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Employer Accommodation and Labor Supply of Disabled Workers*

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Abstract

We examine the factors that influence employer accommodation of newly disabled workers and how effective such accommodations are in retaining workers and discouraging disability insurance applications. Using the Health and Retirement Study, we find that only a quarter of newly disabled older workers in their 50s are accommodated by their employers in some way following onset of a disability. Importantly, we find that few employer characteristics explain which workers are accommodated; rather, employee characteristics, particularly the presence of personality traits correlated with assertiveness and open communication, are highly predictive of accommodation. We also find that if employer accommodation rates could be increased, disabled workers would be significantly more likely to delay labor force exit for up to two years. However, accommodation does not appear to reduce subsequent disability insurance claiming.

Keywords

employer accommodation; labor supply; disability insurance; Health and Retirement Study

1. Introduction

The U.S. Social Security Disability Insurance (SSDI) program is in fiscal crisis. After decades of expansive program growth, the Disability Insurance Trust Fund has nearly exhausted its assets, recently prompting Congress to enact a temporary reallocation of payroll tax revenues in order to avert large benefit cuts later this year (Bipartisan Budget Act of 2015). As this temporary fix buys time for the development of a long-term policy

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solution, much attention is centered on ways to increase the likelihood that a newly disabled individual will continue in employment rather than leave the labor force and apply for SSDI benefits. The role played by employers in facilitating continued work has been of particular interest, especially as research has shown that many SSDI beneficiaries have substantial work capacity (Maestas, Mullen and Strand 2013; Autor, Maestas, Mullen and Strand 2015). Indeed, several influential reform proposals focus on ways to incentivize employers to retain employees after they experience the onset of a disability (Autor and Duggan 2010; Burkhauser and Daly 2011; see also Leibman and Smalligan 2013).

For employer-centered reforms to alter the current growth trajectory of the SSDI program, it must be the case that employers are not already taking sufficient measures to retain disabled workers, that they would take stronger measures if better incentives were in place, and that if they did so, fewer disabled workers would leave the labor force and apply for SSDI benefits. It has been well established that the rate of employer accommodation reported by disabled workers is low—between one-quarter and one-third—despite provisions under the Americans with Disabilities Act (ADA) mandating that employers provide *reasonable accommodation* to disabled workers (see e.g., Charles 2005; Burkhauser, Schmeiser and Weathers 2012). Reasonable accommodation includes steps such as modification of job requirements and work schedules, or provision of assistive equipment; it does not extend to other interventions thought to promote return-to-work such as coordination of medical care, career counseling, vocational rehabilitation, or education and re-training.¹ Whether the low rate of employer accommodation can be increased, and whether such accommodation might be effective in preventing or slowing labor force exit and/or SSDI claiming, remain open questions.

Despite the focus on employers in the policy debate, the evidence base supporting the effectiveness of reforms aimed at changing employer behavior is limited. Most studies on determinants of employer accommodation of disability have focused on the impact of anti-discrimination legislation (e.g., Charles 2005; Burkhauser, Schmeiser and Weathers 2012).² Papers examining how various forms of employment support affect the employment trajectory following disability onset have mostly concentrated in the pre-ADA era (i.e., prior to 1992–1994; see Burkhauser, Butler and Kim 1995; Daly and Bound 1995; Burkhauser, Butler, Kim and Weathers 1999) or other countries such as Canada (Campolieti 2005), Denmark (Høgelund and Holm 2014), and The Netherlands (Koning and Lindeboom 2015).³

In this paper we offer new evidence about workplace accommodation, specifically the factors that determine whether newly disabled workers receive accommodation from their

¹The legal literature suggests that the main reason the ADA has been ineffective at encouraging employer accommodation is that the courts have applied a much stricter definition of what is a covered disability than that intended by Congress (see, e.g., Race and Dornier 2009). The 2008 amendments to the ADA were intended to correct this misinterpretation and specifically widen the definition of covered disability. We are unaware of any empirical papers on the effectiveness of the 2008 amendments, however our data show no increase in accommodation rates all else equal after 2008.

²A recent study by Bronchetti and McInerney (2015) examines employer accommodation of the subset of disabled workers who were injured on the job specifically, with an emphasis on the role of Workers' Compensation.

³A notable exception is a recent paper by Neumark et al. (2015) which examines the effect of workplace accommodations on labor supply on both intensive and extensive margins for women newly diagnosed with breast cancer in Virginia between fall 2007 and fall 2011.

employers, as well as the short- and long-term effects of employer accommodation on employment and SSDI claiming behavior. First, we use the Health and Retirement Study (HRS) to estimate the prevalence of employer accommodation among newly disabled workers in their 50s. Consistent with the previous literature, we find that only slightly more than a quarter of newly disabled workers report that their employer provided any kind of accommodation after they became disabled.

Next we turn to the factors associated with employer accommodation following the onset of a work-limiting health impairment. This is important not only for designing policies to increase accommodation rates but also for evaluating the effectiveness of employer accommodation as a way of retaining disabled workers and discouraging them from applying for SSDI benefits. If sicker employees tend to self-sort into jobs with accommodating employers, or if employers selectively accommodate those they wish to retain, then a simple comparison of the work outcomes of accommodated versus non-accommodated workers could yield biased estimates. With regard to self-sorting, we find no evidence that workers who *expect* to become limited in their ability to work in the future are any more likely to be employed by firms that could be perceived as more flexible or accommodating (e.g., firms providing long term disability coverage, or those that would allow reduced hours if needed). More generally, we find no correlation between employer characteristics and the provision of accommodation. At the same time, we find little evidence that employers selectively provide accommodation to employees on the basis of the employee's workforce attachment or residual productive capacity (e.g., their health, type or severity of disability). Rather, the most predictive factors are relatively fixed *employee* characteristics such as education and race.

This suggests a possible explanation—that *employees* are the source of the roadblock in the accommodation process. Accommodation results from a multi-stage process, whereby an employee must first *request* accommodation and the employer then responds accordingly. Even though the ADA mandates reasonable accommodation of disabilities in the workplace, employees may not know this or may fear discrimination by their employer if they make such a request (von Schrader et al. 2013). A May 2012 supplement to the Current Population Survey (CPS) found that only 12.5 percent of disabled workers requested a change in their current workplace to help them do their job better (Bureau of Labor Statistics 2013). In some cases, the employer may not wish to provide the accommodation requested by the employee and the employer and employee may iterate to a mutually agreeable solution. This may require self-advocacy or persistence on the part of the employee.

Because the HRS does not contain questions on whether the employee *asked* for accommodation (only whether he received it), we cannot investigate this mechanism directly in our data. However, starting in 2006 the HRS administered a psychosocial leave-behind questionnaire to a random half of respondents in alternating survey years. Thus, we are able to investigate the influence of a number of personality traits, including the “Big Five” traits of openness, conscientiousness, extraversion, agreeableness and neuroticism, and two measures of control beliefs, personal mastery and perceived constraints. We find that agreeableness and neuroticism are both strongly negatively correlated with receiving accommodation, whereas extraversion is positively correlated with accommodation.

Agreeableness, neuroticism and extraversion tend to be positively associated with *demanding* conflict management styles and negatively associated with *avoiding* conflict management styles (Antonioni 1998). Individuals with demanding styles are often aggressive and make sure that their needs are met; individuals with avoiding styles do not tend to communicate their needs. We also find that individuals who score high on the perceived constraints measure of sense of control—that is, they are reliant on *others* for solving problems—are more likely to receive accommodation.

Finally, we turn our attention to estimating the effect of employer accommodation on employee outcomes such as employment and SSDI application and receipt. Because we do not find evidence that individuals who expect to develop health problems self-sort into more accommodating employers nor that accommodation is selectively provided to employees with stronger labor force attachment or higher residual productive capacity, we conclude that selection bias in ordinary least squares (OLS) estimates of the effect of accommodation on labor supply is likely minimal, particularly after conditioning on a rich set of relevant control variables. In addition to OLS, we reweight observations using the propensity score to allow for a more flexible specification and find similar results. Using the method proposed by Altonji et al. (2005), we find that any remaining selection on unobservables would have to be an order of magnitude greater than the degree of selection on observables to account for our estimates.

We find that accommodation substantially and significantly increases the probability of continued employment in the two years following disability onset; a worker receiving accommodation is 17 percentage points (40 percent) more likely to work in the next survey wave than a worker who did not receive accommodation. However, this effect almost vanishes by the next survey wave (up to four years after onset). Although any form of accommodation is effective, we find that accommodations involving work changes (e.g., job restructuring, helping an employee learn new skills) are most effective. We find no evidence that accommodation reduces subsequent SSDI application or receipt, suggesting that individuals on the margin of working versus dropping out of the labor force depending on whether their disability is accommodated are not the same ones who are on the margin of applying for disability insurance.

Our findings have a number of important implications for disability employment policy. First, if disabled employees are not disclosing their need for accommodation to employers, then this suggests policies targeting employer incentives for retaining disabled workers—e.g., by introducing experience-rated employer contributions to SSDI or by mandating employers to provide private disability insurance—may not be particularly effective at increasing accommodation rates. Unlike other experience-rated programs such as Workers' Compensation, there is no reporting system for disabling injuries that occur *off* the job, and the lack of *visible* impairment in many cases means that employers are often unaware that an employee suffers from a disability.⁴ Rather, our findings suggest that policies targeting the environment surrounding disability *disclosure* may be more effective at increasing

⁴This likely accounts for the differences between our findings and those of Bronchetti and McInerney (2015), who find that *employer* characteristics matter most in determining whether an employee who is injured on the job receives accommodation.

accommodation of disabled employees. For example, a new rule requiring federal contractors to demonstrate that at least 7 percent of their employees are disabled (or that they are taking steps to achieve that target) could increase accommodation rates among federal contractors not only because employers will now explicitly *ask* their employees if they have a disability but also because employees may now perceive that being disabled is actually *desirable* to their employer (Weber, 2014). If employer accommodation rates increase, we find that disabled workers would be more likely to delay labor force exit, at least for up to two years. However, these data also suggest that increasing employer accommodation is unlikely to stem the tide of new SSDI beneficiaries.

2. Data and Summary Statistics

We use the nationally representative Health and Retirement Study (HRS), which has surveyed individuals ages 51 and older every two years since 1992. We use all survey waves through 2010. We identify individuals as disabled if they answer yes to the question, “Do you have any impairment or health problem that limits the kind or amount of paid work you can do?” We restrict our attention to *newly disabled workers* whose disability onset is observed *in panel*, that is, those individuals who are not disabled when they enter the panel but who subsequently report a work disability that began when they were employed. This allows us to condition on a rich set of job and employer characteristics measured *before* the onset of the disability, so that we can examine their influence on whether the individual’s disability is accommodated by his employer and whether he continues to work or claims disability insurance benefits after becoming disabled.

Table 1 lists the restrictions we apply in constructing our sample and the sample size after each restriction. Of the 15,906 HRS respondents who enter the panel without reporting a work disability, 3,144 or 20 percent report a work-limiting health condition at some time in the future while still in working-age years (that is, before they become eligible to claim full Social Security benefits). We further restrict the sample to individuals who are employed at the time of disability onset; that is, they answer “yes” to the question, “Were you employed at the time your health began to limit your ability to work?” Prior to 1998, this question was only asked of individuals who reported that the health problem first began to bother them *after* the last wave’s interview. Since 59 percent of newly disabled respondents report that the health problem causing their disability first began to bother them *more than* two years ago, this skip pattern resulted in the exclusion of a large number of individuals reporting a new disability onset (28 percent).⁵ Starting in 1998, employment status at onset was asked of all disabled respondents. Of those who were posed the question, 73 percent report working at the time their health first began to limit their ability work.

Next, the respondents were asked, “At the time your health started to limit your ability to work, did your employer do anything special to help you out so that you could stay at work?” Possible responses were “yes,” “no,” “left immediately,” “self-employed” and

⁵ Respondents were also asked when their health problem first began to “interfere with [their] work.” A sizeable fraction (42 percent) still reported onsets occurring more than two years ago, even though two years ago in the last survey wave they reported that their health did *not* limit their ability to work. We include these respondents in our main analyses, but perform robustness checks where we exclude them.

(starting in 1998) “no help needed.” We excluded all respondents who gave an answer other than yes or no. We further limit the sample to those who were observed in the wave prior to onset and those with no missing values on key covariates, resulting in 1,164 newly disabled older workers.⁶ Finally, for specifications that examine the influence of job and employer characteristics that were collected only in the prior wave, we limit the sample to the 972 newly disabled respondents (84 percent) who were also working in the prior wave.

Table 2 presents summary statistics for the main sample of 1,164 respondents, overall and by accommodation status. In our sample, only 26 percent of newly disabled older workers receive some form of employer accommodation upon becoming disabled, despite the fact that by construction all onsets occurred after 1992, when the ADA was implemented. While this statistic is consistent with other work using national surveys of individuals, it is notable that a probability-based survey of private- and federal-sector *employers* found much higher accommodation rates, in the range of 60–70 percent (e.g., Bruyere 2000). One possible explanation for the discrepancy is that the HRS (and other surveys) asks about accommodation only when respondents say they have a work-limiting health problem. This conditioning sequence will skip people who have been accommodated if they no longer consider themselves work-limited (perhaps because the accommodation was successful). A recent experimental study of question ordering demonstrates that this group exists and may be of empirical importance (Maestas and Mullen 2015). The general issue of how to appropriately identify people with disabilities in national surveys is long-standing and unresolved.⁷

If the respondent reported that their employer did something special to help them out, they were then asked more detailed questions about what types of things the employer did. We grouped their responses into three different dimensions of accommodation (not mutually exclusive): changes to *time* (allowing more breaks, allowing different arrival or departure times or shortening the work day), reported by 55 percent of accommodated respondents; provision of equipment/assistance (getting someone to help, getting special equipment, arranging special transportation), reported by 48 percent of accommodated respondents; and changes to *work* (changing the job, helping to learn new job skills), reported by 37 percent of respondents. Twenty-two percent of accommodated respondents reported that they received some other accommodation than one of the eight types prompted by HRS. See Table A1 for a more detailed breakdown of the types of accommodation.

Intriguingly, with the exception of only a few characteristics (education, race and earnings), individuals whose employers accommodate their disabilities are not very different from those whose employers do not accommodate their disabilities. While more educated and higher earning workers are slightly more likely to be accommodated, there is no evidence that *healthier* workers or workers with certain kinds of disabling conditions or job types are more or less likely to be accommodated. Employer characteristics also do not seem to be associated with whether an employee receives any accommodation. However, it is evident

⁶For some covariates with large numbers of missing values (e.g., number of employees at the respondent’s firm), we included a missing indicator instead of dropping the observation.

⁷See for example Burkhauser et al. (2012) for a discussion of how the CPS definition of disability relates to individual reports of *work-limiting* health impairments.

that employees who are accommodated are significantly more likely to continue to work following disability onset. Overall, fewer than half of disabled workers are working 2–4 years after onset. One-third have applied for disability insurance benefits and of those, two-thirds eventually receive benefits. Note that approximately one-quarter of individuals are neither working *nor* pursuing disability insurance benefits.

Finally, in 2006 the HRS began administering a psychosocial leave-behind questionnaire (LBQ) to a random half of respondents in alternating years. The module contains questions enabling one to construct measures of the “Big Five” personality traits—openness, conscientiousness, extraversion, agreeableness and neuroticism—on a four-point scale (1–4), with higher values corresponding to stronger presence of a given personality trait. We also constructed two measures of sense of control: personal mastery and perceived constraints. The personal mastery index measures how much a person believes they can affect change, containing items such as “I can do the things I want to do,” “What happens depends on me,” and “When I want to do something I find a way to succeed at it.” The perceived constraints index, in contrast, measures the extent to which outside factors control an individual’s life and contains items such as “I feel helpless in dealing with the problems of life,” “I have little control over the things that happen to me,” and “Other people determine what I can and cannot do.” The control measures average over items rated on a six-point scale (1–6) with 6 corresponding to strongly agreeing with a statement and 1 to strongly disagreeing. Thus, higher scores on personal mastery and *lower* scores on perceived constraints correspond to a higher sense of control.

For analyses using the personality measures, we restrict our sample to HRS respondents who completed the psychosocial questionnaire prior to reporting a new disability in the 2008 or 2010 survey waves. This limits the sample to onsets that were reported in 2008 (in the half of the sample receiving the psychosocial LBQ in 2006) or 2010 (with personality measures taken from 2006 or 2008, respectively). The last two columns of Table 2 show that the psychosocial LBQ subsample is similar to the larger HRS sample across a wide array of dimensions during the period 2006–2010. Table A2 reports means, standard deviations and correlations between the personality and control measures.

3. Determinants of Employer Accommodation

In this section we explore which factors are correlated with employer accommodation following disability onset. Understanding what factors determine which employees are accommodated is important not only for assessing the scope of increasing accommodation rates in the U.S. through different policy levers but it is also a necessary prerequisite for estimating the effect of employer accommodation on employee outcomes, such as labor supply. We investigate the determinants of employer accommodation in three ways. First, we examine whether employees who are likely to *become* disabled self-sort into jobs with employers who they could reasonably expect to be accommodating in the event that they became disabled. Second, we examine which individual, job and employer characteristics are associated with employer accommodation of workers *following* disability onset. Finally, using a unique subsample of HRS respondents completing a psychosocial leave-behind

questionnaire we examine whether individuals with certain *personality* attributes are more or less likely to be accommodated following disability onset.

3.1. Role of Self-Sorting

To examine whether employees with health problems are more likely to sort into jobs with more accommodating employers, we use a sample of healthy respondents (before they became disabled, if they ever did) in the first wave of employment with a given employer. We use three measures of whether an employer may be perceived by employees as more accommodating to individuals with disabilities: whether the employer offers long-term disability insurance (LTDI), whether the employer would let older workers move to a less demanding job with less pay if they wanted to, and whether the employer would allow the individual to reduce the hours in his regular working schedule if he wanted to. Table 3 presents the mean and standard deviation of individuals' self-reported probability of becoming disabled in the next 10 years by each of the three employer characteristics. The difference in individuals' expectations about becoming disabled is statistically different from zero only for individuals whose employers differ on the offer of LTDI, and only before controlling for other covariates. Yet, employees of firms offering LTDI believe themselves *less* likely to become disabled than employees of firms not offering LTDI. Thus, we do not find any evidence that those individuals with health problems pre-sort into employers who would be more likely to accommodate them in the event that they become disabled.

3.2. Role of Individual, Job and Employer Characteristics

Next we assess which factors are associated with employer accommodation following the onset of disability. Table 4 presents estimates of marginal effects from a probit model of employer accommodation on demographics, pre-disability health, disability characteristics, and job and employer characteristics. All variables except the disability characteristics are pre-determined, measured in the wave *before* the respondent first reports a work-limiting disability. Column 1 presents estimates of the effects of individual demographic factors, pre-disability health status, and disability characteristics on accommodation for the sample of 1,164 newly disabled respondents who were employed at the time their health began to limit their work (but not necessarily in the wave prior). Column 2 restricts the sample to the 972 respondents (83.5 percent) who were both employed at onset *and* two years earlier, and adds pre-determined job and employer characteristics to the regression. The estimated effects of the regressors in common are similar in size and statistical significance across the two groups. Finally, columns 3–5 estimate the effects of the same factors on each of three *dimensions* of accommodation: time, equipment/assistance and work change, as described in Section 2. We omit “other” unspecified accommodations.

Consistent with the summary statistics in Table 2, we find that education and race are the strongest predictors of accommodation. Workers with at least some college are 8–12 percentage points (30–45 percent) more likely to be accommodated than those without a high school degree. Minorities are less likely to be accommodated, especially non-black minorities (e.g., Asians). The finding of race is particularly interesting since, unlike education, it is not related to skill level and therefore should not affect labor demand. Surprisingly, we find little evidence that characteristics of the actual health impairment are

predictive of accommodation. Two notable exceptions are people with a history of back problems, who are 7 percentage points less likely to report an accommodation than people without a history of back problems no matter what their disabling condition, and people with emotional (i.e., mental health) problems, who are least likely to report an accommodation. For the most part these conclusions continue to hold when considering different dimensions of accommodation, although college completion appears to be less of a factor for time- and assistance-related accommodations than it does for work change accommodations, and race appears not to factor significantly into work change accommodations. Interestingly, we find that overweight workers are more likely to receive work change (and perhaps assistance-related accommodations) compared to their normal and underweight peers.

Next, we turn to the influence of job and employer characteristics. The fact that newly disabled workers who had not been working in the wave prior to onset are less likely to be accommodated suggests that job tenure may be an important factor in employer accommodation. We divide job tenure measured in the prior wave into approximate quintiles. We find that tenure in the middle quintile (6–12 years tenure, two years earlier) is (weakly) correlated with higher rates of employer accommodation, especially for time-related accommodations. There is also some evidence that employees with very long tenure are more likely to receive some sort of time-related accommodation, consistent with the idea that they may take the opportunity to phase into retirement. More physically demanding jobs are somewhat less likely to be accommodated by allowing work changes or providing employees with assistance.⁸ On the other hand, more stressful jobs are more likely to be accommodated with changes in work timing or provision of assistance. There is no evidence that employer characteristics, such as offering LTDL, accommodating older workers or employer policies that would allow employees in general to reduce their hours, are associated with accommodation. Industry and occupation fixed effects were jointly insignificant as well.

All of our disability onsets occur after the implementation of the ADA, and we find no evidence that accommodation rates increased after the ADA was amended in 2008 (not shown). There is also no evidence that employee size is meaningfully related to employer accommodation.⁹ Unlike Burkhauser, Schmeiser and Weathers (2011), we do not find strong evidence that job-related injuries are significantly more likely to be accommodated than non-job-related injuries, although their sample included pre-ADA onsets and they also found that job-related injuries were more likely to be accommodated in states that lacked anti-discrimination laws prior to the ADA.¹⁰ The absence of a relationship between accommodation and either firm or federal policy variation indicates these are not useful sources of exogenous variation for estimating the effect of accommodation on labor supply outcomes.

⁸We also estimated specifications which included interactions between physically demanding jobs and employee health; the interactions were statistically insignificant and did not alter the results.

⁹The ADA applies to employers with more than 25 regular employees.

¹⁰We also estimated versions of the model with state fixed effects (on restricted data) and found no significant effects of state of residence on employer accommodation. Again, however, all of our estimates are in the post-ADA era in which all states are subject to antidiscrimination law.

3.3. Role of Personality

The results above suggest that it is *employee* rather than employer characteristics—and perhaps the employee’s relationship with the employer—that matters most in determining employer accommodation following onset of a work-limiting health condition. We hypothesize that personality traits correlated with making one’s needs known to employers and seeking out help will be positively correlated with employer accommodation. For example, extraverts are more likely to engage socially and may be more likely to mention their health problem to their employer. By the same token, disagreeable workers may be more willing to complain and endure conflict in an effort to come to a solution with their employer that would satisfy their needs.

Individuals with a high sense of control exhibit greater personal mastery and perceive fewer external constraints (Lachman et al., 2011). On the one hand, someone with high control beliefs might be more likely to solve their difficulties on their own, while someone with low sense of control might depend on their employer’s help. On the other hand, someone with high control beliefs might be more willing to enlist their employer’s help, while someone with low control beliefs might refrain from engaging their employer at all, especially if they believe it will make no difference. Which effect dominates the other is an empirical question.

We incorporate measures of personality and control beliefs into our analysis by taking advantage of a unique psychosocial leave-behind questionnaire (LBQ) that the HRS began administering in 2006 to a rotating one-half of respondents every four years. Because of the relatively recent, staggered introduction of the LBQ, we observe in panel only 115 individuals whose disability onsets occurred *after* they completed the LBQ in 2006 or 2008. To the degree personality traits are stable over the life course, we could apply the LBQ measures retroactively to capture onsets that occurred prior to completing the LBQ. But the psychology literature is mixed on the stability of personality. For example, while Costa et al. (2000) and Cobb-Clark and Shurer (2012) find that personality traits are relatively stable, recent research with larger sample sizes (Specht et al., 2011) and longer time horizons (Billstedt et al., 2014) finds that personality traits change over the life course. In particular, Specht et al. (2011) find that older individuals who experience major life events are the most likely to show changes in personality.

To examine the issue in our data, we construct a simple test of whether disability onset is associated with changes in personality traits. Using the subsample of respondents with personality traits and control beliefs measured in both 2006 and 2010, we regress each personality trait in 2010 on its own lagged measure in 2006 and an indicator for whether the individual experienced a disability onset *between* the two measurement years. If the personality measures are stable and not influenced by the onset of a work-limiting health condition, then the coefficient on the lagged trait should be close to one and the coefficient on disability onset should be zero. These estimates are shown in Table 5, where each row reports a separate regression. The personality measures are all statistically distinct from one indicating only moderate stability over four years. The measures of control beliefs are notably less stable over time.¹¹ However, we find that newly disabled individuals experience significant changes in personality and control beliefs after disability onset. Specifically, they

are less extraverted, and report reduced personal mastery and a heightened sense of perceived constraints. These results lead us to conclude that personality traits are not stable enough to apply retroactively and we therefore limit our analyses of personality traits as determinants of accommodation to the 115 respondents for whom we have *pre-onset* measures of personality and control beliefs.

Table 6 presents estimated marginal effects of probit models of employer accommodation on the Big Five personality measures—openness, conscientiousness, extraversion, agreeableness and neuroticism—and two measures of control beliefs, personal mastery and perceived constraints. Column 1 displays estimates for all disabled workers completing the psychosocial LBQ, while columns 2–3 present estimates for the subset of disabled workers who were also working in the wave prior to onset, with and without demographic control variables.¹²

We find that the personality traits agreeableness and neuroticism are consistently and strongly negatively correlated with employer accommodation. A standard deviation increase of 0.50 (see Table A2) in agreeableness is associated with an approximately 70 percent decrease in the probability of being accommodated, and a one-standard deviation increase in neuroticism is associated with an 86 percent decrease in the probability of being accommodated. On the other hand, extraversion is positively correlated with employer accommodation, with a standard deviation increase in extraversion nearly *doubling* the likelihood of accommodation. Andreoni (1998) demonstrates that these patterns (high extraversion, low agreeableness/neuroticism) are positively correlated with *dominating* and negatively correlated with *avoiding* conflict management styles.¹³ Individuals with dominating styles tend to be aggressive in attaining their goals, and individuals with avoiding styles (who are unlikely to be accommodated) often fail to communicate their needs. Finally, individuals who measure high in perceiving constraints (i.e., limits on their sense of control) are more likely to be accommodated by an employer. A standard deviation increase in the perceived constraints measure is associated with a 53 percent increase in the probability of being accommodated. Personality traits alone (including no other controls) explain nine percent of the variation in accommodation (Table 6, col. 2). This is same amount of variation explained by our rich set of control variables (omitting personality) in Table 4 (col. 2).

Interestingly, traits that are positively correlated with employer accommodation tend to be *negatively* correlated with one another in the population. For example, extraversion is negatively correlated with perceived constraints ($r=-0.33$; see Table A2). Similarly, *lack* of neuroticism is strongly negatively correlated with perceived constraints ($r=-0.54$), and *lack* of agreeableness is strongly negatively correlated with extraversion ($r=0.54$). The correlation matrix in Table A2 also reveals that the personality variables measure distinct constructs and therefore they are not collinear when entered simultaneously in the same model.

¹¹The finding that control beliefs change over the lifecycle has been noted elsewhere (see e.g., Lachman and Firth 2004).

¹²Owing to the small sample size in the models, we limit the control variables to the demographic characteristics included in Table 4.

¹³The other conflict management styles identified by Andreoni are: integrating, obliging and compromising.

Finally, columns 4 and 5 of Table 6 investigate the relationship between personality measures and labor force status using, alternately, newly disabled and healthy respondents who completed the psychosocial LBQ. Column 4 shows little evidence of correlation between the personality measures and employment status (measured one wave after personality was measured) in the newly disabled sample, where we also condition on demographic covariates. However, because that sample is very small and the estimates lack precision, we perform the same analysis on a larger subsample of healthy respondents. There, too, and with substantially increased precision, we find no correlation between the personality measures and employment status. This suggests that while personality measures may affect labor supply indirectly as important determinants of accommodation, they do not also have a direct effect on labor supply in our sample. An implication of this result is that there is likely to be little omitted variable bias if personality measures are omitted from regressions of labor supply on employer accommodation.

4. Effect of Employer Accommodation on Labor Force Exit and Disability Insurance Claiming

4.1 Methodology

We now turn to estimating the effect of employer accommodation on the labor supply of newly disabled older workers. We use two methods for estimating the effect of employer accommodation on labor supply: ordinary least squares (OLS) and propensity score reweighting. For these estimates to be interpretable as causal, the conditional independence assumption (CIA) must hold. The CIA states that, conditional on a set of observable characteristics, assignment of accommodation is independent of potential labor supply outcomes. While the CIA is fundamentally untestable, we showed in the previous section that conditional on observable characteristics such as education, race and job tenure, employees with health problems do not appear to sort to more accommodating employers and employers do not appear to provide accommodation selectively to individuals with higher labor force attachment or more residual productive capacity (i.e., less severe disabilities). If anything, accommodation is related to aspects of the employee's personality that are correlated with seeking out and obtaining help. We showed that while personality factors influence accommodation, they do not appear to directly influence the labor supply outcomes of the newly disabled. On the basis of this rationale, we estimate the effect of accommodation on labor supply using the full sample of HRS respondents experiencing a disability onset, necessarily omitting controls for personality which are available for only a small subset of the full sample.¹⁴

We perform two tests designed to gauge the validity of the CIA assumption in our setting. The first is a test of unconfoundedness proposed by Imbens (2015) and presented in Table A3. This test demonstrates that lagged labor supply outcomes are uncorrelated with

¹⁴An additional issue arises from the influence of potential sample selection bias. As discussed in Section 2, the HRS only asks those who report a work-limiting disability whether they received an employer accommodation. Recent experimental evidence by Maestas and Mullen (2015) suggests this skip pattern excludes a sizable number of people who report an employer accommodation for health reasons and by implication are currently working. This suggests our estimates may be interpreted as a *lower bound* on the effect of employer accommodation on continued employment post onset.

accommodation status, consistent with the conditional independence assumption holding. The second is a test of selection bias proposed by Altonji et al. (2005). The results of this test indicate that the degree of selection on unobservables would have to be 10.7 times the degree of selection on observables in order to explain our estimated effect. In light of the rich controls included in our model, selection on unobservables of this magnitude is well outside the range of plausibility.

Although both OLS and propensity score methods rely on the same conditional independence assumption, OLS imposes additional functional form assumptions that propensity score methods do not rely on. Propensity score reweighting uses the propensity score to reweight the distribution of covariates X in the control group to match the distribution of X observed in the treated group. Intuitively, it places more weight on untreated observations that “look like” treated observations and down-weights untreated observations that do not so that the two groups are more directly comparable. Thus, one can use the reweighted control group to estimate the counterfactual distribution of the outcome Y for the treated group had they never been treated.

We implement propensity reweighting as follows. First, we estimate the propensity score function $p(X_i)$ using a probit regression of employer accommodation (treatment) on individual, job and employer characteristics X_i measured in the wave prior to onset. We also include indicators for the disabling condition (e.g., musculoskeletal, emotional) which is also predetermined. We then construct the following estimator for the average treatment effect on the treated (ATET):

$$\Delta^{ATE} = \frac{1}{N^T} \sum_{i=1}^{N^T + N^C} \left(D_i Y_i - (1 - D_i) \frac{p(X_i)}{1 - p(X_i)} Y_i \right),$$

where $D_i = 1$ if individual i was accommodated (treated) and $D_i = 0$ otherwise, N^T is the number of treated individuals and N^C the number of control individuals, and Y_i is the outcome of interest (e.g., working after onset). This estimator has been shown to be a consistent estimator of ATET (Dehejia and Wahba, 1999; DiNardi, Fortin and Lemieux, 1996). Finally, we consider the robustness of our ATET estimate to use of other propensity score methods such as radius, nearest neighbor and block matching (Imbens, 2015).

To assess the degree of overlap in the accommodation propensity score between those who are and are not accommodated, Figure 1 shows the distribution of propensity scores estimated from the regression reported in column 2 of Table 4, by accommodation status. Reassuringly, the distributions overlap substantially indicating good covariate balance. Finally, Table A4 illustrates the balance between accommodated and non-accommodated respondents for selected characteristics, unweighted and reweighted using the propensity scores. As expected the reweighting reduces the difference between the treated and control groups.

4.2 Results

Table 7 presents estimates of the effects of employer accommodation on various labor supply outcomes using both OLS and propensity score reweighting. In all cases the two methods yield similar estimates, suggesting that a model specification with a simple dummy variable for treatment is adequate in this setting. We find that employer accommodation increases the probability that an individual is working in the wave immediately after onset by more than 17 percentage points—a 40 percent increase over the baseline labor force participation rate of 45 percent. This difference reduces to a statistically insignificant 5–6 percentage points (12 percent) two years later, up to four years after disability onset, suggesting that employer accommodation may only temporarily stave off labor force exit. Similarly, we do not find a significant effect of employer accommodation on disability insurance application or receipt within four years of disability onset.

Finally, in Table 8 we explore the sensitivity of our estimates to differences in specification, sample and estimation technique. Each row presents the estimated effect(s) of employer accommodation on the probability of working in the first wave following disability onset, defined as the first wave the respondent reports that his health limits his ability to work in some way. The first row reproduces the OLS estimate of the effect of any accommodation on work using the main sample of newly disabled workers who had been working at least two years when they first reported a work disability between 1994 and 2010. First, we examine how *type* of accommodation affects labor supply by including additional indicator variables for one of four dimensions of accommodation: time, work change, equipment/assistance or “other” (row 2; see Section 2 for definitions of these groups). For the most part, the type of accommodation does not have a strong impact on continuing to work beyond the provision of any accommodation, with the exception of work change accommodations which include changing the job to something the employee can do and helping the employee learn new skills. Employees who receive a work change accommodation are 28 percentage points (63 percent) more likely to work in the wave immediately following onset than employees who receive no accommodation at all, suggesting this is a particularly effective form of accommodation.

The next three rows (3–5) explore the sensitivity of the estimate to different sample restrictions. Recall that, prior to 1998, the HRS did not ask newly disabled respondents about their employment if they reported that their disability first began to bother them earlier than the previous wave. Row 3 restricts the sample to onsets first reported in the 1998 wave, which included full employment information for all respondents, even those reporting long standing health problems as the cause of their new disability. Because the sample is comprised of more individuals with long standing health problems, it is not surprising that the estimated effect of employer accommodation is somewhat smaller, 14.5 percentage points compared with 17.2 for the main sample. Similarly, row 4 includes onsets first reported in all years 1994–2010 but excludes those who report the impairment first began to bother them more than two years ago. In this case, the estimated effect of employer accommodation is somewhat higher, 20.7 percentage points, but still statistically similar to the main estimate. Row 5 presents a specification in which we drop individuals who are 62 or older at onset. The coefficient is virtually unchanged, suggesting our baseline estimate is

not overly affected by people who are about to become eligible for early Social Security retirement benefits.

The next three rows explore sensitivity to controls for union membership, pension coverage (DB or DC), and health insurance coverage (all measured pre-onset). The effect of accommodation on post-onset employment is slightly smaller when we control for unionization (consistent with the notion that unions act as institutional advocates for newly disabled employees), but statistically unchanged. Similarly, controlling for DB and DC pension coverage, as well as employer-sponsored health insurance do not change the baseline estimate.

The last four rows explore sensitivity to different propensity score methods. Row 5 reports the results of a control function estimator which includes a polynomial function of the propensity score as a control variable proxying for potential selection bias (Heckman and Navarro-Lozano, 2004). The estimate of the control function itself is statistically insignificant (not shown) and the estimated effect of employer accommodation on work is well within the 95 percent confidence interval of the baseline estimate. The next three rows explore different propensity score matching techniques: radius matching, nearest neighbor matching and block matching (Imbens, 2015). To implement these techniques we first trim the propensity scores by throwing out the extreme values so that only propensity scores between 0.1 and 0.9 are used (Crump, Hotz, Imbens and Mitnik, 2008). After removing the outliers, we re-estimate the propensity scores and match with replacement using the re-estimated propensity scores. Radius and block matching produce similar results to our baseline estimates while nearest neighbor matching produces a slightly lower estimate of 14.6 percentage points (but still statistically indistinguishable from our main estimate). Taken together, these results suggest that our estimates are quite robust to different sample definitions and estimation methods.

5. Conclusion

In this paper we use data on newly disabled workers from the Health and Retirement Study to provide new evidence on what factors determine accommodation of newly disabled workers, as well as the short- and long-term effects of employer accommodation on employment and SSDI claiming behavior. We find that employee characteristics—most notably personality traits—largely determine which workers are accommodated following disability onset, suggesting that *employees* rather than employers bear the burden of communicating and asserting their needs. Workers who are accommodated by their employers are 40 percent more likely to work in the survey wave immediately following disability onset. However, this difference drops to a statistically insignificant 5 percent by the next survey wave (two years later), and we find no evidence that employer accommodation affects SSDI claiming behavior.

Our findings suggest that policies targeting the disclosure environment for disabled workers may be more effective in increasing accommodation rates than policies that target the employer side of the accommodation equation alone. For example, federal contractors are now required to demonstrate that seven percent or more of their workforce has a disability.

Such a policy incentivizes employers to *ask* all employees if they have a disability, eliminating the need for employees to self-advocate and perhaps risk future discrimination in order to get help with work difficulties. Moreover, having a disability could come to be viewed as an asset in such organizations. If accommodation rates can be increased, many more workers would remain in the labor force, at least temporarily, but encouraging employer accommodation of disabilities is unlikely to affect the growing number of SSDI beneficiaries.

Appendix

Table A1

Types of Accommodation

Accommodation type	%
Time:	
Allow more breaks or rest periods	37.3
Allow arrival or departure change	37.2
Shorten work day	27.9
Equipment/Assistance:	
Get someone to help you	36.6
Get special equipment for job	15.1
Arrange special transportation	4.3
Work change:	
Change the job to something they could do	33.2
Help learn new skills	12.2
Other (please specify)	21.9

Note: The sample is HRS respondents who experience a new disability onset, are under age 65 and are employed. Accommodation types are not mutually exclusive categories.

Table A3

Unconfoundedness Test

Lagged outcome	Accomm.	Not Accomm.	Diff.	p-value	N
Working two waves prior to onset	95.9%	93.3%	2.6%	0.199	721
Working three waves prior to onset	92.8%	93.0%	-0.2%	0.937	525

Note: Sample is 972 respondents working in wave prior to onset and corresponds to Table 1, row 11.

Table A4

Covariate balance, unweighted and weighted by probit p-scores

Variable	Unweighted			Weighted (probit p-scores)		
	Difference	S.E.	t-stat	Difference	S.E.	t-stat
Age	0.03	0.27	0.12	0.13	0.29	0.45
Education (in years)	0.77	0.22	3.56	0.18	0.19	0.91
Female	-0.04	0.04	-1.04	0.01	0.04	0.16

Variable	Unweighted			Weighted (probit p-scores)		
	Difference	S.E.	t-stat	Difference	S.E.	t-stat
Black	-0.05	0.03	-1.81	0.00	0.03	-0.02
Job tenure	0.70	0.81	0.86	0.04	0.85	0.05
Earnings at onset	2669	2186	1.22	-698	2409	-0.29

Note: Sample is 972 respondents working in wave prior to onset and corresponds to Table 1, row 11.

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Highlights

- Only a quarter of newly disabled older workers are accommodated by their employers.
- Personality traits of employees are highly predictive of accommodation.
- Accommodated disabled workers are 40 percent more likely to delay labor force exit.

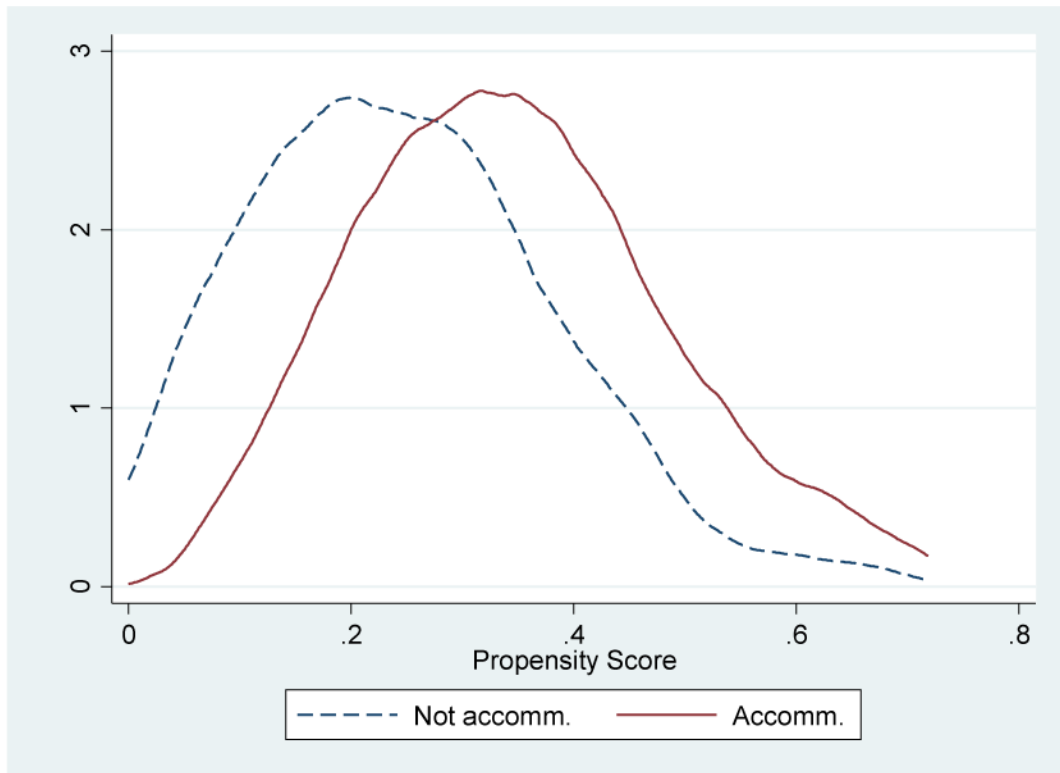


Figure 1.
Distribution of Propensity Score by Accommodation Status

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Table 1

Sample Size and Restrictions

Sample	No. obs.	% of previous
1. HRS respondents entering panel without work disability	15,906	
2. New disability onsets, age<65	3,144	20%
3. Employment at onset non-missing *	2,279	72%
4. Employed at onset	1,674	73%
Excluded responses to accommodation question		
5. Self-employed	1,640	98%
6. Left immediately	1,558	95%
7. No help needed **	1,453	93%
8. DK/RF/missing	1,276	88%
9. Observed in wave prior to onset	1,175	92%
10. Key covariates non-missing	1,164	99%
11. Working in wave prior to onset	972	84%

Notes:

* Before 1998 this question was not asked if reported onset occurred prior to last interview. See text for details.

** Response added in 1998.

Table 2

Summary Statistics

Variable	Overall	Accomm.	Not Accomm.	Overall HRS 2006–2010	LBO Sample 2006–2010
% received any accommodation	26%	100%	0%	31%	32%
any time accommodation		55%			
any equipment/assistance		48%			
any work change accomm.		37%			
other accommodation		22%			
<u>Demographic characteristics at onset</u>					
Age	58.5 (3.7)	58.5 (3.7)	58.5 (3.8)	59.6 (2.7)	60 ^{***} (2.5)
Education (in years)	12.1 (3.1)	12.7 (2.7)	11.9 ^{***} (3.2)	12.9 (2.7)	12.8 (2.6)
Female	59%	56%	60%	58%	56%
Black	20%	16%	20.8% [*]	15%	14%
Married	29%	29%	29%	32%	32%
Wealth	227,290 (472,852)	218,275 (366,625)	230,425 (504,725)	334,399 (676,698)	331,281 (678,247)
<u>Health in wave prior to onset</u>					
Functional limitations index (0–10)	1.45 (1.00)	1.44 (1.02)	1.45 (1.00)	1.85 (0.76)	1.91 (0.78)
BMI	29.2 (6.0)	29.2 (5.9)	29.1 (6.1)	30.3 (6.3)	30.3 (6.6)
Smoker	28%	26%	28%	22%	21%
Ever diagnosed diabetes	16%	14%	17%	21%	20%
Ever diagnosed blood pressure	45%	45%	46%	51%	54%
Ever diagnosed psychological problems	14%	17%	13%	26%	27%
Ever had back problems	37%	34%	38%	37%	40%
CESD score	1.7 (2.1)	1.6 (2.0)	1.8 (2.1)	1.8 (2.1)	2.0 (2.1)
<u>Characteristics of disability</u>					
Caused by nature of work	34%	36%	33%	30%	32%
Cancer	3%	4%	3%	5%	5%
Musculoskeletal	58%	62%	57%	67%	66%

Variable	Overall	Accomm.	Not Accomm.	Overall HRS 2006–2010	LBO Sample 2006–2010
Circulatory	13%	12%	13%	7%	6%
Allergies	6%	4%	7%	2%	1%
Endocrine	3%	3%	3%	3%	3%
Digestive	2%	1%	2%	2%	3%
Neurological	5%	4%	5%	5%	7%*
Reproductive	0%	0%	0%		
Emotional	2%	2%	2%	4%	4%
Other	5%	4%	6%	4%	4%
Type not reported	2%	3%	2%	2%	1%
<u>Job characteristics</u>					
Earnings (at onset)	32,102 (33,297)	35,280 (29,847)	30,982* (34,376)	37,959 (41,273)	40,434 (47,040)
Hours worked per week (at onset)	40.8 (11.1)	40.1 (10.4)	41.1 (11.3)	41.9 (10.3)	42.2 (9.7)
Tenure in wave prior to onset	12.49 (11.24)	13.00 (11.01)	12.30 (11.33)	12.55 (11.57)	13.13 (12.10)
Physical demands index (1–4, 1=most)	2.45 (1.16)	2.45 (1.09)	2.45 (1.18)	2.50 (1.17)	2.53 (1.13)
Job stress index (1–4, 1=most)	2.15 (0.85)	2.16 (0.83)	2.14 (0.85)	2.15 (0.88)	2.09 (0.90)
<u>Employer characteristics</u>					
Offers long term disability insurance	51%	53%	51%	47%	49%
Accommodates older workers	34%	36%	33%	38%	38%
Allows reduced hours	29%	30%	29%	25%	27%
Less than 15 employees	5%	4%	5%	9%	8%
15–24 employees	2%	3%	2%	3%	3%
25–499 employees	14%	12%	14%	14%	17%
500+ employees	34%	36%	33%	28%	33%**
Employee size not reported	46%	45%	46%	46%	39%
<u>Labor market outcomes</u>					
Working in wave after onset	45%	58%	40%***	44%	40%
Working two waves after onset	41%	47%	39%**		

Variable	Overall	Accomm.	Not Accomm.	Overall HRS 2006–2010	LBO Sample 2006–2010
Applied for disability within two waves	33%	28%	34%*		
Received disability within two waves	22%	20%	23%		
No. obs.	1,175	306	869	189	117

p<0.01,

**
p<0.05,

*
p<0.1

Note: The table displays the summary statistics for our estimation sample. Column 1 is our main sample and corresponds to table 1, row 9. Column 2 and 3 are individuals accommodated and not accommodated, respectively. Column 4 shows the sample of individuals in year 2006 to 2010, while column 5 limits this sample further to those individuals who completed a leave behind questionnaire. Accommodation types are not mutually exclusive. See text for details. Asterisks in the “Not Accomm.” column denote statistical difference with respect to corresponding element in the “Accomm.” column. Asterisks in the “LBO Sample” column denote statistical difference with respect to corresponding element in the “Overall HRS 2006–2010” column.

Table 3

Healthy Respondents' Perceived Probability of Becoming Disabled in Next 10 Years, by Employer Characteristic

Employer characteristic	Yes	No	Unadjusted difference	Adjusted difference
Offers long term disability insurance	34.7 (25.7)	37.4 (26.7)	-2.7***	-0.9
Accommodates older workers	35.1 (25.7)	36.1 (26.7)	-1.0	1.3
Allows reduced hours	36.1 (26.8)	36.0 (26.4)	0.1	1.1

p<0.01,

**
p<0.05,

*
p<0.1

Note: Adjusted differences are the differences controlling for age, gender, race, education, marital status, functional limitations, and household assets. Employer characteristic measured in first wave of employment by given employer.

Table 4

Determinants of Employer Accommodation

	Dependent Variable				
	Any accomm. (1)	Any accomm. (2)	Time (3)	Equip./assist. (4)	Work change (5)
<u>Demographic characteristics</u>					
Age	0.000942 (0.00380)	0.00161 (0.00422)	0.00203 (0.00348)	-0.0018 (0.0034)	-0.0012 (0.0029)
GED (omitted = no high school)	0.0594 (0.0555)	0.0865 (0.0631)	0.0445 (0.0501)	-0.0385 (0.0434)	0.0434 (0.0383)
High school degree	0.0545 (0.0355)	0.0604 (0.0396)	0.0492 (0.0309)	0.0265 (0.0325)	0.0538* (0.0233)
Some college	0.0829*** (0.0400)	0.100** (0.0471)	0.121*** (0.0401)	0.0683* (0.0402)	0.0727** (0.0298)
College or more	0.0918* (0.0500)	0.117* (0.0638)	0.0544 (0.0484)	0.0498 (0.052)	0.0985*** (0.0475)
Female	-0.0424 (0.0308)	-0.0538 (0.0386)	-0.0163 (0.0327)	-0.0412 (0.0319)	-0.0202 (0.0268)
Black (omitted = white)	-0.0568* (0.0340)	-0.0680* (0.0385)	-0.0358 (0.0320)	-0.0263 (0.0317)	-0.0058 (0.0283)
Other race (non-white)	-0.106** (0.0505)	-0.133*** (0.0504)	-0.0552 (0.0446)	-0.0741 (0.0374)	-0.0160 (0.0380)
<u>Health prior to onset</u>					
Overweight (omitted = normal/underweight)	0.0440 (0.0338)	0.0480 (0.0378)	0.0236 (0.0319)	0.0629* (0.0326)	0.0514** (0.0248)
Obese	0.0281 (0.0348)	0.0274 (0.0385)	0.0034 (0.0319)	-0.0227 (0.0299)	0.0318 (0.0249)
Had back problems	-0.0322 (0.0279)	-0.0701** (0.0304)	-0.0342 (0.0256)	0.0234 (0.0259)	-0.0094 (0.0210)
<u>Characteristics of disability</u>					
Caused by nature of work	0.0189 (0.0300)	0.0212 (0.0342)	-0.0319 (0.0273)	-0.0217 (0.0257)	0.0082 (0.0228)
Cancer (omitted = missing)	-0.0555 (0.1202)	-0.0342 (0.1348)	0.0456 (0.1083)	-0.0612 (0.0820)	-0.0733 (0.1140)
Musculoskeletal	-0.0777 (0.0945)	-0.0284 (0.1048)	-0.0025 (0.0802)	0.0581 (0.0714)	-0.0890 (0.0924)

	Dependent Variable				
	Dimension of accommodation				
	Any accomm. (1)	Any accomm. (2)	Time (3)	Equip./assist. (4)	Work change (5)
Circulatory	-0.1558 (0.0993)	-0.0963 (0.1085)	0.0329 (0.0842)	-0.0378 (0.0728)	-0.1256 (0.0935)
Allergies	-0.1898* (0.1038)	-0.1742 (0.1138)	-0.0806 (0.0861)	-0.0684 (0.0770)	-0.1295 (0.0981)
Endocrine	-0.0976 (0.1208)	-0.0855 (0.1286)	0.0399 (0.1060)	-0.0444 (0.0866)	-0.0790 (0.1100)
Digestive	-0.1857 (0.1231)	-0.1218 (0.1383)	-0.0132 (0.1128)	0.0417 (0.1130)	-0.0702 (0.1259)
Neurological	-0.1508 (0.1078)	-0.1166 (0.1214)	-0.0033 (0.0977)	-0.0346 (0.0818)	-0.1790* (0.0940)
Reproductive	-0.1265 (0.2267)	-0.0913 (0.2438)	0.0382 (0.2050)	-	-
Emotional	-0.1773 (0.1212)	-0.2449** (0.1196)	-	-	-0.1389 (0.1070)
Other	-0.1562 (0.1063)	-0.1459 (0.1155)	-0.0339 (0.0894)	-0.0228 (0.0801)	-0.1409 (0.0972)
Not working in prior wave	-0.0628 (0.0385)				
<u>Job characteristics in prior wave</u>					
2–6 years tenure (omitted = 0–2 years)		0.0172 (0.0464)	0.0532 (0.0375)	-0.0069 (0.0370)	-0.0013 (0.031)
6–12 years tenure		0.0839* (0.0501)	0.0683* (0.0404)	0.0081 (0.0403)	0.0305 (0.0351)
12–24 years tenure		0.0242 (0.0482)	0.0033 (0.0356)	0.0043 (0.0391)	0.0111 (0.0328)
24+ years tenure		0.0263 (0.0516)	0.0759* (0.0439)	0.0436 (0.0443)	0.0321 (0.0364)
Physical demands index		-0.0203 (0.0140)	-0.0109 (0.0117)	-0.0228** (0.0113)	-0.0236** (0.0096)
Job stress index		0.0176 (0.0188)	0.0279* (0.0158)	0.0339** (0.0154)	-0.0137 (0.0129)
<u>Employer characteristics in prior wave</u>					
Offers LTDI		0.0072 (0.0322)	0.0168 (0.0269)	0.0025 (0.0262)	0.0155 (0.0215)

	Dependent Variable				
	Dimension of accommodation				
	Any accomm. (1)	Any accomm. (2)	Time (3)	Equip./assist. (4)	Work change (5)
Accommodates older workers		0.0194 (0.0355)	0.0287 (0.0331)	-0.0121 (0.0274)	-0.0026 (0.0220)
Allows reduced hours		0.0304 (0.0342)	0.0129 (0.0283)	0.008 (0.0280)	0.0359 (0.0265)
Industry and occupation dummies?	No	Yes	Yes	Yes	Yes
R-squared	0.05	0.09	0.12	0.14	0.17
Observations	1,164	972	932	926	964

Standard errors in parentheses

*** p<0.01,

** p<0.05,

* p<0.1

Notes: The sample is individuals under age 65, with no reported waves of disability who experience a disability onset in the current wave and are employed. The table reports the marginal effects of a linear probit model where the dependent variable is as indicated. Standard errors are in parentheses. Regressions include the following additional covariates: marital status, wealth deciles, earnings and hours worked at onset, terciles of functional limitations index prior to onset, smoking status, diagnosis dummies for diabetes, high blood pressure and psychological problems, CESD score, dummies for condition causing disability, dummies for firm size, missing variable dummies and year fixed effects.

Table 5

Effect of Disability Onset on Personality Traits, 2010

Dependent Variable	Lagged Trait	Disability Onset	N	fract of sd	% of base
<u>Personality</u>					
Openness	0.689 *** (0.012)	-0.007 (0.016)	3,920		
Conscientiousness	0.683 *** (0.013)	-0.028 * (0.015)	3,943	0.056	0.8%
Extraversion	0.719 *** (0.012)	-0.047 *** (0.016)	3,952	0.07833	1.6%
Agreeableness	0.654 *** (0.013)	-0.008 (0.015)	3,958		
Neuroticism	0.629 *** (0.012)	0.028 (0.019)	3,951		
<u>Sense of Control</u>					
Personal mastery	0.401 *** (0.015)	-0.117 *** (0.040)	3,982	0.117	2.5%
Perceived constraints	0.523 *** (0.015)	0.119 *** (0.040)	3,976	0.10818	5.4%

*** p<0.01,
 ** p<0.05,
 * p<0.1

Note: The sample is HRS respondents in 2010 with personality measured in both 2006 and 2010. The table reports the marginal effects of a linear probit model where the dependent variable is as indicated. Standard errors are in parentheses. Additional covariates are: age, gender, marital status, education, and race.

Table 6

Effect of Personality Measures on Accommodation and Work

	Dependent Variable:				
	Any Accommodation			Work	
	(1)	(2)	(3)	(4)	(5)
<u>Personality</u>					
Openness	0.113 (0.093)	0.008 (0.107)	-0.105 (0.102)	-0.104 (0.121)	0.005 (0.015)
Conscientiousness	-0.063 (0.094)	-0.021 (0.116)	-0.071 (0.108)	0.058 (0.126)	0.013 (0.017)
Extraversion	0.155 (0.099)	0.240** (0.113)	0.414*** (0.102)	-0.241* (0.128)	0.012 (0.015)
Agreeableness	-0.147 (0.099)	-0.191* (0.111)	-0.367*** (0.123)	0.215 (0.140)	-0.002 (0.017)
Neuroticism	-0.156** (0.078)	-0.199** (0.087)	-0.321*** (0.081)	-0.062 (0.094)	-0.020* (0.011)
<u>Sense of Control</u>					
Personal mastery	0.015 (0.050)	0.017 (0.057)	0.009 (0.051)	-0.071 (0.055)	-0.010 (0.007)
Perceived constraints	0.091* (0.050)	0.113** (0.053)	0.125** (0.050)	-0.021 (0.058)	-0.003 (0.007)
Includes controls?	No	No	Yes	Yes	Yes
Newly disabled sample?	Yes	Yes	Yes	Yes	No
Restricted to working prior wave?	No	Yes	Yes	Yes	Yes
R-squared	0.07	0.09	0.35	0.14	0.04
Observations	115	90	90	90	3,257

p<0.01,

**
p<0.05,

*
p<0.1

The sample is HRS respondents in with personality measured in either 2006 and 2010, who experience a new disability onset in either 2008 or 2010, are under age 65 and are employed. Column 5 is estimated on sample of healthy respondents. See text for details. The table reports the marginal effects of a linear probit model where the dependent variable is as indicated. Standard errors in parentheses. Control variables when included are age, gender, earnings, education, and race. Work status is measured in wave following personality measurement.

Table 7

Effect of Employer Accommodation on Labor Supply and Program Participation

Dependent Variable	OLS	RW(p)	N
Working in immediate post-onset wave	0.171 *** (.033)	0.173 *** (.036)	972
Working two waves after onset	0.045 (.037)	0.054 (.044)	795
Applied for disability insurance w/in 4 years	-0.037 (.035)	-0.048 (.040)	812
Received disability insurance w/in 4 years	0.017 (.032)	0.010 (.035)	808

p<0.01,

**
p<0.05,

*
p<0.1

Notes: The sample is individuals under age 65, with no reported waves of disability who experience a disability onset in the current wave and are employed. In column 1, the table reports the marginal effects of a linear probit model where the dependent variable is as indicated. Column 2 reports the marginal effects of linear probit model reweighted by propensity score as described in the text. Standard errors are in parentheses. The covariates are: work tenure, if disability was caused by work, age, earnings, average hours worked, functional limitation index, gender, marital status, education, race, BMI, smoking status, diabetes status, high blood pressure indicator, indicator if employer offers long term DI insurance, indicator if respondent believes employer would accommodate older workers, indicator if respondent believes employer would allow reduced hours, indicator if job is stressful, indicator if job is physically intensive, indicator for back problems, indicator for psychological problems, CESD score, wealth decile, number employees at firm, year fixed effects, condition fixed effects, industry fixed effects, occupational fixed effects.

Table 8

Sensitivity and Robustness Checks

Specification/Estimator	Any Accommod.	Time	Equip./Assist.	Work Change	Other
1. Baseline (OLS)	0.171 *** (0.033)				
2. Include type of accommodation	0.149 ** -0.066	0.0132 (0.0597)	-0.0308 -0.059	0.124 ** -0.060	-0.0438 -0.06
3. Restrict to onsets occurring after 1996	0.142 *** (0.041)				
4. Restrict to onsets reported within 2 years	0.207 *** (0.049)				
5. Omit respondents aged >= 62 at onset	0.173 *** (0.041)				
6. Include union membership indicator (pre-onset)	0.161 *** (0.033)				
7. Include DB, DC pension indicators (pre-onset)	0.172 *** (0.033)				
8. Include employer health insurance indicators (pre-onset)	0.172 *** (0.033)				
9. Control function	0.185 *** (0.040)				
10. Radius matching	0.179 *** (0.036)				
11. Nearest neighbor matching	0.139 *** (0.055)				
12. Block matching	0.178 *** (0.040)				

*** p<0.01,

** p<0.05,

* p<0.1

Notes: The sample is individuals under age 65, with no reported waves of disability who experience a disability onset in the current wave and are employed. The table reports the marginal effects of a linear probit model where the dependent variable is working in the wave of onset. Rows correspond to different estimation techniques, sample restrictions, or additional control variables. Standard errors are in parentheses. The covariates are: work tenure, if disability was caused by work, age, earnings, average hours worked, functional limitation index, gender, marital status, education, race, BMI, smoking status, diabetes status, high blood pressure indicator, indicator if employer offers long term DI insurance, indicator if respondent believes employer would accommodate older workers, indicator if respondent

believes employer would allow reduced hours, indicator if job is stressful, indicator if job is physically intensive, indicator for back problems, indicator for psychological problems, CESD score, wealth decile, number employees at firm, year fixed effects, condition fixed effects, industry fixed effects, occupational fixed effects.

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Table A2

Summary Statistics for Personality Measures

Measure	Mean	Std. dev.	Openness	Conscientiousness	Correlation with			
					Extroversion	Agreeableness	Neuroticism	Control
Personality (1–4)								
Openness	2.9	0.5	1.00					
Conscientiousness	3.3	0.5	0.42	1.00				
Extroversion	3.0	0.6	0.53	0.34	1.00			
Agreeableness	3.5	0.5	0.37	0.38	0.54	1.00		
Neuroticism	2.3	0.7	-0.25	-0.26	-0.20	-0.15	1.00	
Sense of Control (1–6)								
Personal Mastery	4.7	1.0	0.28	0.30	0.29	0.08	-0.33	1.00
Perceived Constraints	2.2	1.1	-0.30	-0.15	-0.33	-0.16	0.54	-0.49
No. obs.	115							

Note: The sample is HRS respondents in with personality measured in either 2006 and 2010, who experience a new disability onset in either 2008 or 2010, are under age 65 and are employed.