligible for Social Security benefits increases the probability of retirement by 9.1 to 13.5 percentage points, compared with individuals who are 61 and younger and not yet eligible. The retirement hazard, defined loosely (far right column), is nearly 75 percent (11.0 divided by the mean of 15.3) higher at and after age 62, compared to before one's 62nd birthday. Re-employment is also less common at and after age 62.

While strict and quasi-strict retirement are not influenced by the availability of UI, loose retirement is 7.2-percentage points less likely in the months when the unemployed worker still has some UI eligibility remaining; this cuts the mean hazard rate in half.[25] UI exhaustion may also make loose retirement less likely, but the estimate is not statistically significant. Re-employment is actually more likely during UI months in the strict and quasi-strict regressions relative to months after UI is exhausted; this finding could be due to duration dependence – more recently laid-off workers are more likely to find jobs than the long-term unemployed – or to the incentives in the UI system to continue searching.

---

[25] The addition of health as a reason for not working accounts for about half of the difference in the "still on UI" marginal effect between quasi-strict and loose retirement. Adding caretaking adds very little to the "still on UI" marginal effect, so the remainder is from jobless individuals who are not interested in working.

As net worth increases, retirement becomes more common in any given wave, and the magnitude of the correlation is substantial: a one standard deviation increase in net worth (about $431,000, on a mean of $272,000) is associated with a 1.5 percentage point, or 10 percent, increase in the probability of retiring under the loose definition in the given wave. Having a DB pension plan has a larger correlation with retirement, which is 5-9 percentage points (or 61-85 percent of the mean hazard) more likely if the individual has DB coverage from any previous job. DC plans are associated with a statistically insignificant and small reduction in both re-employment and retirement by any definition.

Married individuals are less likely to retire by the loose definition, especially those with spouses over 62, but there is little evidence of joint retirement among unemployed workers: the marginal effects for having a working spouse are all small and statistically insignificant. Women are more likely to retire only by the loose definition, consistent with women being more likely to take care of an ailing spouse, elderly parent, or grandchild.[26] Those with work limitations are less likely to retire by the strict or quasi-strict definition, but are as expected more likely to retire by the loose definition, which includes those who retire for chronic illness or injury. Fair or poor health, on the other hand, has no clear relationship with retirement. Most other variables in the regression are insignificant; there is little difference by education, race, or Hispanic origin.[27]

Table 6 reports the results for multinomial regressions in which the outcomes are re-employment or labor force exit, instead of retirement. Labor force exit data are available for the earlier panels, 1990-1993, so the first two columns report results from all years, while the second pair of columns reports results from the 1996-2012 period used in the retirement regressions in Table 5. The results are largely similar between the two periods, however; the mean hazard rate is just less than 5 percent in both periods, and most variables have similar magnitudes and qualitative findings.

As with retirement, labor force exit has a small negative correlation with the state unemployment rate, but the marginal effects are statistically insignificant. With respect to age,

---

[26] Separate estimates by gender yield results that are similar to those reported in Tables 5 and 6, except that men are more responsive to their spouse's work status: men are statistically significantly less likely to retire when their spouses are still working, while the marginal effect for this indicator is statistically insignificant and positive for women.

[27] Full results are available upon request, and are largely consistent across retirement definitions. One exception is for those who obtained health insurance through their employer before the job separation. Having once received employer-sponsored insurance is associated with a lower probability of loose retirement, but no difference in strict or quasi-strict retirement. This difference is largely explained by the inclusion of health as a reason for not working.

the general picture is the same as the retirement regressions: Social Security benefits allow for a quicker exit from the labor force. Similarly, labor force exit is significantly less likely when UI eligibility is remaining. Unlike retirement, however, DB pensions have no bearing on the probability of individuals leaving the labor force, and net worth is not statistically significantly correlated with labor force exit.[28]

The correlations in Table 5 between retirement and two individual characteristics – gender and health – differ depending on whether the retirement definition involves health-related reasons for no longer working. The analogous three estimates at the bottom of Table 6 come down on the side of the loose retirement definition, which includes health and caretaking as potential reasons for stopping the job search. Women – the primary caretakers of both children and the elderly – are more likely to exit the labor force, at a similar magnitude and significance level as the estimates using the loose retirement definition. Labor force exit – in contrast to loose retirement – does not have any direct relationship to health; but like loose retirement, the estimates in Table 6 indicate that poor health is associated with a greater probability of permanently leaving the labor force.

Figure 1 indicates that retirement and labor force exit are most likely early in the jobless spell. This figure displays the unexplained retirement hazard rates – that is, the marginal effect for the indicator variables for the number of months since job separation, relative to 12-13 months after separation, after controlling for other factors. The graph begins four months after separation, since those who left their job for retirement are not in the sample. Even with this exclusion, retirement is most common soon after job separation by any definition, and the decline is generally monotonic for more than a year thereafter. Not surprisingly, the loose definition of retirement is most common, but the likelihood of this type of retirement falls rapidly during the 6 to 13 months after separation. The decline is much more gradual for labor force exit. Other than loose retirement, the other retirement and labor force exit definitions continue to decline until about 16-17 months; after that, there is a slight rebound, and loose retirement is about as common just over two years after separation as it is just under a year after separation.

---

[28] Unlike the retirement regressions, where the correlation between net worth and retirement is uniformly linear, the relationship between net worth and labor force exit exhibits signs of non-linearity. For the full period, labor force exit is statistically significantly less likely in the 1st and 3rd wealth quintiles compared to the highest quintile, but only the 4th-lowest wealth quintile for the 1996-2012 period. None of the marginal effects for the included quintiles, however, are statistically significantly different from each other.

These results emphasize that if an older individual has not retired within the first 8-12 months, he is likely to remain on the fringe of the labor force for another year or more.

While the unconditional correlations in Table 3 indicate that retirement and local labor market conditions might be related, the regression results thus far indicate that a higher unemployment rate is associated with only a very slight delay in retirement.[29] To test the robustness of this finding, additional specifications are estimated that include interactions between the unemployment rate and categories for age, remaining UI eligibility, and months since separation. Table 7 shows that none of the interaction effects for age and UI eligibility are statistically significantly different from zero; accordingly, the level effects for age are nearly identical to the results from Tables 5 and 6. The marginal effect of having UI eligibility remaining are slightly larger, though the marginal effect for the labor force exit regression using the full sample (column 4) becomes statistically insignificant.

Figures 2a and 2b plot the predicted probability of retiring (under the loose definition) in each month after job separation for individuals at ages 55-61 and 62-70, respectively, implied by the regressions in Table 7. These simulations compare the predicted retirement hazard for these age groups at two different unemployment rates: 5 percent, which is the average unemployment rate between January 2004 and December 2007 (economic expansion); and 8.3 percent, which is the average unemployment rate from January 2008 to December 2012 (during the Great Recession and early recovery).[30]

For the hypothetical individual who is not yet eligible for Social Security, retirement is actually 1-6 percentage points more likely in the first nine months under a lower unemployment rate. (Figure 2a). From months 10 to 19, however, retirement becomes more common at the higher unemployment rate than at the lower unemployment rate, and thereafter is approximately the same. The pattern is nearly identical for the hypothetical individual who has already reached age 62, though the predicted hazard is nearly twice as high in each month (Figure 2b). But none of the interaction effects between the unemployment rate and months since job separation are statistically significant, indicating that the timing of retirement is unrelated to the state of the labor market, regardless of the individual's Social Security retirement eligibility.

---

[29] The marginal effect of state unemployment rates in multinomial regression models where it enters as a quadratic are smaller and less statistically significant than the results reported in Tables 4 and 5.

[30] The simulations assume the unemployment rate is fixed at either 5 or 8.3 percent, respectively, ignoring the month-to-month variation.

Results by Reason for Separation. The above analysis includes only individuals who report leaving their job involuntarily. But one-third of workers in the sample do not report a reason for separating, and some of them may have also left involuntarily. Excluding from the analysis those individuals who explicitly say that they left their job voluntarily – but did not immediately retire – makes sense, since their circumstances and incentives can differ substantially from workers who had no choice but to leave their jobs. On the one hand, individuals who leave a job voluntarily may only leave if they know their spell is likely to be short, and thus may be indifferent to the availability of resources like Social Security and pension wealth. On the other hand, workers may be more likely to leave a job voluntarily only if they have the resources available to weather a long jobless spell, and thus may be more sensitive to the availability of these resources. The relationship with macroeconomic conditions also may differ by the source of job separation, but the impact on job search duration is unclear. A high unemployment rate is associated with more involuntary separations and more fruitless job search, but more workers who feel financially unable to retire. In contrast, a low unemployment rate environment encourages more voluntary separations, but the impact of resource availability on spell duration among the voluntarily unemployed is ambiguous.

To test the robustness of prior findings, Table 8 compares estimates of the loose retirement and labor force exit hazards for samples that either include workers who did not report any reason for leaving their previous job (some of whom surely had involuntary separations), or that include voluntary separations. The earlier results are largely robust to the source of separation, but the UI findings are notably different. Whereas in previous specifications the UI indicators are statistically significant in the loose retirement and labor force exit regressions, UI is significantly correlated with only labor force exit in the sample that includes both the involuntarily unemployed and those without definitive answers. The UI estimates for all workers, including those who leave jobs voluntarily, are small and statistically indistinct from the omitted condition of exhausted UI benefits. This result may be explained by the UI-ineligibility of workers who quit, but also may reflect that UI is most valuable to workers who are otherwise unprepared for a late-career job loss.

Results by Age. Table 9 tests the robustness of the loose retirement and labor force exit correlations with the unemployment rate, UI, and DB pension variables across three age

16

categories: before age 62, from age 62 up to the FRA, and at and after the FRA. Among 55-61 year olds (first two columns), neither loose retirement nor labor force exit are statistically significantly correlated with the unemployment rate, and the magnitude is even smaller than with the full sample. Both retirement and exit are significantly less likely when UI is still available, and labor force exit is less likely in the wave when UI is exhausted. As relative net worth increases, retirement becomes more likely at ages 55-61, and those with DB pensions are more likely to retire. Married individuals are more likely to retire, and women and those with work limitations or fair or poor health are more likely to both retire and exit in any given wave after job separation among those under age 62.

Once Social Security benefits become available, the relationships between each of the resources available to support an unemployed individual and his decision to retire or leave the labor force are similar (last four columns). Among individuals who have passed the FRA, retirement is statistically significantly less likely when the labor market is weak, though the correlation is small. Before the FRA, UI benefits limit retirement and labor force exit, but after FRA, retirement and exit are statistically significantly *more* likely in the wave in which UI is exhausted. DB pension coverage and net worth are generally associated with more rapid retirement and labor force exit, and DC benefits with less rapid exit. In addition, people with work limitations are more likely to retire and exit before FRA, but not after FRA.

Results by Period. To test whether the correlations with the retirement hazard have changed over time, the model is also estimated by period: 1996-2000, 2001-2003, 2004-2007, and 2008-2012 (Table 10). These time periods line up with the business cycle, and also coincide with the beginnings and ends of SIPP panels. Loose retirement and the unemployment rate are not statistically significantly correlated in these subsamples. The relationship between retirement and Social Security age-eligibility is consistently positive over time, but somewhat weaker for the 2001-2003 period. In no period is the correlation between loose retirement and UI eligibility statistically significant, but the marginal effects are largest for the earlier two periods; the 1996-2000 and 2001-2003 periods appear to be driving the finding that individuals are less likely to retire or exit when UI benefits are still available. The correlations between retirement and both net worth and DB pension coverage are positive throughout, though net worth is statistically significant only in the 2001-2003 period.   On the whole, the results are consistent across business cycles.

17

Results for the Non-Disabled. The main results indicate that having a health condition that limits one's ability to work has one of the strongest and most consistent correlations with retirement and labor force exit, especially among the unemployed younger than 62.[31] This result suggests that many work-limited individuals may fall back on Social Security Disability Insurance (SSDI) rather than wait for retirement benefits from Social Security or DB plans. Previous literature has found that SSDI application is strongly correlated with the unemployment rate (see Autor and Duggan, 2006, for a review) and that unemployed individuals are more likely to apply, especially after UI benefits are exhausted (Rutledge 2012a). Since a disability applicant must have income below the Substantial Gainful Activity level ($1,040 per month in 2013), many applicants will drop out of the labor force.

To test whether SSDI applicants drive the above results, Table 11 presents estimates that exclude the 2,900 unique individuals (approximately 15 percent of the full sample, including individuals who reported voluntary separation or gave no reason) who report receiving SSDI benefits at any point while observed by the SIPP.[32] The outcome variable in the first and second columns is loose retirement; the first column includes the full sample (comparable to Table 5, column 3), while the second column includes only those waves where the individual is age 55-61 (comparable to Table 9, column 1). The outcome in the third column is labor force exit, using the full 1990-2012 sample (comparable to Table 6, column 1). The patterns of statistical significance, and most estimated magnitudes, match the results that include the disabled almost exactly. The one difference is that the marginal effects for work limitation are slightly smaller in magnitude – fittingly, as the individuals most likely to report a work limitation are also those most likely to receive SSDI benefits at some point – though the differences are not statistically significant. While joblessness may push some to retire or exit for SSDI application, their responses to the available resources does not appear to be appreciably different than those who retire or exit without entering the SSDI program.

Results by Education. The above analysis is correlational in nature, because of the potential for endogeneity and selection on unobservables. One concern in particular is that the

---

[31] Work-limited individuals have an incentive to apply for SSDI even after reaching age 62. If they are successful, an SSDI applicant receives the amount he would have received from OASI at their FRA with no actuarial adjustment for early claiming (Benitez-Silva and Yin 2011). Still, few OASI beneficiaries apply for SSDI benefits, and their decision to do so appears to be uncorrelated with macroeconomic conditions (Rutledge 2012b).
[32] Ideally, the sample would be restricted to individuals who do not apply for SSDI, but SIPP includes information only about SSDI receipt, i.e., successful application.

experiences of individuals who end up jobless and not immediately retired in their 50s and 60s might reflect, for example, the breadth of one's skills or one's occupational social network. To the extent that these unobserved factors in one's job search ability are correlated with educational attainment – college-educated workers are likely better connected to job opportunities even outside of their former occupation – estimating the results separately by whether the worker has at least some college experience has the potential to unpack how some unobservable qualities of the worker influence search duration. But the results are quite robust to education (Table 12). The most notable exception is that the estimates for the unemployment rate for the college group are precisely-estimated but small and negative. In addition, the relationship between labor force exit and UI benefits may differ by education: college-educated individuals are less likely to exit while on UI compared to non-UI months, while workers with no more than a high school degree do not respond to UI availability. For both the more- and less-educated, the availability of Social Security, pension benefits, and net worth, as well as health limitations, are associated with more rapid retirement.

Conclusions

Older workers, understanding that their retirement years will in all likelihood be longer and less secure than for the previous generation, report time and again that they plan to work longer (Munnell and Rutledge 2013). Yet the proportion of older workers finding themselves jobless has increased over time, and the lure of choosing retirement over a difficult job search may be hard to resist. At the same time, the retirement decision is often made amid a diminished ability to support one's pre-retirement lifestyle. This project explores the interaction between these competing forces, examining how long jobless individuals age 55 and over are willing to search for a new job before they reach their "point of no return" and exit the labor force.

The results suggest that among individuals with job separations that do not result in an immediate retirement, half of individuals retire and half find a job. Among individuals whose jobless spells end in retirement, most do so within a year after separation. The availability of resources like Social Security retirement benefits, high net worth, and defined benefit pensions appear to encourage more rapid labor force exit and retirement, rather than being used as financial supports that enable job seekers to persevere during a long search. Surprisingly, when the unemployment rate is high and new jobs are hard to find, retirement is actually statistically

significantly less likely, but the correlation is quite small, though UI benefits delay retirement. Finally, poor health and work-limiting disabilities are associated with more rapid labor force exit and retirement.

These results should be interpreted with some caution, because the sample of individuals who find themselves out of work late in their careers and choose not to immediately retire is possibly non-random. While some of the key variables are exogenous to the individual's retirement or re-employment decision-making – age and the Social Security retirement benefit eligibility, state unemployment rate, and UI benefit duration – others, like net worth and the presence of a working spouse, are endogenous. Because of potential selection into job loss and non-immediate retirement, the results are generalizable only to the late-career unemployed.

The brevity of jobless spells suggests that older individuals have little tolerance for job search, and those who can afford to make a quick exit – falling back on a substantial financial portfolio or annuities from Social Security and previous employers – will do so. Furthermore, the evidence that there is no correlation between labor market conditions and the retirement decision indicates that one's impatience has little to do with the difficulty of the job search, though UI benefits delay the decision to stop searching.

These findings are important for future cohorts of older workers, because changes in recent decades that have eroded retirement security indicate that older jobless people will not be able to afford the same haste when retiring in the future: defined benefit pensions and retiree health insurance coverage are all but extinct in the private sector, Social Security benefits replace a smaller proportion of each successive generation's income, and 401(k) balances do not make up for the shortfall. On the upside, workers in their 50s and 60s are healthier and better able to continue working, and have more general experience and less firm-specific capital than previous generations, which may better position them to find jobs than previous cohorts of late-career job seekers, and possibly even their younger competitors. The uptick in the average duration of jobless spells portends longer job searches for older unemployed Americans, and their patience and persistence may pay off in a more secure retirement.

References

Ai, Chunrong and Edward C. Norton. 2003. "Interaction Terms in Logit and Probit Models." *Economic Letters* 80(1): 123-129.

Autor, David H. and Mark G. Duggan. 2006. "The Growth in the Social Security Disability Rolls: A Fiscal Crisis Unfolding." *Journal of Economic Perspectives* 20(3): 71-96.

Benitez-Silva, Hugo and Na Yin. 2011. "Disability Insurance Applications near Retirement Age." State University of New York, Stony Brook working paper.

Bosworth, Barry P. and Gary Burtless. 2010. "Recessions, Wealth Destruction, and the Timing of Retirement." Working Paper 2010-22. Chestnut Hill, MA: Center for Retirement Research at Boston College.

Chan, Sewin and Ann Huff Stevens. 1999. "Employment and Retirement Following a Late-Career Job Loss." *American Economic Review* 89(2): 211-216.

Chan, Sewin and Ann Huff Stevens. 2004. "How Does Job Loss Affect the Timing of Retirement?" *B.E. Journal of Economic Analysis and Policy* 3(1): Contributions Article 5.

Coile, Courtney C. 2004. "Retirement Incentives and Couples' Retirement Decisions." *Topics in Economic Analysis & Policy* 4 (1): article 17.

Coile, Courtney C. and Phillip B. Levine. 2007. "Labor Market Shocks and Retirement: Do Government Programs Matter?" *Journal of Public Economics* 91(10): 1902-1919.

Coile, Courtney C. and Phillip B. Levine. 2011a. "Recessions, Retirement and Social Security." *American Economic Review, Papers and Proceedings* 101(3): 23-28.

Coile, Courtney C. and Phillip B. Levine. 2011b. "The Market Crash and Mass Layoffs: How the Current Economic Crisis May Affect Retirement." *B.E. Journal of Economic Analysis and Policy* 11(1): Contributions Article 22.

Couch, Kenneth A. and Dana W. Placzek. 2010. "Earnings Losses of Displaced Workers Revisited." *American Economic Review* 100(1): 572-589.

Dwyer, Debra Sabatini and Olivia S. Mitchell. 1999. "Health Problems as Determinants of Retirement: Are Self-Rated Measures Endogenous?" *Journal of Health Economics* 18(2): 173-193.

Edin, Per-Anders and Magnus Gustavsson. 2008. "Time out of Work and Skill Depreciation." *Industrial and Labor Relations Review* 61(2): 163-180.

Farber, Henry S. 2011. "Job Loss in the Great Recession: Historical Perspective from the Displaced Workers Survey, 1984-2010." Working Paper 17040. Cambridge, MA: National Bureau of Economic Research.

Farber, Henry S. and Robert G. Valletta. 2013. "Do Extended Unemployment Benefits Lengthen Unemployment Spells? Evidence from Recent Cycles in the U.S. Labor Market." Working Paper 19048. Cambridge, MA: National Bureau of Economic Research.

Friedberg, Leora and Anthony Webb. 2005. "Retirement and the Evolution of Pension Structure." *Journal of Human Resources* 40(2): 281-308.

Friedberg, Leora, Michael Owyang, and Anthony Webb. 2008. "Identifying Local Differences in Retirement Patterns." Working Paper 2008-18. Chestnut Hill, MA: Center for Retirement Research at Boston College.

Gustman, Alan L. and Thomas L. Steinmeier. 2001. "Retirement and Wealth." *Social Security Bulletin* 64(2): 66-91.

Gustman, Alan L., and Thomas L. Steinmeier. 2002. "Retirement and the Stock Market Bubble." Working Paper 9404. Cambridge, MA: National Bureau of Economic Research.

Gustman, Alan L., and Thomas L. Steinmeier. 2005. "The Social Security Early Entitlement Age in a Structural Model of Retirement and Wealth." *Journal of Public Economics* 89(2-3): 441-63.

Hallberg, Daniel. 2011. "Economic Fluctuations and Retirement of Older Employees." *LABOUR* 25(3): 287-307.

Ham, John C., Xianghong Li, and Lara Shore-Sheppard. 2009. "Seam Bias, Multiple-State, Multiple-Spell Duration Models and the Employment Dynamics of Disadvantaged Women." Working Paper 15151. Cambridge, MA: National Bureau of Economic Research.

Johnson, Richard W., and Barbara A. Butrica. 2012. "Age Disparities in Unemployment and Reemployment During the Great Recession and Recovery." Unemployment and Recovery Project Brief 3. Washington DC: Urban Institute.

Johnson, Richard W. and Corina Mommaerts. 2010. "Social Security Retirement Benefit Awards Hit All-Time High in 2009." Fact Sheet on Retirement Policy. Washington, DC: Urban Institute.

Johnson, Richard W. and Corina Mommaerts. 2011. "Age differences in job displacement, job search and reemployment." Working Paper 2011-3. Chestnut Hill, MA: Center for Retirement Research at Boston College.

Kroft, Kory, Fabian Lange, Matthew J. Notowidigdo, and Lawrence F. Katz. "Long-Term Unemployment and the Great Recession: The Role of Composition, Duration Dependence, and Non-Participation" Working Paper 20273. Cambridge, MA: National Bureau of Economic Research.

Krueger, Alan B. and Andreas Mueller. 2010. "Job Search and Unemployment Insurance: New Evidence from Time Use Data." *Journal of Public Economics* 94: 298-307.

Marmora, Paul and Moritz Ritter. 2014. "Unemployment and the Retirement Decisions of Older Workers." Working Paper. Philadelphia, PA: Temple University.

Muldoon, Dan and Richard W. Kopcke. 2008. "Are People Claiming Social Security Benefits Later?" *Issue in Brief* 8-7. Chestnut Hill, MA: Center for Retirement Research at Boston College.

Munnell, Alicia H. and Matthew S. Rutledge. 2013. "The Effects of the Great Recession on the Retirement Security of Older Workers." *Annals of the American Academy of Political and Social Science*, 650(1): 124-142.

Munnell, Alicia H., Mauricio Soto, Robert Triest and Natalia Zhivan. 2008. "How Much do State Economics and Other Characteristics Affect Labor Force Participation of Older Workers?" Working Paper 2008-12. Chestnut Hill, MA: Center for Retirement Research at Boston College.

Neal, Derek. 1995. "Industry-Specific Human Capital: Evidence from Displaced Workers." *Journal of Labor Economics* 13(4): 653-677.

Prowse, Victoria and Yanan Li. 2014. "The Insurance Role of Household Labor Supply for Older Workers." Working Paper. Ithaca, NY: Cornell University.

Reno, Virginia P. and Daniel N. Price. 1985. "Relationship Between the Retirement, Disability, and Unemployment Insurance Programs: The U.S. Experience." *Social Security Bulletin* 48(5): 24-37.

Rothstein, Jesse. 2011. "Unemployment Insurance and Job Search in the Great Recession." *Brookings Papers on Economic Activity*, Fall 2011: 143-213.

Rutledge, Matthew S. 2012a. "The Impact of Unemployment Insurance Extensions on Disability Insurance Application and Allowance Rates." Working Paper 2011-17. Chestnut Hill, MA: Center for Retirement Research at Boston College.

Rutledge, Matthew S. 2012b. "Holding Out or Opting Out? Deciding between Retirement and Disability Applications in Recessions." Working Paper 2012-26. Chestnut Hill, MA: Center for Retirement Research at Boston College.

Rutledge, Matthew S. and Norma B. Coe. 2012. "Great Recession-Induced Early Claimers: Who Are They? How Much Did They Lose?" Working Paper 2012-12. Chestnut Hill, MA: Center for Retirement Research at Boston College.

Shimer, Robert. 2004. "Search Intensity." Working Paper. Chicago, IL: University of Chicago.

Stevens, Ann Huff and Sewin Chan. 2001. "Job Loss and Employment Patterns of Older Workers." *Journal of Labor Economics* 19(2): 484-521.

Tatsiramos, Konstantinos. 2010. "Job Displacement and the Transitions to Re-Employment and Early Retirement for Non-Employed Older Workers." *European Economic Review* 54(4): 517-535.

Valetta, Robert G. 1991. "Job Tenure and Joblessness of Displaced Workers." *Journal of Human Resources* 26(4): 726-741.

von Wachter, Till. 2007. "The Effect of Economic Conditions on the Employment of Workers Nearing Retirement Age." Working Paper 2007-25. Chestnut Hill, MA: Center for Retirement Research at Boston College.

Figure 1. *Unexplained Probability of Retirement and Labor Force Exit by Time since Job Separation*
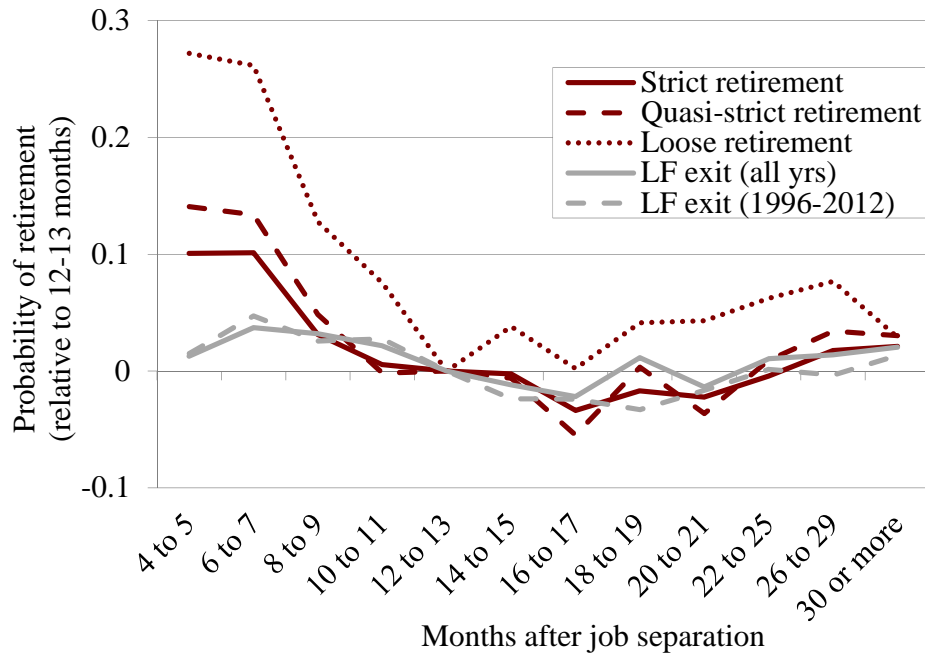
Source: Author's estimates from the *Survey of Income and Program Participation*, 1990-2008 panels.

Figure 2A. *Predicted Probability of Retirement by Time Since Job Separation, Age, and Unemployment Rate, Age 55-61*
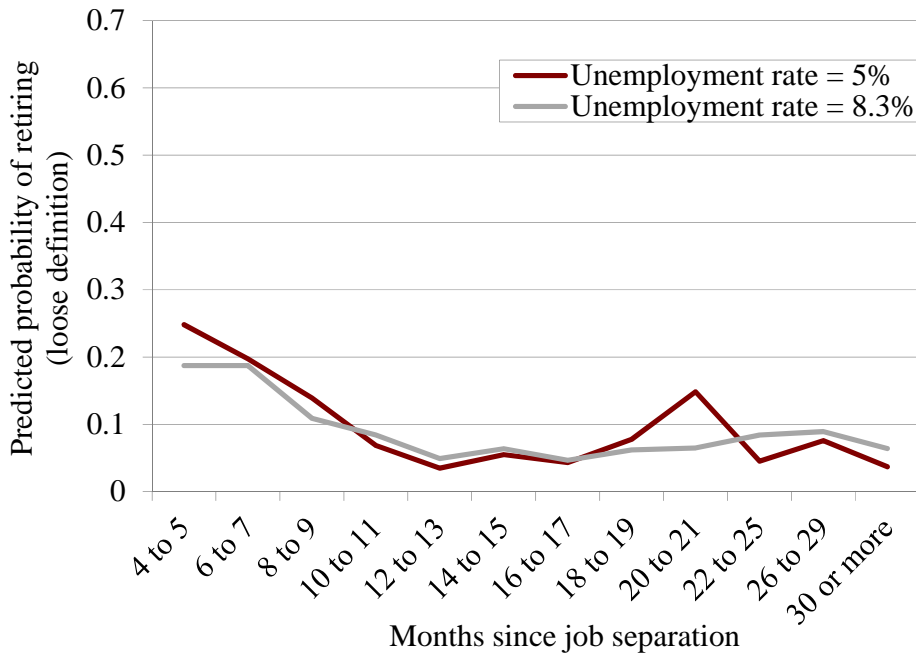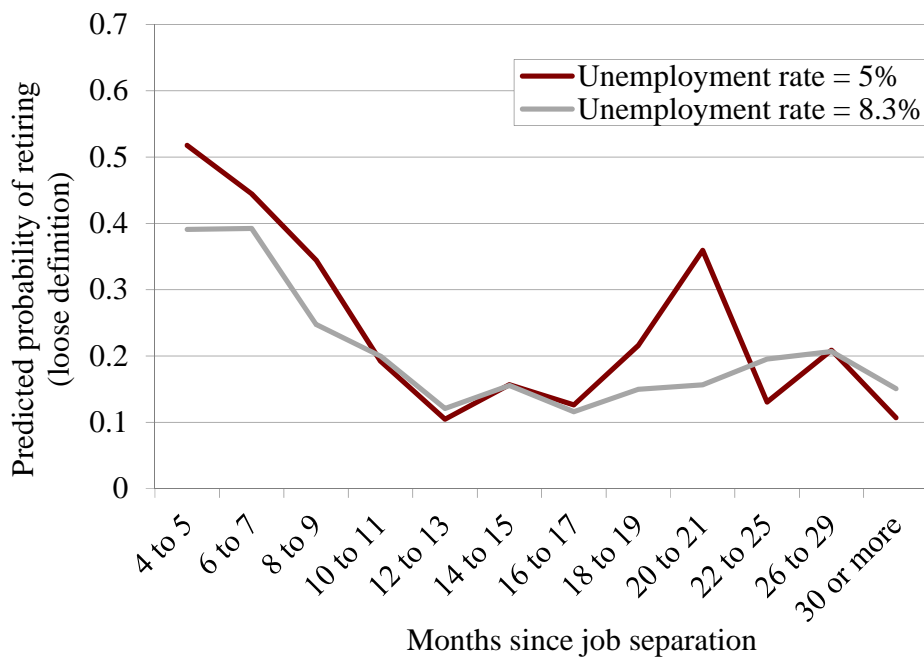

Figure 2B. *Predicted Probability of Retirement by Time Since Job Separation, Age, and Unemployment Rate, Age 62-70*

Source: Author's estimates from the *Survey of Income and Program Participation,* 1996-2008 panels.

Table 1. *Sample Selection*

Criterion	Remaining unique persons
SIPP 1990-2008 panels	716,412
Maximum age at least 55	156,276
At least one month of positive weeks worked	68,054
At least one job separation	22,441
Age 55 or over at job separation	22,427
Age 70 or under at job separation	17,154
Living in an identifiable state	16,889
Strict and quasi-strict retirement samples	
1996-2008 panels	11,716
Did not immediately retire	6,764
Not within three months of censoring	6,460
Job separation was involuntary	2,358
Loose retirement sample	
1996-2008 panels	11,716
Did not immediately retire	4,956
Not within three months of censoring	4,702
Job separation was involuntary	2,247
Labor force exit sample	
Did not immediately leave the labor force	3,761
Not within three months of censoring	3,601
Job separation was involuntary	1,873

Source: Author's calculations from *Survey of Income and Program Participation,* 1990-2008 panels.

Table 2. *Proportion of Spells Ending in Retirement, Re-Employment, and Censoring*

	Any retirement	Re-employment	Censored
Period			
1996-2000	0.423	0.432	0.144
2001-03	0.352	0.402	0.246
2004-07	0.311	0.468	0.221
2008-12	0.315	0.417	0.268
Age			
55-61	0.164	0.531	0.305
Around 62	0.283	0.373	0.344
>62 & <FRA	0.300	0.390	0.310
Around FRA	0.420	0.274	0.306
After FRA	0.329	0.366	0.305
UI eligibility			
Still on UI	0.217	0.491	0.292
UI exhausted	0.294	0.512	0.193
After UI	0.154	0.287	0.558
Net worth quintile			
Lowest	0.194	0.499	0.307
2nd	0.210	0.433	0.358
3rd	0.228	0.438	0.334
4th	0.205	0.533	0.261
Highest	0.265	0.465	0.271
Spouse work status			
Unmarried	0.212	0.443	0.345
Spouse working	0.216	0.511	0.273
Spouse not working	0.247	0.453	0.300
State unemployment rate tercile			
Lowest	0.233	0.475	0.292
Middle	0.237	0.462	0.300
Upper	0.210	0.474	0.316
DB pension			
No	0.193	0.486	0.321
Yes	0.261	0.452	0.287
DC pension			
No	0.186	0.473	0.341
Yes	0.292	0.469	0.239
Work limitation			
No work limitation	0.195	0.505	0.300
Work limitation	0.349	0.316	0.335
Fair or poor health			
Good health or better	0.205	0.489	0.306
Fair or poor health	0.308	0.380	0.311

Source: Author's calculations from *Survey of Income and Program Participation,* 1996-2008 panels.

Table 3. *Average Duration of Spells Ending in Retirement and Re-Employment*

	Any retirement		Re-employment
Period			
1996-2000	6.271		6.046
2001-2003	7.285		6.681
2004-2007	7.057	***	5.998
2008-2012	9.689	**	8.489
Age			
55-61	8.043	***	7.129
Around 62	8.777		8.640
>62 & <FRA	8.513	***	6.895
Around FRA	8.293	*	5.877
After FRA	7.044		6.568
UI eligibility			
Still on UI	6.488	***	5.774
UI exhausted	8.266		8.739
After UI	18.771	***	15.089
Net worth quintile			
Lowest	8.170		7.086
2nd	8.007		7.540
3rd	8.865	***	6.870
4th	7.711	*	6.931
Highest	7.521		7.070
Spouse work status			
Unmarried	8.258	**	7.291
Spouse working	7.695	*	7.046
Spouse not working	7.852	***	6.702
State unemployment rate tercile			
Lowest	7.056		7.109
Middle	7.698	**	6.893
Upper	8.450	***	7.110
DB pension			
No	8.694	***	7.229
Yes	7.205		6.767
DC pension			
No	7.612	**	6.956
Yes	8.309	***	7.184
Work limitation			
No	7.645	**	7.049
Yes	8.677	***	6.978
Fair or poor health			
No	7.667	**	7.020
Yes	8.805	***	7.168

Source: Author's calculations from *Survey of Income and Program Participation,* 1996-2008 panels.

Table 4. *Social Security Retirement Benefit Claiming by Age at Job Loss*

Panel A. Claiming Age When Leaving Job Before 62

	Percent			
Age	All	Any retirement	Re-employment	Censored
62	44.1	53.0	37.5	39.4
63	3.3	1.4	5.3	2.2
64	1.0	0.7	0.9	1.8
Not observed with OASI	51.7	44.8	56.3	56.6

Panel B. Claim Timing Relative to Job Separation After 62

	Percent
Already receiving OASI	53.5
Same wave	12.2
Within six months	3.7
Within a year	5.8
More than one year later	4.8
Not observed with OASI	20.0

Notes: Panel A includes anyone who lost a job before age 62 and is observed in SIPP after their 62nd birthday. Panel B includes anyone who lost a job at or after age 62. Both panels exclude respondents who retired immediately.
Source: Author's calculations from *Survey of Income and Program Participation,* 1996-2008 panels.

Table 5. *Multinomial Logit Estimates for Re-Employment and Retirement*

Dependent variable	(1) Re-employment	(1) Strict retirement	(2) Re-employment	(2) Quasi-strict retirement	(3) Re-employment	(3) Loose retirement
Mean hazard rate	0.190	0.061	0.177	0.098	0.193	0.153
State U Rate	-0.014***	-0.002	-0.012***	-0.007**	-0.013***	-0.008**
	(0.003)	(0.002)	(0.003)	(0.003)	(0.004)	(0.004)
Age 62 or older	-0.021*	0.091***	-0.023*	0.135***	-0.034**	0.110***
	(0.011)	(0.013)	(0.012)	(0.013)	(0.016)	(0.013)
Still on UI	0.047**	-0.012	0.064**	-0.024	0.023	-0.072***
	(0.022)	(0.016)	(0.026)	(0.019)	(0.035)	(0.027)
UI exhausted	0.028	-0.001	0.064**	-0.015	0.056	-0.037
	(0.019)	(0.016)	(0.026)	(0.018)	(0.037)	(0.028)
Net worth ($100k 2012)	-0.004***	0.001	-0.003**	0.003***	-0.003*	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)
DB pension	0.009	0.052***	0.014	0.083***	0.016	0.094***
	(0.011)	(0.010)	(0.013)	(0.011)	(0.015)	(0.013)
DC pension	0.002	0.001	0.006	0.000	0.000	-0.012
	(0.011)	(0.007)	(0.012)	(0.009)	(0.015)	(0.012)
Married	-0.011	0.008	-0.011	0.016	0.010	0.060***
	(0.016)	(0.013)	(0.016)	(0.015)	(0.020)	(0.016)
Spouse 62+	-0.008	-0.002	-0.004	0.005	0.000	0.016
	(0.013)	(0.009)	(0.015)	(0.011)	(0.020)	(0.016)
Spouse working	0.008	-0.012	0.012	-0.010	0.014	-0.013
	(0.013)	(0.009)	(0.015)	(0.010)	(0.018)	(0.012)
Female	-0.030***	0.009	-0.031***	0.003	-0.004	0.051***
	(0.011)	(0.008)	(0.012)	(0.008)	(0.015)	(0.012)
Work limitation	-0.113***	-0.024***	-0.112***	-0.060***	-0.062***	0.105***
	(0.010)	(0.008)	(0.010)	(0.010)	(0.017)	(0.015)
Fair/poor health	-0.065***	-0.005	-0.063***	-0.002	-0.052***	0.020
	(0.011)	(0.010)	(0.012)	(0.011)	(0.016)	(0.014)
Sample size	8,621		8,047		6,751	

Note: Regression also includes educational attainment, race, Hispanic origin, citizenship, family income as a percent of the poverty line, year dummies, and indicators for months since jobless spell began.
Source: Author's estimates from *Survey of Income and Program Participation,* 1996-2008 panels.

Table 6. *Multinomial Logit Estimates for Re-Employment and Labor Force Exit*

	(1)		(2)	
Dependent variable	Re-employment	LF exit (1990-2012)	Re-employment	LF exit (1996-2012)
Mean hazard rate	0.237	0.047	0.223	0.048
State unemployment rate	-0.013***	-0.002	-0.021***	-0.002
	(0.004)	(0.002)	(0.004)	(0.002)
Age 62 or older	-0.014	0.066***	-0.044***	0.072***
	(0.017)	(0.014)	(0.016)	(0.016)
Still on UI	-0.001	-0.031*	0.009	-0.046**
	(0.031)	(0.017)	(0.030)	(0.020)
UI exhausted	0.007	-0.014	0.015	-0.024
	(0.029)	(0.019)	(0.030)	(0.023)
Net worth ($100k 2012)	-0.003	0.000	-0.005**	0.000
	(0.002)	(0.001)	(0.002)	(0.001)
DB pension coverage	0.017	0.012	-0.007	0.009
	(0.013)	(0.009)	(0.016)	(0.010)
DC pension coverage	0.007	-0.006	0.008	-0.002
	(0.016)	(0.010)	(0.017)	(0.011)
Married	0.019	0.015	0.022	0.019
	(0.018)	(0.013)	(0.021)	(0.015)
Spouse 62 or older	-0.012	0.008	-0.018	0.003
	(0.017)	(0.012)	(0.019)	(0.012)
Spouse working	0.018	0.002	-0.004	0.002
	(0.016)	(0.011)	(0.020)	(0.013)
Female	-0.013	0.026***	0.000	0.017*
	(0.013)	(0.010)	(0.015)	(0.010)
Work limitation	-0.050 ***	0.064***	-0.077***	0.075***
	(0.017)	(0.015)	(0.016)	(0.019)
Fair or poor health	-0.037 **	0.020*	-0.056***	0.009
	(0.015)	(0.010)	(0.016)	(0.012)
Sample size	6,296		4,775	

Note: Regression also includes educational attainment, race, Hispanic origin, citizenship, family income as a percent of the poverty line, year dummies, and indicators for months since jobless spell began.
Source: Author's estimates from *Survey of Income and Program Participation,* 1990-2008 panels.

Table 7. *Multinomial Logit Estimates for Retirement/LF Exit with Unemployment Rate Interactions*

Dependent variable	(1) Strict retirement	(2) Quasi-strict retirement	(3) Loose retirement	(4) LF exit (1990-2012)	(5) LF exit (1996-2012)
Mean hazard rate	0.061	0.098	0.153	0.047	0.048
State unemployment rate	-0.002	-0.009	-0.009	-0.002	-0.002
	(0.008)	(0.010)	(0.016)	(0.008)	(0.009)
Age 62 or older	0.091***	0.135***	0.111***	0.066***	0.072 ***
	(0.016)	(0.016)	(0.016)	(0.018)	(0.021)
Still on UI	-0.039	-0.028	-0.093*	-0.034	-0.076 **
	(0.027)	(0.033)	(0.053)	(0.028)	(0.033)
UI exhausted	-0.025	-0.025	-0.069	-0.027	-0.060
	(0.032)	(0.030)	(0.051)	(0.030)	(0.044)
State unemployment rate ×					
Still on UI	-0.004	0.017	0.004	-0.024	-0.020
	(0.006)	(0.015)	(0.019)	(0.027)	(0.033)
UI exhausted	-0.002	-0.007	-0.005	-0.009	-0.001
	(0.005)	(0.020)	(0.018)	(0.020)	(0.021)
62 plus	0.006	-0.007	-0.008	0.004	0.004
	(0.004)	(0.011)	(0.011)	(0.006)	(0.007)
Sample size	8,621	8,047	6,751	6,296	4,775

Note: The other outcome in each regression is re-employment, and each regression includes same controls as previous tables.
Source: Author's estimates from *Survey of Income and Program Participation,* 1990-2008 panels.

Table 8. *Multinomial Logit Estimates for Retirement/LF Exit after Involuntary and Voluntary Job Separations*

	(1)	(2)	(3)	(4)
Separation definition	Excluding voluntary		Irrespective of reason	
Dependent variable	Loose retirement (Age 55-70)	LF exit (1990-2012)	Loose retirement (Age 55-70)	LF exit (1990-2012)
Mean hazard rate	0.181	0.050	0.190	0.071
State unemployment rate	-0.006**	-0.003*	-0.008***	-0.004**
	(0.003)	(0.002)	(0.003)	(0.002)
Age 62 or older	0.106***	0.078***	0.107***	0.097***
	(0.010)	(0.013)	(0.010)	(0.013)
Still on UI	-0.025	-0.029*	-0.025	-0.016
	(0.026)	(0.016)	(0.022)	(0.019)
UI exhausted	0.003	-0.008	-0.003	0.013
	(0.025)	(0.018)	(0.022)	(0.022)
Net worth ($100k 2012)	0.004***	0.000	0.003***	0.000
	(0.001)	(0.001)	(0.001)	(0.001)
DB pension coverage	0.076***	0.013	0.072***	0.034***
	(0.011)	(0.008)	(0.009)	(0.009)
DC pension coverage	-0.007	-0.008	-0.008	-0.003
	(0.011)	(0.009)	(0.010)	(0.009)
Married	0.063***	0.012	0.054***	0.026**
	(0.014)	(0.012)	(0.013)	(0.013)
Spouse working	-0.009	0.003	-0.007	-0.017*
	(0.011)	(0.011)	(0.009)	(0.009)
Female	0.039***	0.023**	0.038***	0.030***
	(0.011)	(0.009)	(0.009)	(0.010)
Work limitation	0.097***	0.057***	0.084***	0.058***
	(0.012)	(0.014)	(0.011)	(0.012)
Fair or poor health	0.032***	0.016*	0.031***	0.037***
	(0.011)	(0.009)	(0.010)	(0.010)
Sample size	9,076	7,682	12,127	10,517

Note: The other outcome in each regression is re-employment, and each regression includes same controls as previous tables.
Source: Author's estimates from *Survey of Income and Program Participation* 1990-2008 panels.

Table 9. *Multinomial Logit Estimates for Retirement and Labor Force Exit, by Age*

	(1)	(2)	(3)	(4)	(5)	(6)
Age group	55 - 61		62 - pre-FRA		FRA and older	
Dependent var.	Loose retire	LF exit	Loose retire	LF exit	Loose retire	LF exit
Mean hazard rate	0.107	0.028	0.195	0.087	0.284	0.087
State U rate	0.002	-0.002	-0.010	0.003	-0.023**	-0.005
	(0.004)	(0.002)	(0.007)	(0.007)	(0.010)	(0.008)
Still on UI	-0.070**	-0.041***	-0.264***	-0.091*	0.076	0.111
	(0.032)	(0.014)	(0.062)	(0.048)	(0.082)	(0.085)
UI exhausted	-0.046	-0.033**	-0.127*	-0.049	0.179*	0.144*
	(0.033)	(0.015)	(0.073)	(0.059)	(0.092)	(0.085)
Net worth ($100k 2012)	0.003**	0.000	0.007**	0.000	0.005	0.007*
	(0.001)	(0.001)	(0.003)	(0.003)	(0.003)	(0.004)
DB pension	0.098***	0.004	0.099***	0.046*	0.098***	0.034
	(0.019)	(0.010)	(0.028)	(0.028)	(0.031)	(0.038)
DC pension	-0.009	0.009	-0.024	-0.040*	-0.005	-0.068***
	(0.016)	(0.012)	(0.026)	(0.022)	(0.031)	(0.022)
Married	0.053***	0.019	0.048	-0.062**	0.013	0.056
	(0.020)	(0.014)	(0.035)	(0.025)	(0.062)	(0.066)
Spouse 62+	-0.003	0.009	0.027	0.046	0.114**	-0.013
	(0.021)	(0.013)	(0.033)	(0.034)	(0.053)	(0.056)
Spouse working	-0.010	0.004	0.005	0.021	-0.021	-0.041
	(0.017)	(0.010)	(0.029)	(0.033)	(0.038)	(0.036)
Female	0.068***	0.032***	-0.002	-0.039*	-0.038	0.073
	(0.015)	(0.012)	(0.027)	(0.023)	(0.030)	(0.046)
Work limitation	0.136***	0.056***	0.104**	0.110**	-0.029	0.050
	(0.022)	(0.017)	(0.045)	(0.049)	(0.037)	(0.041)
Fair or poor health	0.045**	0.020*	-0.017	-0.033	-0.023	0.035
	(0.018)	(0.011)	(0.034)	(0.026)	(0.033)	(0.033)
Sample size	4,269	4,322	1,432	1,182	1,050	792

Note: The other outcome in each regression is re-employment, and each regression includes same controls as previous tables. Labor force exit estimates are from 1990-2012 sample.
Source: Author's estimates from *Survey of Income and Program Participation,* 1990-2008 panels.

Table 10. *Multinomial Logit Estimates for Re-Employment and Retirement, by Period*

	(1)	(2)	(3)	(4)
Period	1996-2000	2001-2003	2004-2007	2008-2012
Dependent variable	Loose retire	Loose retire	Loose retire	Loose retire
Mean hazard rate	0.228	0.180	0.170	0.118
State unemployment rate	-0.020	-0.001	-0.012	-0.002
	(0.015)	(0.015)	(0.017)	(0.004)
Age 62 or older	0.101***	0.066**	0.154 ***	0.104***
	(0.038)	(0.033)	(0.037)	(0.021)
Still on UI	-0.151	-0.115	0.030	-0.044
	(0.120)	(0.098)	(0.089)	(0.082)
UI exhausted	-0.136	-0.100	0.108	-0.023
	(0.103)	(0.092)	(0.079)	(0.079)
Net worth ($100k 2012)	0.003	0.011***	0.001	0.002
	(0.004)	(0.003)	(0.004)	(0.001)
DB pension coverage	0.126***	0.191***	0.085 ***	0.065***
	(0.031)	(0.038)	(0.033)	(0.019)
Married	0.105*	0.044	0.085 *	0.040*
	(0.064)	(0.046)	(0.045)	(0.022)
Spouse working	-0.065	-0.012	-0.021	-0.011
	(0.042)	(0.031)	(0.040)	(0.016)
Female	0.088**	0.051*	0.059 *	0.025
	(0.044)	(0.031)	(0.030)	(0.016)
Work limitation	0.038	0.045	0.119 ***	0.132***
	(0.031)	(0.040)	(0.041)	(0.026)
Fair or poor health	0.027	0.068*	0.005	0.008
	(0.038)	(0.040)	(0.037)	(0.019)
Sample size	965	956	1,338	3,492

Note: The other outcome in each regression is re-employment, and each regression includes same controls as previous tables.
Source: Author's estimates from *Survey of Income and Program Participation,* 1996-2008 panels.

Table 11. *Multinomial Logit Estimates for Retirement/LF Exit excluding SSDI beneficiaries*

Dependent variable	(1) Loose retirement (Age 55-70)	(3) Loose retirement (Age 55-61)	(2) LF exit (1990-2012)
Mean hazard rate	0.140	0.177	0.036
State unemployment rate	-0.008**	0.002	-0.001
	(0.004)	(0.007)	(0.002)
Age 62 or older	0.115***		0.060***
	(0.015)		(0.015)
Still on UI	-0.078***	-0.061	-0.060***
	(0.029)	(0.052)	(0.015)
UI exhausted	-0.040	-0.041	-0.040**
	(0.032)	(0.051)	(0.019)
Net worth ($100k 2012)	0.003**	0.004	0.000
	(0.001)	(0.002)	(0.001)
DB pension coverage	0.092***	0.141***	0.014
	(0.015)	(0.027)	(0.009)
Married	0.061***	0.086***	0.014
	(0.018)	(0.032)	(0.013)
Spouse working	-0.006	-0.004	0.010
	(0.013)	(0.025)	(0.012)
Female	0.057***	0.127***	0.029***
	(0.013)	(0.024)	(0.010)
Work limitation	0.068***	0.142***	0.042***
	(0.016)	(0.027)	(0.014)
Fair or poor health	0.019	0.052**	0.012
	(0.014)	(0.026)	(0.010)
Sample size	5,876	3,658	5,522

Note: The other outcome in each regression is re-employment, and each regression includes same controls as previous tables.
Source: Author's estimates from *Survey of Income and Program Participation,* 1990-2008 panels.

Table 12. *Multinomial Logit Estimates for Retirement/LF Exit by Education*

	(1)	(2)	(3)	(4)
	No college experience		Any college experience	
Dependent variable	Loose retirement	LF exit (1990-2012)	Loose retirement	LF exit (1990-2012)
Mean hazard rate	0.146	0.041	0.164	0.055
State unemployment rate	-0.006	0.002	-0.012**	-0.009**
	(0.005)	(0.002)	(0.006)	(0.004)
Age 62 or older	0.093***	0.050***	0.140***	0.086***
	(0.016)	(0.015)	(0.020)	(0.024)
Still on UI	-0.071**	-0.003	-0.064*	-0.055**
	(0.034)	(0.027)	(0.037)	(0.024)
UI exhausted	-0.029	0.001	-0.051	-0.028
	(0.038)	(0.025)	(0.037)	(0.027)
Net worth ($100k 2012)	0.002**	0.000	0.007***	0.002
	(0.001)	(0.001)	(0.002)	(0.002)
DB pension coverage	0.103***	0.015	0.080***	0.010
	(0.016)	(0.012)	(0.018)	(0.014)
DC pension coverage	0.006	0.004	-0.033**	-0.019
	(0.015)	(0.012)	(0.017)	(0.013)
Married	0.071***	0.004	0.037	0.032
	(0.021)	(0.016)	(0.025)	(0.022)
Spouse 62 or older	0.011	0.015	0.026	-0.007
	(0.019)	(0.016)	(0.024)	(0.020)
Spouse working	-0.031*	-0.003	0.022	0.009
	(0.016)	(0.014)	(0.021)	(0.018)
Female	0.050***	0.009	0.047***	0.055***
	(0.015)	(0.012)	(0.017)	(0.019)
Work limitation	0.088***	0.060***	0.130***	0.070***
	(0.019)	(0.019)	(0.024)	(0.022)
Fair or poor health	0.007	-0.004	0.034*	0.046**
	(0.016)	(0.012)	(0.020)	(0.018)
Sample size	4047	3434	2704	2862

Note: The other outcome in each regression is re-employment, and each regression includes same controls as previous tables.
Source: Author's estimates from *Survey of Income and Program Participation* 1990-2008 panels

Table A1. *Summary Statistics, by Spell Ending*

	Any retirement	Ret vs Job	Re-employment	Labor force exit
State unemployment rate	7.044		6.987	7.526
	(0.133)		(0.096)	(0.143)
Age				
55 - 61	0.496	***	0.758	0.578
	(0.018)		(0.013)	(0.023)
62-plus	0.504	***	0.242	0.422
	(0.018)		(0.013)	(0.023)
Still on UI	0.801	**	0.837	0.772
	(0.011)		(0.009)	(0.013)
UI exhausted	0.136	**	0.117	0.142
	(0.006)		(0.005)	(0.008)
After UI	0.063		0.046	0.086
	(0.008)		(0.007)	(0.010)
Net worth ($100k 2012)	3.160	**	2.536	2.293
	(0.205)		(0.129)	(0.182)
N/A	0.005		0.005	0.002
	(0.002)		(0.003)	(0.002)
DB pension coverage	0.476	*	0.328	0.404
	(0.020)		(0.017)	(0.028)
DC pension coverage	0.472	***	0.521	0.350
	(0.019)		(0.020)	(0.026)
Married	0.645	**	0.584	0.619
	(0.019)		(0.020)	(0.025)
Spouse 62 or older	0.286	***	0.148	0.237
	(0.016)		(0.012)	(0.019)
Spouse FRA or older	0.155	***	0.080	0.133
	(0.014)		(0.009)	(0.018)
Spouse working	0.366		0.396	0.360
	(0.019)		(0.016)	(0.024)
Female	0.505	***	0.427	0.488
	(0.019)		(0.016)	(0.022)
White	0.846		0.849	0.853
	(0.013)		(0.013)	(0.016)
Black	0.098		0.098	0.087
	(0.010)		(0.010)	(0.013)
Asian	0.031		0.026	0.033
	(0.007)		(0.006)	(0.007)

Table A1. *Summary Statistics, by Spell Ending* (cont'd)

	Any retirement	Ret vs Job	Re-employment	Labor force exit
Other race	0.025		0.027	0.026
	(0.006)		(0.006)	(0.007)
Hispanic	0.108		0.125	0.122
	(0.013)		(0.016)	(0.017)
Native citizen	0.867	*	0.833	0.818
	(0.013)		(0.017)	(0.018)
Noncitizen	0.048	**	0.074	0.071
	(0.008)		(0.012)	(0.014)
Naturalized	0.061		0.065	0.063
	(0.009)		(0.009)	(0.011)
Citizenship N/A	0.024		0.028	0.049
	(0.006)		(0.006)	(0.012)
Less than HS	0.155		0.145	0.225
	(0.013)		(0.014)	(0.020)
High school graduate	0.258		0.231	0.266
	(0.016)		(0.015)	(0.021)
Some college	0.343		0.354	0.320
	(0.015)		(0.017)	(0.021)
College graduate	0.245		0.270	0.189
	(0.016)		(0.015)	(0.016)
Family income/Poverty				
< 100 percent	0.046	*	0.068	0.035
	(0.007)		(0.010)	(0.007)
100 - 200 percent	0.205	**	0.157	0.235
	(0.016)		(0.013)	(0.021)
200 - 300 percent	0.196		0.197	0.226
	(0.013)		(0.012)	(0.018)
300 - 400 percent	0.148		0.164	0.146
	(0.011)		(0.012)	(0.013)
400 percent or more	0.405		0.414	0.357
	(0.017)		(0.018)	(0.022)
Work limitation	0.250	***	0.106	0.227
	(0.014)		(0.010)	(0.016)
Fair or poor health	0.227	***	0.123	0.242
	(0.013)		(0.008)	(0.019)
Employer health insurance at separation	0.582		0.611	0.574
	(0.016)		(0.018)	(0.022)
Person-waves	2,679		3,102	1,798
Person-spells	1,038		1,305	615

Note: First three columns are mutually exclusive; labor force exit is not.
Source: Author's calculations from *Survey of Income and Program Participation,* 1996-2008 panels.