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Occupations and Work Characteristics: Effects on Retirement Expectations and Timing

Abstract

Population aging and attendant pressures on public budgets have spurred considerable interest in understanding factors that influence retirement timing. A range of sociodemographic and economic characteristics have been shown to predict both earlier and later retirement. Less is known about the role of occupations and their characteristics on the work choices of older workers. Knowing more about the occupations that workers seem to stay in longer or leave earlier may point the way to policy interventions that are beneficial to both individuals and system finances. This project uses detailed occupational categories and work characteristics in the Health and Retirement Study (HRS) linked to information in the Occupational Information Network (O*NET) to examine compositional changes in occupations held by older workers over time; to provide some basic and interesting information about relationships between occupations and their characteristics and retirement expectations and outcomes; and to shed light on which occupations and associated characteristics might encourage or discourage longer working lives. There are large percentage changes (increases in decreases) in the percentage of older workers in occupations over time. Considering detailed, as opposed to aggregated, occupational categories yields interesting additional information. Jobs that HRS respondents say entail less physical effort, less stress, and jobs that have not increased in difficulty in recent decades, and those in which people can reduce hours if desired, are associated with longer work. While the traditional blue collar-retire earlier and white collar-work longer associations emerge, we find interesting exceptions that suggest fruitful directions for future research.

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Younger cohorts of Americans report increasing likelihood of working to older ages. Explanations for this trend reflect to some extent changing financial and institutional realities (e.g., the importance of defined contribution pension plans, employer-sponsored health insurance), as well as personal characteristics, especially health status (e.g., Aaron & Callan, 2011; Cahill, Giandrea & Quinn, 2008). Other research examines the possible impact of characteristics of the work environment on retirement transitions (Angrisani, et al., 2013). Yet technological advances and globalization ensure an ever-changing work environment with different labor sectors advancing and declining over time (Autor, 2003). Very little research to date has addressed the composition of occupations and the changing nature of work itself to understand the trend toward working longer and, alternatively, the decision to leave the workforce at younger ages.

Understanding how and why people exit the labor force at older ages bears importantly on our ability to develop responsible and salutary retirement policy. For years, policy analysts have anticipated the retirement of the Baby Boomers and have sought policy options—including encouraging longer working lives—to relieve the attendant pressure on public budgets. Likewise, the private sector increasingly recognizes the desirability of keeping older workers on the job. While, in previous generations, employers provided incentives to urge early retirement, the question in both the private and the public sectors has now become: What can we do to retain older people in the workforce? Indeed, Americans are working to older ages, yet it is not clear when and how to urge people to stay in the labor force in ways that are welfare improving. Despite decades of policies encouraging longer working lives, barriers to work at older ages remain (Abraham & Houseman, 2008). Ideally, those who are near or at retirement age but want

to keep working and are able to do so will have those opportunities. And those in poor health,[1] or with stressful or physically demanding jobs, would be able to retire or have the option to transition gradually to retirement through part-time or bridge work.

What changes do we see in occupations over time? What do we know about each of these occupations and the older workers in them, and how might the job characteristics of different occupations affect work expectations and actual retirement timing in older workers? To answer these questions, we use information on occupations and work characteristics in the Health and Retirement Study (HRS), linked to detailed occupational information in the Occupational Information Network (O*NET) project database, to examine the influence of occupations and job characteristics over the past 20 years on workforce departure or retention. We see significant changes in the occupational composition and job characteristics of workers. We find striking variation in the relationship between occupations and longer work lives and earlier workforce departures. Job characteristics, both objectively and subjectively measured, are important predictors of work decisions. This information provides an important benchmark against which to measure future changes in occupations and the relationship between occupations and their characteristics and retirement behavior.

Background

Reversing the decades-long trend toward earlier retirement, Americans are beginning to work longer and are taking a variety of paths toward retirement (Cahill, Giandrea, & Quinn, 2008; Quinn, 2010). Younger cohorts report increasing likelihood of working to older ages (Johnson, Butrica, & Mommaerts, 2010). Part of this reversal stems from elimination of and changes to both public and private policies—especially through the 1980s—that had encouraged

[1] Nearly 25 percent of 65-74 year-olds experience significant health limitations that make working at older age difficult (Rehkopf, Adler, & Rowe, 2011). And low-wage workers are more likely to be in poor health (Gueorguieva, et al., 2009).

workers to retire at relatively young ages. Some changes, such as the ban on mandatory retirement ages and both state and federal age discrimination laws, reduced institutionalized discrimination against older workers (Neumark & Song, 2013). Changes in Social Security law removed barriers to working longer, such as the Social Security earnings test (Haider & Loughran, 2008) and built in incentives to longer work, for example, by increasing the age of eligibility for full Social Security retirement benefits (Gustman & Steinmeier, 2013).

Factors that may encourage earlier workforce departure are clearly still in effect. The past 30 years have seen major changes to pensions. Since their emergence in the 1980s as a vehicle for retirement savings, defined contribution (DC) plans have come to dominate the private pension landscape and are increasingly replacing defined benefit (DB) pensions even in the public sector (Beshears, Choi, Laibson & Madrian, 2011). Yet the presence of a DB pension plan remains a powerful incentive. Several studies demonstrate that the availability of a DB pension has the effect of lowering expectations of working longer (Mermin, et al., 2007) and of encouraging workforce departure (Aaron & Callan, 2011). Other employer-provided benefits that supported younger retirement, such as retiree health insurance, have been reduced over that time as well. In short, policies encouraging longer work have simultaneously helped to increase choices for those who wish to work longer and have limited options for those who need or desire an earlier retirement. At the same time, various incentives continue to encourage earlier retirement for a large proportion of the population.

Researchers have sought to understand more about who works longer and who follows different retirement paths. For example, Aaron and Callan (2011) study work decisions of men and women ages 55 to 66 in the HRS. While they find that women are more likely to stop working than men, they find no racial difference in who works longer. While greater wealth is

generally associated with leaving the workforce, those with more education are likely to work longer. The major factor associated with stopping work is poor health. Our models of work expectations and work choices incorporate these and other covariates that are commonly found to influence retirement plans when retirement is considered as part of the life-cycle model of labor supply. Given previous research and predictions of the family of recent, dynamic life-cycle models (e.g., Gustman & Steinmeier, 2014; Laitner & Sonnega, 2013), we expect that good health, higher education, and earnings will be associated with remaining longer in the workforce (and lower expectations of working longer), whereas presence of a DB pension and higher wealth will be associated in the opposite direction. Research also suggests that married women are likely to depart work at younger ages compared to unmarried men and women and married men (Szinovacz, 2010).

Fewer studies have examined the role of occupations in retirement timing. Aaron and Callan (2011) evaluate the effect of occupation types available in the HRS public data (testing 15 aggregated categories) and a range of job characteristics. They find no association of occupation type with the probability of retiring. However, reporting that work is very stressful is a highly significant predictor of leaving work; not so for physical effort (stooping and bending, and lifting heavy weight). As blue-collar jobs have decreased and white-collar jobs increased (Johnson, Mermin, & Resseger, 2007), it may be that the physical demands of work are decreasing as a reason for retiring. Other studies find relatively modest effects of highly aggregated occupation categories on work decisions, but comparatively strong effects of work characteristics. We speculate that taking a closer look at the detail held within aggregate occupational categories and linking them directly to work characteristics may yield more insight into retirement expectations and behavior.

The contributions of this work are fourfold: 1) to examine compositional changes in occupations held by older workers over time; 2) to provide some basic and interesting information about relationships between occupations and their characteristics and retirement expectations and outcomes; 3) to shed some light on which occupations and associated characteristics might encourage or discourage longer working lives; and 4) to share a methodology for creating consistent occupation coding for the HRS detailed occupational data over time and linking these to O*NET job characteristics.

Data and Methodology

We use data from the HRS, a nationally representative longitudinal study of the population older than 50 in the United States. Details are provided in Sonnega, et al. (2014). The HRS core interview gathers information about the occupations in which HRS respondents work, as well as job history and job characteristics. Data are currently available for the 11 core surveys fielded from 1992 until 2012, and include observations for more than 37,000 individuals.

The public-use version of HRS reports 17 occupational categories formed by aggregating the 900+ 3-digit detailed occupations that are available in the HRS restricted data, which we use in this paper. The occupational coding schemes in the restricted HRS data have changed over the years (Nolte, Turf, & Servais, 2014). To ensure comparability over time and to balance analytic power with occupational detail, we use a coding scheme that is consistent over time and that aggregates across small, similar occupation groups to obtain 100 or more observations per occupation/occupation group whenever reasonable. This coding scheme was developed to use in conjunction with the O*NET data (below), and contains 192 separate occupations/occupational groupings derived from the more than 900 original occupational codes. As a product of this project, we are sharing the crosswalks used to create time-consistent occupation codes within the

HRS and to link these to O*NET job characteristics. These can be accessed at: https://sites.google.com/site/phudomiet/Occupation-Crosswalks-MRRC-2015.xlsx.[2]

Study Measures

HRS employment, subjective expectations, and job characteristic variables

HRS contains self-reports about characteristics of the main occupation, specifically in our analysis, we use the degree to which the job requires a lot of physical effort, involves a lot of stress, and has gotten more difficult. We also included a measure of whether or not the employer would be likely to allow the respondent to reduce his or her work hours if desired. Our main dependent variables in the first set of regression analyses we present, the "subjective probability" questions about working full-time past age 62 and 65, have been asked in nearly identical form in the HRS since 1994. Manski (2004) has suggested that because "subjective probabilities," such as those measured in these questions, allow for expression of uncertainty, they are more closely linked to modern economic theory than point estimates. Several studies have validated the relationships between subjective probability data and actual outcomes (Hurd & McGarry, 1995; Dominitz & Manski, 1997; McGarry, 2004; Dominitz & Manski, 2005; Hurd, 2009; Manski, 2004). Because they ask about future behavior, these measures capture a snapshot of retirement expectations that may be used for analysis prior to actual retirement. Changes in these expectations over survey waves can help researchers zoom in on the factors that move the expectations measures and, by extension, retirement behavior. We also combine information about occupation and age to create *early retirement* and *late retirement* indicators as the dependent variables in the final set of analyses.

Lastly we used a question in HRS that asks respondents, "On your main job, what is the usual retirement age for people who work with you or have the same kind of job?" For these

[2] This coding scheme was developed by Peter Hudomiet, who welcomes comments about this crosswalk.

HRS job characteristic and expectation variables, we use data from the HRS Tracker file, HRS core survey data, and constructed variables from the RAND HRS data version N, a cleaned and ready-to-use version of the HRS data (Chien et al., 2014).

O*NET job characteristics

The O*NET program, sponsored by the United States Department of Labor's Employment and Training Administration, provides detailed occupational information to researchers, students and the public. Using a combination of surveys, expert assessments, and tests, the O*NET database contains occupation-specific information on personal requirements (the skills and knowledge required to perform the work); personal characteristics (the abilities, interests, and values needed to perform the work); experience requirements (the training and level of licensing and experience needed for the work); job requirements (the work activities and context, including the physical, social, and organizational factors, as well as the tasks, tools, and technology involved in the work); and the labor market (the occupational outlook and the pay scale for the work). In this paper we focus on a subset of ability and activity measures that seem most important to retirement decisions while not overly collinear with the other measures. The O*NET database contains measures for 974 occupations. For each occupation, O*NET provides information on the level and importance of each required work activity. Following Firpo, Fortin, and Lemieux (2011), we use Cobb-Douglas weighted means to combine occupation-level *importance* and *level* measures. Importance weights are 2/3, level weights are 1/3. Given the smaller number of somewhat aggregated occupations in our HRS data, we average across multiple O*NET occupations that crosswalk to the HRS occupation categories to create O*NET measures for the HRS occupations. We use CPS detailed occupation frequencies to weight O*NET measures to the level of the 192 detailed occupation categories used in this paper.

For this paper, we used O*NET information on the activities and abilities required for different jobs. Of the 18 activities included in our crosswalk, we selected nine to either represent a group of similar abilities and/or unique abilities that we hypothesized would be related to either workforce retention or departure. These include analyzing data or information; making decisions and solving problems; controlling machines and processes; interacting with computers; repairing and maintaining electronic equipment; documenting/recording information; assisting and caring for others; performing for or working directly with the public; coaching and developing others. Of the six ability measures included in our crosswalk, we selected mathematical reasoning and arm-hand steadiness.

Covariates

Several regression models include a set of covariates that are commonly found to be predictive of retirement expectations and/or behavior. These HRS variables include self-reported health, coded as fair or poor (referent) or good, very good, excellent; vesting in a DB pension; gender and marital status coded as unmarried male (referent), unmarried female, married male, married female; log of total nonhousing wealth, and log of the respondent's labor earnings and educational attainment coded as less than high school (referent), high school, some college, and college graduate or higher.

Analysis

Our analysis proceeds in three main stages, each with somewhat different goals and, therefore, different samples.

The first stage of our analysis evaluates changes in occupational composition associated with earlier and later workforce departure among older workers over time. We begin with an analytic sample of HRS respondents who were 51 to 61 at their initial HRS interview. We

include respondents from new cohorts that were added in 1998, 2004, and 2012. For simplicity in these descriptive analyses, we exclude respondents who were retired, who were self-employed, or who reported working part-time at their baseline HRS survey. To shed light on which occupations are associated with either increasing likelihood of earlier versus later workforce exit or differences in occupational employment patterns between cohorts, we calculate the average percent change in the fraction of workers in each occupation over time, from 1992/1994 to 2010/2012. For these analyses, we include all birth cohorts for the 192 aggregated categories, but exclude occupations with fewer than five observations in any core survey. We pool data from two consecutive core surveys for each end point to increase sample sizes, thereby increasing the chance that changes we see are due to actual compositional changes as opposed to noise. Because there were substantial occupation coding changes in the HRS data in 2010, we also provide the changes from 1992/1994 to 2006/2008.

In the second stage, we examine factors associated with subjective expectations of working full-time past age 62 (*P62*) and working full-time past age 65 (*P65*). For the analyses in this section using *P62* and *P65*, we restrict to a single observation of each working HRS respondent at age 57 or 58. This is early enough that most respondents have not yet retired, but is close enough to typical retirement age ranges to reflect somewhat realistic expectations about when respondents expect to retire. In 1992, the code frame for the subjective probability of work past age 62 and 65 was on an 11-point scale, while from 1994 onward it was 0-100 percent. Therefore, we begin these analyses with 1994, or wave 2. As with all analyses in this paper, we exclude HRS respondents who were already retired or were self-employed at their first HRS interview. We conduct descriptive statistics (Table 2.1) then a set of multivariate regression models beginning with a baseline model that includes a wave indicator along with demographic

and economic covariates (Table 2.2). The next model, in Table 2.4, adds the public occupational categories to the baseline model (descriptive statistics for this analysis can be seen in Table 2.3). The excluded occupation in these regressions is *managerial specialty operation*. A third model adds the detailed occupational categories to the baseline model (Table 2.6, with descriptive statistics in Table 2.5). The excluded occupation in these regressions is *financial managers*. A final table adds the measures of *usual retirement age* to the model with detailed occupations (Table 2.7).

In our analysis of retirement expectations, we also conducted regressions of *P62* and *P65* on occupational category, survey wave, and the interaction between these two to investigate possible changes in the relationship between P2/P65 and occupation type over time. These results are discussed in the text only, but tables are available upon request.

Finally, we also conducted a set of regressions that add HRS job characteristics or O*NET variables to the baseline model with covariates. In some specifications with HRS job characteristics, we also include detailed occupations. Because of their collinearity with detailed occupation indicators, the regression with O*NET characteristics included baseline covariates only. Again, these results are discussed in the text only, but tables are available upon request.

In the third stage of our work, we begin to look at snapshots of occupations associated with longer working lives. Recall that our data include respondents from new cohorts that were added in 1998, 2004, and 2010; however, no one who was between ages 51 and 61 in 2010 would have aged into the 66+ age range by 2012, so they are effectively excluded.

There are many different ways to define retirement timing variables. For purposes of this paper, we have created two binary variables, *early retirement* and *late retirement*. To create these indicators, we use the last observed occupation in the HRS data to date the year of last work. We

then calculate the respondent's age at that interview to categorize the respondent.[3] *Early retirement* is equal to one if the last observed occupation was before the respondent reached age 63 and zero if it was at age 63 or older. *Late retirement* is equal to one if the last observed occupation was after the respondent reached age 66 and zero if before.

For those respondents who were retired at the most recent (2012) wave of the HRS, the presence of a nonmissing occupation code aligns closely with respondents' stating that they are working and not completely retired. A small fraction of respondents report themselves to be not working despite reporting a job. The last nonmissing occupation code is often one-two years earlier than the variable for year of last occupation in the RAND Version N dataset,[4] but is available for even nonretired respondents, so does not introduce as much of the censoring inherent in other measures of retirement timing such as age of retirement. For analyses using these variables, we restrict the sample to respondents who were age 66 or older by the time of their last HRS interview, whether that took place in 2010 or before. As such, we are able to categorize all respondents who were alive at age 66.

Note that both the *early retirement* and *late retirement* indicator variables can be assigned even if respondents reported still working at their last HRS interview. Thus, these variables are less affected by censoring than traditional "retirement age" variables. As with other measures of retirement age, these measures are not proof against "unretirement" in years after the last observation. Additionally, the last observed occupation may represent either a career job or a bridge job. Exploration of such nuances is beyond the scope of the current work.

A useful way to consider these variables is to look at the percentage within each occupation that does not retire early (Table 3.1 uses the *early retirement* indicator, and Table 3.2

[3] Missing birth months were assumed to be June. All birth dates and interview dates were assumed to take place on the 15th of the month.
[4] In future work, we will explore altering the date of last occupation to match last job date.

uses the *late retirement* indicator), which we present for the 10 most common detailed occupational categories, the 10 with the highest rates of last occupation observed at 66 or later (excluding most common occupations) and the 10 occupations with the lowest rates of last occupation observed at age 66 or later (again excluding the most common). We exclude observations for which we are missing the occupation code for the last/most-recently held job. The number of observations has been masked for occupations with fewer than 10 observations in this year.

We then run linear probability model regressions (OLS) with early retirement or late retirement indicators (0/1) as dependent variables and occupation indicators as regressors to explore correlations between these retirement variables and specific occupations toward the end of working life. For these analyses, we use all data from 2010 for respondents who were 51 to 61, working full-time, and not self-employed at their baseline interview, and older than 66 in 2010. The excluded occupation in these regressions is *financial managers*. Only occupations that were statistically significant in one of the two regressions are presented in the tables. Full tables are available upon request.

We examine job characteristics of the occupations, both self-reported by HRS respondents and from the linkage to O*NET characteristics, and their relationship to retirement timing. In Table 3.4, we present summary statistics for these variables including mean, median, and 25^{th} and 75^{th} percentiles. Lastly we run a series of linear probability models to examine the relationships between our retirement timing indicators and detailed occupation, self-reported job characteristics, and O*NET job activities and abilities, simultaneously. (Because O*NET job characteristics are linked to each occupation, they are highly collinear with occupation indicators and should not be included in the same regressions.)

Tables 3.5, 3.6, and 3.7 present results from linear probability models regressing *early retirement* or *late retirement* indicators on various combinations of job characteristics and, in Table 3.5, occupation indicators. Specifically, Table 3.5 includes the HRS self-reported job characteristics and occupation indicators as covariates. The first and second columns of this table report results using the dependent variable *early retirement*, while the third and fourth columns report results using *late retirement*. As with the previous regression analyses, the occupation *financial managers* is the base occupational category. Additionally, to reduce table length, we present only results for occupations whose coefficients were statistically significant in at least one of the models. Again, respondents are included in this regression only if they were 66 or older at the time of the last observation. Tables 3.6 and 3.7 present results using job characteristics only, both from O*NET and the HRS self-reports, as independent variables. The dependent variables are the *early retirement* and *late retirement* indicator variables (Tables 3.6 and 3.7, respectively).

Results

1. Changes in occupational distributions over time may indicate longer working versus earlier departing occupations or inter-cohort differences in occupational employment.

We begin by characterizing the changes in occupational composition of HRS respondents over time. Note that this analysis requires respondents to be between 51 and 61 and working full-time at the point of their enrollment interview. Table 1.1 shows the occupations with relatively large percentage changes over time in the fraction of older workers in the detailed occupations, relative to other occupations. For brevity, we report the top 10 occupations where we see the most change toward lower employment at older ages, and the top 10 where we see the most change toward greater employment at older ages. The former group of occupations are simply

those held by a decreasing proportion of older workers in 2010/2012, relative to 1992/1994. As noted, we present results for changes at 2006/2008. Both sets of results tell similar stories. A large decrease in the proportion of older workers in an occupation could indicate that workers in this occupation tend to retire or switch to other jobs at younger ages than other workers. However, it could also mean that a particular occupation was more common among the older HRS cohorts than the younger ones at similar ages, and that the younger groups did not move into that occupation as the older group retired or moved into other occupations.

Examples of some of the larger occupations in which we see decreased occupational employment among older workers over time include *other managers*, *other machine operators*, and *other freight, stock and material handlers*. While the latter two occupations, and, indeed, a majority of the occupations in the upper portion of the table, are blue-collar jobs which are more likely to be unionized and offer DB pensions and stronger early retirement incentives than white-collar jobs, the *other managers* is the single largest occupational category, and it seems more likely that these jobs are white-collar jobs. In this sense, some of the entries in this table seem surprising, while others align well with the idea that workers in blue-collar jobs choose, are incentivized, or need to retire early, relative to those in other jobs.

In the bottom half of Table 1.1, we see occupations in which a larger proportion of HRS respondents were working in 2010/2012 than in 1992/1994. Again, the meaning of the percent changes is ambiguous: It could be that a large increase in the proportion of older workers in an occupation means that these workers tend to retire later. It could also be that these are popular bridge jobs, or that these are jobs that are more common among younger HRS cohorts than those in older cohorts, even if compared at the same ages. Here, we see many of the expected “white

collar" jobs which are likely to require high levels of education and are not particularly physically challenging, increasing the likelihood of longer work.

These, however, are likely difficult to enter at later ages from an unrelated career track, so are not likely to be bridge jobs or to provide new opportunities to those looking to move from a more physical job to something they can do longer. However, there are also a few occupations which do not fit this pattern, such as *teacher assistants*; *customer service representatives*; *investigators and adjusters, except insurance*; *gardeners and groundskeepers*; and *taxi cab drivers and chauffeurs*. Each of these occupations is at least twice as common in 2010/2012 among older workers than in 1992/1994. It could be that individuals in these occupations, either due to financial necessity or love of the job, tend to work to later ages. Unlikely though it seems, it could also be that these are more common jobs among the younger HRS cohorts. Perhaps a more attractive explanation, and one that we plan to explore further in the future, is that these are common "bridge" jobs that older workers transition to rather than retiring completely. If this last explanation is true, these are particularly interesting occupations, because they are occupations which one can imagine that many older workers might be qualified to do, even if their work history is largely or completely unrelated. In the next two sections, we focus on the relationship between retirement and occupation more directly.

2. Who expects to work longer?

We now turn to examining the relationship between occupations (both detailed and public), job characteristics (O*NET and HRS), usual retirement age, and *P62* and *P65*. In Table 2.1, we present a set of summary statistics for *P62* and *P65* and the baseline covariates used in the ensuing regression models. We present descriptive statistics for the sample used to conduct the regression of *P62* only since the sample from the *P65* regressions is very similar. In this

sample of workers aged 57 to 58, the average probability of working past age 62 is about 51% and working past age 65 is 29%. The mean *wave* value of about six suggests that there is a fairly even distribution of observations from the earlier and later waves of the HRS. A large fraction of respondents reported *good or better health*, which is not surprising given the selection criteria. Forty-five percent of the sample reported entitlement to a *DB pension*. The fraction of the sample that is female is only 45 percent, again, not surprising given the sample.

Table 2.2 presents results from regressions of *P62* and *P65* on the baseline covariates. The w*ave* variable captures linear time trends in retirement expectations; due to the general increase in working to later ages in recent years, we expect this coefficient to be positive but not large. Similarly, we expect *good health or better* to be positively associated with the likelihood of later work, and entitlement to a *DB pension* to be negatively associated with likelihood of later work. We expect wealth (*log total nonhousing wealth*) to be negatively related to the likelihood of later work, while labor earnings (*log earnings*) are expected to be positively related. Higher education levels are expected to be positively related to longer work, due to higher earnings, lower physical demands of jobs, and perhaps greater control over one's work life. Marital status and gender are also likely to be related to retirement expectations: We expect that unmarried women are more likely to work longer due to greater financial need, and married women to plan to retire earlier to line up their retirement with that of their generally older husbands.

Indeed, we find that our hypotheses are borne out quite clearly in our baseline linear regression results, with regression coefficients of the expected signs and mostly of non-negligible magnitudes. However, the predictive power of these regressions is fairly small, leading us to ask whether occupations and occupational characteristics may provide added value in predicting HRS respondents' expectations of working past 62 and 65.

We next turn to the HRS RAND public occupational categories to see what may be gained, relative to the regressions without occupational information. Specifically, we add 17 indicator variables for the large occupational category in which respondents reported working at the age of 57 or 58. Changes in the coding scheme over time reduce the number of waves for which we have a substantial number of observations, so these regressions only use data from 1992 through 2006. Table 2.3 shows summary statistics for these public occupational categories across *P62* and *P65*, which demonstrates some variation in work expectations across the public categories: However, it seems likely that these large categories may mask larger variation that may be seen in the detailed occupations.

Table 2.4 presents results from the regression of *P62* on the baseline covariates along with the RAND public occupational categories. The first two columns show the regression coefficients and standard errors in the model using *P62* as the dependent variable, while the latter two columns are for *P65*. Qualitatively, adding the public occupational categories does little to change the effects of the baseline covariates. The only exceptions are that the coefficient on the *married and female* indicator variable is no longer statistically significantly different from zero in the *P62* regression, and *college+* is the only statistically significant education indicator. These models explain a similar proportion of the variance in *P62* and *P65* as the baseline regressions with only the covariates and wave indicator. The coefficient signs on the set of baseline covariates are also the same. Magnitudes are similar, though slightly reduced, and statistical significance patterns are largely consistent but slightly less robust when compared with the baseline regressions. Several of the large occupational categories do, however, display strong partial correlations with the dependent variables *P62* and *P65*. In many cases, the coefficients are on the order of 10 to 20 percentage points, rivaling or exceeding the partial effect of DB pensions

and college completion. In particular, *provision of private household, cleaning and building services*; *protective services*; *health services*; *and operators: handlers, etc*., are negatively related to *P62* and *P65*.

In the *P62* regression, *construction trades and extractors; machine operators*; and *transportation operators* also tend to report lower probabilities of full-time work past 62, and *precision production workers* report lower probabilities of full-time work past 65. These results imply that occupation, or occupational characteristics, aside from pensions and earnings, are important predictors of retirement expectations. Next, we substitute the public occupation variables with our detailed occupation indicators, to see if more detailed occupational categories add additional predictive power to these regressions and additional insights into the relationship between occupation and retirement expectations.

We first present summary statistics for *P62* and *P65* for each of the detailed occupational categories (Table 2.5). Results are provided for all occupations. Cell counts (and percentages) are masked for categories with fewer than five observations. For larger occupational groups, which may represent more reliable estimates, the mean values vary considerably across occupations for both *P62* and *P65*. For example *P62* ranging from 39 percent for *primary school teachers* (category 31) to 58 percent *for other sales and sales related* (category 69). Perhaps even more interesting is the 75th percentile. Here, for a large number of occupations, it can be seen that more than a quarter of respondents report a 100 percent probability of full-time work past age 62. On the other hand, looking at *P65*, even at the 75th percentile cut-off, respondents in most occupations are reporting much lower probabilities of working past age 65. Nonetheless, a smaller number of relatively less common occupations report very high expected probabilities of working past age 65.

Table 2.6 presents results from regressions of *P62* and *P65* on baseline covariates plus detailed occupation indicators. In these models, the signs, magnitudes, and significance patterns of the baseline covariates are, again, qualitatively very similar to those in the baseline regression table. As in the table with public occupation categories, of the education categories, only the coefficient on *college+* is precisely estimated (as opposed to both *some college* and *college+* in the baseline regressions). *Log earnings* and *good health or better* also lose their statistical significance, relative to the baseline regression for *P65*.

Turning to the estimated coefficients for the detailed occupational indicators in Table 2.6, we see an interesting pattern: Every statistically significant coefficient, and a vast majority of those that are not statistically significant, is negative and fairly large relative to the referent category (*financial managers*). That is, the common pattern for occupations is that, if they are associated with the probability of full-time work past 62 or 65, the relationship is negative. Of occupations with at least 50 observations in this sample, we see strong relationships for *primary school teachers*, *secondary school teachers*, *other matchine operator,s* and *janitors* for both the *P62* and *P65* regressions. This suggests that attempting to reduce occupation-specific factors that encourage earlier retirement expectations in many occupations may be more effective than encouraging transition to occupations in which later work is the norm in reducing early Social Security claiming and/or old age financial insecurity. This pattern is also broadly consistent with our results on actual retirement timing in the next section.

Overall, comparing across results from Tables 2.3/2.4 and Table 2.5/2.6, we find considerably more variation in *P62* and *P65* in the detailed occupational categories relative to the aggregated public occupational categories.

Next, we explored the role of respondents' reports of usual retirement age in their jobs on retirement expectations. Table 2.7 presents results from two regressions, both with *P65* as the dependent variable. In the first set of regression results, we added *usual retirement age* in the respondent's job at age 57/58. A one-year increase in the usual retirement age is associated with about a 1.8 percentage point increase ($p<0.001$) in the chance a respondent expects to be working full-time past age 65.[5] Coefficients on our standard covariates remain qualitatively similar to our other models including detailed occupation. Here, again, we see that all statistically significant coefficients on occupation indicators are negative and fairly large in magnitude.

Because one response category to the question about *usual retirement age* in one's job was "no usual age," we have also included an indicator for this response as a regressor in the second model presented in this table. This increases the sample size for this regression substantially, and this variable is found to be statistically significant and to indicate a 6.5 percentage point increase ($p<0.001$) in the probability of work past age 65 for respondents reporting that there is no usual age of retirement in their jobs. Other results are qualitatively unchanged from the first two columns of the table, and also similar to other regressions of the probability of full-time work past 65 on similar sets of covariates. A perceived later usual retirement age in a job or the lack of a norm both appear to have important bearing on retirement expectations, but neither seem to systematically affect the coefficient estimates of the occupation dummies.

We then conducted several further models, for which results are not presented, but areavailable upon request. In addition to examining the relationship between occupation and

[5] Adding only the *usual retirement age* variable along with the baseline covariates we've been using in this set of regressions also shows that a one-year increase in the usual retirement age is associated with about a two percentage point increase ($p<0.001$) in the chance a respondent expects to be working full-time past age 65. Inclusion of this variable alone increases the adjusted R-squared from 0.09 in the baseline regression to 0.12.

retirement expectations, we also conducted regressions that interacted occupation with wave. The dependent variables in these analyses were *P62* and *P65*. Again, the sample was restricted to HRS respondents who were working when they were interviewed at age 57/58. The covariates included in this model were the same as the baseline model in Table 2.2. In the first set of regressions, the RAND HRS public occupation indicators were included and interacted with wave. Qualitatively, the results for the covariates were very similar to those in Table 2.4 in terms of magnitudes, signs, and statistical significance. The one qualitative change, relative to that table, is that *farming/fishing/forestry* became statistically significant once the occupation x wave interactions were also included.

The wave indicator variables did not show a consistent pattern over time: Most were not statistically significant, and the signs and magnitudes changed nonmonotonically from wave to wave. Coefficients on *mechanics/repair* by wave generally get smaller over time (moving from positive and fairly large to slightly negative), and coefficients on both *construction trade/extractors* and *precision production* by wave seem to generally increase over time, but none exhibit clear, statistically significant patterns. Overall, after adjusting for the number of covariates, these regressions explain only marginally more variance in work expectations than regressions without the occupation by wave interactions (adjusted R-squared values are 0.07 for *P62* and 0.09 for *P65*). As in any regression with many covariates, it is possible that sample size is limiting our ability to detect true changes over time within work expectations by occupation.

In the second set of regressions, we included indicator variables for 15 large, detailed occupational categories: those with at least 50 observations in the sample used in the first regression of *P62* on detailed occupation indicators and baseline covariates. We used only 15 occupations for parsimony, since the interactions would greatly increase the number of variables

in the regression. Qualitatively and quantitatively, we see very similar results to those with detailed occupation but no wave interactions. The coefficients on *janitors, nursing aides, office supers* and *secretaries* lost statistical significance relative to other detailed occupational regressions, but did not change in sign. *Nurses* may have reported increasing probability of working past 65 over time, but this pattern is not statistically significant. Both the R-squared and adjusted R-squared are smaller here than in regressions with the full set of detailed occupations. Overall, it appears that we are constrained by sample size issues even after restricting to only the largest occupational categories.

We further conducted analyses of the HRS job characteristics and O*NET variables, for which tables are available upon request. In regressions of *P62* or *P65* on HRS job characteristics, either with or without covariates and occupation codes, there is no strong pattern of significance. Furthermore, these variables leave the rest of the regression results qualitatively (and mostly quantitatively) unchanged. This has interesting implications. For example, it could be that specific, current job characteristics at age 57/58 do not greatly affect one's plans for retirement, but do impact actual retirement timing.

In regressions of *P62* on the O*NET variables and covariates, the estimates for the covariates are qualitatively similar to other specifications in this paper. Here, coefficients on the activity *documenting and recording information* and the ability *arm-hand steadiness* are negative and statistically significant, while the ability *mathematical reasoning* is positive and statistically significant. None of the coefficients on the other eight activities and abilities included in this regression is precisely estimated. The adjusted R-squared for this regression is 0.14, showing some added explanatory power of this set of O*NET variables relative to the baseline regression.

In the *P65* model with covariates, only one O*NET variable is statistically significant, namely, *performing for or working directly with the public*, which is positively related to the probability of working past age 65. The adjusted R-squared for this model is 0.13.

3. Who remains longer at work and who departs earlier?

We now turn to examining the relationship between occupations (both detailed and public), job characteristics (O*NET and HRS), and earlier and later workforce departure. In these analyses, we use data from respondents who were older than 66 in 2010 to better understand which occupations are associated with later work. This removes the concern that differences in how common an occupation is between cohorts is driving the results, as was a possibility in Table 1.1. Respondents are assigned the occupation in which they last worked, if they were no longer working as of the 2010 HRS interview, and the occupation in which they were working as of the 2010 interview, if they were still working.

Tables 3.1 and 3.2 use data from HRS respondents who were older than 66 in 2010, and report the percentage of workers within occupations who do not retire early for the 10 most common detailed occupational categories, the 10 with the highest rates of last occupation observed at older ages (excluding most common occupations), and the 10 occupations with the lowest rates of last occupation observed at older ages, again excluding the most common. The second column of each table reports the number of observations in each occupational category, so one can get a sense of how common each occupation is. Table 3.1 uses the *early retirement* indicator, which indicates whether a respondent's last observed occupation was observed before or after age 63. Table 3.2 uses the *late retirement* indicator, which indicates whether a respondent's last observed occupation was observed before or after age 66. Overall, these reflect similar patterns found in Table 1.1, with mostly blue-collar jobs showing the lowest rates of later

retirement, and both highly-skilled professional jobs and jobs such as *taxi drivers, messengers*, and *protective services workers* showing higher rates of later work. For occupations showing similar tendencies in Tables 1.1, 3.1, and 3.2, it is likely that the explanation for trends in Table 1.1 is due to retirement patterns rather than compositional differences between cohorts.

Table 3.3 reports results from the linear probability model regressions of *early retirement* and *late retirement* on the occupation dummies. Results in this table are similar to those in Tables 3.1 and 3.2. Recall that these analyses include data from 2010 for respondents who were 51 to 61, working full-time, and not self-employed at their baseline interview and were older than 66 in 2010. The excluded occupation is *financial managers*. Coefficients for occupations that were statistically significant in one of the two regressions are presented in the tables. Not surprisingly, some of the occupations most significantly predictive of *early retirement* include *production supervisors or foremen, other machine operators, precision metal workers*. Yet we also *see purchasing managers*; *agents and buyers*; and *business and promotion agents* retiring earlier. Perhaps less surprising, we find that *licensed practical nurses* are more likely to retire earlier, as well. Occupations where recent workers seem to be remaining longer include *management analysts*; *postsecondary teacher; social workers, clergy and religious workers*; *lawyers and judges; writers, authors,* and *technical writers*; *designers, musicians or composers*; *real estate sales*; *messengers*; *taxi cab drivers and chauffeurs*; *guards, watchmen and doorkeepers*; and *other protective services*. Thus, workers in a wide range of occupations appear to be remaining at work longer, potentially for a wide range of reasons.

Table 3.4 presents summary statistics for the job characteristic variables, as well as the *early retirement* and *late retirement* variables for the sample in the analyses in Tables 3.5, 3.6, and 3.7. The means of the *early retirement* and *late retirement* indicators, at 0.38 and 0.45, are

very similar to those used in Tables 3.1, 3.2, and 3.3. Again, the majority of respondents appear to finish working in the age range of 63 through 65, despite the modal age of last work at 62. The means and distributions of the four HRS job characteristic variables show a fair amount of variation, so they are likely to meaningfully differentiate between occupations if individuals' views of the same occupations tend to agree. Most respondents in their final observed occupations tend to slightly disagree that their jobs are more difficult than they used to be, and that their jobs involve a lot of stress. Additionally, most respondents' last-observed occupations seem not to be particularly physically demanding. This is encouraging from the perspective of encouraging later work, since physically-demanding jobs may be difficult or impossible to continue in at later ages. Most respondents report that they could not reduce their work hours if they wanted to, indicating a lack of flexibility in the work hours of most jobs that has been confirmed by other studies. The O*NET variables have tighter ranges but display some variability, nonetheless.

Tables 3.5, 3.6, and 3.7 explore the relationships between occupational characteristics and retirement decisions. Table 3.5 presents regressions of *early retirement* and *late retirement* indicators on HRS job characteristics and detailed occupation indicators. The R-squared from these regressions are fairly high, higher than in the regressions that do not include the HRS job characteristic variables. This implies that there may be significant value in the HRS job characteristic variables in explaining retirement behavior, above and beyond what is common to particular occupations. That is, individuals' experiences in their particular jobs are not fully summarized by their job titles. Each of the HRS variables are highly statistically significant, with higher values of each (disagreement that job is more difficult than it used to be, disagreement that job is stressful, less physical demands of job, and the ability to reduce hours if desired) being

associated with a lower probability of early retirement, and a higher probability of later retirement. All coefficients are of the expected signs. For example, the ability to reduce one's work hours is associated with a 16 percentage point increase in the probability of working past 66, and a 16 percentage point decrease in the probability of stopping work prior to age 63, all else equal.

Moving from strongly agreeing to strongly disagreeing that one's job is very stressful decreases the chance of early retirement by 21 percentage points, and increases the chance of late retirement by 24 percentage points, all else equal. The coefficients on the occupation indicators are at least as large as these, implying that there is, indeed, a fair amount of commonality within occupation that is associated with retirement timing. However, in a sense, the coefficients on the occupation indicators are simply unlabeled residuals, the contents of which we have yet to understand. What they tell us at this stage is that there is something about some of these occupations that influences retirement timing that is not captured by the HRS variables.

Tables 3.6 and 3.7 present regressions of *early retirement* and *late retirement*, respectively, on job characteristics. Recall that these do not include the occupation indicators because of their collinearity with O*NET variables. Rather, the point of these analyses is to examine the relative value of the O*NET versus HRS job characteristic variables. Both tables support the observation that respondent-reported HRS variables appear to be much more important than O*NET variables, over all. For example, the adjusted R-squared for the model predicting earlier retirement with only self-reported job characteristics is 0.10, increasing to 0.12 with the addition of the O*NET variables. Likewise, predicting later retirement, the adjusted R-squared for the HRS variables only is 0.11 and 0.15 with O*NET included. It may be that perceptions of one's job, or idiosyncrasies of particular jobs at particular firms are not well-

captured by occupation-level variables. On the other hand, in these analyses we have aggregated across several occupations, which may attenuate the association. It also seems likely that the correlations between the O*NET variables may be causing them to cancel one another. We attempted to choose as independent a set as possible, but the correlations between these characteristics are still all above 0.3 (and mostly above 0.5).

Conclusion

The findings of this study represent preliminary steps in beginning to exploit the rich data resource of the detailed occupational categories in the HRS as an avenue to understand more about longer working lives in the United States. It is important to recall that these analyses exclude respondents who were retired or were working part-time at the time of their initial HRS interview. Thus, these results should not be construed as representative of older adults as a whole. However, as the goal of this project is to shed some light on trends in occupational composition over time and how occupation and occupational characteristics may be related to retirement expectations and timing, we believe these analyses provide interesting descriptive information that points the way to areas for future work.

Our goal with this initial work is to look at compositional changes in employment of older workers over time, highlighting some occupations that may be retiring earlier (or may be less common in younger cohorts) or that may be retiring later (or may be more common in younger cohorts). Our results tend to show that more blue-collar jobs have the largest decreases in percentage of older workers in occupation, relative to older workers in all occupations. The range of occupations found in the largest increases reflects mostly white-collar jobs but also includes occupations such as *taxi drivers* and *farm operators*. When we specifically model early and late retirement, we find interesting differences in which occupations are likely to be

associated with longer work lives and earlier workforce departures. Many results are as expected. For example, we find white-collar, especially creative or labor-of-love-type jobs such as *clergy* or *writers/authors* and/or those that are not physically demanding, common in longer-working occupations. However, we also find occupations such as *taxi drivers and chauffeurs, guards and watchmen*, and *messengers* as jobs where people are working past age 66. These are jobs that many people may have the qualifications to do. In some cases, they provide flexible hours, which many older workers find appealing, as well as opportunities for social engagement, which appears to be especially important for well-being at older ages.

We also sought to share some basic and interesting information about relationships between occupations and retirement expectations, and to shed some light on which occupations and associated characteristics might encourage or discourage longer working lives. As expected, we find considerably more variation in the *P62* and *P65* outcomes by detailed occupations compared to the public occupations, suggesting that further exploring of the detailed occupations is likely to be a fruitful direction. We found an interesting pattern of results in the regressions using the detailed occupations: If the occupation was statistically significantly associated with the expectations of working longer, the relationship was negative. These patterns also held in the analyses of actual retirement. This suggests increased attention be paid to identifying characteristics of occupations that encourage earlier retirement rather than just longer working. In the end, this may be a comparatively easier route to improving system finances than efforts to move workers to occupations in which later retirement is normative. Indeed, our analyses suggest that occupations where respondents report an older “usual age” or “no usual age” of retirement do have higher expectations of working past 65. These norms, however, may be associated with less mutable aspects of the occupations.

Interestingly, job characteristics, both objectively (O*NET) and subjectively (HRS) measured, were found to be important predictors of both early and late retirement outcomes, but were not consistently associated with expectations of working past 62 and 65. In the early and late retirement analyses, we found that after accounting for occupational category, jobs that HRS respondents say entail less physical effort, less stress, and jobs that have not increased in difficulty in recent decades, and those in which people can reduce hours if desired, are associated with longer work. These analyses, however, did not include the baseline covariates, largely because they are mostly time-varying, and it is not clear what wave to select for their inclusion. Our next steps will include potentially using a Cox proportional hazards approach to enable us to use time-varying covariates such as self-rated health and wealth to predict retirement. It is possible that their inclusion will diminish the effects of job characteristics, but is not likely to eliminate it.

It is possible that job characteristics and retirement norms may differently affect retirement over time. To examine this possibility, we attempted to evaluate the interaction of wave by occupations in models of job characteristics and usual retirement age. The sample size was too limited, however, to be confident in these results.

Going forward, we would like to complement these results with something like case studies of particular occupations to try to figure out what it is about them that seem to encourage earlier or later retirement. For example, identifying characteristics of occupations associated with earlier retirement could point to potential targets for policy intervention. It will also be useful to attempt to determine exactly which occupations reflect bridge jobs (rather than just longer-held career jobs), as workers increasingly pursue this path to retirement. It would be especially interesting to learn about which occupations are easier to enter at older ages, even without very

specific education or training. This might point to occupations that may be potentially open to people who have retired from their career jobs. In sum, the descriptive findings presented in this paper just begin to explore these rich data resources of the detailed occupation data in the HRS and the possibilities for learning about the relationships between occupational characteristics and retirement timing.

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Table 1.1. Compositional changes in occupation: occupations displaying large changes in employment of older workers over time, all cohorts

Total these 20 occupations, 1992-2012	7,140
Total for 192 occupations with min 5 observations, 1992-2012	28,624

Largest decreases in percentage of older workers in occupation, relative to older workers in all occupations

Detailed Occ	Occupation title	Obs	Change '92-'94 to 2010-12	Change '92-'94 to 2006-08
6	Other managers	2,549	-36%	-34%
89	Shipping and receiving clerks	181	-42%	-47%
116	Other mechanics and repairers	244	-46%	-54%
127	Precision metal working occupations	234	-82%	-75%
136	Farm occupations, except managerial	241	-43%	-26%
150	Other machine operators, assorted materials	576	-64%	-51%
153	Production inspectors, testers, samplers, and weighers	298	-44%	-50%
161	Construction equipment operators	161	-65%	-60%
168	Other freight, stock, and material handlers	370	-40%	-36%
191	Other personal service occupations	303	-39%	-46%

Largest increases in percentage of older workers in occupation, relative to older workers in all occupations

Detailed Occ	Occupation title	Obs	Change '92-'94 to 2010-12	Change '92-'94 to 2006-08
4	Managers of medicine and health occupations	194	242%	168%
8	Other financial specialists	252	181%	103%
9	Management analysts	149	282%	256%
42	Lawyers and Judges	141	184%	133%
55	Health technologists and technicians	157	129%	164%
94	Cust. service reps, investigators and adjust., except insurance	216	294%	158%
100	Teacher assistants	254	133%	121%
135	Farm operators and managers	124	128%	193%
137	Gardeners and groundskeepers	276	126%	101%
158	Taxi cab drivers and chauffeurs	220	291%	374%

Table 2.1. Summary statistics from regressions of Pr(work FT past 62) and Pr(work FT past 65) on common covariates

	Mean	25th %	Median	75th %	St. Dev.	N
Pr(work full-time after 62)	51.74	10	50	90	38.02	3445
Pr(work full-time after 65)	29.08	0	10	50	33.55	3427
Wave (2 = 1994 to 11 = 2012)	5.84	3	5	9	3.11	3445
Good health or better	0.89	1	1	1	0.32	3445
Has DB pension	0.45	0	0	1	0.50	3445
ln(total non-housing wealth)	10.86	9.7	11.0	12.2	1.84	3445
Total non-housing wealth	$51,988	$16,065	$61,300	$196,000		
Educational category	2.75	2	3	4	1.02	3445
Married	0.70	0	1	1	0.46	3445
Female	0.45	0	0	1	0.50	3445
ln(labor earnings)	10.5	10.1	10.5	11.0	0.87	3445
Labor earnings	$36,256	$24,000	$38,000	$60,000		
Usual retirement age	63.03	62	65	65	3.41	1929
No usual retirement age (0/1)	0.29	0	0	1	0.45	2700

Note: Sample is from OLS regression of *P62* (probability of full-time work past age 62) on common covariates. Sample restriction: ages 57-58 only and working. Wave ranges from 2 (1994) to 11 (2012). Educational categories are 1 (<HS), 2 (HS), 3 (Some college) and 4 (College or more). Sample from regressions of *P65* had almost identical sample and sample size. Usual retirement age and no usual retirement age indicator are not part of the base set of covariates, but are brought in at Table 2.7.

Table 2.2. Regressions of *P62* and *P65* on common covariates

Dependent variable:	***P62***	***P65***
Wave	1.28***	1.47***
	(0.21)	(0.19)
Good health or better	6.36**	3.89*
	(2.01)	(1.77)
Has DB pension	-8.83***	-9.62***
	(1.30)	(1.13)
Log total non-housing wealth	-2.37***	-2.45***
	(0.40)	(0.35)
Log earnings	3.48***	2.23**
	(0.84)	(0.73)
Educational category (reference category: <HS)		
HS	1.95	0.61
	(2.17)	(1.91)
Some college	7.02**	5.23*
	(2.31)	(2.03)
College+	11.87***	10.97***
	(2.40)	(2.11)
Married x Female (reference category: unmarried male)		
Ummarried and female	6.71**	3.72
	(2.42)	(2.12)
Married and male	4.13	0.38
	(2.19)	(1.92)
Married and female	-2.68	-4.25*
	(2.36)	(2.06)
Constant	23.30**	19.82**
	(8.61)	(7.54)
R-squared	0.07	0.09
Adjusted R-squared	0.07	0.09
F-test p-value	0.000	0.000
Observations	3445	3430

Note: Results from OLS regression with *P62* and *P65* (probability of full-time work past age 62 and 65) as dependent variables. Sample for this paper is all HRS participants who were working and not self-employed at their first HRS interview, and aged 51-61 at that same interview. Sample in this table further restricts to a cross-section of all HRS respondents who were working at age 57/58. Base (excluded) categories are less than high school and unmarried males. Wave indicates HRS wave, 1=1992 through 11=2012. Significance levels denoted as * for p<0.05, ** for p<0.01, *** for p<0.001.

Table 2.3. Public occupation category, current job

			Pr (work past age 62)				Pr (work past age 65)			
	Obs.	%	Mean	Median	75th %	St Dev	Mean	Median	75th %	St Dev
01. Managerial specialty ops.	487	17.0	55.9	50	95	37.5	31.1	20	50	34.1
02. Prof specialty opr/tech sup	566	19.8	53.9	50	90	37.9	29.9	17.5	50	33.1
03. Sales	206	7.2	56.3	55	90	35.2	33.0	20	50	34.0
04. Clerical/admin supp	517	18.1	48.0	50	90	38.8	24.5	5	50	32.6
05. Services: private hhld/clean/bldg	13	0.5	33.5	1	70	39.8	20.0	0	50	30.0
06. Services: protection	57	2.0	38.5	25	80	38.8	20.7	0	40	30.5
07. Services: Food prep	49	1.7	48.4	50	100	40.6	26.6	10	50	32.6
08. Health svc	66	2.3	43.1	50	75	35.0	21.4	0	40	31.0
09. Personal svc	122	4.3	48.6	50	90	40.0	29.7	10	50	36.3
10. Farming/forestry/fishing	30	1.1	51.0	50	90	39.7	33.1	20	50	37.2
11. Mechanics/repair	131	4.6	53.1	50	100	39.2	27.4	5	50	35.8
12. Construction trade/extractors	101	3.5	44.6	50	85	39.1	22.2	2	40	30.8
13. Precision production	111	3.9	45.6	50	90	41.1	20.2	2.5	30	30.6
14. Operators: machine	181	6.3	41.8	50	75	37.0	21.8	0	50	31.3
15. Operators: transport, etc	148	5.2	46.8	50	92.5	42.0	24.5	2	50	31.4
16. Operators: handlers, etc	76	2.7	43.1	50	70	34.4	21.0	1.5	50	27.0
17. Member of armed forces	--	--	25.0	25	50	35.4	5.0	5	10	7.1
Total	2,863	100	50.2	50	90	38.5	27.1	10	50	33.1

Note: Included are those in the *P62* regressions on RAND public occupation categories (1980 codes), requiring respondents be at age 57 or 58 & working. Frequencies with categories with 5 or fewer observations suppressed.

Table 2.5. Detailed occupation plus *P62* and *P65* values				*P62*				*P65*			
Occupation (custom categories)		**Obs.**	**%**	**Mean**	**Median**	**75th %**	**St Dev**	**Mean**	**Median**	**75th %**	**St Dev**
104	**Bus, truck, and stationary engine mechanics**	8	0.23	61.9	77.5	100	42.1	28.8	15	50	36.4
105	**Aircraft mechanics**	--	--	50.0	60	90	45.8	23.3	10	60	32.1
106	**Auto body repairers**	--	--	--	--	--	--	--	--	--	--
107	**Heavy equipment and farm equipment mechanics**	6	0.18	48.7	50	90	45.0	9.5	1	5	19.9
108	**Industrial machinery repairers**	27	0.79	49.9	50	90	40.4	24.1	0	40	38.0
109	**Other machinery maintenance and repairers**	--	--	79.0	80	90	18.8	31.0	0	75	42.5
110	**Repairers of industrial electrical equipment**	--	--	50.0	50	80	30.0	33.3	20	60	23.1
111	**Repairers of data processing equip. or other office machines**	--	--	51.0	51	100	69.3	15.0	15	30	21.2
112	**Telecom and line installers and repairers**	14	0.41	37.8	17.5	99	44.8	26.7	0	50	37.1
113	**Heating, air conditioning, and refigeration mechanics**	7	0.21	35.7	30	80	39.5	20.7	5	50	31.7
114	**Other electronic or electrical equipment repairers**	6	0.18	48.3	50	90	42.6	14.2	5	25	20.1
115	**Precision makers, repairers, smiths; other**	--	--	44.0	50	50	37.8	22.0	25	25	18.9
116	**Other mechanics and repairers**	27	0.79	53.7	50	90	36.5	32.3	20	50	39.6
117	**Supervisors of construction work**	34	1	58.2	55	90	33.6	31.1	30	50	31.5
118	**Masons, tilers, and carpet installers**	--	--	26.7	30	50	25.2	26.7	30	50	25.2
119	**Carpenters**	13	0.38	37.3	40	50	39.1	23.1	0	50	31.5
120	**Drywall installers**	--	--	--	--	--	--	--	--	--	--
121	**Electricians, electric power installers and repairers**	17	0.5	49.7	70	90	44.1	19.1	0	20	34.7
122	**Painters, construction and maintenance**	10	0.29	57.2	50	100	40.8	31.7	17.5	50	36.6
123	**Plumbers, pipe fitters, and steamfitters**	16	0.47	40.6	30	80	39.2	17.5	0	25	30.4
124	**Other construction trades**	17	0.5	45.0	40	80	40.9	23.5	0	50	30.1
126	**Production supervisors or foremen**	48	1.41	48.4	45	80	37.9	23.3	5	50	32.7
127	**Precision metal working occupations**	25	0.73	41.4	40	90	41.1	14.4	10	10	26.6
128	**Precision woodworking occupations**	--	--	--	--	--	--	--	--	--	--
129	**Precision textile, apparel, and furnishings machine workers**	--	--	52.5	55	100	55.0	2.5	0	5	5.0
130	**Optical goods workers, dental lab. & med appliance techs**	7	0.21	78.6	80	100	24.8	40.7	30	80	30.6
131	**Other precision workers, assorted materials**	20	0.59	61.5	50	90	30.8	26.5	17.5	50	28.2
132	**Butchers and meat cutters**	8	0.23	45.6	50	82.5	41.5	25.0	5	50	34.2
133	**Bakers and batch food makers**	--	--	70.0	85	100	42.4	47.5	40	85	45.0
134	**Plant and system operators, adjusters and calibrators**	16	0.47	41.6	37.5	67.5	37.3	17.5	5	25	27.9
135	**Farm operators and managers**	--	--	76.7	80	80	5.8	55.0	50	75	18.0
136	**Farm occupations, except managerial**	17	0.5	51.2	50	100	44.6	35.0	15	77.5	41.7
137	**Gardeners and groundskeepers**	18	0.53	52.2	50	80	36.5	26.9	20	50	27.9
138	**Other agricultural occupations**	--	--	45.0	40	65	26.5	67.5	75	100	39.5
139	**Timber, logging, and forestry workers**	--	--	75.0	75	100	35.4	10.0	10	20	14.1

Table 2.5. Detailed occupation plus *P62* and *P65* values				*P62*				*P65*			
Occupation (custom categories)		**Obs.**	**%**	**Mean**	**Median**	**75th %**	**St Dev**	**Mean**	**Median**	**75th %**	**St Dev**
141	**Metal working and plastic working machine operators**	18	0.53	39.8	35	60	36.4	23.3	0	50	37.3
142	**Metal and plastic processing machine operators**	--	--	--	--	--	--	15.0	15	25	14.1
143	**Woodworking machine operators**	--	--	60.0	50	75	27.1	42.5	30	70	40.3
144	**Textile sewing machine operators**	7	0.21	28.6	20	75	35.0	16.4	0	25	29.5
145	**Laundry workers**	--	--	30.0	0	90	52.0	33.3	0	100	57.7
146	**Other textile, apparel, and furnishings machine operators**	--	--	78.3	85	100	25.7	0.0	0	0	0.0
147	**Packers, fillers, and wrappers**	--	--	38.0	50	60	36.3	36.0	50	50	35.1
148	**Painting machine operators**	--	--	40.0	10	100	52.0	30.0	0	90	52.0
149	**Slicing and cutting machine operators**	--	--	66.7	50	100	28.9	48.3	60	75	34.0
150	**Other machine operators, assorted materials**	60	1.76	38.8	35	60	36.9	20.2	1	27.5	30.8
151	**Welders, metal cutters, solderers**	20	0.59	45.0	50	77.5	38.6	24.5	10	50	29.4
152	**Assemblers and fabricators**	34	1	39.7	40	80	40.0	24.9	0	50	35.7
153	**Production inspectors, testers, samplers, and weighers**	28	0.82	40.4	50	72.5	35.9	17.7	0	25	27.3
154	**Supervisors of motor vehicle transportation**	16	0.47	62.8	62.5	100	34.3	29.7	22.5	50	29.7
155	**Truck, delivery, tractor drivers and parking lot attendants**	82	2.4	51.8	50	90	40.1	31.3	20	50	30.8
156	**Industrial truck and tractor operators**	24	0.7	44.2	45	85	40.2	17.3	0	22.5	30.6
157	**Bus drivers**	23	0.67	46.5	50	100	43.3	29.2	20	50	34.8
158	**Taxi cab drivers and chauffeurs**	8	0.23	36.3	30	65	39.6	19.4	0	40	33.0
159	**Rail transportation occupations**	7	0.21	33.7	5	80	42.8	14.3	0	20	29.9
160	**Water transportation occupations**	--	--	--	--	--	--	--	--	--	--
161	**Construction equipment operators**	17	0.5	30.9	0	50	42.9	11.1	0	0	25.9
162	**Crane, derrick, winch, and hoist operators**	--	--	33.3	0	100	57.7	16.7	0	50	28.9
163	**Misc material moving occupations**	6	0.18	68.3	80	100	38.2	41.7	50	50	37.6
164	**Construction helpers and laborers, surveyor helpers**	19	0.56	31.1	10	60	36.1	14.3	0	20	28.1
165	**Production helpers**	--	--	--	--	--	--	--	--	--	--
166	**Vehicle washers and equipment cleaners**	--	--	42.0	60	70	39.0	14.0	0	20	21.9
167	**Packers and packagers by hand**	7	0.21	38.6	30	80	39.8	31.4	10	70	40.2
168	**Other freight, stock, and material handlers**	38	1.11	41.6	50	50	31.4	22.4	10	40	28.2
169	**Supervisors in protective services**	25	0.73	48.6	60	90	42.0	24.6	5	50	34.2
170	**Fire fighting, prevention, and inspection**	--	--	75.0	75	100	35.4	50.0	50	100	70.7
171	**Police, detectives, and private investigators**	17	0.5	33.2	10	60	39.0	22.1	0	50	31.1
172	**Other law enforce: sheriffs, bailiffs, correctional officers**	10	0.29	45.5	50	80	37.9	18.2	1	40	28.5
173	**Guards, watchmen, doorkeepers**	19	0.56	41.6	30	90	37.9	19.2	10	40	21.9
174	**Other protective services**	--	--	--	--	--	--	--	--	--	--
175	**Private household occupations**	28	0.82	46.4	50	85	41.1	28.2	0	50	36.5

Table 2.5. Detailed occupation plus *P62* and *P65* values				*P62*				*P65*			
Occupation (custom categories)		**Obs.**	**%**	**Mean**	**Median**	**75th %**	**St Dev**	**Mean**	**Median**	**75th %**	**St Dev**
176	**Bartenders**	--	--	20.0	20	40	28.3	15.0	15	30	21.2
177	**Waiter/waitress, food counter and fountain workers**	8	0.23	59.4	62.5	100	42.1	55.6	60	87.5	39.2
178	**Chefs, head cooks and food supervisors**	13	0.38	53.5	50	90	41.5	40.0	50	60	39.4
179	**Other cooks**	22	0.65	48.9	45	100	41.5	23.4	2.5	50	30.8
180	**Kitchen workers**	--	--	42.5	50	60	29.9	27.5	25	45	25.0
181	**Waiter's assistant**	--	--	56.3	52.5	90	39.9	17.5	10	35	23.6
182	**Misc food prep workers**	6	0.18	45.0	55	60	38.9	15.8	2.5	40	22.9
183	**Janitors**	69	2.02	44.9	50	90	40.4	22.6	0	50	30.8
184	**Other cleaning & bldg service occupations, exc households**	14	0.41	49.3	50	90	42.3	40.4	20	90	43.3
185	**Dental assistants**	9	0.26	45.0	50	75	32.1	15.6	10	20	18.8
186	**Health aides, except nursing**	16	0.47	40.0	35	77.5	37.0	15.0	0	32.5	20.9
187	**Nursing aides, orderlies, and attendants**	50	1.47	44.9	50	80	35.8	18.8	0	25	29.4
188	**Barbers, hairdressers and cosmetologists**	--	--	50.0	50	100	50.0	50.0	50	100	50.0
189	**Recreation facility attendants**	--	--	40.0	30	75	45.5	27.5	5	55	48.6
190	**Child care workers**	17	0.5	41.8	50	75	38.9	26.5	0	50	35.2
191	**Other personal service occupations**	26	0.76	55.2	77.5	100	43.6	36.5	32.5	75	38.3
192	**Military**	--	--	30.0	30	60	42.4	25.0	25	50	35.4
	Overall	3,410	100	51.8	50	90	38.0	29.1	10	50	33.5

Note: Included are those in the base *P62* regressions requiring respondents be at age 57 or 58 & working. Frequencies with categories with 5 or fewer observations are suppressed. Highlighted rows are discussed in the text as examples of the range of work expectations.

2.6. Regressions of *P62* and *P65* on common covariates plus detailed occupation

Dependent variable:	Pr(work FT past 62)		Pr(work FT past 65)	
	coef.	se	coef.	se
Wave	1.46***	0.23	1.59***	0.2
Good health or better	6.45**	2.08	3.5	1.82
Has DB pension	-7.23***	1.37	-8.15***	1.19
Log total non-housing wealth	-2.92***	0.42	-2.88***	0.36
Log earnings	2.42**	0.91	1.23	0.79
Educational category (reference category: <HS)				
HS	-0.33	2.31	0.37	2.02
Some college	3.92	2.53	3.78	2.21
College+	8.04**	2.85	8.62***	2.49
Married x Female (reference category: unmarried male)				
Married=0 # Female=1	5.74*	2.73	2.11	2.38
Married=1 # Female=0	3.38	2.29	-1.14	1.99
Married=1 # Female=1	-3.06	2.68	-5.53*	2.33
Detailed occupation (reference category: financial managers)				
Human resources, marketing, advertising, PR managers	-2.7	8.41	-4.53	7.3
Managers in education and related fields	-18.14*	8.3	-16.76*	7.2
Managers of medicine and health occupations	-17.16	10.82	-13.89	9.39
Managers of properties and real estate	9.22	12.66	7.48	10.99
Other managers	-9.18	6.62	-9.16	5.75
Accountants and auditors	-7.97	9.61	-17.20*	8.34
Other financial specialists	-4.33	9.11	-0.37	7.91
Management analysts	-11.14	12.64	-0.35	10.97
Personnel, HR, training, and labor relations specialists	-8.32	10.61	-17.18	9.21
Purchasing managers, agents & buyers; bus. & promo agents	-17.25	9.52	-16.23*	8.26
Inspectors and compliance officers	-31.02**	10.28	-21.82*	8.92
Management support occupations	-15.69	13.09	-12.74	11.36
Civil engineers	-16.66	13.67	-18.63	11.86
Electrical engineers	-8.37	11.89	-3.74	10.32
Industrial engineers	4.71	10.13	5.34	8.79
Mechanical engineers	19.37	17.46	16.01	15.15
Other engineers, architects, surveyors & mapping scientists	6.77	10.63	-4.96	9.23
Mathematical and Computer Scientists	-19.91*	9.21	-18.48*	7.99
Physical scientists	-39.96**	15.14	-29.12*	13.14
Life scientists	5.79	19.27	21.65	16.72
Physicians	11.61	16.13	14.45	14
Dentists	8.69	26.46	34.34	22.97
Other health and therapy occupations	-33.91**	12.24	-25.10*	10.63
Registered nurses	-12.11	7.86	-3.78	6.82
Pharmacist	-36.47	21.93	-30.56	19.03
Therapists	-25.96*	12.23	-21.72*	10.62
Dietitians, nutritionists and physicians assistants	-5.82	17.49	12.5	15.18
Postsecondary teachers	1.68	8.09	-6.04	7.02
Kindergarten and earlier school teachers	-30.33*	12.25	-26.78*	10.63
Primary school teachers	-25.66***	7.69	-23.80***	6.69
Secondary school teachers	-23.52**	7.76	-21.51**	6.73
Special education teachers	-26.64*	13.13	-20.84	11.4

2.6. Regressions of *P62* and *P65* on common covariates plus detailed occupation

Dependent variable:	Pr(work FT past 62)		Pr(work FT past 65)	
	coef.	se	coef.	se
Teachers , nec	-2.18	12.23	-7.93	10.61
Vocational and educational counselors	-7.78	11.08	-19.04*	9.62
Librarians, Archivists, and Curators	-10.99	12.27	-7.94	10.65
Psychologists	-12.39	13.63	-16.15	11.83
Other social scientists and urban planners	-4.55	16.1	-7.36	13.98
Social workers	-6.85	8.93	-10.24	7.75
Recreational workers	-12.71	21.98	-24.04	19.08
Clergy and religious workers	6.91	10.03	2.35	8.82
Lawyers and Judges	12.88	12.24	16.13	10.62
Writers, authors, technical writers	5.83	26.48	-13.81	22.98
Designers	8.73	19.27	-6.63	15.15
Musician or composer	-1.4	37	8.23	32.11
Actors, directors, producers	-13.62	36.95	-21.67	32.07
Art makers: painters, sculptors, craft-artists, & print-makers	-8.94	21.93	14.29	19.03
Photographers	36.71	36.92	-21.68	32.04
Art/entertainment performers and related	9.45	21.93	-14.2	19.03
Editors and reporters	13.33	21.92	9.72	19.02
Athletes, sports instructors, officials and announcers	31.32	36.98	52.09	32.09
Clinical laboratory technologies & techs, dental hygenists	-22.05	11.87	-26.94**	10.3
Radiologic tech specialists	-27.97	21.91	-12.92	19.01
Licensed practical nurses	-10.11	10.51	-17.68	9.12
Health technologists and technicians, nec	-8.49	11.37	-5.23	9.86
Engineering, surveyor and mapping technicians	-19.42	10.31	-12.1	8.95
Drafters	10.09	19.31	6.43	16.76
Science technicians	-8.54	12.24	-4.52	10.62
Airplane pilots and navigators, air traffic controllers	-19.82	17.43	-18.86	15.13
Computer programmers, support specialists & administrators	-17.49	9.59	-10.61	8.42
Technicians, nec	-25.17*	11.56	-18.49	10.03
Supervisors and proprietors of sales jobs	-6.64	7.44	-2.87	6.45
Insurance sales occupations	-8.63	11.57	-3.76	10.04
Real estate sales occupations	-6.23	14.33	5.35	12.43
Financial services sales occupations	14.61	15.13	22.21	13.13
Advertising and related sales jobs	-45.96*	21.95	-31.45	19.04
Cashiers	-22.60*	9.7	-22.83**	8.42
Door-to-door sales, street sales, and news vendors	6.68	19.26	14.07	16.72
Other sales and sales related	-10.13	7.27	-10.93	6.32
Office supervisors	-13.54	7.63	-14.28*	6.62
Computer and peripheral equipment operators	-8.82	11.63	-17.16	10.09
Secretaries, Stenographers, and Typists	-13.03	7.11	-12.25*	6.17
Interviewers, enumerators, and surveyors	-0.83	17.47	6.53	15.16
Transportation ticket and reservation agents	-32.95	21.93	-13.41	19.03
Information clerks, nec	-9.27	9.38	-18.58*	8.21
Correspondence and order clerks	-4.22	17.47	-16.2	15.16
Human resources clerks, except payroll and timekeeping	5.07	21.98	-20.7	19.08
Library assistants	-9.39	14.35	-0.88	12.45
File clerks	-14.35	19.27	-2.27	16.72

2.6. Regressions of *P62* and *P65* on common covariates plus detailed occupation

Dependent variable:	Pr(work FT past 62)		Pr(work FT past 65)	
	coef.	se	coef.	se
Records clerks	-7.22	21.96	8	19.05
Bookkeepers and accounting and auditing clerks	-12.77	7.74	-11.5	6.72
Other financial records processing occupations	-1.99	10.05	-4.17	8.72
Duplicating, mail, and other office machine operators	-31.91*	16.15	-24.03	14.02
Postal clerks, excluding mail carriers	2.16	11.93	-13.85	10.36
Mail carriers for postal service	-27.02*	11.93	-22.72*	10.35
Mail clerks, outside of post office	-17.77	17.48	-32.25*	15.17
Messengers	-3.53	16.17	0.82	14.04
Dispatchers	-30.39*	11.93	-27.39**	10.36
Shipping and receiving clerks	-38.69***	10.39	-28.40**	9.16
Stock and inventory clerks	-17.53	9.01	-15.49*	7.82
Weighers, measurers, checkers, meter readers	-9.74	17.49	-18.88	15.18
Material recording, sched, prod, plan, & expediting clerks	-27.22*	11.34	-36.29***	10.09
Insurance adjusters, examiners, and investigators	-8.89	12.25	-12.34	10.63
Cust. service reps, investigators & adjusters, exc insurance	-15.28	9.36	-8.46	8.13
Eligibility clerks for government programs; social welfare	-9.52	14.32	-5.08	12.43
Bill and account collectors	11.79	13.65	8.45	11.85
General office clerks	-20.02*	9.91	-10.73	8.6
Bank tellers	-15.79	11.36	-23.18*	9.86
Data entry keyers	-22.95	14.35	-25.63*	12.45
Teacher assistants	-22.22*	10.3	-25.08**	8.94
Other administrative support occupations	-1.36	9.88	-7.55	8.57
Supervisors of mechanics and repairers	-13.44	9.49	-7.98	8.23
Automobile mechanics	10.19	15.22	7.66	13.21
Bus, truck, and stationary engine mechanics	-8.23	14.4	-18.09	12.5
Aircraft mechanics	-10.74	21.96	-14.55	19.06
Auto body repairers	-3.68	37.03	18.41	32.13
Heavy equipment and farm equipment mechanics	-19.62	16.19	-34.42*	14.05
Industrial machinery repairers	-14.38	9.54	-16.05	8.28
Other machinery maintenance and repairers	17.58	17.49	-6.29	15.17
Repairers of industrial electrical equipment	-15.82	21.95	-6.43	19.04
Repairers of data process. equip. or other office machines	-3.46	26.54	-15.88	23.03
Telecom and line installers and repairers	-25.25*	11.66	-11.96	10.12
Heating, air conditioning, and refigeration mechanics	-28.79	15.18	-21.87	13.18
Other electronic or electrical equipment repairers	-11.97	16.19	-21.86	14.05
Precision makers, repairers & smiths, mech & elevator repair	-23.41	17.49	-19.99	15.17
Other mechanics and repairers	-7.2	9.54	-4.5	8.28
Supervisors of construction work	-9.08	9	-12.35	7.86
Masons, tilers, and carpet installers	-49.50*	22.04	-25.97	19.13
Carpenters	-27.24*	12.04	-19.55	10.45
Drywall installers	-60.63	37.06	-31.87	32.16
Electricians, electric power installers and repairers	-16.31	10.93	-22.59*	9.48
Painters, construction and maintenance	-10.16	13.18	-12.46	11.44
Plumbers, pipe fitters, and steamfitters	-21.04	11.14	-20.12*	9.67
Other construction trades	-18.45	11.02	-17.32	9.57
Production supervisors or foremen	-15.12	8.3	-16.25*	7.23

2.6. Regressions of *P62* and *P65* on common covariates plus detailed occupation

Dependent variable:	Pr(work FT past 62)		Pr(work FT past 65)	
	coef.	se	coef.	se
Precision metal working occupations	-18.4	9.73	-21.47*	8.45
Precision woodworking occupations	-72.75*	36.98	-49.45	32.09
Precision textile, apparel, and furnishings machine workers	-13.81	19.3	-41.44*	16.75
Optical goods workers, dental lab & med appliance tech	7.02	15.14	-8.12	13.13
Other precision workers, assorted materials	-1.38	10.37	-13.04	9
Butchers and meat cutters	-17.44	14.41	-14.74	12.5
Bakers and batch food makers	4.68	19.35	3.82	16.8
Plant and system operators, adjusters and calibrators	-19.81	11.14	-19.54*	9.67
Farm operators and managers	9.11	21.93	10.67	19.03
Farm occupations, except managerial	-17.22	11.15	-12.02	9.67
Gardeners and groundskeepers	-16.04	10.86	-19.26*	9.43
Other agricultural occupations	-24.22	19.36	19.11	16.8
Timber, logging, and forestry workers	22.36	26.62	-22.58	23.1
Metal working and plastic working machine operators	-25.87*	10.73	-18.72*	9.31
Metal and plastic processing machine operators	32.71	26.51	-21.96	23
Woodworking machine operators	-8.53	19.31	-4.08	16.76
Textile sewing machine operators	-28.14	15.27	-17.67	13.25
Laundry workers	-30.93	22	-5.33	19.09
Other textile, apparel, and furnishings machine operators	13.05	22.01	-39.95*	19.1
Packers, fillers, and wrappers	-24.06	17.48	0.9	14.04
Painting machine operators	-24.19	21.95	-9.99	19.05
Slicing and cutting machine operators	-4.49	21.93	0.77	19.03
Other machine operators, assorted materials	-22.98**	7.97	-17.35*	6.92
Welders, metal cutters, solderers	-20.19	10.42	-18.36*	9.19
Assemblers and fabricators	-20.51*	8.96	-12.59	7.78
Production inspectors, testers, samplers, and weighers	-24.26**	9.39	-23.71**	8.15
Supervisors of motor vehicle transportation	-6.23	11.14	-15.82	9.67
Truck, delivery, tractor drivers and parking lot attendants	-14.31	7.65	-11.19	6.65
Industrial truck and tractor operators	-22.32*	9.9	-27.00**	8.59
Bus drivers	-16.85	9.95	-11.04	8.64
Taxi cab drivers and chauffeurs	-26.32	14.37	-19.97	12.47
Rail transportation occupations	-23.95	15.2	-17.37	13.2
Water transportation occupations	-40.2	36.99	-33.97	32.1
Construction equipment operators	-33.00**	10.99	-27.78**	9.54
Crane, derrick, winch, and hoist operators	-21.28	22.11	-15.41	19.19
Misc material moving occupations	3.45	16.24	-0.36	14.09
Construction helpers and laborers, surveyor helpers	-34.81**	10.61	-28.15**	9.21
Production helpers	35.4	37.03	50.58	32.13
Vehicle washers and equipment cleaners	-24.62	17.53	-29.77	15.21
Packers and packagers by hand	-26.27	15.23	-12.44	13.22
Other freight, stock, and material handlers	-23.38**	8.77	-19.51*	7.62
Supervisors in protective services	-18.6	9.65	-18.04*	8.38
Firefighting, prevention, and inspection	17.87	26.55	16.39	23.04
Police, detectives, and private investigators	-31.83**	10.86	-18.86*	9.43
Other law enforcement: sheriffs, bailiffs, correc inst officers	-26.65*	13.17	-30.00**	11.43
Guards, watchmen, doorkeepers	-24.53*	10.61	-24.26**	9.21

2.6. Regressions of *P62* and *P65* on common covariates plus detailed occupation

Dependent variable:	Pr(work FT past 62)		Pr(work FT past 65)	
	coef.	se	coef.	se
Other protective services	-46.27	36.99	-25.64	32.1
Private household occupations	-20.27*	9.5	-16.21*	8.25
Bartenders	-52.95*	26.56	-35.25	23.05
Waiter/waitress, food counter and fountain workers	-15.81	14.41	3.75	12.51
Chefs, head cooks and food supervisors	-12.72	11.96	-3.62	10.38
Other cooks	-17.18	10.1	-20.63*	8.77
Kitchen workers	-25.81	19.34	-18.61	16.78
Waiter's assistant	-18.36	19.43	-37.40*	16.86
Misc food prep workers	-22.07	16.22	-28.89*	14.07
Janitors	-19.50*	7.85	-19.17**	6.88
Other cleaning & bldg service occupations, exc households	-16.75	11.66	-1.91	10.12
Dental assistants	-25.57	13.7	-32.12**	11.89
Health aides, except nursing	-25.01*	11.08	-27.43**	9.62
Nursing aides, orderlies, and attendants	-21.78**	8.24	-25.62***	7.18
Barbers, hairdressers and cosmetologists	-12.45	21.95	10.43	19.05
Recreation facility attendants	-34.71	19.3	-25.65	16.75
Child care workers	-23.86*	10.96	-17.74	9.51
Other personal service occupations	-10.92	9.58	-7.58	8.32
Military	-51.2	26.46	-31.39	22.96
Constant	55.99***	12.25	49.71***	10.66
R-squared	0.14		0.17	
Adjusted R-squared	0.09		0.12	
F-test p-value	0.000		0.000	
Observations	3410		3395	

Note: Results from OLS regression with *P62*/*P65* (probability of full-time work past age 62/65) as dependent variable. Base (excluded) categories are less than high school, unmarried males, and financial managers. Wave indicates HRS wave, 1=1992 through 11=2012. Significance levels denoted as * for p<0.05, ** for p<0.01, *** for p<0.001.

2.7. Regressions of *P65* on usual retirement variables

	(1)		(2)	
Dependent variable: Pr(work FT past 65)	**coef.**	**se**	**coef.**	**se**
Usual retirement age in this type of job (self-report)	1.82***	0.24		
Dummy for no usual retirement in job (based on self-report)			6.54***	1.46
Wave	1.61***	0.27	1.60***	0.24
Good health or better	4.80*	2.42	3.78	2.06
Has DB pension	-5.79***	1.56	-7.64***	1.37
Log total non-housing wealth	-2.94***	0.48	-2.95***	0.4
Log earnings	0.69	1.12	1.44	0.94
Educational category (reference category: <HS)				
HS	2.89	2.82	0.73	2.41
Some college	4.48	3.04	4.67	2.6
College+	7.50*	3.41	8.05**	2.9
Married x Female (reference category: unmarried male)				
Married=0 # Female=1	1.87	3.09	2.46	2.68
Married=1 # Female=0	2.2	2.56	0.31	2.24
Married=1 # Female=1	-3.12	3.01	-3.42	2.64
Detailed occupation (reference category: financial managers)				
Human resources, marketing, advertising, PR managers	-11.12	8.51	-5.66	7.86
Managers in education and related fields	-17.28*	8.54	-21.20**	7.81
Managers of medicine and health occupations	-12.64	11.96	-10.39	10.01
Managers of properties and real estate	16.59	15.09	12.83	13.38
Other managers	-11.3	6.82	-10.6	6.1
Accountants and auditors	-21.53*	10.55	-17.32	8.88
Other financial specialists	-12.26	9.42	-1.53	8.45
Management analysts	-6	14.98	-7.08	12.61
Personnel, HR, training, and labor relations specialists	-30.39**	11.51	-28.22**	10.23
Purchasing managers, agents & buyers; bus. & promo agents	-20.64	10.6	-20.21*	9.3
Inspectors and compliance officers	-20.60*	9.98	-21.11*	9.29
Management support occupations	-31.89*	14.99	-15.65	12.61
Civil engineers	-22.24	16.47	-23.68	14.18
Electrical engineers	-13.25	11.17	-4.04	10.53
Industrial engineers	4.7	9.95	9.01	9.63
Mechanical engineers	-4.67	18.64	-0.13	19.22
Other engineers, architects, surveyors & mapping scientists	-12.05	10.83	-12.18	10.01
Mathematical and Computer Scientists	-25.64**	9.6	-23.46**	8.65
Physical scientists	-24.47	13.19	-27.71*	13.34
Life scientists			17.43	23.24
Physicians	0.33	18.62	21.37	15.32
Dentists	3.76	30.98	32.26	23.17
Other health and therapy occupations	-29.24*	11.97	-28.17*	11.57
Registered nurses	-5.15	8.28	-2.15	7.33
Pharmacist	-31.78	18.66	-28.84	19.24
Therapists	-20.64	11.53	-21.12	11.17
Dietitians, nutritionists and physicians assistants	3.22	16.6	6.26	16.98
Postsecondary teachers	-7.1	8.47	-3.34	7.59
Kindergarten and earlier school teachers	-15.21	12.02	-25.22*	11.19
Primary school teachers	-19.47*	8.1	-23.61**	7.26

2.7. Regressions of *P65* on usual retirement variables

	(1)		(2)	
Dependent variable: Pr(work FT past 65)	**coef.**	**se**	**coef.**	**se**
Secondary school teachers	-15.97*	7.95	-21.98**	7.29
Special education teachers	-23.32	15	-23.31*	11.61
Teachers , nec	-2.43	12.53	-9.15	10.82
Vocational and educational counselors	-22.58	12.02	-21.13	11.2
Librarians, Archivists, and Curators	-9.74	13.99	-4.8	11.61
Psychologists	-14.46	13.12	-14.05	12.6
Other social scientists and urban planners	-28.2	18.63	-14	15.31
Social workers	-19.42*	9.49	-12.14	8.41
Recreational workers	-69.10*	31.08	-26.4	19.3
Clergy and religious workers	-12.44	10.43	2.46	9.49
Lawyers and Judges	7.74	12.46	11.27	11.16
Writers, authors, technical writers	-70.60*	31.6	-17.18	23.2
Designers			-6.2	16.94
Musician or composer	7.46	31.14	10.72	32.38
Actors, directors, producers	-24.15	31.06	-19.44	32.33
Art makers: painters, sculptors, craft-artists, & print-makers	-7.62	22.4	12.3	19.22
Photographers	-29.64	31.02	-22.3	32.29
Art/entertainment performers and related	-29.62	31.01	-17.9	19.24
Editors and reporters	3.35	18.63	10.12	19.21
Athletes, sports instructors, officials and announcers				
Clinical laboratory technologies & techs, dental hygenists	-25.33*	11.55	-23.43*	11.59
Radiologic tech specialists	-0.9	22.35	-15.12	19.21
Licensed practical nurses	-27.62*	12.07	-18.46	10.6
Health technologists and technicians, nec	-11.4	11.7	-7.29	10.62
Engineering, surveyor and mapping technicians	-11.4	10.66	-9.32	10.05
Drafters	5.61	18.73	9.19	19.28
Science technicians	-12.96	13.16	-10.86	12.06
Airplane pilots and navigators, air traffic controllers	-16.25	15	-17.94	15.32
Computer programmers, support specialists & administrators	-15.81	9.89	-11.12	8.86
Technicians, nec	-25.03*	11.51	-18.5	10.52
Supervisors and proprietors of sales jobs	-15.53	7.92	-5.16	6.97
Insurance sales occupations	-10.56	13.14	-5.66	10.82
Real estate sales occupations	4.89	18.73	2.19	12.65
Financial services sales occupations	38.25*	18.62	43.30*	16.88
Advertising and related sales jobs	-38.88	22.39	-32	23.2
Cashiers	-18.52	10.5	-21.89*	9.14
Door-to-door sales, street sales, and news vendors			8.04	16.95
Other sales and sales related	-21.88**	7.9	-16.73*	6.77
Office supervisors	-15.03	7.82	-14.46*	7.04
Computer and peripheral equipment operators	-29.94*	13.99	-23.66	13.36
Secretaries, Stenographers, and Typists	-15.70*	7.56	-14.25*	6.65
Interviewers, enumerators, and surveyors	-2.5	22.44	2.85	15.38
Transportation ticket and reservation agents	-3.17	22.47	-0.2	23.24
Information clerks, nec	-14.43	10.97	-16.39	9.22
Correspondence and order clerks	-12.54	16.5	-16.38	15.37
Human resources clerks, except payroll and timekeeping	-22.66	31.3	-28.19	23.31

2.7. Regressions of *P65* on usual retirement variables

	(1)		(2)	
Dependent variable: Pr(work FT past 65)	**coef.**	**se**	**coef.**	**se**
Library assistants	3.09	14	11.15	14.22
File clerks	2.22	18.72	5.67	19.26
Records clerks	-16.54	31.05	28.89	23.22
Bookkeepers and accounting and auditing clerks	-17.03*	8.32	-12.55	7.35
Other financial records processing occupations	-2.11	10.64	-4.85	9.68
Duplicating, mail, and other office machine operators	-23.2	18.73	-23.38	16.94
Postal clerks, excluding mail carriers	-11	11.59	-12.86	10.88
Mail carriers for postal service	-22.04	12.14	-24.13*	11.63
Mail clerks, outside of post office	-49.33	31.18	-37.01*	16.94
Messengers	-5.02	16.54	-1.1	14.25
Dispatchers	-36.27**	12.55	-28.51*	11.63
Shipping and receiving clerks	-35.24**	11	-31.44**	10.12
Stock and inventory clerks	-11.6	9.91	-10.78	8.89
Weighers, measurers, checkers, meter readers	-8.77	18.81	-16.79	16.96
Material recording, sched., prod, plan, & expediting clerks	-36.87**	12.04	-38.20***	10.89
Insurance adjusters, examiners, and investigators	-20.05	12.02	-17.61	11.61
Cust. service reps, investigators & adjusters, exc. insurance	-8.97	10.03	-12.09	9.07
Eligibility clerks for government programs; social welfare	1.9	18.69	-3.14	13.33
Bill and account collectors	-2.72	15.03	11.62	12.62
General office clerks	-19.97	10.45	-14.1	9.88
Bank tellers	-22.38	12.11	-24.74*	11.26
Data entry keyers	-32.93*	16.55	-28.08*	14.23
Teacher assistants	-21.24*	10.66	-25.13**	9.48
Other administrative support occupations	-8.89	10.71	-7.41	9.69
Supervisors of mechanics and repairers	-15.96	10.01	-10.63	9.08
Automobile mechanics	9.56	16.65	1.89	14.28
Bus, truck, and stationary engine mechanics	-22.8	13.28	-19.08	13.42
Aircraft mechanics	-18.34	18.71	-14.02	19.27
Auto body repairers				
Heavy equipment and farm equipment mechanics	-35.71	31.18	-34.23*	16.95
Industrial machinery repairers	-18.55	9.94	-15.19	9.15
Other machinery maintenance and repairers	-3.73	16.54	-7.01	15.38
Repairers of industrial electrical equipment	-20.15	22.43	-8.72	19.25
Repairers of data process. equip. or other office machines			-39.03	32.31
Telecom and line installers and repairers	-15.96	11.66	-11.52	10.91
Heating, air conditioning, and refrigeration mechanics	-24.88	15.11	-22.46	13.39
Other electronic or electrical equipment repairers	-29.67*	15.11	-26.34	15.4
Precision makers, repairers & smiths, mech. & elevator repair	-23.92	16.54	-21.43	15.38
Other mechanics and repairers	-9.96	10.3	0.49	9.57
Supervisors of construction work	-19.02*	9.3	-14.82	8.55
Masons, tilers, and carpet installers	-31.95	22.56	-28.01	23.31
Carpenters	-24.46*	12.18	-19.32	11
Drywall installers	-32.56	31.23	-30.73	32.45
Electricians, electric power installers and repairers	-29.38**	10.46	-23.43*	9.72
Painters, construction and maintenance	-25.9	15.09	-28.85*	13.38
Plumbers, pipe fitters, and steamfitters	-24.46*	11.67	-23.64*	10.61

2.7. Regressions of *P65* on usual retirement variables

	(1)		(2)	
Dependent variable: Pr(work FT past 65)	**coef.**	**se**	**coef.**	**se**
Other construction trades	-21.17	12.22	-21.2	11.33
Production supervisors or foremen	-23.74**	8.37	-20.32**	7.79
Precision metal working occupations	-29.94**	10.73	-21.77*	9.73
Precision woodworking occupations	-42.44	31.17	-47.48	32.38
Precision textile, apparel, and furnishings machine workers	-58.84	31.05	-48.03*	19.29
Optical goods workers, dental lab & med appliance tech	-8.1	16.61	-8.13	14.24
Other precision workers, assorted materials	-15.82	10.72	-11.85	10.13
Butchers and meat cutters	-26.46	14.09	-25.96	13.43
Bakers and batch food makers	-23.2	18.82	2.39	17.03
Plant and system operators, adjusters and calibrators	-18.9	11.3	-19.07	10.63
Farm operators and managers	-2.21	31.04	6.96	19.24
Farm occupations, except managerial	11.77	15.29	-2.42	11.85
Gardeners and groundskeepers	-3.09	16.83	-13.9	10.81
Other agricultural occupations	17.59	22.54	23.76	23.29
Timber, logging, and forestry workers	-34.58	31.1	-26.13	32.35
Metal working and plastic working machine operators	-24.88*	10.76	-21.88*	10.13
Metal and plastic processing machine operators	-35.56	31.02	-25.48	23.22
Woodworking machine operators			-9.1	17.01
Textile sewing machine operators	-11.07	18.85	-8.73	19.36
Laundry workers	-48.71	31.1	-9.5	19.33
Other textile, apparel, and furnishings machine operators	-36.88	31	-32.7	32.28
Packers, fillers, and wrappers	13.55	31.1	14.23	23.17
Painting machine operators	-0.06	22.42	4.99	23.21
Slicing and cutting machine operators	-15.2	22.46	-0.19	19.23
Other machine operators, assorted materials	-23.23**	8.52	-14.31	7.82
Welders, metal cutters, solderers	-18.8	10.31	-16.34	9.95
Assemblers and fabricators	-15.03	9.28	-13.42	8.45
Production inspectors, testers, samplers, and weighers	-32.25**	10.21	-28.27**	9.53
Supervisors of motor vehicle transportation	-15.16	11.33	-14.85	10.12
Truck, delivery, tractor drivers and parking lot attendants	-18.30*	8.23	-12.52	7.27
Industrial truck and tractor operators	-28.30**	10.17	-26.50**	9.19
Bus drivers	-3.43	12.07	-13.15	9.56
Taxi cab drivers and chauffeurs	-29.87	22.46	-24.1	12.71
Rail transportation occupations	-24.51	16.62	-27.47	16.98
Water transportation occupations				
Construction equipment operators	-33.15**	12.15	-26.42*	10.98
Crane, derrick, winch, and hoist operators	13.88	31.2	-9.95	23.33
Misc material moving occupations	7.57	16.62	15.53	17
Construction helpers and laborers, surveyor helpers	-28.97*	11.34	-26.94**	10.4
Production helpers			46.34	32.43
Vehicle washers and equipment cleaners	-23.96	18.76	-31.49*	15.43
Packers and packagers by hand	28.98	31.07	-20.89	19.29
Other freight, stock, and material handlers	-24.53*	9.55	-21.54*	8.47
Supervisors in protective services	-20.33*	9.9	-20.05*	9.2
Firefighting, prevention, and inspection	-32.53	31.03	-28.02	32.3
Police, detectives, and private investigators	-16.01	10.65	-17.29	10.05

2.7. Regressions of *P65* on usual retirement variables

	(1)		(2)	
Dependent variable: Pr(work FT past 65)	**coef.**	**se**	**coef.**	**se**
Other law enforcement: sheriffs, bailiffs, correc inst officers	-35.31*	15.22	-32.77**	11.66
Guards, watchmen, doorkeepers	-29.95	15.28	-33.66**	11
Other protective services				
Private household occupations	-15.51	11.1	-18.79*	8.98
Bartenders			-40.82	23.3
Waiter/waitress, food counter and fountain workers	-21.67	18.73	-7.03	14.28
Chefs, head cooks and food supervisors	-8.73	13.24	-5.57	11.27
Other cooks	-23.89	12.68	-23.37*	10.39
Kitchen workers	-38.01	22.46	-29.33	19.31
Waiter's assistant	-23.67	22.92	-39.74*	17.12
Misc food prep workers	-45.38	31.08	-33.61*	14.32
Janitors	-24.77**	8.48	-19.32**	7.43
Other cleaning & bldg service occupations, exc households	-16.79	12.58	-0.05	10.93
Dental assistants	-30.49*	15.05	-33.67*	13.36
Health aides, except nursing	-34.87*	13.95	-27.97*	11.21
Nursing aides, orderlies, and attendants	-30.77***	9.08	-30.18***	8
Barbers, hairdressers and cosmetologists	9.69	31.01	29.78	23.22
Recreation facility attendants	-62.87**	22.46	-51.66**	19.28
Child care workers	-12.34	14.12	-24.77*	10.41
Other personal service occupations	3.94	12.1	-6.87	9.55
Military	-13.48	22.52	-29.89	23.17
Constant	-62.06**	21.33	45.72***	12.32
R-squared	0.22		0.18	
Adjusted R-squared	0.13		0.11	
F-test p-value	0.000		0.000	
Observations	1929		2700	

Note: Significance levels denoted as * for p<0.05, ** for p<0.01, *** for p<0.001.

Table 3.1. Occupation by *last occupation observed at age 63 or later*, for respondents over age 66 in 2010

10 Most common occupations

Occupation	Title	% No early retirement	Observations*
6	Other managers	57%	159
31	Primary school teachers	49%	69
62	Supervisors and proprietors of sales jobs	63%	56
69	Other sales and sales related	81%	108
72	Secretaries, Stenographers, and Typists	66%	82
81	Bookkeepers and accounting and auditing clerks	67%	64
155	Truck, delivery, tractor drivers and parking lot attendants	66%	91
173	Guards, watchmen, doorkeepers	82%	50
183	Janitors	67%	125
187	Nursing aides, orderlies, and attendants	68%	78

10 occupations with highest rates of last occupation observed at age 63 or later

Occupation	Title	% No early retirement	Observations*
24	Other health and therapy occupations	100%	<10
42	Lawyers and Judges	100%	<10
43	Writers, authors, technical writers	100%	<10
49	Art/entertainment performers and related	100%	<10
51	Athletes, sports instructors, officials and announcers	100%	<10
109	Other machinery maintenance and repairers	100%	<10
158	Taxi cab drivers and chauffeurs	96%	28
41	Clergy and religious workers	94%	18
87	Messengers	92%	13
9	Management analysts	91%	11
135	Farm operators and managers	90%	20

10 occupations with lowest rates of last occupation observed at age 63 or later

Occupation	Title	% No early retirement	Observations*
3	Managers in education and related fields	44%	18
2	Human resources, marketing, advertising, public relation managers	44%	16
89	Shipping and receiving clerks	42%	12
11	Purchasing managers, agents and buyers; business and promotion agents	39%	18
54	Licensed practical nurses	38%	13
108	Industrial machinery repairers	37%	19
127	Precision metal working occupations	36%	22
144	Textile sewing machine operators	35%	23
126	Production supervisors or foremen	29%	28
150	Other machine operators, assorted materials	28%	47

* Number of observations includes "Yes," "No" and missing values for whether last occupation was observed at age 63 or later. Additionally, numbers of observations that are less than 10 have been masked to "<10."

Table 3.2. Occupation by *last occupation observed at age 66 or later* for respondents over age 66 in 2010

10 Most common occupations

Occupation	Title	% No early retirement	Observations*
6	Other managers	39%	159
31	Primary school teachers	33%	69
62	Supervisors and proprietors of sales jobs	43%	56
69	Other sales and sales related	67%	108
72	Secretaries, Stenographers, and Typists	48%	82
81	Bookkeepers and accounting and auditing clerks	48%	64
155	Truck, delivery, tractor drivers and parking lot attendants	54%	91
173	Guards, watchmen, doorkeepers	70%	50
183	Janitors	44%	125
187	Nursing aides, orderlies, and attendants	54%	78

10 occupations with highest rates of last occupation observed at age 66 or later (excludes most common occupations)

Occupation	Title	% No early retirement	Observations*
42	Lawyers and Judges	100%	<10
87	Messengers	92%	13
158	Taxi cab drivers and chauffeurs	89%	28
174	Other protective services	89%	<10
43	Writers, authors, technical writers	88%	<10
45	Musician or composer	88%	<10
51	Athletes, sports instructors, officials and announcers	86%	<10
135	Farm operators and managers	85%	20
73	Interviewers, enumerators, and surveyors	83%	<10
129	Precision textile, apparel, and furnishings machine workers	83%	<10

10 occupations with lowest rates of last occupation observed at age 66 or later (excludes most common occupations)

Occupation	Title	% No early retirement	Observations*
25	Registered nurses	36%	42
168	Other freight, stock, and material handlers	35%	43
19	Mathematical and Computer Scientists	33%	21
10	Personnel, HR, training, and labor relations specialists	33%	15
127	Precision metal working occupations	32%	22
108	Industrial machinery repairers	32%	19
144	Textile sewing machine operators	30%	23
152	Assemblers and fabricators	24%	37
126	Production supervisors or foremen	18%	28
150	Other machine operators, assorted materials	15%	47

* Number of observations includes "Yes," "No" and missing values for whether last occupation was observed at age 63 or later. Additionally, numbers of observations that are less than 10 have been masked to "<10."

Table 3.3. Regressions of *early retirement* and *late retirement* on occupation

		Early retirement		*Late retirement*	
Variable		**coef.**	**se**	**coef.**	**se**
Occupation	**Title**				
1	Financial Managers (excluded category)	--		--	
5	Managers of properties and real estate	-0.08	0.15	0.26*	0.15
9	Management analysts	-0.19	0.17	0.34*	0.18
11	Purchasing managers, agents and buyers; business and promotion agents	0.30**	0.15	-0.24	0.16
29	Postsecondary teachers	-0.1	0.12	0.25**	0.13
31	Primary school teachers	0.22*	0.11	-0.14	0.12
39	Social workers	-0.10	0.15	0.27*	0.16
41	Clergy and religious workers	-0.23	0.15	0.36**	0.15
42	Lawyers and Judges	-0.29	0.23	0.52**	0.24
43	Writers, authors, technical writers	-0.29	0.19	0.40**	0.20
44	Designers	-0.16	0.19	0.40**	0.20
45	Musician or composer	-0.16	0.19	0.40**	0.20
51	Athletes, sports instructors, officials and announcers	-0.29	0.20	0.38*	0.21
54	Licensed practical nurses	0.33**	0.16	-0.25	0.17
64	Real estate sales occupations	-0.09	0.15	0.32**	0.16
69	Other sales and sales related	-0.11	0.11	0.20*	0.11
87	Messengers	-0.21	0.16	0.45***	0.17
97	General office clerks	-0.15	0.14	0.25*	0.15
100	Teacher assistants	-0.15	0.13	0.25*	0.14
108	Industrial machinery repairers	0.28*	0.15	-0.10	0.16
126	Production supervisors or foremen	0.42***	0.13	-0.29**	0.14
127	Precision metal working occupations	0.31**	0.14	-0.13	0.15
131	Other precision workers, assorted materials	0.24*	0.15	-0.37**	0.15
135	Farm operators and managers	-0.19	0.14	0.37**	0.15
144	Textile sewing machine operators	0.33**	0.14	-0.14	0.15
150	Other machine operators, assorted materials	0.43***	0.12	-0.32**	0.13
157	Bus drivers	-0.15	0.13	0.25*	0.14
158	Taxi cab drivers and chauffeurs	-0.25*	0.13	0.42***	0.14
168	Other freight, stock, and material handlers	0.21*	0.12	-0.10	0.13
173	Guards, watchmen, doorkeepers	-0.11	0.12	0.22*	0.12
174	Other protective services	-0.17	0.18	0.41**	0.19
Constant		0.29***	0.10	0.48***	0.10
R-squared		0.13		0.15	
Adjusted R-squared		0.07		0.09	
Observations		2842		2842	

Linear probability models (OLS) with *early* or *late retirement* variables (0/1) as dependent variables and occupation dummies as regressors. All data from 2010. Includes respondents who were 51-61, working full-time, and not self-employed at their baseline interview, and over age 66 in 2010. *Early retirement* equals 1 if the last observed occupation was before the age of 63 (those over 66 and still having a listed occupation in 2010 were coded as 0). *Late retirement* equals 1 if the last recorded occupation was at age 66 or later, or if the respondent was over 66 and still had a listed occupation in 2010. Excluded occupation is *Financial Managers*. Only occupations which were statistically significant in one of the two regressions are included. Significance levels denoted as * for p<0.1, ** for p<0.05, *** for p<0.01.

Table 3.7. Regressions of *late retirement* on job characteristics

Covariate source:	HRS only		O*Net only		Both	
Variable	coef	se	coef	se	coef	se
Physical effort (jphys)	0.04***	0.01			0.04***	0.01
Lots of stress (jstres)	0.09***	0.01			0.09***	0.01
More difficult (jdiff)	0.06***	0.01			0.05***	0.01
Could reduce hours (credh)	0.2***	0.02			0.17***	0.02
Activity 4			0.29*	0.17	0.27	0.18
Activity 5			0.07	0.16	-0.19	0.16
Activity 9			-0.46***	0.10	-0.33***	0.10
Activity 11			-0.33***	0.08	-0.22**	0.09
Activity 13			-0.03	0.11	0.02	0.12
Activity 14			-0.11	0.12	-0.02	0.12
Activity 16			0.05	0.09	0.17*	0.10
Activity 17			0.39***	0.05	0.3***	0.06
Activity 18			-0.18*	0.09	-0.04	0.10
Ability 3			-0.08	0.11	-0.17	0.11
Ability 4			0.17	0.12	0.09	0.12
Constant	-0.15***	0.04	0.48***	0.07	-0.07	0.08
R-squared	0.11		0.05		0.15	
Adjusted R-squared	0.11		0.05		0.14	
Observations	3051		3780		3051	

Regressions are linear probability models. Dependent variable is *late retirement* indicator. Same sample restrictions as in regressions of retirement on occupation, except these use characteristics of last occupation observed, max one observation per respondent, for those who are observed past age 66. *Late retirement* is equal to 1 if last observed occupation in HRS data was at age 66 or later, and zero otherwise. Significance levels denoted as * for p<0.1, ** for p<0.05, *** for p<0.01.