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Barriers to Later Retirement: Increases in the Full Retirement Age, Age Discrimination, and the Physical Challenges of Work

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Abstract

Policy changes intended to delay retirements of older workers and extend their work lives may run up against demand-side barriers from age discrimination, and supply-side barriers owing to rising physical challenges of work as people age. We study three questions. How do age discrimination protections affect labor market transitions of workers encouraged to work longer by increases in Social Security's Full Retirement Age (FRA)? How do physical challenges at work influence employment transitions of older workers for whom public policy is trying to delay retirement? And what role do stronger age discrimination protections play in helping workers facing physical challenges at work?

We find that stronger state age discrimination protections increase employment and hiring for older workers caught by increases in the FRA. We also find that physical challenges pose a barrier to extending work lives, although some workers with physically-demanding jobs are able to mitigate these demands -- either at new jobs or with the same employer. However, for the most part stronger age discrimination protections do not appear to contribute to older workers' ability to mitigate physical challenges at work.

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I. Introduction

Population aging in the United States has led to numerous Social Security reforms intended to increase the labor supply of seniors, including phased increases in the full retirement age (FRA) – the age of eligibility for full benefits – from 65 to 67 (e.g., American Academy of Actuaries, 2002; Munnell et al., 2004). But policy changes intended to delay retirements of older workers and extend their work lives may run up against two constraints – demand-side barriers in the form of age discrimination, and supply-side barriers in the form of the rising physical challenges of work as people age. Both of these constraints may impact the effectiveness of public policies intended to lengthen work lives.

To the extent that these policy goals are hindered by age discrimination, stronger and more vigorously-enforced age discrimination laws could make these policy changes more effective, or equivalently would enable policymakers to utilize more moderate supply-side policies to achieve their objectives. Rising physical challenges of work for some older individuals can imply either low responsiveness to supply-side incentives to work longer, or diminished welfare from doing so. Finally, the two can interact. It is possible, for example, that stronger age discrimination laws encourage employers to accommodate physical challenges of older workers, enabling them to work longer.

Neumark and Song (2011) considered some evidence on the first issue – whether stronger state-level age discrimination protections enhance the effects of Social Security reforms. They found that in states with age discrimination laws that are stronger than the federal Age Discrimination in Employment Act (ADEA), the increases in the FRA did more both to delay retirement (claiming benefits) and to increase employment of workers for whom the FRA increased beyond age 65. This evidence points to policy complementarities between labor-supply incentives underlying Social Security reforms and labor-demand policies to lessen barriers to the employment of older workers.

The focus on discriminatory barriers to older workers' employment is limited, however, because of the additional barriers some older workers may face – namely, the physical challenges of work itself, which can become more of a constraint with age. Moreover, how these physical challenges are accommodated in the workplace may be affected by age discrimination and, concomitantly, by laws that restrict this discrimination. In this paper, we therefore expand on the analysis of barriers to increasing

employment of older workers. We take a more dynamic approach, focusing on the employment transitions of older individuals directly affected by increases in the FRA, and more generally on the employment transitions of individuals in the age ranges affected by efforts to delay retirement, studying how these transitions are influenced by physical challenges older workers face, and the types of transitions made by workers with physical challenges.

In particular, we study three questions. First, how do age discrimination protections affect the labor market transitions of workers directly affected by increases in the FRA? Second, how do physical challenges at work influence the employment transitions of older workers for whom public policy is trying to delay retirement? And third, do age discrimination protections influence the ability of older workers facing physical challenges at work to remain employed?

With regard to age discrimination protections and labor market transitions, our past research found increases in employment among those "caught" by increases in the FRA. Here, we turn to the question of how the employment increases come about. Is it through continued employment at the same employer, hiring at new employers, or even re-entry into employment?

How age discrimination laws affect labor market transitions of those caught by increases in the FRA is important in thinking about efforts to delay retirement, because transitions to new jobs provide a common route to remaining employed and delaying retirement for some workers. Workers near conventional retirement ages frequently seek new employment in part-time or shorter-term "partial retirement" or "bridge jobs" before retiring fully, rather than simply continuing employment in their long-term career jobs until they leave the workforce (e.g., Cahill et al., 2005; Johnson et al., 2009). But evidence also suggests that discriminatory barriers based on age may be particularly strong for hiring (Adams, 2002, 2004; Bendick et al., 1996, 1999; Hirsch et al., 2000; Hutchens, 1988; Johnson and Neumark, 1997; Kite et al., 2005; Lahey, 2008a).

If hiring discrimination against older workers deters transitions to new jobs, then some workers may have to respond to increases in the FRA by remaining in their current jobs. One consequence of this is that age discrimination can limit overall responsiveness to increases in the FRA, perhaps allowing only minor adjustments to increases in the FRA as workers remain at their same employer, but inhibiting

partial retirement or taking up bridge jobs. Conversely, if stronger age discrimination protections enhance hiring of older workers, then these protections may ultimately lead to more substantial lengthening of work lives as the FRA increases.

The second set of questions concerns how physical challenges at work influence employment transitions of older workers. When older workers for whom public policy is trying to delay retirement face physical challenges at work, are they more likely to leave the workforce, or are they able to move to other employers (or to self-employment)? Are older workers who face physical challenges able to reduce the physical demands of work, and how do they do this? Do their challenges appear to be mitigated, if they are, at the same employer, or does this mitigation require changing employers?

These questions about physical challenges and labor market transitions are significant with respect to efforts to delay retirement because such efforts, for some workers, will inevitably create a tension between increased incentives to work and rising physical challenges from doing so. For this reason, reservations about raising the FRA often focus on the difficulties some workers will face because of the lengthening of work lives (e.g., Rho, 2010). Some older individuals with physical limitations, or in physically-demanding jobs, may find it difficult to remain on the current job, and their ability to change jobs or otherwise reduce the physical challenges of work may be central to efforts to delay retirement. Just like we argued with respect to barriers posed by age discrimination, to the extent that barriers posed by the physical challenges of work can be reduced, it will be easier for policymakers to induce later retirement.

The third set of questions considers the intersection of the first two, asking how age discrimination protections influence labor market transitions of older workers facing physical challenges at work.[1] Do these protections increase the likelihood that these workers remain employed? Do they make it more likely that workers will be able to remain employed but in less physically-demanding jobs, whether because of changes on the current job or transitions to jobs with more moderate physical demands?

[1] In that sense, part of the goal of answering the second set of questions is to set the stage for asking how age discrimination laws affect the accommodation of physical challenges in the workplace.

If stronger age discrimination protections act mainly to extend employment of older workers with the current employer, there may be less scope for reducing physical challenges. Alternatively, the current employer may be more compelled to find ways to help accommodate aging workers. Or if stronger age discrimination protections make it easier for older workers to move to other employers, then such transitions may serve as a means to reduce physical challenges at work and extend work lives in that way.

II. Related Prior Research

There is a large body of research on age discrimination in labor markets, including evidence that age discrimination laws increase employment of older workers covered by these laws (see Neumark, 2008, for a review). With respect to the narrower question of hiring, which takes on particular importance with regard to efforts to lengthen work lives by delaying retirement, predictions regarding the effects of stronger age discrimination protections are more ambiguous, and evidence is sparse.

It may be natural to think that stronger age discrimination laws should deter age discrimination in hiring. But in hiring discrimination cases it is difficult to identify a class of affected workers, and for this reason and others economic damages can be much smaller than in termination cases (Adams, 2004; Posner, 1995). As a consequence, the ADEA may be ineffective at combating hiring discrimination. Moreover, because the ADEA makes it more difficult to terminate older workers, raising the costs of doing so (Neumark and Stock, 1999), it may actually *discourage* their hiring (Bloch, 1994; Lahey, 2008b).

If age discrimination laws discourage hiring of older workers, then even if these laws on net increase employment among those affected by increases in the FRA, they could reduce the likelihood that older workers increase employment via the re-employment route. Instead, age discrimination laws might simply make it easier for older workers caught by increases in the FRA to remain in the current job a little longer. As such, an adverse effect of stronger age discrimination protections on hiring of older workers would cast a more negative or nuanced perspective on the apparent complementarities between age discrimination laws and increases in the FRA reported in Neumark and Song (2011).

The argument that discrimination laws deter hiring been made generally with respect to anti-discrimination laws, and it has perhaps appeared natural to assume that it applies to older workers as well

(e.g., Lahey, 2008b). However, since most older workers are unlikely to remain employed for very long, increases in termination cost may have less force in employers' decisions about hiring older workers. If, for example, an older worker is applying for a part-time job after a long career, employers may regard it as likely they will only stay in the position for a year or two, in which case the possibility that the law raises termination costs may be largely irrelevant – in contrast, say, to hiring a young black male protected by race discrimination laws.

The only empirical studies of how age discrimination laws affect hiring are by Lahey (2008b) and Adams (2004). Adams does not find any evidence that age discrimination laws increase hiring of older workers, and perhaps the opposite, especially for those aged 65 and over. However, the data he uses are not that well-suited to measuring hiring. Lahey concludes that stronger age discrimination laws deter hiring of older workers, but there are reasons to be skeptical of this conclusion.[2] Among other things, Lahey simply looks at whether there was a state age discrimination law, as this lengthens the statute of limitations. But this is the one feature of state age discrimination laws that we found does not matter (Neumark and Song, 2011). In contrast, the age discrimination protections that appear to matter are whether state age discrimination laws cover small firms exempted from the ADEA, and whether stronger remedies in the form of compensatory and punitive damages are allowed. Thus, the question of how hiring and other transitions of older workers are affected by the features of state age discrimination laws that *do* matter is unexplored.

There is also, perhaps surprisingly, very little research on how physical challenges at work influence labor market transitions of older workers. What exists is mostly rather dated, focuses exclusively on retirement or labor force exit more generally, and does not focus on people in the age ranges affected by increases in the FRA. Using data on job characteristics from the *Dictionary of Occupational Titles* (DOT), and Census data on retirement, Filer and Petri (1988) show that jobs from which people tend to retire earlier pose greater physical demands (more heavy physical work, climbing and balancing, stooping and kneeling, noisy or hazardous environment, etc.). Similarly, Hayward et al. (1989) find that an index of physical demands from the DOT predicts earlier retirement in data from the

[2] Neumark (2008) provides a lengthier discussion.

National Longitudinal Study of Older Men. Using the first wave of the Health and Retirement Study (HRS) – the same data set we use, although we have many more waves – Loprest et al. (1995) find that labor force participation is lower among both men and women with more severe work-related physical limitations. More recently, McGarry (2004) uses data from the first two waves of the HRS and finds that declines in subjective health assessments (and other adverse health conditions) decrease the likelihood that workers expect to work full-time after age 62.

III. Data and Main Empirical Analyses

We utilize HRS data from 2000-2008, a period covering the first phase of increases in the FRA from age 65 for cohorts born in 1937 or earlier up to age 65 and 10 months for the 1942 birth cohort.[3] We study men only, to minimize complexity from issues pertaining to eligibility for Social Security retirement benefits.

We exploit the longitudinal nature of the data to measure hiring and other employment transitions. For the most part, we do this based on employment status at each wave and information on whether a worker reporting changing employers. Thus, for example, we measure whether a person was employed at wave t-2 but not at wave t, or whether a worker changed employers between waves t and t-2.[4] In some cases we also use responses to interview questions that provide information on labor market transitions between the interviews, which we refer to as "inter-wave" information.

The analysis also relies on the detailed compendium of statutory-, judicial-, and enforcement-related differences in state age discrimination laws that we have constructed (described in Neumark and Song, 2011). We focus in particular on whether the state age discrimination law applies to smaller employers than the federal ADEA – hence increasing coverage – and whether the state law allows for stronger remedies (penalties). These were the two features of age discrimination laws that the earlier research indicated were important in delaying retirement and increasing employment of older workers affected by the increase in the FRA.

The first part of the analysis focuses on how age discrimination laws affect labor market

[3] At the time of analysis, the 2010 data are available, but not for the restricted data with state identifiers, which we need for our analysis.
[4] HRS waves are two years apart.

transitions of older workers – in particular those caught by increases in the FRA. For subsets of the sample defined by employment status at wave t, and information on employment status and employer at waves t-2 and t, we define dummy variables for particular labor market transitions.

To fix ideas, consider the subsample of those employed at wave t-2, and define T_{ist} as a dummy variable equal to one if individual i in states is employed in year (wave) t.[5] We estimate a linear probability model for this subsample and outcome that is a difference-in-difference-in-differences (DDD) model, based on differences between states with stronger versus weaker age discrimination protections, differences between workers of different ages, and differences between workers of the same age who face an FRA above 65 or equal to 65. In particular, aside from standard controls, the model includes: a detailed set of age dummy variables; dummy variables capturing whether one was "caught" by the increase in the FRA – for those above age 65 but less than the FRA, and for those in the 62-65 age range; dummy variables for stronger state age discrimination protections, and the interactions needed to identify the DDD estimator. The estimated model is:

$$
\begin{aligned}
(1) \qquad T_{ist} = {} & \alpha + \beta A65FRA_{ist} \cdot IFRA_t \cdot AD_s + \gamma A6265_{ist} \cdot IFRA_t \cdot AD_s \\
& + \beta' A65FRA_{ist} \cdot IFRA_t + \gamma' A6265_{ist} \cdot IFRA_t + \kappa IFRA_t \cdot AD_s + \lambda IFRA_t + \psi AD_s \\
& + \sum_k A^k{}_{ist} \cdot AD\delta_{1k} + \sum_k A^k{}_{ist}\delta_{0k} + X_{ist}\theta + \varepsilon_{ist}.
\end{aligned}
$$

[5] One could think about analyzing the outcomes we study in this paper – does one remain employed, does one leave employment, does one exit to self-employment, etc. – as duration data, perhaps with competing risks. When event times are grouped into intervals, there is often a close relationship between conclusions drawn from duration models and dichotomous choice models (Abbott, 1985), although the competing risks case – when time in a spell can end in transitions to many possible states – is more complicated. Because this paper looks at a large number of outcomes in a somewhat exploratory fashion, we adopt a simple approach of estimating linear probability models for the different events occurring in the intervals captured by the HRS (usually two-year intervals). Additional work using more sophisticated duration analyses, and focusing on a subset of the outcomes we consider, could be valuable.

In equation (1), A^k is a vector of age dummy variables in two-month intervals, and X is a vector of individual-level demographic and other controls, including fixed state effects. *IFRA* is a dummy variable equal to one for cohorts that faced an FRA higher than age 65 (cohorts born 1938 and later). *A6265* is a dummy variable for those in the age range 62-65 (exclusive of 65). *A65FRA* is a dummy variable for those aged 65 to the FRA for their cohort. Given these definitions, the interactions *A65FRA·IFRA* and *A6265·IFRA* capture those "caught" by the increase in the FRA, in the affected age ranges. *AD* is a dummy variable for a particular feature of state age discrimination laws that provides greater protection for older workers than the ADEA.[6] We estimate the model considering one specific feature of the age discrimination law at a time.[7]

Equation (1) embeds two DDD estimators. One (β) is the difference in the dependent variable for those between 65 and their FRA, born in cohorts affected by the increase in the FRA, in states with stronger age discrimination protections, relative to the same ages and cohorts in states without the stronger protection, in turn relative to the same difference-in-differences for those outside the ages from 62 to the FRA. The second DDD estimator (γ) is the parallel estimator, but for 62-65 year-olds relative to those outside the age ranges from 62 to the FRA.[8] In this specification, the "caught" variables shift the timing of changes in behavior (benefit claiming or employment), with no impact on behavior outside of the affected age ranges.[9] Then, when the "caught" variable is interacted with the age discrimination

[6] We are able to include fixed state effects along with this variable because for a few states the age discrimination laws change in the sample period. But there is not enough variation to assess the "main" effects of age discrimination laws from these changes.

[7] This simplifies the equation, and in Neumark and Song (2011) we found that the results for static models for employment and retirement were not very sensitive to including the age discrimination protections simultaneously.

[8] For the older group this setting is more complex than a conventional DDD estimator because the age range (65 to the FRA) varies by birth cohort for those born in 1938 or later. That is, because the FRA varies by cohort, *A65FRA* is not a simple dummy variable for an age range, but is instead defined to equal one when (i) a person is in a cohort affected by the increase in the FRA, and (ii) that person is between 65 and the FRA for his cohort. As a result, the interaction with *IFRA* is redundant. However, we leave it in to make clear the parallel to a standard difference-in-difference-in-differences estimator, and the intuition goes through entirely. See Neumark and Song (2011) for details.

[9] To see this, suppose that the data run only through the 1938 birth cohort, for which the FRA shifts from 65 to 65 and 2 months. For the earlier cohorts not affected by the increase in the FRA (*IFRA* = 0), their change in behavior at age 62 is ($\delta_{62} - \delta_{61\&10mo.}$), their change at age 65 is ($\delta_{65} - \delta_{64\&10mo.}$), and their change in behavior at age 65 and 2 months is ($\delta_{65\&2mo.} - \delta_{65}$). For those caught by the increase in the FRA (*IFRA* = 1), their change in behavior at age 62 is ($\{\delta_{62} + \gamma\} - \delta_{61\&10mo.}$), their change at age 65 is ($\{\delta_{65} + \beta\} - \{\delta_{64\&10mo.} + \gamma$), and their change in behavior at 65 and 2 months is ($\delta_{65\&2mo.} - \{\delta_{65} + \beta\}$). Thus, the increase in the FRA induces one shift at age 62, another at age 65, and another at the new, higher FRA, with the sum of the cumulative shifts netting out to zero.

protection, the estimate captures the difference in this shift in the timing of behavior between states with and without the protection. We actually begin with preliminary analyses in which we omit the age discrimination variables, estimating a difference-in-differences model for how being caught by the increase in the FRA affects labor market transitions.

The second part of the analysis studies the relationships between physical challenges at work and the dynamics of employment for workers in the age ranges affected by increases in the FRA. In this case we focus not only on those aged 62-65 and 65-66, but also on those aged 66 and over; the next scheduled increases in the FRA will raise the FRA from 66 to 67, and it is possible that there will be increases to a higher FRA subsequently.[10]

In these analyses we estimate simpler models for employment dynamics, which capture how physical demands faced by workers on the job affect labor market transitions. (We also touch briefly on results looking at physical limitations reported by HRS respondents whether or not they work, but here emphasize the analysis of physical demands, for which the evidence was stronger.) The models allow for differential effects of physical demands on those age 62-65, 65-66, and 66+, all relative to younger individuals. We use largely the same notation as before, but now introduce a dummy variable *PD* for physical demands of the job. We look at alternative ways of capturing physical demands – whether the work imposed any of a list of physical demands included in the HRS survey, as well as specific physical demands. In these analyses, the estimated model is of the form:

$$(2) \qquad T_{ist} = \alpha + \beta A66_{ist} \cdot PD_{ist} + \gamma A65_{ist} \cdot PD_{ist} + \delta A6265_{ist} \cdot PD_{ist}$$
$$+ \kappa PD_{ist} + \sum_k A^k{}_{ist}\delta_{0k} + X_{ist}\theta + \varepsilon_{ist}.$$

In equation (2) the parameters β, γ, and δ measure the differences in labor market transitions associated with physical demands for the three older age groups that have been or could be affected by increases in the FRA.

In addition to estimating models for labor market transitions, we estimate models of the same

[10] For example, the Simpson-Bowles plan proposed increasing the retirement age to 69 by 2075 (http://www.fiscalcommission.gov/sites/fiscalcommission.gov/files/documents/TheMomentofTruth12_1_2010.pdf, viewed July 3, 2012).

form for changes in the physical demands of jobs. In particular, we define as the outcome a transition to a less physically-demanding job, and estimate linear probability models for these transitions for all workers who remain employed, as well as separately for those who stay with the same employer and those who move to a different employer.

Finally, for the third part of the analysis we incorporate information on age discrimination laws into equation (2), estimating DDD models that ask whether the transitions associated with physical challenges at work are different in states with stronger age discrimination protections. In this case the models take the form:

$$
\begin{aligned}
(3) \qquad T_{ist} = {} & \alpha + \beta 66_{ist} \cdot PD_{ist} \cdot AD_s + \gamma A65_{ist} \cdot PD_{ist} \cdot AD_s + \delta A6265_{ist} \cdot PD_{ist} \cdot AD_s \\
& + \beta' A66_{ist} \cdot PD_{ist} + \gamma' A65_{ist} \cdot PD_{ist} + \delta' A6265_{ist} \cdot PD_{ist} \\
& + \beta'' A66_{ist} \cdot AD_s + \gamma'' A65_{ist} \cdot AD_s + \delta'' A6265_{ist} \cdot AD_s \\
& + \kappa PD_{ist} \cdot AD_s + \lambda AD_s + \theta PD_{ist} + \sum_k A^k{}_{ist} \delta_{0k} + X_{ist} \theta + \varepsilon_{ist}.
\end{aligned}
$$

In this model, β, γ, and δ capture the differential effects of physical challenges on workers in age groups affected (or potentially affected) by increases in the FRA in states with stronger age discrimination protections.

IV. Results

A. Age discrimination protections and labor market transitions of workers affected by increases in the Full Retirement Age

We first examine labor market transitions of individuals affected by increases in the FRA. In Table 1, we start with three subsamples defined based on employment status as of wave t-2: employed, self-employed, and not working. For each of these subsamples we estimate four separate linear probability models for which the outcomes, defined for wave t are, respectively, employed for the same employer, employed for a different employer,11 self-employed, and not working. Thus, for example, in Table 1, the first two estimates in column (1) are from the estimation of a single linear probability model

[11] A self-employed worker who takes wage or salary employment is coded as switching to employment at a different employer.

for continuing employment at the same employer in wave t, for those employed (in a wage or salary job) at wave t-2. In the table we report only the estimated coefficients of the interactions between dummy variables for ages between 62 and 65 (exclusive of 65) and age greater than or equal to 65, and a dummy variable for whether one was caught by the increase in the FRA (based on birth cohort).

For those aged 65 and over, the estimates in the first panel show that, for those caught by the increase in the FRA, the probability of remaining at the same employer was higher by 0.09, whereas the probability of switching to a new employer was 0.06 lower. Similarly, in the second panel, for those who were self-employed the probability of remaining self-employed was higher by 0.10 (nearly significant at the ten-percent level), and the probability of moving from self-employment to wage or salary employment was lower by 0.08. In the third panel, for those initially not working, there is little evidence of differences associated with being caught by a higher FRA, except for a possible decrease in the probability that those between 65 and the FRA become employed; this is hard to explain as an effect of getting caught by the increase in the FRA, unless it is harder for non-employed men in this age range to re-enter work given that more of those who were working remain employed. Thus, for those aged 65 and over and already working, the response to the increase in the FRA was simply to remain in one's job – whether a wage/salary job or self-employment – longer. As a further reflection of this, the point estimates for transitions to non-employment for those initially employed are all negative, but none are significant.

For those aged 62 to 65 there is some parallel evidence, but only for those initially self-employed. The self-employed who are caught by the increase in the FRA are more likely to remain at those jobs and less likely to make transitions to other jobs; the estimated effects are smaller than for those aged 65 and over. Finally, there is no evidence that those initially not working enter employment in response to increases in the FRA.

The evidence that getting caught by increases in the FRA tends mainly to increase persistence at the current job could reflect the quite short-term nature of the adjustment the affected cohorts needed to make to work until the new FRA, given that the increases in the FRA ranged from only two to ten months. On the other hand, it is conceivable that some affected workers would have wanted to change

jobs, perhaps to accommodate physical challenges at work, but found this difficult to do so – a difficulty that could have been exacerbated by age discrimination. Of course to the extent that remaining at the current job is difficult for older workers because of physical challenges at work – which we investigate below – then adjusting to increases in the FRA by remaining at current jobs may be less conducive to achieving more significant lengthening of work lives.

Table 2 provides evidence on whether stronger age discrimination laws lead to differences in the labor market transitions of individuals caught by increases in the FRA. We report estimates for a subset of the transitions from Table 1, but now incorporating the information on state age discrimination protections (as in equation (1)). Specifically, we focus on those in wage or salary jobs at wave t-2, or not employed at wave t-2. For the first group, we estimate linear probability models for the probability of wage or salary employment at wave t, and then the probability of employment with the same or a different employer. For the second group we estimate linear probability models for the probability of any employment or of wage/salary employment at wave t. We estimate models first incorporating an indicator for a lower firm-size cutoff (10 or more workers) under state age discrimination law; the cutoff for the ADEA is 20. We then instead use the indicator for stronger remedies under state law.

The estimates in the first column of the first panel indicate that, for those aged 65 and over caught by the increase in the FRA, a stronger state age discrimination law in the form of a lower firm-size cutoff is associated with a higher probability of remaining employed, by 0.13. We then focus on those initially in wage or salary employment, and look at whether they are subsequently employed at the same or a different employer. The evidence suggests that the positive effect of a lower firm-size cutoff on remaining employed comes about because of a higher probability of remaining at the same employer, rather than transitions to a different employer (here we drop the self-employed), although the former, larger estimate is not statistically significant. This evidence does *not* point to a lower firm-size cutoff increasing hiring of those aged 65 and over, and already employed, who are caught by the increase in the FRA.

In contrast, for those not employed initially, a lower firm-size cutoff under state age

discrimination law is associated with a higher probability that the non-employed become employed; the effect is 0.10 for any employment, and nearly as big (0.08) for wage or salary employment. This evidence *is* consistent with a hiring effect of this kind of state age discrimination protection, which we explore further below. For those aged 62-65 there is no significant evidence that this kind of stronger age discrimination protection matters.

In the second panel, which looks at stronger remedies under state age discrimination law, there is no statistically significant evidence that this feature of state age discrimination laws affects the probability of remaining employed overall, although the point estimates for those aged 65 and over is quite large (0.11). However, when we narrow attention to those with wage or salary employment and look at whether one stays at the same employer or makes a transition to a new employer, there is evidence that stronger remedies boost the probability of a transition to a new employer, by 0.11. In contrast, for this law there is no evidence of a hiring effect for those initially non-employed.[12]

As a falsification test with regard to whether age discrimination protections boost hiring of older individuals caught by increases in the FRA, we estimated models for transitions to self-employment, which clearly should not be affected by stronger age discrimination protections. As shown in the last two columns of the table, there is no evidence that these protections increase the probability of transitions to self-employment for older workers caught by increases in the FRA.

This evidence of some positive effects of age discrimination laws on hiring contrasts with the conjecture that age discrimination laws will deter hiring of older workers, and is more positive with respect to thinking about how stronger age discrimination laws can help lengthen work lives. However, the evidence is not entirely consistent, because the lower firm-size cutoff appears to boost hiring of the non-employed, whereas stronger remedies appear to boost hiring of the employed. Thus, we try to get a firmer understanding of effects on hiring by focusing on hiring specifically. We first estimate models for a single hiring variable (i.e., in Table 2, whether one switched employers, or went from self-employment

[12] There is no reason to expect a direct effect of age discrimination laws on changes in outcomes at age 62 or 65 without regard to whether one was caught by an increase in the FRA, since age discrimination laws do not single out these ages. In contrast, the variation in the FRA over the sample period gives us information on people of the same age facing varying retirement and employment incentives because of their year of birth, under different age discrimination protections that can influence how they respond to these incentives.

or non-employment to wage/salary employment). We also use more-detailed data than what is simply available at each wave, exploiting information on job transitions between waves to try to capture additional hiring that could be missed because of employment transitions between interviews. With older individuals making transitions to partial retirement, changes over a shorter period than the two years between waves could be common. For example, a person employed at wave t-2 but not employed at wave t could have been hired into a job after wave t-2 that he left by wave t.

We use HRS's Employment, Retirement, and Pension questions to track hires that occurred between interviews. The data have some limitations for this purpose because the questions on work between waves are not asked of every respondent, either because of incomplete interviews or because in a couple types of cases the questions that could detect a hire between waves were not asked (for those who go from self-employed to not self-employed). In many cases of missing data we were able to make an educated guess that no hire occurred, although it is possible that in some cases a hire did in fact occur.[13] Overall, we lose about 500 observations for whom we cannot determine (or make an educated guess at) whether a hire occurred between waves.

Table 3 reports estimates that parallel Table 2, but the outcome is hiring per se. The first column just uses the information at the waves, while the second supplements this with information on hiring between waves. As the descriptive statistics at the bottom of the table show, the definition of hiring using the inter-wave information picks up substantially more hiring. These statistics also show that hiring rates decline with age, as would be expected.

The regression estimates point to a significant positive effect of the lower firm-size cutoff on hiring, for those aged 65 and over who are caught by the increase in the FRA. This holds for either definition of hiring. For this age group, the estimate for stronger remedies is positive in both cases, but statistically significant only in the first column. Thus, this table provides an additional indication that stronger state age discrimination protections boost hiring of older individuals caught by the increase in the

[13] This is explained in the notes to the Table 3, discussed next.

FRA, although the evidence could be viewed as more robust for the lower firm-size cutoff.[14]

However, it is possible to look for some corroborating evidence on one dimension of stronger state age discrimination protections – the lower firm-size cutoff. Because the HRS includes information on the number of employees at respondents' employers (at the firm level), we can compare the sizes of the firms at which older workers are hired into, across states with differing size limits. As shown in Table 4, the older the group we look at, the more is hiring concentrated in smaller firms.[15] The proportion of hires at firms with fewer than five workers is 0.15 for those under age 62, 0.19 for those aged 62 to 65 (exclusive), 0.25 for those aged 65 to 66 (exclusive), and 0.22 for those aged 66 and over. For firms with five to 14 workers, the proportion drops slightly from the first to the second age group, but is highest (0.26) for those aged 66 and over. Conversely, the lower rows of the table show that the proportion of hires at large firms declines with age. In the bottom panel, we focus instead on firms with fewer than 10 workers, which is the same as the firm-size cutoff we use to define stronger age discrimination protection at the state level. In this case, the increase in hiring with age at small firms is clear. This evidence establishes nothing about the direct effects of age discrimination laws, but because it demonstrates that there is a sizable amount of hiring of older workers at very small firms, it could explain why the lower firm-size cutoff under state age discrimination law boosts hiring of workers caught by increases in the FRA.

B. Physical challenges at work and employment transitions of older workers

Table 5 provides descriptive information on the physical demands of jobs reported by workers. There is a generic "lots of physical work" measure, as well as two more specific measures. In each case, we code an affirmative response when the respondent says he faces the demand all/almost all or most of the time. We also constructed an indicator for "any physical demand" for those who responded that they faced at least one of the three specific physical demands. Table 5 shows that physical demands are quite

[14] In fact in Neumark and Song (2011) we found some indirect evidence consistent with a lower firm-size cutoff having this effect, as this kind of age discrimination protection boosted the probability of any employment, but not of full-time employment, consistent with it increasing the likelihood that older affected workers took new, part-time jobs.

[15] Here we use hiring based only on employment status at the interviews, as in the first column of Table 3, because the firm-size information is not available for jobs not held at the interviews.

prevalent. It also shows declining physical demands with age, but of course this likely reflects selection in terms of who remains employed, as older workers who do *not* face physical demands at work are more likely to remain employed than older workers facing physical demands.

Table 6 reports estimates of models for transitions from wage or salary employment to each of the four possible outcomes:[16] continued employment at the same employer, employment at a different employer, self-employment, or non-employment.[17] In the top panel we focus on the simple indicator of whether the worker faces any physical demands. We also now focus on three age groups: those aged 62-65 (exclusive), those aged 65, and those aged 66 and up. We break out the latter group as it captures those not yet directly affected by increases in the FRA, but who will be affected by the next round of increases (and possible additional increases). Only for those aged 66 and up do we find that transitions differ for those with physical demands at work. Specifically, for this group the probability of remaining employed is lower by 0.08, and the probability of a transition to not working is higher by 0.08. Thus, the oldest workers we consider appear to respond to physical challenges at work by leaving employment.

To get a richer look at this same question, in the remaining panels of Table 6 we report estimates of the same models for the three specific physical demand responses. The estimates for those aged 66 and over are quite similar; in every case physical demands at work are associated with a lower probability of remaining at the same employer (by about 0.07 to 0.09), and a higher probability of becoming non-employed (by 0.09 to 0.10). In addition, for the physical demand in the last panel – stooping, kneeling, or crouching on the job – the evidence is qualitatively similar for those aged 62-65, although the estimated coefficients are smaller. And finally, for the "lifting heavy loads" demand, the evidence points to a lower probability of a transition to a new employer, for both 65 year-olds and for those aged 66 and over. Thus, in general this evidence indicates that physical demands on the job are a challenge to remaining employed, a phenomenon that seems likely to take on even greater importance if attempts are made to

[16] We restrict attention to those initially employed because only for them are physical demands of the job reported.
[17] In this part of the paper we focus only employment status at the waves, and do not look at inter-wave hiring. The reason is that part of our interest is in transitions to jobs with different physical demands, and this information is elicited only for jobs held at the interviews.

lengthen work lives further.[18]

In Table 7 we focus not on employment transitions, but rather on transitions to less physically-demanding jobs. This is coded as an unambiguous decline in physical demands – with at least one decreasing (to *not* being a demand of the job all/almost all or most of the time), and none increasing. In the first column we report estimates of linear probability models for declines in physical demand for all workers who remain employed, and in the second and third columns we report separate models for those who remain at the same employer and those who change employers. We can only do this analysis for those who remain employed, and the sample is restricted to those employed at a wage or salary in both waves.

The first column of the top panel, for any physical demand of the job, shows that for all three age groups, those with a physically-demanding job were more likely to report (relative to those of the same age without a physically-demanding job) a decline in the physical demands of the job. This probability is higher by about 0.05 for 62-65 year-olds, and 0.10 to 0.11 for those aged 65, or 66 and over. The estimates in the other columns suggest that the physical demand was mitigated in different ways depending on age. For those aged 62-65 the probability of a reduction in physical demands is much larger for those who switch employers than for those who remain at the same employer, although both estimates are positive. For those aged 65, or 66 and over, the evidence indicates that the physical demands of the job were mitigated only for those who remained at the same employer.

In the remaining panels of the table, where we consider each of the three types of physical demands separately, the results are quite consistent, although there are some exceptions. Much of the evidence points to mitigation of physical demands of the job, and more so for those aged 65 or 66 and over. And the evidence fairly consistently points to this mitigation occurring via a job change for those aged 62-65 (for the first two physical demands), but for those aged 65, or 66 and over, instead occurring for those who remain at the same job. The one exception is for lifting heavy loads, for which all three age

[18] We also estimated specifications where we added the indicators and interactions for those caught by the increase in the FRA. (These exactly parallel equation (1) and Table 2, except substituting the physical demand indicators for the age discrimination law indicators.) We found no evidence that transitions associated with physical demands for the age groups we consider are different for those caught by an increase in the FRA. (Results available upon request.)

groups exhibit a large probability of mitigating this specific physical demand by moving to other jobs.

Thus, the evidence on physically-demanding jobs faced by older workers perhaps has a silver lining, as there appear to be at least some cases in which these physical demands are reduced. Note that, as the final rows of the table report, the incidence of mitigation of physical demands is particularly high for those who change employers, suggesting that changing jobs is a potentially important path to reducing physical challenges at work. This sets the table for our final inquiry, taken up in the next sub-section, of whether age discrimination laws – which might make it easier to change employers – also enable older workers to reduce physical challenges at work by moving to employers with jobs that are less physically demanding.

Although not reported in the tables, we also looked at physical limitations reported by HRS respondents, rather than physical demands of jobs. These are reported by everyone, not just those with jobs. The HRS asks about a far greater number of physical limitations. However, the data on physical limitations pose problems, because they were not asked on a consistent basis throughout the HRS. In particular, they were asked differently in 1992 and 1994, which implies that using these data for the years for which they are consistent results in significantly smaller samples of workers. Nonetheless, we looked at a similar classification of whether workers have any limitations, as well as specific limitations based on grouping together some of those reported, based on evidence on correlations between them and how well they predicted whether respondents indicated that health limits work.[19] We found that for "any" physical limitation, or for limitations related to either stooping or getting up from a chair, or either lifting or pushing objects or reaching up with one's arms, there was no impact on those aged 65 or 66 and over, but those aged 62-65 were less likely to remain employed, and in some cases more likely to leave employment. In addition, there was some indication of transitions to less physically-demanding jobs (as defined in Table 7). In general, though, this evidence was much weaker and less consistent, and the

[19] We also considered looking directly at the question on whether health limits work, and substituting that for physical demands. However, it seems likely that this variable is particularly difficult to view as exogenous with respect to whether or not a person is working. For example, it seems likely that someone not working, even if they have a health limitation that would limit work, does *not* respond that health limits work. (In addition, in 2004 the HRS did not ask this question of those who previously reported such a limitation – simply assuming that the limitation persists – even though these limitations could have diminished or been eliminated.)

finding that it was stronger for 62-65 year-olds than for those aged 65 and over makes us a little more cautious about the results. Of course part of the issue may be that just because there is a physical limitation does not mean that a job is physically challenging. For all of these reasons, we focus on physical demands of jobs.[20]

C. Age discrimination protections and responses to physical challenges at work

Finally, we put together the information on state age discrimination protections and physical demands at work to ask how responses to these demands are influenced by stronger protections against age discrimination. Table 8A parallels Table 6 in asking how those with any physical demands on the job respond in terms of labor market transitions. Now, however, as in equation (3), a third level of differencing is added and the focus is on the differential effect of these physical demands when age discrimination protections are stronger.

In this table, virtually none of the estimates are statistically significant, many are near zero, and the signs are not consistent within the columns. With the possible exception that stronger remedies make it less likely that workers aged 66 and over make a transition to new employers, there is really no evidence that stronger age discrimination protections alter labor market transitions of those with physically-demanding jobs.

In Table 8B we look instead at specific physical demands of jobs.[21] In the top three panels we incorporate information on the lower firm-size cutoff for state age discrimination laws, and in the bottom three panels we instead use stronger remedies. Within each of these sets of three panels we look at a different specific physical demand. There is very little evidence that stronger age discrimination protections in the form of a lower firm-size cutoff help those with physically-demanding jobs to make

[20] A second approach we tried was to try to link up the physical demands of jobs with physical limitations, since in some sense it is the *coincidence* of these that most likely presents physical challenges at work. Thus, in this analysis we defined an indicator of physical challenges at work when people reported both a physically-demanding job and physical limitations. These results to some extent paralleled the results reported in Tables 6 and 7 for physical demands, but they were noisier and less consistent, perhaps because it is difficult to link up specific physical demands with specific physical limitations, and also perhaps because endogenous selection gets tricky, as those with physical limitations may be less likely to be employed in jobs with physical demands. (Results available upon request.)

[21] Table 8B parallels the lower three panels of Table 4, but introducing the interactions with state age discrimination protections.

transitions to different employers. In the second column, in only one case (for stooping, kneeling, or crouching, for those aged 62-65) is there a positive effect on transitions to different employers; in two other cases we find estimates pointing to a lowering of the probability of such transitions. Similarly, there is no evidence that these stronger state age discrimination protections help workers in physically-demanding jobs stay at the same employer; if anything, three of the estimates point to negative effects. And paralleling these results, most of the estimates in the last column – for transitions to non-employment – are positive, and some of these are statistically significant or nearly so. In the lower three panels, there is no evidence pointing to stronger remedies for age discrimination increasing the probability that those with physical challenges stay employed, move to a new employer, or become employed.

The next two tables instead estimate the models for mitigation of physical challenges at work, adding the interactions with state age discrimination protections to the models for whether individuals report declines in physical demands of jobs. In Table 9A we focus on those reporting any physical demand. The evidence is mixed. In particular, in the top panel, for 65 year-olds, there is evidence suggesting that a lower firm-size cutoff in the state age discrimination law increases the probability of mitigating physical challenges on the job by moving to a new employer. The estimate is very large, however, and is based on a small cell size of only 11 observations that are (i) in this age range, (ii) report a physical demand of the job, and (iii) are in a state with this kind of age discrimination protection. In the bottom panel, there is no statistically significant evidence that stronger remedies under state age discrimination laws influence the mitigation of physical challenges.

In Table 9B we estimate similar models, but for the specific physical demands. The estimates are in many cases noisier because the cell-size problem becomes even more severe. But the pattern of estimates is in some respects similar. In the top three panels focusing on a lower firm-size cutoff for the state age discrimination law, 65 year-olds facing physical demands again appear to have a greater ability to mitigate those physical demands by moving to a new employer. (But now the cell size of 17 from Table 9A gets split three ways; for "lifting heavy loads" the cell size is only 1, and for "stooping, kneeling, and crouching" it is only 7.) And the evidence is more mixed; in two out of three cases we find

that, for those aged 66 and over, the lower firm-size cutoff overall appears to reduce the probability of mitigation of physical demands of the job.[22]

Turning to stronger remedies under state law, in the bottom three panels, the point estimates again suggest that this age discrimination protection makes mitigation by moving to a new employer less likely for those aged 66 and over, and the estimate is significant in one case. A couple of the other coefficient estimates are statistically significant, but these findings are not consistent across the different sets of estimates so we do not emphasize them.

V. Conclusions and Discussion

The evidence points to a few conclusions. First, for 65 year-olds caught by increases in the FRA, stronger state age discrimination protections appear to enable labor market transitions that permit people to remain at work, through either moving to a new employer or re-entering employment. Given that individuals in states with weaker age discrimination protections instead stay at work by remaining at the same employer, these results for stronger age discrimination protections suggest that such protections may make extended work lives more viable by boosting transitions to bridge or partial retirement jobs. This may be particularly relevant tounderstanding how workers facing physical challenges on the job respond to efforts to get them to work longer. At the same time, we do not want to overstate the evidence. In our view the preponderance of the evidence points this way, but some of the results are less consistent with this interpretation. It may be hard to get firmer answers until we have more evidence on people for whom the FRA has increased.

Second, evidence on the labor market transitions of those with physically-demanding jobs suggests that physical challenges faced by older workers are a barrier to extending work lives. Among workers in the age ranges for which policy is trying to extend work lives, those who are in physically-demanding jobs are more likely to leave employment and less likely to remain at their employers.

[22] There is a potential concern of endogenous policy with respect to age discrimination, stemming either from older individuals with physical demands who want to work moving to states with stronger protections, or from states adopting stronger (for example) protections where older individuals with physical challenges work more. Under these scenarios, there be would be a bias towards evidence that age discrimination protections increase continued employment or hiring of older workers with physical demands. However, we do not find evidence of such relationships.

Moreover, there is no evidence that they are more likely to switch employers, perhaps as a way of reducing physical demands. On the other hand, there are some workers with physically-demanding jobs who are able to mitigate these demands, although how this occurs is somewhat of a mixed bag – sometimes occurring through moves to new jobs, and sometimes occurring while staying with the same employer.

Third, stronger age discrimination protections do not appear to help in the process of making labor market transitions to different employers for those with physically-demanding jobs. On the other hand, there is some evidence that a lower firm-size cutoff under state law does ease accommodation of physical demands, as older workers in states with this stronger protection are more likely to make a transition to a job with less physical demands, if they make an employment transition. Other evidence we find suggests that this kind of age discrimination protection boosts hiring of older workers. Our results suggest that this protection does not have this effect, on net, for those in physically-demanding jobs, but that for those who do change jobs it may help them move to jobs that are less demanding physically.

Overall, then, the results do not provide a clear indication that stronger state age discrimination protections can help reinforce efforts to extend work lives. We do find, however, that for older workers caught by increases in the FRA, stronger state age discrimination protections increase employment, and in fact increase the likelihood of *new* employment. That is positive from the point of view of policies intended to extend work lives, because many older individuals are likely to have to move to new jobs in order to significantly extend their work lives.

However, when we focus on workers for whom this issue is likely to be most severe, namely those in physically-demanding jobs, the picture is more muddled. On net, stronger age discrimination protections do not appear to make it easier for these workers to move to new jobs, or to move – in particular – to jobs that are less physically demanding. However, among those who change jobs, there is sometimes evidence suggesting that these laws make it more likely that the jobs have less strenuous physical demands. Nonetheless, the absence of net effects on transitions to new jobs – and especially to new jobs that are less physically demanding – makes it impossible to conclude that stronger age

discrimination protections would help older workers facing physical challenges at work to adjust to staying in the workforce longer.

At this point we do not know whether this is a definitive answer, or one that stems either from inadequate measurement of physical challenges at work, or overly-taxing demands on the data. With regard to the latter issue, we are estimating differences among small groups of workers. The HRS dataset – despite covering a large number of older individuals in the right time period at least to begin asking these questions – still captures relatively few individuals in the narrow age range for whom the FRA has increased, and the problem gets compounded if we try to test for differences across individuals based on the physical challenges they face and the differences in legal regimes across the states in which they live. In addition, physical demands of jobs may not fully capture the physical challenges older workers face, because their own physical condition and limitations also matter, although we could not detect anything more systematic with the data on physical limitations available in the HRS.

And finally, once we start to think about physical challenges at work, we are led also to consider the legal environment regulating employer treatment of disabled workers, which raises the possibility (to be considered in future research) that we have not fully characterized the relevant legislation regarding older workers, who have high disability rates. Because older workers are more likely to develop work-related disabilities, state laws regarding discrimination against disabled workers could figure prominently in the treatment of older workers in the labor market. Supplementing the types of analyses described in this paper with additional evidence on the role of disability discrimination laws could give us firmer guidance as to how policy could help ease the burden of longer work lives, especially for those for whom aging also entails increasing physical challenges of working.

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Table 1: Effect of Being Caught by Increase in FRA on Employment Transitions

	Current wave (t)			
Outcome	***Employed (same employer)***	***Employed (different employer)***	***Self-employed***	***Not working***
Previous wave (t-2)				
Employed				
Caught by increase in FRA (Age ≥ 65)	0.090* (0.047)	-0.057** (0.027)	0.010 (0.019)	-0.043 (0.042)
Caught by increase in FRA (Age 62-65)	0.007 (0.022)	-0.010 (0.014)	0.010 (0.008)	-0.007 (0.020)
N=12,389				
Self-employed				
Caught by increase in FRA (Age ≥ 65)	n.a.	-0.079** (0.034)	0.101 (0.062)	-0.023 (0.057)
Caught by increase in FRA (Age 62-65)	n.a.	-0.035* (0.019)	0.054* (0.031)	-0.018 (0.027)
N=4,499				
Not working				
Caught by increase in FRA (Age ≥ 65)	n.a.	-0.031* (0.019)	0.023 (0.018)	0.008 (0.026)
Caught by increase in FRA (Age 62-65)	n.a.	0.005 (0.013)	-0.002 (0.009)	-0.003 (0.015)
N=11,723				

Notes: The linear probability model is used for estimation. Standard errors reported in parentheses are clustered at the individual level. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. For each subsample listed in panels of the table (e.g., employed at wave t-2), we estimate four linear probability models, one corresponding to the outcome at wave t in each column. "Employed" in this table refers to working for a wage or salary. All specifications include dummy variables for age in months (by two-month increments), state dummy variables, and dummy variables for urban or rural residence, race, marital status, education level, and self-reported health. Urban-rural status includes urban, suburban, or ex-urban residence; race includes white, black, and other; marital status includes married and married with spouse absent, partnered, separated/divorced/widowed, and never married; education includes less than high school, GED or high school graduate, some college, and college or above; self-reported health includes excellent, very good, good, fair, or poor. HRS restricted data with state identifiers are used. The sample period for this analysis is 1992 through 2008. We restrict the sample to males born 1931-1943. We also ran the analysis in the last panel with additional controls for retired at wave t-2 and not in the labor force at wave t-2; the results were nearly identical.

Table 2: Effect of State Age Discrimination Laws on Employment Transitions for those Caught by Increase in FRA

Previous wave	*Employed (wage/salary or self-employed) at t-2*	*Employed (wage/salary) at t-2*	*Employed (wage/salary) at t-2*	*Not employed at t-2*	*Not employed at t-2*	*Employed (wage/salary) at t-2*	*Not employed at t-2*
Current wave (outcome)	***Any employment at t***	***Employed (wage/salary, same employer) at t***	***Employed (wage/salary, different employer) at t***	***Any employment at t***	***Wage/salary employment at t***	***Self-employed at t***	***Self-employed at t***
Caught by increase in FRA (Age ≥ 65) × Lower firm size	0.131*	0.119	0.012	0.100**	0.076**	0.004	0.023
	(0.070)	(0.096)	(0.053)	(0.049)	(0.036)	(0.037)	(0.035)
Caught by increase in FRA (Age 62-65) × Lower firm size	-0.050	-0.053	-0.011	-0.006	0.019	-0.006	-0.025
	(0.033)	(0.046)	(0.029)	(0.031)	(0.027)	(0.017)	(0.018)
Caught by increase in FRA (Age ≥ 65) × Stronger remedies	0.110	0.013	0.110***	0.027	0.036	-0.011	-0.009
	(0.076)	(0.102)	(0.052)	(0.054)	(0.041)	(0.037)	(0.037)
Caught by increase in FRA (Age 62-65) × Stronger remedies	0.049	0.040	0.027	-0.034	-0.034	-0.033*	0.0004
	(0.035)	(0.048)	(0.029)	(0.033)	(0.027)	(0.017)	(0.020)
N	*17,006*	*12,389*	*12,389*	*11,723*	*11,723*	*12,389*	*11,723*

Notes: The linear probability model is used for estimation. Standard errors reported in parentheses are clustered at the individual level. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. For each subsample (e.g., employed for a wage or salary at wave t-2, not employed at t-2), we estimate linear probability models corresponding to the outcome at wave t in each column. Each panel reports estimates of separate specifications using the different specified state age discrimination protections; lower firm size refers to a size cutoff of 10 employees. All specifications include the controls listed in the notes to Table 1. The specifications also include: a dummy variable for the age discrimination protection indicated; a dummy variable for the birth cohorts affected by the increase in the FRA as well as an interaction of this variable with the age discrimination protection feature; dummy variables for the two age groups (62-65 and 65+) caught by the increase in the FRA; and interactions of the age dummy variables and the specified age discrimination law protection. The specification corresponds to equation (1) in the text. HRS restricted data with state identifiers are used. The sample period for this analysis is 1992 through 2008. We restrict the sample to males born 1931-1943. The sample size in column (1) is larger than it would be based on the sum of the employed and self-employed in Table 1, because for 118 observations we do not have the requisite data to determine, in Table 1, whether one is working for the same or a different employer.

Table 3: Effect of State Age Discrimination Laws on Hiring for those Caught by Increase in FRA

	Based on employment status at waves t-2 and t	*Incorporating information inter-wave information*
Outcome	***Hired between waves t-2 and t***	***Hired between waves t-2 and t***
Caught by increase in FRA (Age ≥ 65) × Lower firm size	0.046*	0.066*
	(0.028)	(0.035)
Caught by increase in FRA (Age 62-65) × Lower firm size	-0.008	0.003
	(0.018)	(0.022)
Caught by increase in FRA (Age ≥ 65) × Stronger remedies	0.058**	0.044
	(0.029)	(0.037)
Caught by increase in FRA (Age 62-65) × Stronger remedies	0.0001	0.016
	(0.018)	(0.023)
N	*28,729*	*28,230*
Hiring rate		
Overall	0.080	0.129
Age < 62	0.101	0.154
62 ≤ Age < 65	0.083	0.143
Age ≥ 65	0.056	0.099

Notes: The linear probability model is used for estimation. Standard errors reported in parentheses are clustered at the individual level. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. Each panel reports estimates of separate specifications using the different specified state age discrimination protections; lower firm size refers to a size cutoff of 10 employees. All specifications include the controls listed in the notes to Tables 1 and 2. The specification corresponds to equation (1) in the text. Additional controls include a dummy variable equal to one if the respondent was self-employed at t-2 and a dummy variable equal to one if the respondent was not working at t-2. HRS restricted data with state identifiers are used. The sample period for this analysis is 1992 through 2008. We restrict the sample to males born 1931-1943. The dependent variable "hired" is equal to 1 if we observe any hire between waves; in the first column this is based only on employment status and respondent's answer to "are you still working for the same employer?" at the waves, and in the second column we incorporate additional information on job transitions between the waves. Specifically, employment transitions from self-employed or not working to employed are coded as hires, as are transitions from employed at wave t-2 to working for a different employer at wave t. Respondents who make transitions from non-employment at wave t-2 to self-employed or non-employment at wave t are coded as hires if they report working for a wage or salary between waves. Otherwise respondents are coded as non-hires. The sample size is smaller in the second column because data are sometimes missing to fill in inter-wave hires. In some cases – but not all – we made a determination as to whether there was an inter-wave hire. Specifically, the questions on work between waves were not asked for respondents who went from self-employed to not employed or self-employed, if they do not know when they stopped the initial self-employed job; we assumed these individuals were not hired between waves. Also, many observations are missing the inter-wave information and classified as "inapplicable or partial interview" in the codebook. For cases with missing data and transitions from wave t-2 to t between disabled, retired, and not in the labor force (based on the RAND HRS labor force status code), we assumed no hire occurred.

Table 4: Proportion Hired by Firm Size Category and Age

Firm size	All age group	Age < 62	62 ≤ Age < 65	65 ≤ Age < 66	Age ≥ 66
< 5	0.181	0.149	0.191	0.247	0.220
5 - 14	0.228	0.226	0.204	0.200	0.260
15 - 24	0.108	0.102	0.112	0.113	0.115
25 - 99	0.215	0.229	0.231	0.213	0.175
100 - 499	0.176	0.190	0.179	0.147	0.154
≥ 500	0.091	0.104	0.083	0.080	0.075
N	*2,175*	*1,048*	*446*	*150*	*531*
< 10	0.317	0.278	0.324	0.360	0.378
N	*2,156*	*1,043*	*442*	*150*	*521*

Notes: The sample is restricted to males born between 1931 and 1943, employed (wage or salary) at wave t. We have not otherwise restricted the sample to those for whom information used in other tables is available. Self-employed are not included. The HRS first asks respondents about the actual number of employees working at the firm, and then for those who do not know, they are asked to estimate using the size categories in the top panel of the table. We can therefore assign workers to these categories for everyone who answers the question. When we assign workers to firm size less than 10, we cannot use the observations on those who do not report the actual number but report the size category of 5-14, which is why the sample is smaller in the bottom panel. Hiring is defined as described in the notes to Table 3; in this table we use hiring based only on employment status at the interviews, because firm size is not available for inter-wave hires.

Table 5: Descriptive Statistics on Physical Demands of Jobs, by Age

	Age 61 or younger	Age 62	Age 63	Age 64	Age 65	Age 66	Age 67	Age 68	Age 69 or older
Lots of physical work	0.396	0.427	0.392	0.397	0.349	0.389	0.311	0.340	0.301
Lifting heavy loads	0.181	0.183	0.180	0.169	0.154	0.167	0.139	0.147	0.132
Stooping, kneeling, or crouching	0.291	0.314	0.287	0.296	0.253	0.284	0.240	0.272	0.240
Any physical demands of jobs	0.454	0.484	0.452	0.456	0.410	0.442	0.385	0.422	0.372
N	*8,433*	*1,353*	*1,218*	*1,002*	*922*	*790*	*662*	*512*	*1,669*

Notes: Information on physical demands is based on responses of those who are either fully or partly employed (including self-employment) to the following question: "I'll read some statements that are true for some people's jobs, but not for other people's jobs. Thinking about your job, please tell me how often these statements are true. My job requires [physical demands specified in column]." The answers to these questions are all/almost all the time, most of the time, some of the time, or none/almost none of the time. If the respondent answers either all/almost all the time or most of the time, then they are coded as 1, and otherwise they are coded as 0. "Any physical demands of jobs" is a dummy variable equal to 1 if they report having any one of the three physical demands. Means are reported for all males born between 1931and 1943 in the data. We have restricted the sample to respondents who report on all three physical demands of jobs, but have not otherwise restricted the sample to those for whom information used in other tables is available.

Table 6: Employment Transitions and Physical Demands of Jobs, by Age

	Employed at wave t-2: Current wave (t)			
Outcome	***Employed (same employer)***	***Employed (different employer)***	***Self-employed***	***Not working***
Age ≥ 62 and < 65 × Any physical demand	-0.021	0.009	0.005	0.007
	(0.023)	(0.014)	(0.008)	(0.019)
Age ≥ 65 and < 66 × Any physical demand	0.028	-0.031	-0.015	0.018
	(0.042)	(0.027)	(0.015)	(0.038)
Age ≥ 66 × Any physical demand	-0.075***	-0.009	0.005	0.079***
	(0.025)	(0.014)	(0.010)	(0.022)
Age ≥ 62 and < 65 × Lots of physical effort	-0.018	0.005	0.005	0.008
	(0.023)	(0.015)	(0.008)	(0.020)
Age ≥ 65 and < 66 × Lots of physical effort	0.012	-0.016	-0.021	0.025
	(0.044)	(0.028)	(0.014)	(0.040)
Age ≥ 66 × Lots of physical effort	-0.079***	-0.014	0.008	0.085***
	(0.026)	(0.015)	(0.010)	(0.022)
Age ≥ 62 and < 65 × Lifting heavy loads	-0.022	0.013	0.005	0.004
	(0.031)	(0.020)	(0.010)	(0.026)
Age ≥ 65 and < 66 × Lifting heavy loads	0.087	-0.123***	-0.016	0.052
	(0.057)	(0.023)	(0.014)	(0.054)
Age ≥ 66 × Lifting heavy loads	-0.074**	-0.036**	0.015	0.095***
	(0.033)	(0.018)	(0.013)	(0.030)
Age ≥ 62 and < 65 × Stooping, kneeling, or crouching	-0.051**	0.010	0.003	0.037*
	(0.025)	(0.016)	(0.008)	(0.021)
Age ≥ 65 and < 66 × Stooping, kneeling, or crouching	0.019	-0.041	-0.012	0.033
	(0.049)	(0.030)	(0.016)	(0.044)
Age ≥ 66 × Stooping, kneeling, or crouching	-0.094***	-0.015	0.009	0.098***
	(0.028)	(0.016)	(0.011)	(0.025)
N		*12,052*		

Notes: The linear probability model is used for estimation. Standard errors reported in parentheses are clustered at the individual level. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. We estimated separate linear probability models corresponding to the outcome in each column. "Employed" in this table refers to working for a wage or salary. Each panel reports estimates of separate specifications first using "any" physical demand, and then using each of the specified physical demands, based on responses that jobs require at least one of "lots of physical work," "lifting heavy loads," or "stooping, kneeling, or crouching" either all/almost all or most of the time. The coding of "any physical demands" is based on responses that jobs require at least one of "lots of physical work," "lifting heavy loads," or "stooping, kneeling, or crouching" either all/almost all or most of the time, based on those who report on all three physical demands. See the notes to Table 5 for additional details on questions about physical demands. We have restricted the sample to respondents who report on all three physical demands of jobs. All specifications include the controls listed in the notes to Table 1, and the main effect for the physical demand. The specification corresponds to equation (2) in the text. HRS restricted data with state identifiers are used. The sample period for this analysis is 1992 through 2008. We restrict the sample to males born 1931-1943. The sample size in this analysis is smaller than subsample of employed in Table 1 because for 337 observations we do not have the requisite data to determined physical demands of job.

Table 7: Transition to Job with Less Physical Demands

	Employed wave t-2: Current wave (t)		
Subsample	*Employed*	*Employed, different employer*	*Employed, same employer*
Outcome	***Less physically-demanding job***	***Less physically-demanding job***	***Less physically-demanding job***
Age ≥ 62 and < 65 × Any physical demand	0.048***	0.121*	0.035**
	(0.018)	(0.069)	(0.016)
Age ≥ 65 and < 66 × Any physical demand	0.100***	-0.028	0.116***
	(0.038)	(0.130)	(0.041)
Age ≥ 66 × Any physical demand	0.108***	0.032	0.129***
	(0.022)	(0.091)	(0.023)
Age ≥ 62 and < 65 × Lots of physical effort	0.041**	0.132*	0.028
	(0.019)	(0.073)	(0.018)
Age ≥ 65 and < 66 × Lots of physical effort	0.066	-0.043	0.073*
	(0.041)	(0.138)	(0.044)
Age ≥ 66 × Lots of physical effort	0.106***	-0.001	0.135***
	(0.024)	(0.094)	(0.025)
Age ≥ 62 and < 65 × Lifting heavy loads	0.044	0.238***	-0.003
	(0.028)	(0.090)	(0.025)
Age ≥ 65 and < 66 × Lifting heavy loads	0.077	0.576***	0.086
	(0.061)	(0.179)	(0.062)
Age ≥ 66 × Lifting heavy loads	0.111***	0.300**	0.129***
	(0.035)	(0.122)	(0.037)
Age ≥ 62 and < 65 × Stooping, kneeling, crouching	0.029	0.055	0.018
	(0.021)	(0.078)	(0.020)
Age ≥ 65 and < 66 × Stooping, kneeling, crouching	0.127***	-0.075	0.154***
	(0.049)	(0.170)	(0.052)
Age ≥ 66 × Stooping, kneeling, crouching	0.100***	0.047	0.119***
	(0.026)	(0.111)	(0.028)
N	9,753	1,172	8,089
Means of the dependent variable			
Overall	0.112	0.335	0.083
Age < 62	0.089	0.324	0.057
62 ≤ Age < 65	0.130	0.400	0.092
Age ≥ 65	0.163	0.301	0.149

Notes: The linear probability model is used for estimation. Standard errors reported in parentheses are clustered at the individual level. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. We estimated separate linear probability models corresponding to the outcome in each column. "Employed" in this table refers to working for a wage or salary. Each panel reports estimates of separate specifications first using "any" physical demand, and then using each of the specified physical demands, based on responses that jobs require at least one of "lots of physical work," "lifting heavy loads," or "stooping, kneeling, or crouching" either all/almost all or most of the time. We have restricted the sample to respondents who report on all three physical demands of jobs. See the notes to Tables 5 and 6 for more details on questions and coding for physical demands. A job is coded as less physically demanding if the respondent reported a decrease in at least one of the three physical demands of the job, and did not report an increase in any of the physical demands. All specifications include the controls listed in the notes to Table 1, and the main effect for the physical demand. The specification corresponds to equation (2) in the text. HRS restricted data with state identifiers are used. The sample period for this analysis is 1992 through 2008. We restrict the sample to males born 1931-1943.

Table 8A: Employment Transitions, Physical Demands, and State Age Discrimination Laws

	Employed wave t-2: Current wave (t)			
Outcome	***Employed (same employer)***	***Employed (different employer)***	***Self-employed***	***Not Working***
Lower firm size cutoff × Age ≥ 62 and < 65 × Any physical demand	-0.030 (0.048)	0.038 (0.031)	0.015 (0.016)	-0.024 (0.040)
Lower firm size cutoff × Age ≥ 65 and < 66 × Any physical demand	-0.083 (0.085)	-0.075 (0.055)	0.030 (0.032)	0.128* (0.078)
Lower firm size cutoff × Age ≥ 66 × Any physical demand	0.020 (0.052)	-0.007 (0.029)	0.014 (0.020)	-0.027 (0.044)
Stronger remedies × Age ≥ 62 and < 65 × Any physical demand	0.012 (0.051)	0.016 (0.032)	0.009 (0.016)	-0.036 (0.042)
Stronger remedies × Age ≥ 65 and < 66 × Any physical demand	-0.028 (0.090)	-0.022 (0.057)	-0.048* (0.029)	0.097 (0.083)
Stronger remedies × Age ≥ 66 × Any physical demand	-0.005 (0.054)	-0.068** (0.030)	0.016 (0.020)	0.057 (0.046)
N		*12,052*		

Notes: We estimated separate linear probability models corresponding to the outcome in each column. Standard errors reported in parentheses are clustered at the individual level. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. "Employed" in this table refers to working for a wage or salary. Each panel reports estimates of separate specifications using the different specified state age discrimination protections; lower firm size refers to a size cutoff of 10 employees. All specifications include the controls listed in the notes to Table 1. The specifications also include: a dummy variable for the age discrimination protection; a dummy variable indicating whether respondents have any physical demand or not; an interaction of the age discrimination protection and any physical demand; interactions between age dummy variables and any physical demand; and interactions between age dummy variables and the specified age discrimination protection. The specification corresponds to equation (3) in the text. See the notes to Table 5 for more details on questions and coding for physical demands. We restrict the sample to respondents who report on all three physical demands of jobs, and to males born 1931-1943. HRS restricted data with state identifiers are used. The sample period for this analysis is 1992 through 2008.

Table 8B: Employment Transitions, Physical Demands, and State Age Discrimination Laws

	Employed at wave t-2: Current wave (t)			
Outcome	***Employed (same employer)***	***Employed (different employer)***	***Self-employed***	***Not Working***
Lower firm size cutoff × Age ≥ 62 and < 65 × Lots of physical effort	-0.015	0.001	0.003	0.011
	(0.048)	(0.031)	(0.016)	(0.041)
Lower firm size cutoff × Age ≥ 65 and < 66 × Lots of physical effort	-0.029	-0.108*	0.007	0.131
	(0.089)	(0.057)	(0.032)	(0.081)
Lower firm size cutoff × Age ≥ 66 × Lots of physical effort	-0.008	0.004	0.005	-0.0002
	(0.054)	(0.031)	(0.021)	(0.046)
Lower firm size cutoff × Age ≥ 62 and < 65 × Lifting heavy loads	-0.054	0.002	-0.013	0.065
	(0.064)	(0.044)	(0.019)	(0.054)
Lower firm size cutoff × Age ≥ 65 and < 66 × Lifting heavy loads	-0.198*	0.032	0.027	0.139
	(0.119)	(0.044)	(0.036)	(0.112)
Lower firm size cutoff × Age ≥ 66 × Lifting heavy loads	0.023	0.024	0.030	-0.077
	(0.070)	(0.039)	(0.025)	(0.062)
Lower firm size cutoff × Age ≥ 62 and < 65 × Stooping, kneeling, or crouching	-0.095*	0.065*	0.026	0.004
	(0.052)	(0.035)	(0.017)	(0.044)
Lower firm size cutoff × Age ≥ 65 and < 66 × Stooping, kneeling, or crouching	-0.217**	-0.005	0.055**	0.166**
	(0.095)	(0.062)	(0.030)	(0.087)
Lower firm size cutoff × Age ≥ 66 × Stooping, kneeling, or crouching	-0.020	-0.005	0.031	-0.006
	(0.058)	(0.033)	(0.022)	(0.051)
Stronger remedies × Age ≥ 62 and < 65 × Lots of physical effort	-0.030	0.024	0.015	-0.008
	(0.051)	(0.032)	(0.017)	(0.043)
Stronger remedies × Age ≥ 65 and < 66 × Lots of physical effort	0.037	-0.023	-0.068**	0.053
	(0.093)	(0.056)	(0.029)	(0.086)
Stronger remedies × Age ≥ 66 × Lots of physical effort	-0.015	-0.064**	0.016	0.063
	(0.056)	(0.031)	(0.021)	(0.048)
Stronger remedies × Age ≥ 62 and < 65 × Lifting heavy loads	0.036	0.0003	-0.003	-0.033
	(0.067)	(0.043)	(0.019)	(0.059)
Stronger remedies × Age ≥ 65 and < 66 × Lifting heavy loads	-0.009	-0.036	-0.027	0.071
	(0.132)	(0.046)	(0.021)	(0.128)
Stronger remedies × Age ≥ 66 × Lifting heavy loads	-0.010	-0.054	-0.030	0.095
	(0.071)	(0.041)	(0.030)	(0.063)
Stronger remedies × Age ≥ 62 and < 65 × Stooping, kneeling, crouching	0.056	0.003	-0.017	-0.042
	(0.055)	(0.036)	(0.018)	(0.048)
Stronger remedies × Age ≥ 65 and < 66 × Stooping, kneeling, or crouching	-0.044	-0.011	-0.044	0.099
	(0.105)	(0.061)	(0.035)	(0.101)
Stronger remedies × Age ≥ 66 × Stooping, kneeling, or crouching	-0.001	-0.077	-0.020	0.097*
	(0.061)	(0.037)	(0.024)	(0.053)
N		*12,052*		

Notes: We estimated separate linear probability models corresponding to the outcome in each column. Standard errors reported in parentheses are clustered at the individual level. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. "Employed" in this table refers to working for a wage or salary. Each panel reports estimates of separate specifications using the different specified state age discrimination protections (lower firm size refers to a size cutoff of 10 employees) and each of the specified physical demands. All specifications include the controls listed in the notes to Table 1. The specifications also include: a dummy variable for the age discrimination protection; a dummy variable indicating whether respondents have the physical demand indicated in the panel or not; interaction of age discrimination law and the physical demand; interactions between age dummy variables and the specified physical demand; and interactions between age dummy variables and the specified age discrimination protection. The specification corresponds to equation (3) in the text. See the notes to Tables 5 and 6 for more details on questions and coding for physical demands. We restrict the sample to respondents who report on all three physical demands of jobs, and to males born 1931-1943. HRS restricted data with state identifiers are used. The sample period for this analysis is 1992 through 2008. The sample size in this analysis is smaller than subsample of employed in Table 1 because for 337 observations we do not have the requisite data to determined physical demands of job.

Table 9A: State Age Discrimination Laws and Transition to Job with Less Physical Demands

	Employed at wave t-2: Current wave (t)		
	Employed	*Employed, different employer*	*Employed, same employer*
Outcome	***Less physically-demanding job***	***Less physically-demanding job***	***Less physically-demanding job***
Lower firm size cutoff × Age ≥ 62 and < 65 × Any physical demand	0.017	-0.001	0.006
	(0.036)	(0.148)	(0.034)
Lower firm size cutoff × Age ≥ 65 and < 66 × Any physical demand	0.064	0.653***	0.013
	(0.078)	(0.238)	(0.082)
Lower firm size cutoff × Age ≥ 66 × Any physical demand	-0.061	-0.113	-0.018
	(0.043)	(0.187)	(0.047)
Stronger remedies × Age ≥ 62 and < 65 × Any physical demand	-0.013	-0.186	-0.013
	(0.038)	(0.163)	(0.035)
Stronger remedies × Age ≥ 65 and < 66 × Any physical demand	0.009	0.052	-0.029
	(0.081)	(0.310)	(0.082)
Stronger remedies × Age ≥ 66 × Any physical demand	-0.012	-0.282	0.054
	(0.045)	(0.191)	(0.047)
N	*9,753*	*1,172*	*8,089*

Notes: The linear probability model is used for estimation. Standard errors reported in parentheses are clustered at the individual level. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. We estimated three linear probability models, one corresponding to the outcome in each column. "Employed" in this table refers to working for a wage or salary. Each panel reports estimates of separate specifications using the different specified state age discrimination protections; lower firm size refers to a size cutoff of 10 employees. All specifications include the controls listed in the notes to Tables 1 and 8A. The specification corresponds to equation (3) in the text. See the notes to Tables 5-7 for more details on questions and coding for physical demands. We restrict the sample to respondents who report on all three physical demands of jobs, and to males born 1931-1943. HRS restricted data with state identifiers are used. The sample period for this analysis is 1992 through 2008. The means of the dependent variables for each subsample by different age group are reported in Table 7.

Table 9B: State Age Discrimination Laws and Transition to Job with Less Physical Demands

	Employed at wave t-2: Current wave (t)		
	Employed	*Employed, different employer*	*Employed, same employer*
Outcome	***Less physically-demanding job***	***Less physically-demanding job***	***Less physically-demanding job***
Lower firm size cutoff × Age ≥ 62 and < 65 × Lots of physical effort	0.034	-0.039	0.049
	(0.039)	(0.161)	(0.037)
Lower firm size cutoff × Age ≥ 65 and < 66 × Lots of physical effort	0.074	0.674***	0.035
	(0.082)	(0.227)	(0.087)
Lower firm size cutoff × Age ≥ 66 × Lots of physical effort	-0.081*	-0.157	-0.064
	(0.049)	(0.205)	(0.052)
Lower firm size cutoff × Age ≥ 62 and < 65 × Lifting heavy loads	0.029	-0.055	0.048
	(0.057)	(0.188)	(0.048)
Lower firm size cutoff × Age ≥ 65 and < 66 × Lifting heavy loads	-0.064	0.404	-0.115
	(0.133)	(0.256)	(0.130)
Lower firm size cutoff × Age ≥ 66 × Lifting heavy loads	-0.144**	-0.087	-0.091
	(0.071)	(0.341)	(0.077)
Lower firm size cutoff × Age ≥ 62 and < 65 × Stooping, kneeling, or crouching	0.034	-0.020	0.009
	(0.042)	(0.156)	(0.040)
Lower firm size cutoff × Age ≥ 65 and < 66 × Stooping, kneeling, or crouching	0.113	0.734**	-0.027
	(0.100)	(0.329)	(0.106)
Lower firm size cutoff × Age ≥ 66 × Stooping, kneeling, or crouching	-0.042	-0.053	0.005
	(0.054)	(0.241)	(0.059)
Stronger remedies × Age ≥ 62 and < 65 × Lots of physical effort	-0.013	-0.391**	-0.005
	(0.041)	(0.175)	(0.038)
Stronger remedies × Age ≥ 65 and < 66 × Lots of physical effort	0.172**	-0.206	0.190**
	(0.086)	(0.382)	(0.090)
Stronger remedies × Age ≥ 66 × Lots of physical effort	-0.025	-0.154	0.030
	(0.049)	(0.206)	(0.051)
Stronger remedies × Age ≥ 62 and < 65 × Lifting heavy loads	-0.075	-0.169	-0.048
	(0.060)	(0.243)	(0.054)
Stronger remedies × Age ≥ 65 and < 66 × Lifting heavy loads	-0.130	0.595***	-0.079
	(0.137)	(0.193)	(0.138)
Stronger remedies × Age ≥ 66 × Lifting heavy loads	-0.081	-0.389***	-0.015
	(0.078)	(0.249)	(0.079)
Stronger remedies × Age ≥ 62 and < 65 × Stooping, kneeling, or crouching	-0.048	-0.124	-0.035
	(0.047)	(0.183)	(0.044)
Stronger remedies × Age ≥ 65 and < 66 × Stooping, kneeling, or crouching	-0.188	0.277	-0.292**
	(0.117)	(0.292)	(0.124)
Stronger remedies × Age ≥ 66 × Stooping, kneeling, or crouching	-0.013	-0.254	0.068
	(0.059)	(0.205)	(0.061)
N	*9,753*	*1,172*	*8,089*

Notes: The linear probability model is used for estimation. Standard errors reported in parentheses are clustered at the individual level. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. We estimated three linear probability models, one corresponding to the outcome in each column. "Employed" in this table refers to working for a wage or salary. Each panel reports estimates of separate specifications using the different specified state age discrimination protections (lower firm size refers to a size cutoff of 10 employees) and each of the specified physical demands. All specifications include the controls listed in the notes to Tables 1 and 8B. The specification corresponds to equation (3) in the text. See the notes to Tables 5-7 for more details on questions and coding for physical demands. We restrict the sample to respondents who report on all three physical demands of jobs, and to males born 1931-1943. HRS restricted data with state identifiers are used. The sample period for this analysis is 1992 through 2008. The means of the dependent variables for each subsample by different age group are reported in Table 7.