



Network for Studies on Pensions, Aging and Retirement

Netspar DISCUSSION PAPERS

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Factors Limiting the Opportunities for Partial Retirement

DP 10/2013-036

Factors limiting the opportunities for partial retirement[☆]

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Abstract

We differentiate between various types of restrictions that might limit the access to partial retirement. We also consider different types of restrictions that might make partial retirement less attractive for employees. Respondents of an online survey are asked to indicate the extent these restrictions apply in their own situation. We analyze the associations between these restrictions and worker characteristics, job characteristics and job satisfaction of the respondents. Principal results indicate that higher income earners, those working in larger companies, and blue-collar workers have limited opportunities for partial retirement. Older workers are much more likely but those who value work for itself rather than for the compensation are much less likely to be discouraged by the labor market restrictions that might make partial retirement less attractive.

Keywords: Older workers, gradual retirement, field survey

JEL classification: D04, J14, J22, J26

1. Introduction

Partial retirement means that a worker reduces his work hours in a gradual manner over several years before he moves into full retirement.¹ It has economic and non-economic advantages over the alternative full retirement scenario where workers leave their full-time job in one abrupt step. For example, an employee can combine part-time work income with partial pension income during early retirement years when pensions are substantially reduced for early claiming, and smooth his consumption path until the official retirement age when full benefits are payable. Or, partial retirement can enable older workers in poor health to reduce their working hours but remain in the labor force (Laczko, 1988; Pagán, 2009). For the employer, partial retirement provides an opportunity to retain senior workers whose skills and experience are difficult to replace (Laczko, 1988; Olmsted and Smith, 1994; Latulippe and Turner, 2000;

Ghent et al., 2001; Munzenmaier and Paciero, 2002; Collison, 2003). At a more macro level, it is considered as a potential policy tool to keep people employed beyond the early or normal retirement ages so that pension claims can be decreased to ameliorate the financial strain on the pension system of an aging country (Laczko, 1988; Latulippe and Turner, 2000; Wadensjö, 2006). Most of the literature on this topic focuses on the US where partial retirement and bridge jobs are more common than in other OECD countries (Kantarcı and van Soest, 2008) and we also focus on the US, both in the empirical work and the review of the literature. Partial retirement in an international context is discussed in, for example, Reday-Mulvey (2000) and Latulippe and Turner (2000).

There is substantial interest in partial retirement among employees. In a telephone survey in 1989, employees aged between 50 and 64 are asked if they would prefer to work full-time or part-time if they had a choice. Among 1,645 employees working full-time, 24.7 percent said they would prefer part-time work (Louis Harris and Associates, Inc., 1997). In an Internet panel survey in 2005, 38 percent of the workers ages 50 and older stated interest in participating in partial retirement (Brown, 2005). In the first three waves (1992-1996) of the Health and Retirement Study (HRS), Graig and Paganelli (2000) find that three out of four older workers prefer to reduce their work hours gradually rather than retire abruptly. Siegenthaler and Brenner (2000) report similar figures from other surveys conducted in the United States.

However, few people seem to have enough opportunities for reducing number of work hours in a gradual manner before they move into full retirement. In the Panel Study of Income Dynamics (PSID), about 40 percent of the respondents aged 55 to 65 answered 'no' to the question "Could you have worked less if you had wanted to?" (Gustman and Steinmeier, 1983). Quinn

[☆]This study is supported by the National Institute on Aging (NIA) under Grant Number R01AG030824 and by the Netherlands Organization for Scientific Research (NWO) under Grant Number 400-04-088. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of NIA and NWO.

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¹Some studies make a distinction between "partial" and "phased" retirement (Gustman and Steinmeier, 1984a). Partial retirement refers to reducing work hours outside the career employer while phased retirement refers to reducing hours within the career employer. On the other hand, "gradual" retirement is almost always used as a generic term. In this paper, we do not make such a distinction and use partial retirement as a generic term with no reference to employer change. The reason for our choice of the term "partial" is the following. In our survey, which we exploit here, respondents are provided with descriptions of "full" and "partial" retirement schemes. In these descriptions, we use the term "partial" retirement with the rationale that it is semantically more comparable to the term "full" retirement than are the terms "phased" or "gradual" retirement to make it easier for the respondents to understand the types of retirement schemes described to them.

and Burkhauser (1994) report that, in a survey conducted by The Commonwealth Fund in 1989, among those working full-time, 21 percent of the men aged 55 to 64 preferred part-time work but only 6 percent had it, and 43 percent of the women aged 50 to 59 wanted to work part time but only 19 percent were doing so. In the first three waves of the HRS, about 80 percent of the employees aged 55 to 64 report that they cannot reduce the number of paid hours below 40 hours per week (Charles and Decicca, 2007). Studies based on actual retirement behavior in the HRS show that only about 20 percent of the workers participate in some form of partial retirement (Gustman and Steinmeier, 2000b; Scott, 2004; Cahill et al., 2006). Hutchens (2010) reports lower fractions from earlier studies in the 1980s. These figures are consistent with the figures from employer surveys. Gustman and Steinmeier (1983) present results from an employer survey conducted in 1979 and show that only about 10 percent of the surveyed employers allow their employees to reduce their work time as they approach retirement. A survey of 406 companies conducted in 1991 shows that only 35 percent offer opportunities to transfer to jobs with reduced pay and responsibilities, or only 21 percent offer a program of “phased retirement” to workers over 55 (Louis Harris and Associates, Inc., 1993). Hutchens (2010) conducted a telephone survey with 950 establishments in 2001-2002. Among them, 67 percent said that partial retirement would be feasible for a generic white-collar worker, and another 15 percent said that partial retirement was possible in some cases, but formal partial retirement programs were rare.

The large gap between the stated and revealed preferences for work hours reduction in old age implies that certain labor market restrictions are keeping older employees from reducing their work hours before they move into full retirement. It seems important to investigate these restrictions for at least two reasons. From a theoretical point of view, any retirement model that treats number work hours as continuous needs to account for the constraints on work hours reduction through full retirement. This is emphasized by Gustman and Steinmeier (1983) who argue that in studies of retirement behavior, ignoring minimum hours constraints may lead to biased estimates of the parameters of the utility function. From a policy point of view, two studies show that adverse effects of minimum hours constraints for the economy could be large. Gustman and Steinmeier (2004) estimate that if minimum hours constraints were abolished, for those 65 and above, the increase in part-time workers would be much greater than twice the decline in full-time workers, suggesting a 3 to 5 percentage point increase in full-time work equivalents. Charles and Decicca (2007) find that workers aged 55 to 64 who could not reduce the number of work hours in their regular work schedule are much more likely to be retired by some future date than their peers who could reduce work hours.

Studies identified different types of restrictions on hours reduction in older age. Many of them highlight the importance of restrictions from the employer. For example, fixed employment costs discourage employers to allow employees to work reduced hours (Quinn, 1981; Hurd, 1996). Team production requires that employees work together during the same

hours which discourages flexible work schedules for part-time jobs (Jondrow et al., 1983b; Hurd, 1996; Hutchens and Grace-Martin, 2006). Age discrimination against older workers may limit their opportunities for part-time work (Quinn, 1981; Johnson, 2011). In the United States, social security regulation requires that retirement benefits are reduced for people who are 65 years or older and have earnings above an exempt amount, which discourages individuals to work reduced hours and draw pension benefits at the same time (Quinn, 1981; Hurd, 1996). Hutchens (2010) finds that employers are selective when offering opportunities for partial retirement in the sense that if there are regular part-time workers in a worker’s job or if a worker requires little supervision, partial retirement is more feasible.

To learn about the factors that restrict the opportunities of employees for partial retirement, Hutchens (2010) conducted, to our knowledge, the first thorough survey with employers. He asked employers if they would allow partial retirement, and conditional on a positive response, in the follow-up question he asked if specific full-time workers of age 55 or over would be allowed to shift into a part-time position if they wanted to. To investigate the factors associated with access to partial retirement, he asked questions on certain worker and job characteristics that are not usually obtained through household or individual level surveys. For example, he asked about the job characteristics (e.g., existence of part-time jobs within the individual’s job title) or the work performance (e.g., whether the individual requires little supervision) of a select individual. In the current study, we conduct a survey with current and former employees and ask if their employer would have allowed them to participate in partial retirement if they wanted to. In this respect, our study complements employer views on permitting partial retirement, as studied by Hutchens, with employee perceptions on access to partial retirement. In addition, we review the literature on the reasons why access to partial retirement is hampered, select those factors that are most cited, and ask survey respondents to what extent these reasons indeed would limit their access to partial retirement. Finally, we also ask respondents to evaluate a set of reasons why they could be discouraged to participate in partial retirement.

We collect additional information on worker characteristics, job characteristics, and job satisfaction and analyze their relations to the restrictions on partial retirement. Principal results indicate that income, company size and occupation type are important correlates of access to partial retirement. Age and job satisfaction are important correlates of the reasons explaining why partial retirement is less attractive for employees.

This paper proceeds as follows. Section 2 introduces the survey data. Sections 3 and 4 describe the survey design and questions. Section 5 analyzes the data using logit models. Section 6 discusses policy implications.

2. Survey on the factors restricting partial retirement

Our aim is to learn about the perceptions of employees for their opportunities for partial retirement. To this purpose we interviewed the respondents of the American Life Panel in November 2010. The American Life Panel is an Internet survey of in-

dividuals executed by the RAND Corporation. Respondents are 18 years or older and selected to be representative of the total population. However, the sample is relatively highly educated due to the higher nonresponse rate of less educated individuals. Respondents either use their own computer to log on to the Internet or they are provided a small laptop or a Web TV, which allows them to access the Internet so that the sample also covers households without Internet access. Respondents are interviewed twice a month and are paid an incentive of about \$20 per 30 minutes of interviewing. We restricted our sample to the respondents of age 40 and older because retirement planning would be less relevant to younger respondents. This generated 2028 responses. The questions were asked to individuals who were working for an employer or self-employed, but also to former employees who were retired, homemakers, unemployed, disabled, or temporarily laid off at the time of the survey. For example, respondents who were retired were asked about their monthly work income and their job satisfaction in their last job. The wordings of the questions were adjusted with respect to the labor market status of the respondent.

The survey consisted of three parts. In the first part, we collected information on worker characteristics, job characteristics, and job satisfaction. In the second part, we presented hypothetical full and partial retirement scenarios with associated work and income trajectories over time and asked respondents to choose their favorite retirement scenario. In the third part, we presented respondents with a set of potential reasons that could limit their access to partial retirement or make partial retirement less attractive for them. Since survey respondents were made familiar with various partial retirement plans in the second part of the survey, we expect that respondents evaluated the reasons that restrict their opportunities for partial retirement with a clear understanding of what partial retirement is all about. The exact survey questions and the documents showing the design of the questions can be inspected at <https://sites.google.com/site/tungakantarci/home/research>.

In the next section we present the survey questions on the reasons limiting access to partial retirement, the factors that make partial retirement less attractive for employees, and the questions on other variables of interest. We also explain the theoretical and empirical rationale behind these questions.

3. Employer-side restrictions on partial retirement

We asked three questions to assess the opportunities for partial retirement. First, we asked if employees have access to partial retirement with the following question:

Does your employer offer you the possibility of partial retirement? (Partial retirement means that you retire for part of your work week but keep working the other part, for example, from age 65 until age 68.)

Possible answers are “yes”, “no”, and “I don’t know”. This question compares to that analyzed by Hutchens (2010). In a telephone survey of 950 establishments in the United States, Hutchens asked employers if they allow their employees of age 55 or older to shift to a part-time work schedule. Conditional

on a positive response, in the follow up question he asked if specific full-time workers have access to partial retirement, to assess whether partial retirement is used selectively for workers in specific types of jobs or for particularly productive workers. Hutchens conducted his survey with employers and therefore directly investigates if a particular employee would be permitted to partially retire. As we conduct our survey with employees, we investigate the perception of employees on whether their employer would permit partial retirement. We believe that comparison of the results based on employee responses in this paper with those based on employer responses in Hutchens (2010) is particularly valuable in showing how perceptions of employees for their opportunities for partial retirement differ from what employers state about the possibility of partial retirement in their establishments.

The preceding question investigates, from the perspective of the employee, whether a particular employer allows partial retirement. However, if the employer does not allow partial retirement, it is still not clear what is keeping the employer from allowing partial retirement. The literature on partial retirement mentions various reasons why employees’ access to partial retirement can be restricted. We selected the most salient ones cited in the literature and asked survey respondents to what extent these factors apply in their own situation. Furthermore, while some factors might limit access to partial retirement, other factors might make partial retirement less attractive. Therefore, we presented the survey respondents with a second set of reasons that might make partial retirement less attractive and asked to what extent they agree with each of these. The question on the factors that limit the applicability and attractiveness of partial retirement started with the following introductory text:

Partial retirement means that you retire for part of your work week but keep working the other part, for example, from age 65 until age 68. Below we present several reasons that might limit the applicability or attractiveness of participating in partial retirement in your case. Please indicate how much you agree with each reason.

We then presented the following reasons that might limit the applicability of partial retirement:

My employer would find the cost of a part-time worker, relative to a full-time worker, too high to offer partial retirement.

My employer does not offer part-time jobs.

My employer would favor younger people over older people in pay, promotion, task assignments, and therefore would not offer the opportunity to partially retire.

The type of work I do – in terms of its time schedule, tasks, etc. – is not suitable for part-time work.

My pension fund would not allow drawing pension benefits during partial retirement or would reduce final benefits as a result of partial retirement.

Respondents indicated how much they agree with each reason on a seven-point scale from 1 (Strongly disagree) to 7 (Strongly agree). Note that these questions were asked regardless of the answer given to the question of whether the employer allows partial retirement.

The first factor states that, for an employer, the cost of a part-time worker can be high relative to the number of part-time hours that worker is employed. A commonly cited reason is the quasi-fixed employment costs, such as hiring, training, or benefit costs, which do not change with the number of hours worked and hence are the same for part-time and full-time workers (Quinn, 1981; Jondrow et al., 1983b; Montgomery, 1988; Hurd, 1996; Siegenthaler and Brenner, 2000). For example, supervisory costs can be high for part-time workers due to the scheduling complexities of these workers because they are not continuously available or work at irregular hours (Hutchens and Grace-Martin, 2006).

The second reason states that the employer does not offer part-time jobs. This can be due to a general company policy on work hours flexibility. Various reasons may contribute to such a policy. One reason can be the earnings test. The test requires that retirement benefits are reduced for an employee who earns more than some exempt amount. This may induce the employee to work fewer hours so as not to lose benefits. However, employers who would want employees with precious skills to work more than the exempt amount would be frustrated and decide not to offer part-time work (Hurd, 1996; Hutchens and Grace-Martin, 2004). Another reason can be the age discrimination act. The act prohibits discrimination on the basis of age in hiring, promotion, discharge, compensation, or terms, conditions or privileges of employment. This may discourage employers to promote reduced work hours among elderly workers as it might signal age discrimination (Hurd, 1996; Hutchens, 2010; Brown and Schieber, 2003; Johnson, 2011). In fact, a poll showed that 13 percent of the businesses opposed partial retirement for fear of age discrimination lawsuits (Carlson, 2005).

However, employers may indeed favor younger workers over older workers, due to age discrimination or for some other reason, and not offer partial retirement, or offer it only to older workers with precious skills (Johnson, 2011). Therefore, we consider age as a third factor limiting access to partial retirement.

The fourth reason investigates if the technology of work is suitable for part-time work. For example, in a job where members of a team need to interact in the same place at the same hours, part-time employment will be difficult (Jondrow et al., 1983b; Hurd, 1996; Latulippe and Turner, 2000; Hutchens, 2010). Or, in a job where expensive capital needs to be operated on a full-time basis, part-time employment will not be possible (Even and Macpherson, 2004).

The fifth factor that limits access to partial retirement relates to pension benefit claiming. The pension fund may not allow drawing pension rights while working part-time or may reduce the rights as a result of partial retirement. This may happen because active employees covered by a defined benefit pension scheme are not allowed to draw benefits before they reach their normal retirement age according to the Internal Rev-

enue Code (Fields and Hutchens, 2002; Even and Macpherson, 2004; Penner et al., 2002; Hutchens and Grace-Martin, 2006). Moreover, part-time employees may receive reduced benefits if their benefits are based on formulas that place a higher weight on the earnings during the final years of employment (Chen and Scott, 2003; Hutchens and Grace-Martin, 2006).

The reasons explaining why the attractiveness of partial retirement may be limited are presented as follows:

If my hourly wage would be lower during partial retirement than before, it would discourage me from partially retiring.

If I would need to change my employer to partially retire, it would discourage me from partially retiring.

During partial retirement if I would need to do different types of work than I did before, it would discourage me from partially retiring.

If I have a long-term health problem by the time I am about to retire, I would prefer full retirement to partial retirement (Assume that this health problem is not severe enough to limit work activities.)

I would wish to spend time with family and friends, or pursue leisure activities by the time I would normally fully retire and therefore I would prefer full retirement to partial retirement.

Again, we asked respondents to indicate their level of agreement with each statement on a seven-point scale from 1 (Strongly disagree) to 7 (Strongly agree). Empirical evidence shows that partial retirement often involves a change in employer and a reduction in the wage rate (Honig and Hanoch, 1985; Gustman and Steinmeier, 1983, 1984b, 1986b; Siegenthaler and Brenner, 2000). The employee might be forced to seek part-time work with a different employer if his current employer finds the cost of a part-time employee higher than that of a full-time employee (Hutchens, 2010). The employee might need to accept a reduced hourly wage if the shift to part-time work involves a job change and hence a loss in job tenure (Gordon and Blinder, 1980; Quinn and Burkhauser, 1993; Johnson and Neumark, 1996). Or, Jondrow et al. (1983b) hypothesizes that for employers part-time work is less productive and more costly per hour than full-time work which leads to a lower wage per hour. The employee might also be forced to carry out different types of work in partial retirement since partial retirement almost always involves a change in the sector of employment (Ruhm, 1990). In fact, when asked if participating in partial retirement would require that they do different types of work for the same employer, 48% of the respondents 50 years and older indicated that this would make partial retirement less attractive to them (Brown, 2005). These three, i.e. employer change, wage reduction, and change in the type of work, may make partial retirement less attractive, especially for older employees who may in general be more reluctant to bear the cost of such changes. A non-economic reason why elderly employees

stop working all together rather than reduce hours is deteriorating health. In fact, it is shown that poor health induces many older workers to withdraw from the labor force (Berkovec and Stern, 1991; Blau, 1994; Bound et al., 1999). A last and more of a preference-driven factor is that for those who wish to spend time with family and friends or pursue leisure activities, partial retirement will be less attractive than full retirement. An individual might value retirement more if, for example, his or her spouse is also retired (Gustman and Steinmeier, 2000a).

3.1. Summary statistics

Table 1 presents descriptive statistics for whether the employer offers the possibility of partial retirement. According to the table, 305 (18.1 percent) of the 1684 respondents indicated that partial retirement would be possible, and another 981 (58.2 percent) of the respondents said that partial retirement would not be possible. A sizable number of respondents, 398 (23.6 percent), said they don't know. These figures suggest that the majority of the respondents do not have access to partial retirement. It is important to note that the question is not explicit on whether the employer offers a formal partial retirement program or not. A respondent can have access to partial retirement through an informal agreement or through a formal partial retirement program. These figures are consistent with other studies based on employee surveys (Gustman and Steinmeier, 1983; Charles and Decicca, 2007). However, they are not consistent with Hutchens (2010). Hutchens asked 950 employers if partial retirement would be feasible for a generic white-collar worker. 67 percent said "yes" and another 15 percent said "in some cases". This suggests a mismatch between employee and employer perceptions on access to partial retirement, but it should be noted his sample over represents firms with more than 100 employees and is based on only white-collar workers.

The table allows comparisons across respondents who choose among three answer categories. The numbers in columns 1, 3 and 5 are the average values of the respondents' characteristics, while those in columns 2, 4 and 6 are the corresponding standard errors of the means. The standard deviation for a certain characteristic of the respondent in the sample is, of course, much larger. With respect to the worker characteristics, the respondents who answered 'I don't know' are much younger than those who answered 'yes' or 'no'. For example, the average age of the respondents who said 'I don't know' is 52.25 while the corresponding number for the respondents who said 'no' is 58.59. This suggests that younger respondents are less aware of their opportunities for partial retirement with their employer, perhaps because for them retirement is still further away in time and they have not yet given much thought to it. Female respondents and those who have a low income also appear to have given less thought to their retirement plan. These results are consistent with those of Brown (2005) who finds that women and those with a low household income are more likely to answer 'no' when they are described a partial retirement plan and asked if they have ever heard of 'partial retirement'. On average, the respondents who think of having access to partial retirement have more education, are in better health, and are active in the labor market. With respect to job characteristics, those

who think of having access to partial retirement are more often working part-time, self-employed, working in smaller companies, working in white-collar occupations, and working in jobs that are physically less demanding. Perhaps the most notable result in the table is that, on average, higher levels of job satisfaction are associated with an affirmative answer of having access to partial retirement. This is true for each of the nine domains of job satisfaction.

Table 2 presents descriptive statistics for the reasons why access to or attractiveness of partial retirement is limited. The table shows the means and the standard deviations of the ratings given to each potential factor on a seven-point scale from 1 (Strongly disagree) to 7 (Strongly agree). Among the factors limiting the applicability of partial retirement, employer preference for younger workers has the lowest mean rating with a relatively small standard deviation. On the other hand, restriction on pension benefit claiming has the highest mean rating with the lowest standard deviation. The figures with respect to the reasons limiting the attractiveness of partial retirement suggest that the majority of the respondents would prefer full retirement to partial retirement if they have a long-term health problem by the time they are about to retire, although it is mentioned that this health problem would not be interfering with their ability to work part-time. A change in the type of work appears to be the least important reason limiting the attractiveness of partial retirement.

4. Restrictions on partial retirement

4.1. Worker characteristics

We collected information on a variety of worker characteristics which include age, gender, education, health status, income, employment status, marital status, and household size. Education is based on the question "What is the highest level of school you have completed or the highest degree you have received?". Answer categories included 16 different levels of educational degrees. We classified individuals into three educational groups: low, medium, high. Three dummy variables are created to indicate the three groups.² Health status is based on the question "In the last 6 months, to what extent have you been limited because of a health problem in activities that people usually do?". Answer categories included "Severely limited", "Limited but not severely", and "Not limited". Since the majority of the respondents are not limited because of a health problem, we created a dummy variable that takes a value of 1 if the respondent is not limited, and a value of 0 otherwise. Income is based on the question "Below we present income categories. Can you indicate which category contains your last monthly income from work, after taxes and other deductions?"

²Those with a high school degree or lower are classified as low educated; those with some college but no degree and with an associate degree in college (in an occupational/vocational or academic program) are classified as medium educated; and those with a bachelor's degree or higher are classified as high educated.

If you don't know exactly please give your best estimate." Respondents are presented with 21 income categories with increments of \$500. We classified individuals into three income groups: low, medium, high. Three dummy variables are created to indicate the three groups.³ Employment status is based on the question "What is your current employment situation?". Answer categories included "Working for an employer", "Self-employed", "Retired", "Homemaker", "Unemployed and looking for work", "Disabled", "Student or trainee", "Temporarily laid off, on sick or other leave", and "Other". We classified individuals into three employment categories: those working for an employer or self-employed, retired, and other. We created a dummy variable for each category. Marital status is based on the question "Could you tell us what your current living situation is?". Answer categories included "married or living with a partner", "separated", "divorced", "widowed", and "never married". This information is summarized in a dummy variable so that a value of 1 indicates married or living with a partner, and a value of 0 indicates otherwise. Household size is based on the question "How many other people live with you?" where respondents indicate a number from 0 to 10. We created two dummy variables to indicate those living alone and those living with one or more people.

A theoretical rationale to explain how worker characteristics could affect the access to partial retirement is given by Hutchens (2010). The argument is that if a worker asks to move to a part-time job when he reaches the full retirement age of his employer, the employer will permit the worker to move to this job if the worker's expected surplus (the worker's expected output minus the market wage) in that job is positive. However, if the worker's expected surplus, or the worker's productive characteristics that are correlated with it, is observable by other potential employers, the incumbent employer will need to pay a higher wage and hence not offer part-time job. This leads to the hypothesis that individual productive characteristics that are easily observed by other potential employers, such as age, gender, or education should have little or no effect on the probability of partial retirement. On the other hand, certain job performance indicators that are not easily observed by potential employers should have a significant effect on the probability of partial retirement. Hutchens provides empirical evidence that education and gender indeed have no effect on the odds of having access to partial retirement. The exception, however, is age. Older workers appear to have a higher chance of getting access to partial retirement. One given reason is that an older worker can more credibly threaten to quit. For example, the worker may be eligible for social security or pension benefits and if not permitted to access partial retirement, he or she can retire fully or partially with a different employer. A second reason is that as workers approach their retirement age, the employer may want to retain higher performing workers and offer them partial retirement.

³Those earning less than \$2500 are classified as low income earner; those earning \$2500 or more but less than \$3500 are classified as medium income earner; and those earning \$3500 or more are classified as high income earner. Medium income earner is defined with respect to the net average income in the U.S. which is roughly \$3000.

There might still be other ways that worker characteristics could affect the opportunities for partial retirement. With respect to age, employers may be reluctant to offer part-time work to older workers due to fears of low productivity, absenteeism, or high accident rates. Many studies provide evidence that women are involved in part-time jobs more often than men in the United States (Reimers and Honig, 1996; Hirsch et al., 2000; Latulippe and Turner, 2000) or in Europe (Naegele, 1999; Morris and Mallier, 2003; Wadensjö, 2006; Pagán, 2009). This might reflect a preference-driven behavior if women allocate part of their time to other commitments outside the labor market, but it might also reflect that the types of jobs that women do are more compatible with part-time work. In permitting elderly workers to move to a part-time job after their normal retirement age, employers may be selective for educated workers with essential skills. Besides, education, by itself, may increase the chance of working part-time because more educated workers may be more competent to handle different types of work increasing their chances for varied retirement options (Kim and DeVaney, 2005). Or, education may indirectly increase the chance of working part-time through its interaction with occupation type; educated workers usually hold white-collar occupations which are more compatible with part-time work or flexible hours than blue-collar occupations. Those with a health problem may not be allowed to retire part time but be forced to retire all together. With respect to income, Jondrow et al. (1983a) analyze hourly earnings across industries and find that incidence of part-time work is higher in industries with lower hourly earnings. They interpret this result as evidence that part-time work is less productive and more costly per hour than full-time work and therefore is more prevalent in industries with lower hourly earnings.

It is less clear how worker characteristics might interact with the factors that make partial retirement less attractive for employees. One might expect that older workers are more easily discouraged by the employer-side restrictions on partial retirement since it becomes increasingly difficult to derive utility from work as workers age. Hence, older workers would be more reluctant, e.g., to accept a lower hourly wage or to change their type work in partial retirement. Or, those with a health problem might get discouraged by the employer-side restrictions more easily. For example, it might be difficult for a disabled worker to change his type of work or employer for partial retirement. Those who have a working spouse might consent to a lower hourly wage in partial retirement if the income of the spouse is high enough to compensate the reduced wage of the partial retiree. These and other arguments can be developed further but since the literature did not identify clear causal relationships, we will not elaborate on them further. In this respect, worker characteristics might be expected to prove insignificant.

4.2. Job characteristics

We collected information on several domains of job characteristics. Respondents are asked to indicate how often the following characteristics about their job are true: lots of physical effort such as lifting heavy loads, stooping, kneeling, or crouching; intense concentration or attention; frequent or close com-

munication with other members of a group; keeping up with the pace of others; doing the same things over and over; and learning new things. Respondents are presented with the following frequency options: (almost) none of the time, some of the time, most of the time, or (almost) all of the time. Responses are coded in four categories from 1, to indicate (almost) none of the time, to 4, to indicate (almost) all of the time.

Information on other job characteristics is collected as follows. We asked employees “How many hours a week do you usually work at your current job?”. Those who are retired, homemaker, unemployed, disabled, or temporarily laid off are asked “How many hours a week did you usually work at your last job?”. We created a dummy variable that takes a value of 1 if the respondent is working or worked less than 35 hours a week to indicate part-time employment, and a value of 0 to indicate full-time employment. To determine if respondents work or worked for an employer or self-employed, we asked all respondents if they are working or worked for an employer or self-employed. We created a dummy variable that takes a value of 1 if the worker is currently working or worked self-employed, and a value of 0 if he or she is currently working or worked for an employer. The size of the company that the respondent is working for is determined by asking “About how many people are employed at the place where you usually work?”. Answer categories included 1-5, 6-15, 16-24, 25-199, 200-499, and 500 or more. We classified the first two categories as a small company, the second and third categories as a medium-sized company, and the last two categories as a large company. Three dummy variables are created to indicate the three groups of company size. Finally, to determine the occupation type, respondents are presented with 22 different types of occupation and are asked to choose the one that best describes the type of work they do or did. We then classified the occupations as blue-collar and white-collar and created a dummy variable where blue-collar occupations are represented by a value of 1, and white-collar occupations by a value of 0.⁴

There are various ways that job characteristics can influence the opportunities for part-time work. For example, jobs that require frequent coordination and communication between team members would be less compatible with part-time work since such jobs require that team members are present at the work place on a continuous basis. On the other hand, repetitive jobs, e.g., would require little coordination between employees and can be handled by a full-time worker as well as by two

⁴Blue-collar occupations include the following: Building and grounds cleaning and maintenance occupations; farming, fishing, and forestry occupations; construction and extraction occupations; installation, maintenance, and repair occupations; production occupations; transportation and material moving occupations. White-collar occupations include the following: Management occupations; business and financial operations occupations; computer and mathematical occupations; architecture and engineering occupations; life, physical, and social science occupations; community and social services occupations; legal occupations; education, training, and library occupations; arts, design, entertainment, sports, and media occupations; health care practitioner and technical occupations; health care support occupations; protective service occupations; food preparation and serving related occupations; personal care and service occupations; sales and related occupations; office and administrative support occupations.

part-time workers (Hutchens, 2010). Jobs that involve competition, intense concentration, or new learning would require commitment and hard work on a full-time basis and therefore be less compatible with part-time work. In jobs that involve new learning, employers may fear that they will be unable to recover the training costs before older workers retire and hence not offer part-time work (Johnson, 2011). In fact, Montgomery (1988) provides evidence that positions that require high training costs are less likely to be filled by part-time workers. With respect to part-time status, Hutchens (2010) asked employers whether there are regular part-time workers in a selected full-time worker’s job title to determine if a job is technologically compatible with part-time work. He finds that presence of part-time workers in the worker’s job title is associated with greater opportunities for partial retirement. Self-employed individuals have more control over their working hours or number of work hours and therefore have better opportunities for partial retirement (Quinn, 1981; Honig and Hanoch, 1985; Quinn and Burkhauser, 1993; Hurd, 1996; Kim and DeVaney, 2005; Parker et al., 2005). Montgomery (1988) provides evidence from a survey with more than 5000 employers that the proportion of part-time workers decline with the size of the establishment. Jondrow et al. (1983a,b) also show that number of work hours and compensation raise with establishment size in the trade, services, and manufacturing industries. Possible reasons include the following. First, larger companies are more likely to have formal rules and procedures and therefore be less flexible in accommodating preferences for reducing work hours (Hutchens and Papps, 2005; Siegenthaler and Brenner, 2000). Second, larger companies may experience higher administrative costs per worker, i.e. a higher quasi-fixed cost, and therefore have lower proportions of part-time workers (Montgomery, 1988). Third, larger companies may involve more team-work and raise the number of work hours above part-time (Jondrow et al., 1983a,b). Blue-collar jobs usually involve physically demanding tasks and it becomes increasingly difficult to meet the demands of such jobs as a worker ages. In fact, workers in blue-collar jobs prefer to retire earlier than those in white-collar jobs (Gustman and Steinmeier, 1986a; Hayward et al., 1989). Hence, companies with many jobs that are physically demanding are probably less likely to offer broad partial retirement arrangements (Hill, 2010).

It is difficult to predict how job characteristics would influence the factors that might make partial retirement less attractive but several mechanisms could be hypothesized. For example, those who work part-time could be expected to get discouraged by the given restrictions less easily perhaps because they are already subject to these restrictions. Or, in jobs that are mentally or physically demanding, individuals could be particularly sensitive to a reduction in wage rate and decide not to participate in partial retirement.

4.3. Job satisfaction

We collected information on several domains of job satisfaction by asking survey respondents to indicate how satisfied they are with the following aspects of their current job: total pay, actual work itself (if the work is attractive), freedom

to decide how you do your work, work schedule, promotion prospects, help and supervision from supervisor or manager, relationship with your supervisor and coworkers, and job security (for example, risk of lay off). Respondents are presented with the following 5 satisfaction levels: very dissatisfied, dissatisfied, neutral, satisfied, and very satisfied. We created a variable where we assigned a value of 1 to the first satisfaction level, a value of 2 to the second satisfaction level, and so on, up to a maximum value of 5 for the highest level of satisfaction. As an additional measure of satisfaction with working life in general, we asked respondents to state their level of agreement with the statement "I would keep working even if the money were not needed". Respondents are asked to indicate their level of agreement on a seven point scale from 1 (Strongly disagree) to 7 (Strongly agree).

High job satisfaction could lead to high job performance resulting in increased opportunities for partial retirement. This would indicate that employers are providing opportunities for partial retirement only to those who are better performing in their jobs. This is consistent with Hutchens (2010) who finds that partial retirement is used selectively for workers who are older and productive in the sense that they require little supervision and make an extra effort to get the job done. Henkens et al. (2009) also provide evidence that managers favor delayed retirement only for those workers who are "still keen to work". However, the relationship between job satisfaction and opportunities for partial retirement does not need to be causal. Better opportunities for flexible work arrangements in old age could increase the satisfaction that older workers derive from various aspects of their job (Chen and Scott, 2006).

Section 3 presented potential reasons that might make partial retirement less attractive for employees. Not all employees might get discouraged by these reasons to the same degree. Employees with higher job satisfaction might be willing to bear the costs of participating in partial retirement more than employees with lower job satisfaction.

4.4. Summary statistics

Table 3 presents summary statistics on worker characteristics, job characteristics, and job satisfaction. The majority of the sample is older than age 50, not limited because of a health problem in activities that people usually do, working in white-collar jobs, earning less than roughly the average net income of \$3000, and working full-time. The sample over-represents those with higher education. We address this problem by controlling for the education level in our regression analyses. 13.9 percent of the sample is or has been self-employed and would probably face no minimum hours constraints. Compared to the fraction of self-employed in the sample, a much larger fraction is working in small companies. This suggests that those who are working in small companies are not necessarily self-employed and hence free to change their number of work hours. In line with the fact that majority of the sample is working in white-collar jobs, respondents give a low mean rating when asked if their job requires lots of physical effort such as lifting heavy loads, stooping, kneeling, or crouching. They give high mean ratings when asked if their job requires intense concentration or

attention, or frequent or close communication with other members of a group. Respondents seem rather satisfied with their job since the mean ratings are above the middle value of the five-point rating scale for many aspects of job satisfaction.

5. Multivariate models

This section uses multivariate models to analyze the probability that an individual has access to partial retirement and the probability that a given reason why access to or attractiveness of partial retirement is limited. All models use the same control variables.

5.1. Access to partial retirement

Table 4 presents the estimates of the probability that the employer offers the possibility of partial retirement. Possible answers to the associated question are 'yes', 'no', and 'I don't know'. We treat the last category as missing and estimate a binomial logit model to explain whether a respondent could access to partial retirement if he wanted to.

With respect to worker characteristics, there are two findings. First, compared to low income earners, medium income earners have a worse chance to access partial retirement. The effect of high income group is, however, not significant. In terms of the theoretical ideas in Section 4.1, a possible explanation is that part-time work is less productive and more costly per hour than full-time work and therefore is associated with lower hourly earnings. Of course, the level of monthly income does not need to reflect the level of hourly earnings although we control for part-time and full-time work hours. We address other potential explanations for the effect of income in the next section.

Second, compared to those individuals who are currently working for an employer or self-employed, those who are retired, homemaker, unemployed, or disabled are clearly more likely to answer 'no'. This result might reflect one of three things. First, it might reflect subjective perceptions of lack of opportunities for partial retirement. Second, it might reflect a tendency of those who are not working to justify their leaving the labor force. Finally, it might reflect that minimum hours constraints are in fact responsible for them to leave the labor force.

We find no significant effect for age, gender, education, health, and marital status. This is consistent with the hypothesis that individual productive characteristics that are easily observed by outside employers will have little or no effect on the probability of partial retirement. Hutchens (2010) also found that gender, education, and health have no effect on access to partial retirement. However, we do find that some of these variables have significant effects on some specific reasons that could explain why the opportunities for partial retirement are limited as we discuss in the next section.

With respect to job characteristics, there are two findings. First, compared to medium-sized companies (16-199 employees), in small companies (1-15 employees) workers have better opportunities for partial retirement. This is in line with a previous empirical finding by Montgomery (1988) who showed

that the proportion of part-time workers declines with the size of the establishment. A possible factor that could explain this result is self-employment. Small companies could be run by self-employed individuals who have more discretion over their number of work hours and therefore can more easily access partial retirement. However, we observe self-employment status and control for its effect in the regression. Table 4 shows that the coefficient on self-employed is indeed positive but not significant, but when we drop the variables that control for company size, it almost doubles and becomes significant at a 0.05 level. In terms of the theoretical ideas in Section 4.2, three factors could explain the prevalence of hours constraints in larger companies, which we do not observe and therefore cannot control for. First, larger companies are more likely to have formal rules and procedures in accommodating preferences for working part-time. Second, larger companies may experience higher fixed costs per worker which do not change with the number of work hours. Third, larger companies may involve more teamwork and raise the number of work hours above part-time. The next section seeks to address other potential factors that could explain the effect of company size.

The second finding is that blue-collar workers have worse opportunities for partial retirement. This is consistent with the hypothesis that blue-collar jobs involve physically demanding tasks and for a worker approaching retirement age it would be difficult to meet the demands of such jobs. However, the coefficient on blue-collar worker is significant although we condition on physically demanding job. This suggests that blue-collar jobs have other characteristics than physical requirements that limit the opportunities for part-time work.

Several of the job satisfaction variables have significant effects. Those with better promotion prospects and higher job security and those who value work for itself rather than for the compensation have better opportunities for partial retirement. Yet, the relation does not need to be causal. It is very plausible that high job satisfaction could lead to high job performance resulting in increased opportunities for partial retirement. This might indicate that partial retirement is offered selectively for particularly productive workers consistent with Hutchens (2010) who finds that partial retirement is used selectively for workers who are older and productive in the sense that they require little supervision and make an extra effort to get the job done. However, it could also be that better opportunities for flexible work arrangements are increasing the satisfaction that older workers derive from various aspects of their job. Hence, it is important to note that our coefficient estimates might reflect only associations and not causal relationships. In fact, if, e.g., job satisfaction is endogenous, other potential causal effects may not be estimated consistently.

5.2. Reasons why access to partial retirement is limited

The previous section analyzed the factors associated with access to partial retirement. This section analyzes the factors associated with specific reasons why access to partial retirement can be hampered. These reasons are described in Section 3. Table 5 presents the estimates of the probability that access to partial retirement is limited because of each specific reason .

Because respondents indicate their level of agreement with a given reason on a seven-point scale from 1 (strongly disagree) to 7 (strongly agree), the model is estimated with ordered logit.

With respect to worker characteristics, although we did not find a significant effect for gender in the analysis of access to partial retirement, we do find that male workers are particularly more likely to indicate that their employer does not offer part-time jobs and the type of work they do is not suitable for part-time work. Compared to low income earners, medium or high income earners are clearly more likely to indicate that their employer does not offer part-time jobs, would favor younger people in promotion or task assignments, or the type of work they do is not suitable for part-time work. This result is consistent with that in the preceding analysis of access to partial retirement. A similar pattern holds for those who are retired, homemaker, unemployed, or disabled, compared to those who are currently working for an employer or self-employed.

With respect to job characteristics, there are four findings. First, compared to those who work full-time, those who work part-time are particularly less likely to be limited in their opportunities for partial retirement compared to those who work full-time. This is consistent with Hutchens (2010) who showed that presence of part-time workers in a full-time worker's job title is associated with greater opportunities for partial retirement, or with Hutchens and Grace-Martin (2006) who showed that establishments that employed part-time white-collar workers, that allowed job sharing, and that had flexible starting times are much more likely than other establishments to permit partial retirement. Hence, our result might support the hypothesis that jobs that are technologically more compatible with part-time work offer greater opportunities for partial retirement. We did not find, however, a significant effect for part-time work in the preceding analysis of access to partial retirement.

The second result is that, in three out of five regressions, compared to medium-sized companies, workers in small companies have better opportunities for partial retirement, although we condition on self-employment status. In these three regressions the coefficient on small company is significant at a 0.05 level. However, compared to medium-sized companies, workers in large companies do not appear to have worse opportunities, except for the third reason where we obtain the clear trend that as companies get larger, employers prefer younger workers when offering opportunities for partial retirement. These results are in line with the result of the preceding section that in smaller companies it is easier to access partial retirement. These findings suggest that the relative cost of a part-time worker, employer policy on worker age, and the policy on pension benefit payments differ across small and large companies affecting the opportunities for partial retirement.

Third, in line with our previous finding on access to partial retirement, blue-collar occupations are less likely to offer part-time jobs, as suggested by the second reason, and the types of work in these occupations – in terms of their time schedule, tasks, etc. – are not suitable for part-time work, conditional on physically demanding tasks in those jobs. This suggests that blue-collar jobs have other characteristics than physical requirements that limit the opportunities for part-time work.

Finally, with respect to the second factor, employers are more likely to offer part-time work in jobs that involve a lot of physical effort. On the other hand, the result with respect to the third reason suggests that employers prefer younger workers when offering part-time work opportunities in physically demanding jobs. We conclude that jobs that involve a lot of physical effort are compatible with part-time work but not for older workers limiting their opportunities for partial retirement.

The coefficients on job satisfaction show a clear pattern of negative signs in all five regressions. A first observation with respect to statistical significance suggests that most of the coefficients are individually insignificant but we find that they are jointly significant at a 0.01 level in the regressions of the first three reasons and at a 0.05 level in the fifth regression. The particular case here is the employer's policy on worker age when offering opportunities for partial retirement. Those who are satisfied with many aspects of their job are less likely to think that their employer would favor younger people when offering opportunities for partial retirement. However, the relation does not need to be causal and equal treatment of younger and older workers when offering partial retirement could lead to higher job satisfaction. Regardless of the causal direction, this result suggests that job satisfaction, with respect to equal treatment on the basis of age, has a strong relation with opportunities for partial retirement.

We obtain several other results that are very plausible. First, consistent with the hypothesis that more educated individuals are more competent to do different types of work and have a richer set of retirement options, those with high education are less likely to state that the type of work they do is not suitable for part-time work. Note that we obtain this result although we condition on occupation type which is likely to be correlated with education level. Second, healthy workers are less likely to think that their employer would favor younger people when offering opportunities for partial retirement. Third, employers are less likely to offer partial retirement to older workers if the job requires keeping up with the pace of others. Finally, consistent with the hypothesis that training costs limit the opportunities for part-time work, those respondents whose jobs require learning new things perceive that their employers are less likely to offer part-time jobs or more likely to find the relative cost of a part-time worker too high to offer partial retirement.

5.3. *Reasons why the attractiveness of partial retirement is limited*

Table 6 presents the estimates of the probability that the attractiveness of partial retirement is limited for a specific reason. Since respondents indicate their level of agreement with the given factor on a seven-point scale from 1 (strongly disagree) to 7 (strongly agree), the model is estimated with ordered logit.

There are three main findings. First, older workers are much more likely to be discouraged by employer-side restrictions that might make partial retirement less attractive for them. In particular, older workers are more likely to state that partial retirement would be less attractive if it involves a reduction in the wage rate, an employer change, or a change in the types of work they do. This result is important because it is well established

that partial retirement often involves these changes. This implies that older workers prefer to reduce their work hours with their career employer, rather than with a different employer, which is usually called "phased retirement" in the literature. On the other hand, however, older workers are clearly less likely to prefer full retirement over partial retirement where it is indicated that full retirement allows them to spend time with family and friends or pursue leisure activities. This might be due to financial reasons or a desire to combine work and social activities and stay mentally and physically active around the retirement age. Second, those with high education (bachelor's degree or higher) are less likely to state that a change in employer or the type of work they do would make partial retirement less attractive. This is perhaps because educated people are able to accommodate their skills, or at least more efficiently, in different types of jobs. Third, those who value work for itself rather than for the compensation are less likely to be discouraged by employer-side restrictions in terms of all five different types of restrictions where the effects are significant at a 0.01 level in almost all cases. To our knowledge, the existing literature is silent on the role of job satisfaction in the analysis of factors that hamper the practice of partial retirement.

For several other variables we obtain significant effects with plausible signs. First, those in good health are less likely to state that a long-term health problem would lead them to leave the labor market entirely rather than partially. Second, those who are retired, compared to those who are working, are particularly more likely to prefer full retirement over partial retirement if they have a long-term health problem or wish to spend time on non-work activities by the time they are about to retire. This suggests that workers would not return to the labor market, even to work at reduced hours, once they withdraw from the labor market making retirement an absorbing state. Third, those working in jobs that involve lots of physical effort are more likely to prefer full retirement over partial retirement for the same two reasons as for retired individuals. Finally, those working in jobs that involve repetitive tasks are more likely to state that a reduction in hourly wage or a health problem would discourage them to take partial retirement. This suggests that it is difficult to bear the burden of doing repetitive work, and in cases of hardship, workers are likely to quit their job. This is consistent with Honig (1996) who showed that jobs that involve repetitive tasks are positively related to early retirement. However, there are many effects that are statistically insignificant. In fact in Section 4 we argued that it is not clear how worker or job characteristics might interact with the reasons why partial retirement less attractive for employees.

6. Conclusion

Hutchens analyzed the determinants of access to partial retirement in a survey with employers. He found that employers are selective with respect to certain worker and job characteristics when offering partial retirement. This paper analyzed the determinants of access to partial retirement in a survey with employees. Furthermore, it explored the determinants of specific

reasons why access to partial retirement is limited and why partial retirement is less attractive for employees.

We find evidence for worker and job characteristics other than those found by Hutchens. In particular, we find that higher income earners, those working in large companies, and blue-collar workers are limited in their opportunities for partial retirement. We also find that older workers and workers with low job satisfaction are two worker groups that are most likely to find partial retirement unattractive due to the five specific reasons that we considered.

Our results show that restrictions on work hours reduction do not target older workers. We showed that among the reasons limiting the applicability of partial retirement, employer preference for younger workers received the lowest mean agreement rating; we did not find any evidence that older workers have limited access to partial retirement; and we showed that employers favor younger workers only in those jobs that require lots of physical effort and keeping up with the pace of others. These results are consistent with Gustman and Steinmeier (1983) and Hutchens and Grace-Martin (2006) who argue that minimum hours constraints are not part of an employer policy targeting older workers but they exist at any age, or with Warr (1993) who argues that rated job performance is unrelated to age, overall absenteeism tends to be greater among younger workers, accidents are more common at lower ages, and staff turnover declines with age. An interesting future research direction in this respect would be to compare the restrictions on part-time work among younger and older workers to better understand the types of restrictions that are specifically related to age.

Although we find that minimum hours constraints do not target older workers, we do find that these constraints matter for older workers. The literature has established that partial retirement typically involves a reduction in the wage rate, an employer change, or a change in the types of work. We find evidence suggesting that any of these constraints discourage older workers to participate in partial retirement. Taken together these results suggest that minimum hours constraints exist at any age, but their effect is most pronounced on older workers.

Acknowledgments

We thank Tim Colvin, Tania Gutsche, and Arie Kapteyn for their useful comments and assistance.

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Table 1
Characteristics of the employee and if the employee has access to partial retirement

	Does your employer offer you the possibility of partial retirement?					
	“Yes”		“No”		“I don’t know”	
	Mean	SE	Mean	SE	Mean	SE
	(1)	(2)	(3)	(4)	(5)	(6)
Worker characteristics						
Age	57.82	0.56	58.59	0.32	52.25 ^b	0.39
Male	0.45	0.03	0.47	0.02	0.36 ^b	0.02
Education	12.12 ^a	0.12	11.57	0.07	11.64	0.10
No health impairment	2.77 ^a	0.03	2.61	0.02	2.70 ^b	0.03
Married	0.68	0.03	0.67	0.01	0.63	0.02
Household size	0.70	0.06	0.70	0.04	0.97 ^b	0.06
Income	7.55	0.31	7.30	0.16	6.47 ^b	0.22
Retired, homemaker, etc.	0.22 ^a	0.02	0.54	0.02	0.16 ^b	0.02
Job characteristics						
Part-time worker	0.27 ^a	0.03	0.18	0.01	0.20	0.02
Self-employed	0.24 ^a	0.02	0.13	0.01	0.08 ^b	0.01
Company size	3.20 ^a	0.10	3.71	0.05	3.67	0.08
Blue-collar worker	0.10 ^a	0.02	0.19	0.01	0.14 ^b	0.02
Lots of physical effort	1.54 ^a	0.05	1.66	0.03	1.66	0.05
Intense concentration	3.02	0.05	3.03	0.03	2.97	0.04
Frequent communication	3.03	0.05	3.06	0.03	3.03	0.05
Keeping up with others	2.54	0.06	2.60	0.03	2.56	0.05
Repetitive	2.37 ^a	0.05	2.50	0.03	2.61	0.05
Learning new things	2.66 ^a	0.05	2.64	0.03	2.57	0.04
Job satisfaction						
Total pay	3.45 ^a	0.06	3.40	0.03	3.16 ^b	0.06
Work itself	4.09 ^a	0.05	3.86	0.03	3.74 ^b	0.04
Freedom in how work is done	4.17 ^a	0.05	3.82	0.03	3.82	0.05
Work schedule	4.06 ^a	0.05	3.82	0.03	3.82	0.05
Promotion prospects	3.26 ^a	0.06	2.90	0.03	2.88	0.05
Supervision	3.50 ^a	0.06	3.21	0.04	3.38 ^b	0.05
Relationships with colleagues	4.02 ^a	0.05	3.80	0.03	3.89	0.05
Job security	4.02 ^a	0.06	3.57	0.04	3.54	0.05
Work more important than money	4.32 ^a	0.11	3.77	0.06	4.19 ^b	0.09
Number of observations	305		981		398	

Notes: 1. ^a indicates that the difference between the means in columns 1 and 3 is statistically significant at a 0.05 level. ^b indicates the same test for the means in columns 3 and 5. 2. The variables take the following range of values. Age: 40 - 91. Male, married, work status (retired, homemaker, disabled, etc.), part-time status, and self-employed are dummy variables that take a value of 1 or 0. Education: 3 (5th or 6th grade) - 16 (Doctorate degree). Health: 1 (Severely limited), 2 (Limited but not severely), 3 (Not limited). Household size: 0 - 8. Income: 1 (0-499) - 21 (more than 10000). Company size: 1 (1-5) - 6 (500 or more). Blue-collar worker is a dummy variable. Other variables on job characteristics: 1 ((almost) none of time) - 5 ((almost) all of the time). Variables on job satisfaction: 1 (very dissatisfied) - 5 (very satisfied). Work more important than money: 1 (Strongly disagree) - 7 (Strongly agree).

Table 2
Descriptive statistics for the factors limiting partial retirement

	Mean	S.D.
Factors limiting the applicability of partial retirement		
Employer finds the cost of part-time worker too high	3.88	1.76
Employer does not offer part-time jobs	3.96	2.19
Employer favors younger people	3.66	1.90
Job is not suitable for part-time work	3.71	2.10
Pension fund does not allow drawing partial pension	4.23	1.85
Factors limiting the attractiveness of partial retirement		
Reduced wage rate	4.75	1.78
Change of employer	4.25	1.91
Change in type of work	3.71	1.79
Health problem	4.85	1.80
Spend time with family	4.73	1.76

Notes: 1. Number of observations is about 2000. 2. Respondents indicated on a seven-point scale from 1 (Strongly disagree) to 7 (Strongly agree) how much they agree with each factor that could limit their access to partial retirement, and with each factor that could make partial retirement less attractive.

Table 3
Descriptive statistics for control variables

Characteristic	Attribute	Fraction
Age	40-49	26.90
	50-59	36.70
	60-69	24.20
	70+	12.20
Gender	Male	42.30
	Female	57.70
Education level	High school degree or lower	19.10
	Some college or assoc. degree in college	37.90
	Bachelor's degree or higher	43.00
Health status	Severely limited	6.40
	Limited but not severely	21.80
	Not limited	71.80
Marital status	Living with a partner	66.40
	Single (divorced, widowed, etc.)	33.60
Household size	Living alone	59.30
	Living with one or more people	40.70
Income level	Less than \$2500	48.64
	\$2500-3500	16.90
	\$3500 or more	34.46
Work status	Working for an employer	50.70
	Working self-employed	9.40
	Retired	22.10
Job characteristics	Homemaker, unemployed, disabled, etc.	17.80
	Full-time worker (current or last job)	79.28
	Part-time worker (current or last job)	20.72
	Work for an employer (current or last job)	86.06
	Work self-employed (current or last job)	13.94
	Small company (1-15 employees)	32.27
	Medium company (16-199 employees)	37.65
	Large company (200 or more employees)	30.08
	White-collar worker	82.26
	Blue-collar worker	17.74
	Lots of physical effort (1-4)	1.68
	Intense concentration (1-4)	3.01
	Frequent communication (1-4)	3.08
	Keeping up with others (1-4)	2.60
Repetitive (1-4)	2.54	
Learning new things (1-4)	2.62	
Job satisfaction	Total pay (1-5)	3.33
	Actual work itself (1-5)	3.86
	Freedom in how work is done (1-5)	3.87
	Work schedule (1-5)	3.87
	Promotion prospects (1-5)	2.95
	Supervision (1-5)	3.30
	Relationships with colleagues (1-5)	3.85
	Job security (1-5)	3.63
	Work more important than money (1-7)	3.81

Notes: 1. Number of observations is about 2000. 2. The last six variables on job characteristics take values from 1 to 4: 1 ((almost) none of the time), 2 (some of the time), 3 (most of the time), 4 ((almost) all of the time). The variables on job satisfaction take values from 1 to 5: 1 (very dissatisfied), 2 (dissatisfied), 3 (neutral), 4 (satisfied), 5 (very satisfied) except that the last variable takes values from 1 to 7: 1 (Strongly disagree), ..., 7 (Strongly agree). The figures represent the means. 3. Percentages may not add to 100% due to rounding error.

Table 4

Logit model explaining access to partial retirement

	Employer offers the possibility of partial retirement	
	Coefficient	p-value
Worker characteristics		
Age	0.019	0.103
Male	-0.102	0.547
Medium education	0.120	0.615
High education	0.391	0.117
No health impairment	-0.083	0.656
Married	-0.076	0.644
Single	-0.025	0.887
Medium income	-0.483	0.033
High income	-0.269	0.186
Retired	-1.372	0.000
Homemaker, disabled, etc.	-2.051	0.000
Job characteristics		
Part-time worker	0.196	0.336
Self-employed	0.208	0.374
Small company	0.389	0.060
Large company	0.006	0.973
Blue-collar worker	-0.518	0.035
Lots of physical effort	0.096	0.294
Intense concentration	0.027	0.799
Frequent communication	0.089	0.367
Keeping up with others	0.036	0.670
Repetitive	-0.018	0.849
Learning new things	-0.036	0.720
Job satisfaction		
Total pay	-0.056	0.510
Work itself	0.057	0.615
Freedom in how work is done	0.097	0.391
Work schedule	-0.020	0.840
Promotion prospects	0.190	0.039
Supervision	0.029	0.770
Relationships with colleagues	0.086	0.455
Job security	0.203	0.009
Work more important than money	0.069	0.077
Log-likelihood	-572.686	
Pseudo R square	0.138	
Number of observations	1187	

Notes: 1. Logit model explaining if the employer offers the possibility of partial retirement. 2. The excluded company size medium (16-199 employees).

Table 5
Ordered logit model explaining the factors limiting the applicability of partial retirement

	F1		F2		F3		F4		F5	
	Coeff.	p-val	Coeff.	p-val	Coeff.	p-val	Coeff.	p-val	Coeff.	p-val
Worker characteristics										
Age	-0.010	0.136	0.002	0.708	0.002	0.793	-0.007	0.288	0.013	0.046
Male	0.075	0.448	0.275	0.004	0.123	0.206	0.247	0.011	-0.148	0.136
Medium education	-0.111	0.359	0.009	0.940	0.109	0.391	-0.128	0.316	0.055	0.651
High education	-0.143	0.297	-0.063	0.654	0.124	0.379	-0.295	0.038	-0.124	0.362
No health impairment	-0.166	0.098	0.076	0.445	-0.267	0.011	-0.073	0.470	0.092	0.383
Married	0.069	0.458	0.035	0.710	-0.102	0.275	-0.169	0.068	-0.071	0.439
Single	0.035	0.714	0.066	0.489	-0.002	0.985	0.071	0.456	-0.285	0.003
Medium income	0.078	0.546	0.307	0.014	0.128	0.308	0.285	0.029	0.039	0.767
High income	-0.032	0.773	0.246	0.032	0.302	0.009	0.285	0.013	0.128	0.243
Retired	0.170	0.259	0.708	0.000	0.143	0.332	0.566	0.000	-0.003	0.985
Homemaker, disabled, etc.	-0.126	0.395	0.497	0.001	0.312	0.041	0.255	0.068	0.051	0.719
Job characteristics										
Part-time worker	-0.255	0.035	-0.509	0.000	0.069	0.556	-0.625	0.000	-0.241	0.037
Self-employed	0.161	0.233	0.107	0.458	0.198	0.159	0.017	0.906	0.014	0.920
Small company	-0.250	0.026	-0.182	0.115	-0.267	0.019	-0.047	0.675	-0.335	0.003
Large company	0.113	0.290	0.071	0.501	0.283	0.006	0.020	0.849	0.130	0.219
Blue-collar worker	0.185	0.152	0.579	0.000	0.198	0.129	0.485	0.000	0.193	0.153
Lots of physical effort	0.011	0.816	-0.129	0.014	0.161	0.002	-0.055	0.296	0.120	0.021
Intense concentration	0.074	0.201	-0.044	0.454	0.025	0.690	0.072	0.216	0.005	0.925
Frequent communication	0.013	0.820	-0.082	0.153	-0.076	0.208	0.007	0.907	0.108	0.054
Keeping up with others	-0.008	0.879	0.055	0.291	0.203	0.000	0.040	0.447	0.035	0.512
Repetitive	0.032	0.523	0.012	0.813	-0.069	0.196	0.017	0.746	-0.055	0.285
Learning new things	0.146	0.009	0.119	0.030	0.068	0.229	0.042	0.460	0.027	0.640
Job satisfaction										
Total pay	-0.064	0.189	0.009	0.850	-0.080	0.103	0.059	0.215	-0.052	0.266
Work itself	-0.000	0.996	0.025	0.688	-0.052	0.406	-0.029	0.631	-0.045	0.476
Freedom in how work is done	-0.112	0.071	-0.058	0.296	-0.149	0.012	-0.039	0.501	-0.007	0.907
Work schedule	0.037	0.520	-0.030	0.580	0.126	0.026	-0.112	0.044	0.061	0.263
Promotion prospects	-0.101	0.073	-0.108	0.056	-0.140	0.013	0.039	0.483	-0.009	0.876
Supervision	-0.058	0.321	-0.032	0.585	-0.121	0.039	0.029	0.623	0.030	0.601
Relationships with colleagues	-0.020	0.753	-0.085	0.178	-0.165	0.007	-0.114	0.070	-0.025	0.678
Job security	-0.023	0.593	0.041	0.347	-0.154	0.001	0.024	0.593	0.025	0.575
Work more important than money	-0.003	0.902	-0.034	0.165	-0.053	0.030	-0.007	0.770	-0.100	0.000
Log-likelihood	-3268.480		-3238.060		-3286.995		-3308.033		-3132.684	
Pseudo R square	0.013		0.032		0.041		0.028		0.015	
Number of observations	1816		1815		1815		1813		1816	

Notes: 1. Respondents indicated on a seven-point scale from 1 (Strongly disagree) to 7 (Strongly agree) how much they agree with each of the following factors that could limit their access to partial retirement. F1: My employer would find the cost of a part-time worker, relative to a full-time worker, too high to offer partial retirement. F2: My employer does not offer part-time jobs. F3: My employer would favor younger people over older people in pay, promotion, task assignments, and therefore would not offer the opportunity to partially retire. F4: The type of work I do in terms of its time schedule, tasks, etc. is not suitable for part-time work. F5: My pension fund would not allow drawing pension benefits during partial retirement or would reduce final benefits as a result of partial retirement. 2. The excluded company size is 1 to 5 employees.

Table 6
Ordered logit model explaining the factors limiting the attractiveness of partial retirement

	F1		F2		F3		F4		F5	
	Coeff.	p-val	Coeff.	p-val	Coeff.	p-val	Coeff.	p-val	Coeff.	p-val
Worker characteristics										
Age	0.025	0.000	0.014	0.020	0.014	0.023	-0.008	0.175	-0.019	0.002
Male	-0.178	0.065	-0.047	0.629	0.030	0.756	0.089	0.366	0.028	0.781
Medium education	-0.036	0.779	-0.118	0.332	-0.109	0.384	-0.032	0.802	0.025	0.839
High education	-0.159	0.256	-0.292	0.032	-0.288	0.040	-0.083	0.543	0.016	0.907
No health impairment	0.012	0.905	0.055	0.582	0.019	0.850	-0.285	0.005	-0.042	0.692
Married	-0.124	0.182	-0.156	0.098	-0.161	0.083	-0.008	0.930	0.171	0.065
Single	-0.071	0.452	-0.018	0.849	-0.095	0.319	0.072	0.449	-0.033	0.722
Medium income	0.344	0.007	0.055	0.667	-0.073	0.572	0.061	0.628	-0.075	0.549
High income	-0.005	0.968	0.097	0.395	-0.063	0.592	-0.007	0.953	-0.175	0.136
Retired	-0.164	0.259	0.005	0.973	-0.079	0.614	0.430	0.002	0.759	0.000
Homemaker, disabled, etc.	-0.069	0.646	-0.015	0.915	-0.092	0.494	0.051	0.729	0.027	0.857
Job characteristics										
Part-time worker	-0.230	0.064	-0.086	0.468	-0.012	0.921	-0.006	0.956	-0.144	0.221
Self-employed	0.057	0.685	0.004	0.978	0.251	0.074	-0.108	0.455	-0.009	0.948
Small company	-0.388	0.001	-0.062	0.583	-0.134	0.236	-0.086	0.461	-0.141	0.203
Large company	-0.022	0.836	-0.030	0.777	0.024	0.821	0.001	0.995	0.082	0.424
Blue-collar worker	0.253	0.063	0.191	0.146	0.152	0.227	-0.147	0.287	0.065	0.634
Lots of physical effort	-0.003	0.962	-0.063	0.250	-0.082	0.125	0.104	0.070	0.109	0.048
Intense concentration	0.003	0.960	0.068	0.238	0.117	0.047	0.004	0.947	0.094	0.113
Frequent communication	0.115	0.053	-0.072	0.212	-0.028	0.629	0.083	0.157	0.051	0.374
Keeping up with others	-0.046	0.384	0.136	0.010	0.041	0.433	0.040	0.464	-0.032	0.525
Repetitive	0.166	0.002	0.018	0.723	0.061	0.246	0.116	0.030	0.066	0.212
Learning new things	0.001	0.987	-0.011	0.843	-0.023	0.677	-0.066	0.238	0.030	0.599
Job satisfaction										
Total pay	-0.043	0.390	0.016	0.759	0.030	0.548	0.008	0.878	0.028	0.569
Work itself	0.018	0.783	0.090	0.165	0.168	0.007	0.068	0.281	0.092	0.142
Freedom in how work is done	0.025	0.661	-0.045	0.448	0.006	0.917	-0.034	0.562	-0.076	0.205
Work schedule	0.126	0.018	0.036	0.506	-0.048	0.366	0.115	0.041	0.006	0.913
Promotion prospects	-0.217	0.000	0.040	0.508	0.072	0.210	0.013	0.828	-0.041	0.490
Supervision	-0.025	0.673	0.078	0.198	0.092	0.117	0.046	0.425	0.062	0.283
Relationships with colleagues	-0.002	0.980	0.000	0.996	-0.103	0.107	-0.096	0.141	-0.121	0.050
Job security	0.015	0.739	0.043	0.307	0.039	0.368	0.106	0.019	0.129	0.005
Work more important than money	-0.071	0.005	-0.068	0.006	-0.047	0.064	-0.163	0.000	-0.227	0.000
Log-likelihood	-3297.486		-3437.305		-3393.789		-3273.841		-3260.413	
Pseudo R square	0.020		0.010		0.010		0.021		0.031	
Number of observations	1816		1815		1815		1814		1815	

Notes: 1. Respondents indicated on a seven-point scale from 1 (Strongly disagree) to 7 (Strongly agree) how much they agree with each of the following factors that could make partial retirement less attractive. F1: If my hourly wage would be lower during partial retirement than before, it would discourage me from partially retiring. F2: If I would need to change my employer to partially retire, it would discourage me from partially retiring. F3: During partial retirement if I would need to do different types of work than I did before, it would discourage me from partially retiring. F4: If I have a long-term health problem by the time I am about to retire, I would prefer full retirement to partial retirement. (Assume that this health problem is not severe enough to limit work activities). F5: I would wish to spend time with family and friends, or pursue leisure activities by the time I would normally fully retire and therefore I would prefer full retirement to partial retirement.
2. The excluded company size is 1 to 5 employees.