

Bad Job, Happy Retirement? Job Characteristics and Retirement Satisfaction for Union and Non-Union Workers

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Abstract

The study examines the effect of prior job characteristics on retirement satisfaction for union and non-union retirees. The author finds a differential effect across union status. Union members retiring from high skill blue-collar jobs, and jobs that required skill working with others, did not require keeping pace with others, and gave freedom to decide how work was done are more likely to be very satisfied with retirement. Non-union members who retired from high skill blue-collar jobs, and jobs that required stooping, were stressful, or did not require using computers are less likely to be very satisfied with retirement. The results suggest that unions may protect employees from being pushed into a less satisfying retirement, but also may hinder the acquisition of skills on the job that make retirement more satisfying.

In 2010, the median age in the United States rose to an all-time high of 37.2 years, up from 30.0 in 1980. Driving the increase was a shift in the fraction of the population aged 45 or older, which increased from 30.9% in 1980 to 39.4% in 2010. Within this distribution the portion of the population entering the traditional retirement ages of 62 and over has recently increased significantly, growing by 21.1% since 2000 (Howden and Meyer 2011). While many of these older Americans will likely retire at later ages than earlier generations, the trends still show a large and growing portion of the population is, or may soon be, experiencing retirement.

Given the trend towards an aging population, in order to understand the well-being of many Americans it is important to understand their satisfaction with retirement. Although arguably smaller than the body of work examining the financial adequacy of retirees, there is a growing body of literature exploring determinants of retirement satisfaction. In terms of what leads to greater satisfaction with retirement, the most consistent findings across studies are for good health (Bender 2004; Calasanti 1996; Dorfman 1989; Elder and Rudolph 1999; Fouquereau et al. 2005; Neuman 2011; Panis 2003; Quick and Moen 1998; Smith and Moen 2004; Szinovacz and Davey 2005), voluntary retirement (Bender 2004; Elder and Rudolph 1999; Hardy and Quadagno 1995; Neuman 2011; Quick and Moen 1998; Schultz, Morton, and Weckerle 1998; Szinovacz and Davey 2005), and greater income (Bender 2004; Elder and Rudolph 1999; Hardy and Quadagno 1995; Neuman 2011; Panis 2003; Quick and Moen 1998; Smith and Moen 2004; Szinovacz and Davey 2005). In terms of basic demographic factors, being a woman (Bender 2004; Calasanti 1996; Neuman 2011; Richardson and Kilty 1991; Smith and Moen 2004) and being married (Bender 2004; Calasanti 1996; Elder and Rudolph 1999; Fouquereau et al. 2005; Neuman 2011; Price and Joo 2005) have also been found to increase retirement satisfaction. Subsets of studies have examined more specific influences, for example finding that satisfaction is increased by annuities and traditional defined benefit pensions (Bender 2004; Neuman 2011; Panis 2003), by planning for retirement (Dorfman 1989; Elder and Rudolph 1999; Neuman 2011; Quick and Moen 1998; Spiegel and Schultz 2003), and by satisfied income expectations (Bender 2004; Calasanti 1996; Dorfman 1989). Overall the studies provide valuable information about who tends to experience a more satisfying retirement, and who needs help adjusting to their retirement experience.

Despite the range of issues investigated in prior work, a deficiency in knowledge exists concerning the effect of prior job characteristics on retirement satisfaction. This paper addresses the gap in the literature, exploiting a detailed set of job characteristics to examine whether the nature of the individual's pre-retirement job has an impact on later retirement satisfaction for samples of union and non-union workers. The gap in the literature is notable as the decision to retire should distinctly be influenced by the nature of the individual's pre-retirement work. By impacting the retirement decision job characteristics may have lasting effects on satisfaction even after workers have left their positions.

A few studies have examined aspects of the pre-retirement job finding that retirement satisfaction is increased for individuals who enjoyed prior work (Quick and Moen 1998) and had high occupational prestige (Richardson and Kilty 1991). Another study found no effect of occupational attachment (Taylor et al. 2007). The most noteworthy attempt to look at the effect of job characteristics primarily focused on whether prior union membership had an effect on retirement satisfaction, but also included a set of variables describing conditions on the pre-retirement job (Neuman 2011). Union membership was not found to have a direct effect on retirement satisfaction, but it did have an indirect effect by increasing the provision of defined benefit pensions and by reducing the incidence of involuntary retirement for union members. The study also found that stooping or crouching and stress on the job decreased later retirement satisfaction, while working with computers increased retirement satisfaction (Neuman 2011). The current study significantly extends these prior works by employing a much broader set of job characteristics and also by looking for differential effects by union membership. While the study by Neuman (2011) did look for a union effect, it did not examine whether the retirement satisfaction of union workers was influenced by different factors than that of non-union workers. The effect by union status is valuable information as it would illustrate another possible effect of unions in the workplace. Overall a detailed examination of the effect of job characteristics can highlight which workers may have the toughest time creating a satisfying retirement experience.

Theoretical Effects of Job Characteristics

The theoretical basis for the nature of an individual's job influencing later retirement satisfaction lies within its influence on the retirement decision. A simple model of retirement suggests that an individual should retire when the expected utility from working falls below the expected utility from retiring. Changes in the determination of either expected utility should have effects on the final retirement decision made by the individual. However, retirement satisfaction should mainly be driven by the utility the individual expects to derive from living in the retirement state. An individual who decides to retire because the expected utility of continuing to work has declined, should have a lower level of retirement satisfaction than an individual who decides to retire because the expected utility of retiring has increased. In the literature this distinction is referred to as being "pushed" versus "pulled" into retirement (Schultz, Morton, and Weckerle 1998). Within this framework for the retirement decision the influences on the relevant expected utilities are quite numerous, but it seems reasonable that the nature of an individual's job will be a strong determinant of the expected utility from continuing to work. Given the influence of job characteristics on the retirement decision the theory suggests that the nature of individuals' jobs may have persistent effects on subsequent retirement satisfaction.

Using an example framed in terms of job characteristics, if a negative characteristic such as stressful work reduces the expected utility from continuing to work this makes retirement more likely for the individual who experiences the stress than for the individual who does not. For the individual who does not experience the stressful work to retire they would have to be pulled into retirement by an increase in the utility related to retirement. Comparing the satisfaction with retirement across individuals, the different motivation of the retirement decision would make retirement relatively less satisfying for the individual who was pushed into retirement by stressful work. Alternatively, if a positive job characteristic such as working with friendly people increases the expected utility from continuing to work this makes retirement less likely than for an individual who does not work with as friendly people. Given the greater utility related to working, the individual who enjoys work more will only retire when something increases the expected utility from retirement and pulls them into retirement. As with the example for negative job characteristics above, the different motivation for the individuals' retirement should mean a different satisfaction with the retirement state, with the individual pulled into retirement from a job with greater utility experiencing greater satisfaction even after leaving their job.

The satisfaction differential may be exacerbated if a job characteristic not only influences the expected utility from continuing to work, but also the expected utility from retirement. For example, an individual who performs repetitive, monotonous work which is interrelated to work performed by others may have little control or discretion about how, when, or how fast the job is done. This type of work may decrease the expected utility from continuing to work. However, individuals in these situations may not have developed, or may have lost, the ability to choose between alternative uses of their time to allocate their time to various activities, a skill which will be very valuable once they are given the quantity of free time associated with retirement. For these individuals the inability to determine the course of their own days may actually decrease the utility from retirement. These individuals may be pushed into retirement, which tends to make the experience less satisfying, but of itself retirement might be less satisfying due to a failure to acquire time management skills. The opposite could be true for those who do enjoy a great amount of discretion and freedom on the job. The greater on the job autonomy may make work more satisfying, but also may teach a skill which is applicable during retirement to make that experience more enjoyable as well. These individuals would tend to experience greater retirement satisfaction as they are pulled into a retirement which is already more satisfying. Job characteristics such as these would influence satisfaction through their effect on the retirement decision, but would have a secondary influence by altering skill acquisition at work.

When unions are added into the workplace there is the potential for a more complicated, differential effect across union status. If union members feel that they are being harmed or discomforted by negative job characteristics they may push their leadership to address the incidence of the job characteristics during the collective bargaining process. Union leadership may be able to negotiate an adjustment in the work process to

moderate the effects of a characteristic, or may be able to force a compensating increase in pay for those experiencing the negative job attribute. If unions are able to accomplish either of these goals, a union member experiencing a certain job characteristic may have a different subsequent effect than a non-union member experiencing the same characteristic.

For example, a union and a non-union job may both require a great deal of physical work. If union workers call on their leadership to address the physical work during the bargaining process they may be able to reduce the physical effects by adjusting the work environment to make the physical work more ergonomic or by providing equipment such as back braces to protect workers' bodies. If these same accommodations are not made for non-union workers, non-union workers would experience a greater decline in utility related to work and would be more likely to be pushed into a less satisfying retirement than union workers. Even if the union is unable to change the work process to moderate the effects of a negative job characteristic, if they are able to increase pay the greater income should increase utility to compensate for the decline in utility caused by having to endure the characteristic. Non-union workers who did not experience the compensating increase in pay would once again be more likely to be pushed into a less satisfying retirement.

The Empirical Model and Data Sample

The baseline empirical model is a standard ordered probit using a three category ranking of an individual's retirement satisfaction. Individuals were asked how satisfied they were with retirement with possible responses of very satisfied, moderately satisfied, or not at all satisfied. I code responses of very satisfied as the top response, meaning that positive coefficients increase the likelihood of being in the top satisfaction category. The model includes a detailed set of control variables as well as the set of job characteristics which are the focus of the study.

To estimate the model I use a sample derived from the Health and Retirement Study (HRS), including compiled HRS data contributed by RAND Corporation. The HRS follows a sample of older adults from 1992 to the most recent wave in 2010, surveying them every two years. What makes the HRS such an ideal data set for this type of analysis is the breadth of information gathered not only for demographics, but also for income and pensions, health, retirement experiences, and job characteristics. The breadth of the HRS data allows me to control for the numerous factors found in other studies while still exploring the under-researched area related to job characteristics. Prior work has usually had to either choose a small but detailed data sample focusing on a specific question, or a large but broad sample which is unable to control for important satisfaction determinants and often cannot examine detailed questions. With the data sample used,

the current study most closely resembles work by Bender (2004) and Neuman (2011) with the significant contribution of the job characteristic and union/non-union analysis.

For the sample the initial selection criteria are that individuals self-report being not at all retired and are also working for pay in the initial survey wave in 1992. This selection process should remove most individuals who are already retired when first observed, and is essential in order to gather information regarding individuals' job characteristics and pre-retirement information such as retirement planning. Without observing the individuals while they are at work I would not be able to capture the work environment in the position from which they retired. After the initial selection I then follow the individuals across successive waves of the survey. Every time individuals report being retired in the 1994-2008 surveys, and thus have a valid response for retirement satisfaction, I count it as an observation and combine them in a pooled sample. With this sampling process I have a set of retirees who have been retired for anywhere from a few days if they had retired just before the 1994 survey, to almost 16 years if they retired immediately after the 1992 survey and persisted in the sample. Given that an individual can appear in the sample more than once with this sampling process I correct for clustering by individuals in the estimation. I also include a set of indicators for each survey year. In each wave of the survey I update time variant control variables, using information from 1992 for the time invariant information. Finally, I split the data into union and non-union samples using a question in the initial 1992 survey wave asking if they are covered by a union or employee association contract. After applying all the selection criteria I have 3,841 observations in the union sample and 9,126 in the non-union sample.

Information on the variables in the sample is presented in Tables 1 and 2. Variable definitions and sample year are presented in Table 1, while variable means, standard deviations, and t-statistics for equality of means across samples are presented in Table 2. The definition and characteristics of the retirement satisfaction dependent variable are presented in the top lines of the tables. Union retirees are significantly more satisfied than their non-union counterparts. The higher satisfaction of union retirees was found by Neuman (2011) as well, although the author found that the premium disappeared after controlling for the voluntariness of the retirement decision and the presence of defined benefit pensions. I include controls for these issues to account for the finding.

Information on the control variables is presented in the top panels of the tables. The set of control variables is extensive, but needs to be given the diverse set of influences on retirement satisfaction found in prior work. Along with typical demographic factors like age, sex, race/ethnicity, and education, I include a variable for how satisfied the individual is with their life overall. This variable helps to control for the fact that people who are satisfied in general, also tend to be satisfied with retirement. I include multiple measures of health, using a self-report of health as well as measures of functional limitations. A variable for the number of

years the individual has been retired should capture whether satisfaction follows any adjustment path as time goes by. Two variables capture issues related directly to the retirement decision. A question asking whether the individual had thought about retirement should reflect at least some degree of retirement planning albeit an imperfect measure, while a variable for if the individual self-reported that they felt forced to retire should capture effects of involuntary retirement. Finally, I include measures of total wealth and income (in 2008\$) and a set of pension indicators to capture the effect of pension type. Turning to the means in Table 2, it is clear from the number of significant t-statistics presented in the last column that union and non-union retirees are very different people. The number of differences between the two groups in terms of simple demographics such as age, sex, and race, but also in terms of planning, the voluntariness of retirement, and financial issues, highlights the importance of estimating the two samples separately.

Information on the detailed job characteristics is presented in the bottom panels of the tables. As a first check on the nature of an individual's job I include basic indicators for the type of occupation, with low skill blue-collar jobs as the base group. As could be expected, the means in Table 2 show that union and non-union retirees did work in different occupations. As the focus of the study I include a much more detailed set of job characteristics that reflects the specific nature of the individual's work within those general occupations. From the definitions in Table 1, one can see that there is a diverse set of characteristics capturing the physical nature of the work, but also the technical details of how work is structured, and the mental or social aspects of the job. This detailed information should capture the variety of dimensions of work which might influence retirement satisfaction by either pushing workers into retirement, or by cultivating skills to improve retirement.

Job characteristics did vary somewhat across union status, particularly for characteristics reflecting physical work. Union retirees are significantly more likely to have retired from jobs which required physical effort, lifting heavy loads, or stooping/crouching. They are also more likely to report that their pre-retirement job required more difficult things than before. These differences are interesting because one might expect them to be characteristics which could push an individual into a less satisfying retirement. However, the higher overall satisfaction level suggests either that union workers are compensated for the work or the characteristics' effects are moderated, or that other factors related to being in a union had positive effects on retirement satisfaction which overwhelm the job characteristic effects. Non-union retirees are more likely to have come from jobs which required analyzing data and gave them freedom to decide how the work was done. These characteristics may be areas where non-union workers develop skills that may help them during retirement. The ordered probit model should control for the variety of confounding factors present in the means to separate out the effects of these detailed job characteristics.

Results

The results for the baseline ordered probit model are presented in Table 3. Because coefficients in an ordered probit model are difficult to interpret and may even have misleading signs, I report the marginal effect on the probability of reporting each satisfaction category (very satisfied, moderately satisfied, and not at all satisfied). The model coefficients and standard errors are available upon request. The union sample results are presented in the first three columns with the non-union results presented in the last three columns.

The first thing to note regarding the results for the control variables in the top panel is the strong similarity between the union and non-union samples. In general the two samples display the same pattern of significance and sign, with only some variation in magnitudes. Only total income, DB pension, and undetermined pension are significant at the 5% level in one sample and are not significant at any level in the other sample. Greater total income significantly increases the probability of appearing in the highest satisfaction category for non-union retirees although by a small magnitude, while having a DB pension or an undetermined pension increases the probability of reporting the highest satisfaction category for non-union members by 6.5 and 16.8 percentage points respectively. It is also likely that the difference in results for the financial variables reflects the fact that union members have relatively less variation in these variables than non-union members. While the means showed that union and non-union retirees had generally different demographic and financial characteristics on average, the similarity in the regression results suggests that within the union and non-union groups, retirees with similar characteristics reacted in the same manner.

The second thing to note regarding the results is that the control variables for both the union and non-union samples generally reproduce the findings from prior research. As found previously, being in poor health and being forced to retire decrease the likelihood of reporting the highest satisfaction category. The results persist across the samples and are not just highly significant, but of a large magnitude. For example, being forced to retire decreases the likelihood of reporting being very satisfied for union and non-union retirees by 26.3 and 27.5 percentage points respectively. Being satisfied with life overall is significant as well, with those reporting being satisfied with life experiencing increases in the likelihood of being very satisfied of 18.5 and 12.0 percentage points. In general, the fact that our control variable results match prior research is encouraging as it suggests that our sample is representative of the population.

Where interesting differences emerge across union status is for the job characteristics. For job characteristics we do not observe the same pattern of significance across the samples. Variables significant in one sample are insignificant in the other, except for high skill blue-collar jobs where both samples display significance but of opposite sign. The difference in significant variables suggests the model is capturing some of the theoretical reasons for a differential union effect described previously.

In terms of negative job characteristics possibly pushing people into retirement, I find that for non-union workers having a job requiring stooping or crouching reduces the likelihood of being very satisfied by 4.7 percentage points, while having a job that is very stressful reduces the likelihood by 5.4 percentage points. Neither variable is significant for the union sample, even though the means show that union members are actually much more likely to work in jobs that require stooping or crouching. Non-union retirees may be pushed into retirement by a reduction in utility related to work due to these negative work characteristics, resulting in a lower level of satisfaction compared to those who do not experience the stooping or stressful work. The lack of similar results for union retirees suggests that these workers are either compensated for their discomfort, or have found a way to mitigate the negative effects. A similar interpretation can perhaps be given to the differing signs of the high skill blue-collar results as union membership may offer protection for this group which keeps them from being pushed out of their jobs into retirement, while non-union workers do not receive this protection and end up with lower retirement satisfaction as a result.

The results for having to keep pace with others at work display an interesting difference across union status as well. Union workers who have to keep pace with others at work are 6.1 percentage points less likely to report the highest satisfaction category, while non-union workers who experience this type of work are unaffected. The results may reflect the differential effects of being pushed into retirement, but the pattern of significance seems to be opposite of what could be expected. It would seem that as with stooping and stress, union membership should protect workers leaving them unaffected, while the lack of protection for non-union members would once again drive down satisfaction. Perhaps a better interpretation of this effect relates to the mechanism of differential skill acquisition at work described previously. If union workplaces are more rigid due to the formalization of work rules and processes during collective bargaining, union retirees may not have developed the types of skills which they can use to adapt to a very different lifestyle in retirement. The negative effect for those who must keep pace with others at work may reflect a lesser ability to manage their time, which would negatively affect their retirement experience as well. Non-union workplaces which are less rigid may do a better job of cultivating worker adaptability even for those workers who do report having to keep pace with others.

Adding the other significant results for union members may lend support to the interpretation related to differential skill acquisition. Union workers who retire from jobs that require skill working with others experience a 15.0 percentage point increase in the likelihood of being very satisfied, while those who had freedom to decide how work was done see an 8.4 percentage point increase. Both of these factors may reflect a greater flexibility at work, either through the allocation of time or through greater interpersonal interactions. The development of these skills should then carry over into retirement making the experience more satisfying because retirees are better able to adjust to greater free time and different personal interactions. The lack of significant effects for non-union retirees may reflect that a less rigid workplace has made the acquisition of

these skills more pervasive overall so that workers who report these job characteristics are not really that different from workers who do not. In a union setting the skills may not be as widely acquired as formalized communication and grievance procedures may have generally reduced the ability to resolve conflict interpersonally, while a system of job classifications and duties may have reduced time management skills by limiting worker discretion over their work. The positive result for non-union retirees who came from jobs that require computer use could be interpreted similarly if the computer use was more general and therefore more applicable outside of work, thus providing a skill to make retirement more enjoyable.

The different results for the union and non-union job characteristics strongly suggest that union presence in the workplace does cause differential effects on subsequent retiree satisfaction. The control variable results show that union and non-union retirees are influenced similarly by basic demographic, health and financial controls, suggesting that the difference in results for the job characteristics is not simply due to the fact that union retirees are different people who experience retirement differently than non-union retirees. The job characteristics also suggest that unions may have two effects on retirement satisfaction, one positive and one negative. While unions do seem to protect their workers from being pushed into a less satisfying retirement by either mitigating the effects or compensating them for the effects of negative work characteristics, they also seem to limit the acquisition of skills which might help their workers once they enter retirement.

To check the robustness of the baseline results I conducted a variety of tests and specification checks. The first concern given the number of control variables and the related nature of some of the job characteristics is that multicollinearity is driving the results. As a basic check I estimated the variance inflation factors for each variable, finding that none approached standard levels that would suggest the existence of a problem. I also estimated the model using subsamples of variables to see if the results changed dramatically. The model displayed remarkable stability across specifications, once again suggesting that multicollinearity is not the cause of the basic results.

I also estimate two different models to check for fundamental problems with the basic ordered probit. The first model is a random effects ordered probit that I estimate over concerns that the results could be driven by unobserved factors. Given the panel nature of the data the random effects model should account for unobservable influences, under the assumption that they are normally distributed. The second model is related to the sample selection process. Because the survey only asks individuals about their retirement satisfaction if they report that they are retired, self-selection into or out of the retirement state may be biasing the results. For example, individuals who are less satisfied may drop out of the retirement state and therefore out of the sample, causing retirees to appear more satisfied than they actually are. To account for this issue I estimate a sample selection model which simultaneously estimates a probit for whether the

individual reports being retired and the ordered probit for retirement satisfaction. In the probit equation for retirement I add indicator variables for whether the individual or their spouse is older than 62, 65, or 70, as well as an indicator for the usual retirement age on an individual's job. The age thresholds capture discontinuous Social Security and other pension incentives which should make retirement more or less likely, and follow the strategy used in other work (Charles 2002; Neuman 2008).

I present results for the various models in Table 4. The first column for each union status reproduces the baseline results for the probability of reporting the highest satisfaction category as shown in Table 3. The next two columns report the effect on the highest satisfaction category for the random effects and sample selection models. The most striking finding from the results is that there is very little variation across the model structures. While there is minor variation in significance and magnitude the core results are unaffected. The union sample tends to display a bit more variation but this is likely due to the smaller sample size. A statistical test for the appropriateness of the random effects model does find that it is statistically different from the baseline model, although it does not seem to be substantively different. Given the relatively strong distributional assumption for the random effects model, I believe the baseline model results are the most reliable. Overall, it does not appear that the results from the baseline ordered probit model are driven by unobservable variables or sample selection.

Conclusion

This study extends prior work on retirement satisfaction by examining the effects of a detailed set of job characteristics across prior union status. Exploiting a longitudinal data set that allows me to observe prior work characteristics and control for a wide variety of influences on retirement satisfaction, I find a differential effect of job characteristics on retirement satisfaction across union status. Union members retiring from high skill blue-collar jobs, and jobs that required skill working with others, did not require keeping pace with others, and gave freedom to decide how work was done are significantly more likely to report being very satisfied with retirement. Non-union members who retired from high skill blue-collar jobs, and jobs that required stooping, were stressful, or did not require using computers are less likely to report being very satisfied with retirement. The results are not driven by multicollinearity and are not affected by unobservable variables or sample selection.

The results suggest another influence of unions in the workplace which extends beyond the individual's time on the job. The pattern of the results suggests that there may be two different mechanisms that transmit a union effect, one working through the retirement decision and the other working through skill acquisition at work. While it does appear that unions protect their workers from being pushed into a less

satisfying retirement by negative work characteristics, it also appears that unions may hinder the acquisition of skills on the job which may carry over into retirement and make it more satisfying.

Table 1: Variable Names, Definitions, and Survey Year

Variable Name	Variable Definition	Year ^a
Retirement Satisfaction	2=Very satisfied, 1=Moderately sat., 0=Not at all sat.	'94-'08
<i>CONTROLS</i>		
Age	Age of individual at observation wave	'94-'08
Female	1=Female, 0=Male	1992
Hispanic	1=Hispanic ethnicity, 0=Other	1992
White	1=White race, 0=Other	1992
Couple	1=Married or partnered, 0=Other	'94-'08
High school	1=High-school degree (base: less than HS degree)	1992
Some college	1=Some college education (base: less than HS degree)	1992
College degree	1=College degree or greater (base: less than HS degree)	1992
Satisfied with life	1=Very or somewhat satisfied with life overall, 0=Other	1992
Good health	1=Self-reported health good or better, 0=Other	'94-'08
Mobility limitations	Reports of "some difficulty" to mobility questions (max 5)	'94-'08
Large muscle limitations	Reports of "some difficulty" to muscle questions (max 4)	'94-'08
Health Insurance	1=Health insurance from some source, 0=Other	'94-'08
Years Retired	Current wave year – self reported retirement year	'94-'08
Thought about ret.	1=Given thought to retirement prior to retiring, 0=Other	1992
Forced retirement	1=Self-report of feeling "forced to retire", 0=Other	'94-'08
Total wealth (\$10k)	Total wealth from all sources in 2008 \$	'94-'08
Total income (\$10k)	Total income from all sources in 2008 \$	'94-'08
DB pension	1=Defined Benefit pension from current job, 0=Other	1992
DC pension	1=Defined Contribution pens. from current job, 0=Other	1992
DB/DC combo	1=Combination DB/DC pens. from current job, 0=Other	1992
Undetermined pension	1=Pens. of undetermined type from current job, 0=Other	1992
<i>JOB</i>		
White-collar high skill ^b	1=Longest occupation high-skill WC (base: other BC job)	1992
White-collar other ^b	1=Longest occupation other WC (base: other BC job)	1992
Blue-collar high skill ^b	1=Longest occupation high-skill BC (base: other BC job)	1992
Physical effort	1=Job requires physical effort "some of the time", 0=Other	1992
Lifting heavy loads	1=Job requires lift heavy loads "some of the time", 0=Other	1992
Stoop or crouch	1=Job requires stooping "some of the time", 0=Other	1992
Good eyesight	1=Job requires good eyesight "some of the time", 0=Other	1992
Intense concentration	1=Job requires concentration "some of the time", 0=Other	1992
Skill dealing with others	1=Job requires skill with others "some of the time", 0=Other	1992
Use computers	1=Job requires computer use "some of the time", 0=Other	1992
Analyze data	1=Job requires analyzing data "some of the time", 0=Other	1992
Keep pace with others	1=Job requires keeping pace "some of the time", 0=Other	1992
Repetitive	1=Job requires repetition "some of the time", 0=Other	1992
Learn new things	1=Job requires learn new things "some of the time", 0=Other	1992
Freedom to decide	1=Free to decide how to work "some of the time", 0=Other	1992
Friendly people	1=People are friendly "some of the time", 0=Other	1992
More difficult things	1="Agree" job now requires more difficult things, 0=Other	1992
Lot of stress	1="Agree" job involves lots of stress, 0=Other	1992

^a 1992 variables are constant or pre-retirement information while others are updated each survey.

^b Occupation classifications follow those used by Quinn (1996).

Table 2: Union & Non-union Sample Means

Variable Names	Union (N=3,841)		Non-Union (N=9,126)		t-stat For Means Equality ^a
	Mean	Std. Dev.	Mean	Std. Dev.	
Retirement Satisfaction	1.595	0.591	1.511	0.635	4.37***
<i>CONTROLS</i>					
Age	66.284	4.951	66.715	5.080	2.88***
Female	0.435	0.496	0.547	0.498	5.46***
Hispanic	0.072	0.259	0.059	0.236	1.30
White	0.756	0.429	0.860	0.347	6.35***
Couple	0.719	0.450	0.710	0.454	0.56
High school	0.393	0.489	0.398	0.489	0.21
Some college	0.160	0.367	0.213	0.410	3.44***
College degree	0.249	0.432	0.196	0.397	2.95***
Satisfied with life	0.934	0.248	0.933	0.251	0.18
Good health	0.747	0.435	0.739	0.439	0.63
Mobility limitations	0.878	1.278	0.984	1.356	2.44**
Large muscle limitations	1.172	1.256	1.229	1.298	1.31
Health Insurance	0.930	0.255	0.895	0.307	5.29***
Years Retired	5.965	4.050	6.054	4.048	1.04
Thought about ret.	0.714	0.452	0.647	0.478	3.63***
Forced retirement	0.195	0.396	0.272	0.445	4.79***
Total wealth (\$10k)	32.657	93.210	44.540	149.880	3.62***
Total income (\$10k)	5.773	6.252	6.466	63.719	1.01
DB pension	0.745	0.436	0.377	0.485	19.70***
DC pension	0.348	0.476	0.367	0.482	0.97
DB/DC combo	0.042	0.201	0.019	0.136	2.93***
Undetermined pension	0.012	0.110	0.009	0.094	0.73
<i>JOB</i>					
White-collar high skill	0.295	0.456	0.346	0.476	2.64***
White-collar other	0.186	0.389	0.285	0.451	5.90***
Blue-collar high skill	0.400	0.490	0.197	0.398	10.55***
Physical effort	0.774	0.418	0.647	0.478	7.04***
Lift	0.502	0.500	0.407	0.491	4.60***
Stoop or crouch	0.722	0.448	0.603	0.489	6.22***
Sight	0.983	0.130	0.973	0.161	1.57
Concentration	0.982	0.134	0.971	0.168	1.90*
Skill with others	0.964	0.186	0.970	0.171	0.76
Use computers	0.504	0.500	0.515	0.500	0.51
Analyze	0.607	0.488	0.660	0.474	2.66***
Keep pace	0.750	0.433	0.726	0.446	1.33
Repetitive	0.899	0.301	0.892	0.310	0.57
Learn new things	0.903	0.297	0.891	0.312	0.98
Freedom to decide	0.861	0.345	0.896	0.305	2.54**
Friendly people	0.982	0.135	0.983	0.129	0.28
More difficult things	0.591	0.492	0.544	0.498	2.32**
Lot of stress	0.654	0.476	0.653	0.476	0.05

^a The t tests for equality of union and non-union means corrects for clustering by individual.

***Statistically significant at the 1% level **at the 5% level *at the 10% level (two tailed tests).

Table 3: Ordered Probit Marginal Effects on Satisfaction Categories, Union and Non-union^a

Variable Names ^b	Union ^c			Non-Union ^c		
	P(not sat)	P(mod sat)	P(very sat)	P(not sat)	P(mod sat)	P(very sat)
<i>CONTROLS</i>						
Age	-0.008	-0.042	0.050	-0.007*	-0.027*	0.034*
Age squared	0.0001	0.0003	-0.0004	0.0001*	0.0002*	-0.0003*
Female	-0.005	-0.027	0.032	-0.005	-0.019	0.024
Hispanic	0.030**	0.111***	-0.141***	0.022***	0.069***	-0.091***
White	-0.014**	-0.065***	0.080***	-0.011**	-0.038**	0.049**
Couple	-0.008	-0.039*	0.047	-0.018***	-0.064***	0.082***
High school	-0.009*	-0.048*	0.058*	0.004	0.013	-0.017
Some college	-0.003	-0.015	0.018	0.0003	0.001	-0.001
College degree	-0.012*	-0.069	0.082	0.004	0.014	-0.018
Satisfied with life	-0.043***	-0.142***	0.185***	-0.031***	-0.089***	0.120***
Good health	-0.027***	-0.115***	0.143***	-0.049***	-0.142***	0.190***
Mobility limitations	0.004***	0.023***	-0.028***	0.008***	0.029***	-0.036***
Large muscle limits	0.006***	0.030***	-0.036***	0.005***	0.018***	-0.023***
Health Insurance	-0.008	-0.038	0.046	-0.002	-0.006	0.008
Years Retired	0.002	0.010	-0.011	0.002*	0.007*	-0.009*
Years Ret. squared	-0.0002**	-0.001**	0.001**	-0.0002***	-0.001***	0.001***
Thought about ret.	-0.007	-0.036*	0.043*	-0.004	-0.014	0.017
Forced retirement	0.063***	0.200***	-0.263***	0.078***	0.198***	-0.275***
Total wealth (\$10k)	0.0000	0.0000	0.0000	-0.0001*	-0.0003*	0.0003*
Total inc. (\$10k)	-0.0001	-0.001	0.001	0.0000**	0.0001**	-0.0001***
DB pension	-0.005	-0.024	0.029	-0.013***	-0.052***	0.065***
DC pension	-0.008*	-0.040*	0.048*	-0.010***	-0.041***	0.051***
DB/DC combo	0.003	0.017	-0.020	-0.015*	-0.068	0.083
Undet. pension	-0.007	-0.039	0.046	-0.025***	-0.143**	0.168**
<i>JOB</i>						
WC- high skill	-0.007	-0.038	0.046	0.007	0.024	-0.031
WC- other	-0.006	-0.033	0.039	0.009	0.031	-0.040
BC- high skill	-0.011*	-0.057*	0.068*	0.013**	0.045**	-0.058**
Physical effort	-0.003	-0.017	0.021	0.002	0.006	-0.008
Lift	0.007	0.037	-0.044	-0.005	-0.018	0.022
Stoop or crouch	-0.004	-0.019	0.023	0.010**	0.037**	-0.047**
Sight	0.015**	0.100	-0.115	-0.001	-0.004	0.005
Concentration	0.003	0.015	-0.018	0.006	0.023	-0.029
Skill with others	-0.033**	-0.117***	0.150***	0.004	0.017	-0.022
Use computers	-0.003	-0.013	0.016	-0.014***	-0.054***	0.068***
Analyze	-0.002	-0.011	0.013	0.001	0.004	-0.005
Keep pace	0.009**	0.052**	-0.061**	-0.005	-0.017	0.021
Repetitive	-0.011	-0.052	0.063	-0.002	-0.009	0.011
Learn new things	0.003	0.015	-0.017	-0.009	-0.031	0.040
Freedom to decide	-0.016**	-0.068**	0.084**	-0.006	-0.021	0.026
Friendly people	0.0002	0.001	-0.001	0.003	0.012	-0.015

Table 3: Ordered Probit Marginal Effects on Satisfaction Categories, Union & Non-union^a (cont.)

Variable Names ^b	Union ^c			Non-Union ^c		
	P(not sat)	P(mod sat)	P(very sat)	P(not sat)	P(mod sat)	P(very sat)
<i>JOB (CONT.)</i>						
More diff. things	0.003	0.015	-0.017	-0.004	-0.013	0.017
Lot of stress	0.0001	0.0004	-0.0004	0.011***	0.043***	-0.054***
Pseudo R ²		0.154			0.172	
N=		3,841			9,126	

^a The ordered probit coefficient results and standard errors are available upon request.

^b All specifications also include indicators for year of observation.

^c Marginal effects are on the probability of being in the “not at all”, “moderately”, or “very” satisfied with retirement categories. Marginal effects for dummy variables are for discrete change from 0 to 1.

***Statistically significant at the 1% level **at the 5% level *at the 10% level (two tailed tests). All standard errors correct for clustering by individuals in the pooled sample.

Table 4: Ordered Probit Marginal Effects on Highest Satisfaction Category, Various Models^a

Variable Names ^b	P(very sat) Union ^c			P(very sat) Non-Union ^c		
	Baseline	Random Effects	Sample Selection	Baseline	Random Effects	Sample Selection
<i>CONTROLS</i>						
Age	0.050	0.038	0.030	0.034*	0.036*	0.010
Age squared	-0.0004	-0.0003	-0.0003	-0.0003*	-0.0003*	-0.0001
Female	0.032	0.014	0.021	0.024	0.026	0.007
Hispanic	-0.141***	-0.117**	-0.129***	-0.091***	-0.107***	-0.079***
White	0.080***	0.086***	0.058**	0.049**	0.058***	0.026
Couple	0.047	0.029	0.033	0.082***	0.068***	0.065***
High school	0.058*	0.062**	0.060**	-0.017	-0.012	-0.016
Some college	0.018	0.049	0.039	-0.001	0.012	0.002
College degree	0.082	0.101**	0.068	-0.018	-0.003	0.004
Satisfied with life	0.185***	0.169***	0.160***	0.120***	0.141***	0.094***
Good health	0.143***	0.109***	0.147***	0.190***	0.133***	0.199***
Mobility limits.	-0.028***	-0.033***	-0.029***	-0.036***	-0.033***	-0.038***
Lg. muscle limits	-0.036***	-0.029***	-0.028***	-0.023***	-0.024***	-0.019***
Health Insurance	0.046	0.044	0.029	0.008	-0.013	-0.010
Years Retired	-0.011	-0.014**	-0.010	-0.009*	-0.011**	-0.007
Years Ret. squared	0.001**	0.001***	0.001**	0.001***	0.001***	0.001***
Thought about ret.	0.043*	0.036	0.030	0.017	0.015	0.012
Forced retirement	-0.263***	-0.259***	-0.221***	-0.275***	-0.278***	-0.230***
Tot. wealth (\$10k)	0.0000	0.0000	0.0000	0.0003*	0.0003***	0.0003*
Total inc. (\$10k)	0.001	-0.0002	0.002	-0.0001***	0.0000	-0.0001
DB pension	0.029	0.054*	0.016	0.065***	0.066***	0.016
DC pension	0.048*	0.046*	0.033	0.051***	0.059***	0.026*
DB/DC combo	-0.020	0.019	-0.036	0.083	0.069	0.044
Undet. pension	0.046	0.055	0.038	0.168**	0.168***	0.100
<i>JOB</i>						
WC- high skill	0.046	0.052	0.040	-0.031	-0.025	-0.028
WC- other	0.039	0.049	0.028	-0.040	-0.033	-0.027
BC- high skill	0.068*	0.060	0.053*	-0.058**	-0.074***	-0.044*
Physical effort	0.021	0.020	0.015	-0.008	-0.012	-0.002
Lift	-0.044	-0.061**	-0.024	0.022	0.024	0.022
Stoop or crouch	0.023	0.030	0.019	-0.047**	-0.043**	-0.034**
Sight	-0.115	-0.076	-0.071	0.005	-0.006	0.004
Concentration	-0.018	-0.009	-0.036	-0.029	-0.046	-0.005
Skill with others	0.150***	0.120*	0.161***	-0.022	-0.008	-0.012
Use computers	0.016	0.027	0.017	0.068***	0.058***	0.051***
Analyze	0.013	-0.002	0.011	-0.005	0.001	0.007
Keep pace	-0.061**	-0.060**	-0.061***	0.021	0.011	0.015
Repetitive	0.063	0.080**	0.056	0.011	0.009	0.011
Learn new things	-0.017	0.011	-0.025	0.040	0.031	0.032
Freedom to decide	0.084**	0.054	0.062*	0.026	0.020	0.033
Friendly people	-0.001	-0.018	0.005	-0.015	-0.023	-0.031

Table 4: Ordered Probit Marginal Effects on Highest Satisfaction Category, Various Models^a (cont.)

Variable Names ^b	P(very sat) Union ^c			P(very sat) Non-Union ^c		
	Baseline	Random Effects	Sample Selection	Baseline	Random Effects	Sample Selection
<i>JOB (CONT.)</i>						
More diff. things	-0.017	-0.009	-0.015	0.017	0.010	0.013
Lot of stress	-0.0004	-0.011	0.002	-0.054***	-0.053***	-0.047***
N=	3,841			9,126		

^a The ordered probit coefficient results and standard errors are available upon request.

^b All specifications also include indicators for year of observation.

^c Marginal effects are on the probability of being in the “very” satisfied with retirement category.

Marginal effects for dummy variables are for discrete change from 0 to 1.

***Statistically significant at the 1% level **at the 5% level *at the 10% level (two tailed tests).

Baseline and Sample Selection model standard errors correct for clustering by individuals in the pooled sample.

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