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Does Protecting Older Workers From Discrimination Make It Harder to Get Hired? Evidence From Disability Discrimination Laws

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Abstract

We explore the effects of disability discrimination laws on hiring of older workers. A concern with antidiscrimination laws is that they may reduce hiring by raising the cost of terminations and—in the specific case of disability discrimination laws—raising the cost of employment because of the need to accommodate disabled workers. Moreover, disability discrimination laws can affect nondisabled older workers because they are fairly likely to develop work-related disabilities, but are generally not protected by these laws. Using state variation in disability discrimination protections, we find little or no evidence that stronger disability discrimination laws lower the hiring of nondisabled older workers. We similarly find no evidence of adverse effects of disability discrimination laws on hiring of disabled older workers.

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Introduction

Discriminatory barriers to employment of older workers may constrain the effects of supply-side policy reforms intended to boost employment of older workers. Discrimination in hiring is particularly important, since substantially extending work lives is likely to require a good deal of employment in new part-time or shorter term "partial retirement" or "bridge jobs," and not just extended employment of workers in their career jobs, in part as some older workers make transitions to jobs that are less physically taxing (Cahill, Giandrea, & Quinn, 2006; Johnson, Kawachi, & Lewis, 2009).

In this article, we examine how disability discrimination laws affect hiring of older workers. Our focus is on older workers generally, and not just the disabled. There are two reasons why disability discrimination laws are germane to the question of barriers to employment of older workers generally. First, disabilities that can limit work and hence trigger protection by disability discrimination laws rise steeply with age, especially past age 50 or so (e.g., Rowe & Kahn, 1997); correspondingly, employer expectations that a worker will develop a disability in the near future should also rise steeply with age. Second, disability discrimination laws may do more to protect many older workers than do age discrimination laws. Many ailments associated with aging have become classified as disabilities (Sterns & Miklos, 1995), giving older workers an option of pursuing discrimination claims under either the Age Discrimination in Employment Act or the Americans with Disabilities Act (ADA). Moreover, ADA claims may be more likely to prevail because the ADA limits possible defenses more.[1]

Disability discrimination laws (like age discrimination laws) vary across states, with some states providing stronger protections than the federal ADA. We exploit this variation to assess the effects of additional protections on the hiring of older workers. Although states differ in whether they impose additional disability discrimination protections, there is virtually no temporal variation in these regulations within states. As a result, our identification comes from cross-state variation. We study disabled as well as nondisabled older workers; the latter may be affected adversely because of a higher likelihood of developing a physical impairment in the near future that may bring older disabled workers under the protection of disability laws. For the

nondisabled, we assume that disability discrimination laws only directly affect *older*, but not younger, nondisabled workers (because the likelihood of near-term disability for young workers is so low). This assumption permits us to conduct a difference-in-differences analysis estimating the effects of stronger state disability discrimination protections on nondisabled older workers, based on differences in effects of stronger state disability discrimination protections on hiring of older versus younger nondisabled workers within a state. Although we cannot exploit within-state variation in state disability discrimination laws, we believe that our article broaches an important question regarding disability discrimination laws and older workers and provides some interesting new evidence.

Related Research

Antidiscrimination laws may boost employment mainly via reduced terminations, but could be ineffective at increasing hiring. In contrast to termination cases, in hiring cases it is difficult to identify a class of affected workers, and economic damages may be small—both of which reduce the attractiveness of hiring cases to plaintiffs and their attorneys. If antidiscrimination laws mainly raise the costs of terminating protected workers, they could unintentionally reduce hiring of protected groups (Bloch, 1994; Posner, 1995). The effects of age discrimination laws on hiring have been studied, and the evidence is mixed (Lahey, 2008; Neumark & Button, 2014; Neumark & Song, 2013).

Moreover, the unintended consequence of reducing hiring of the protected group might be more severe for the effects of disability discrimination laws on older workers, for two reasons. First, if disability discrimination laws offer stronger protections than age discrimination laws, they may raise termination costs more. Second, employers should have a reasonable expectation of an older worker developing a disability requiring costly accommodation—reducing hiring of older *non-disabled* workers.

Existing research on the effects of disability discrimination laws studies employment rather than hiring and reaches ambiguous conclusions. Acemoglu and Angrist (2001) and Deleire (2000) conclude that the ADA reduced employment among disabled individuals. Both studies identify the effects of the ADA from time-series changes in the employment of the disabled relative to the nondisabled, and hence cannot distinguish policy effects from other sources of different changes in the employment rates of these two groups (Houtenville & Burkhauser, 2004). Beegle and Stock (2003) also note that when the ADA was enacted all but two states had laws barring discrimination

against the disabled, although there was heterogeneity in these laws, raising questions about what the time series evidence identifies, although Acemoglu and Angrist (2001) report some cross-state evidence of larger employment declines of the disabled in states with more ADA-related discrimination charges.

Beegle and Stock (2003) use variation in state disability discrimination laws passed prior to the ADA, finding no clear employment effects, and no incremental effect of "reasonable accommodation" provisions in state laws. Kruse and Schur (2003) show that results from time-series evidence are sensitive to the definition of disability. Hotchkiss (2004) argues that the apparent decline in employment of the disabled reflects a decline in their labor force participation, mainly from (self) reclassification of nonparticipants as disabled, rather than a decline in demand. Jolls and Prescott (2004) try to identify separately the reasonable accommodation cost effects of the ADA, based on variation in state laws, suggesting that the reasonable accommodation provision reduced employment only in the short term.

Stock and Beegle (2004), like our study, extend the analysis to the non-disabled, arguing—echoing the discussion in the Introduction—that older workers who are not disabled may receive greater protection from age discrimination when there are disability discrimination laws. Moreover, they test for interactions between age and disability discrimination laws. They find a positive interactive effect on employment of nondisabled workers aged 40–64, but a net effect of disability discrimination laws that is very small and statistically insignificant.

Our research differs in a number of ways. First, it include workers aged 65 and over—a group that is of considerable interest in terms of extending work lives, and for which disability rates are quite high. Second, it focuses on contemporaneous variation in state disability discrimination protections, including differences in these laws that were not considered earlier. Third, it emphasizes effects on nondisabled older workers. Fourth, it studies effects of disability discrimination laws on hiring, which we argue is important for extending work lives of older workers, and is the outcome most likely to be *deterred* by disability discrimination protections.

Disability Discrimination Laws

State disability discrimination laws are sometimes stronger than the federal ADA in three principal ways. Two of these increase the number of individuals who are protected under state law, via the definition of disability, or the minimum firm size to which disability discrimination laws apply. The third is

higher potential compensation for plaintiffs, through higher or uncapped compensatory and punitive damages, relative to the capped damages available under the ADA. The first three columns of Table 1 display this variation in state disability discrimination laws. An appendix available from the authors documents the extensive legal research underlying Table 1 and provides more details on these laws than the brief description we provide here.

The minimum firm size for the ADA to apply is 15. In our analysis, we distinguish states with a firm size minimum lower than 10 (substantially lower than the ADA minimum). When the firm size minimum is lower, more workers (and employers) are covered.

Defining disability is complex. Most states adopt the ADA definition, either explicitly or via case law. Some states use a laxer definition, changing a key part of the definition of disability from "substantially limits one or more major life activities" to either "materially limits" or just "limits." Other states relax this criterion even more, simply requiring that the disability be "medically diagnosed" without regard to whether the impairment limits major life activities (Long, 2004). In our analysis, we distinguish states that use the broader medical definition of disability.

The ADA caps the sum of compensatory and punitive damages per claimant, with caps that are larger for larger firms. Some states allow larger potential damages. We distinguish states with larger damages than the ADA; we base this classification on punitive rather than compensatory damages, since punitive damages are likely to drive large judgments.[2,3]

Labor Market Data

Health and Retirement Study (HRS) Data

Part of our analysis studies older workers only, using the RAND HRS, a version of the regular HRS data that makes it easier to track individuals across waves of the survey. We use data from 9 waves from 1992 through 2008, avoiding the period of the Great Recession. The oldest cohort in the HRS sampling frame was born in 1924 and the youngest cohort in 1955; spouses of the respondents can have a wider age range. We restrict our data (for almost all of our analyses) to respondents aged 53–69 and avoid spouses outside these age ranges.[4] We study men only, to avoid complications from the very different labor force participation patterns of men and women in the covered cohorts.

To measure our dependent variable—hiring—as accurately as possible, we use more information not only on employment status and the job at each

Table 1. State Disability and Age Discrimination Laws, 2008.

State	Disability Discrimination Laws			Age Discrimination Laws	
	Minimum Firm Size	Broader Definition of Disability	Larger Damages Than ADA	Minimum Firm Size	Larger Damages Than ADEA
Alabama	No law	No law	No law	20	No
Alaska	1	No	Yes	1	Yes
Arizona	15	No	No (no punitive)	15	No
Arkansas	9	No	No (same as ADA)	No law	No law
California	5	No ("limits" only, effective 2001)	Yes (uncapped)	5	Yes
Colorado	1	No	No (same as ADA)	1	No
Connecticut	3	Yes	No (no punitive)	3	No
Delaware	15	No	No (same as ADA)	4	Yes
District of Columbia	1	No	Yes (uncapped)	1	Yes
Florida	15	No	No (punitive capped at US$100k)	15	Yes
Georgia	15	No	No (no punitive)	1	No
Hawaii	1	No	Yes (uncapped)	1	Yes
Idaho	5	No	No (punitive capped at US$10k)	5	Yes
Illinois	1	Yes	No (no punitive)	15	Yes
Indiana	15 (25 before July 25, 1994)	No	No (no punitive)	1	No
Iowa	4	No	No (no punitive)	4	Yes
Kansas	4	No	No (damages capped at US$2k)	4	Yes
Kentucky	15	No	No (no punitive)	8	Yes

Table 1. (continued)

State	Disability Discrimination Laws			Age Discrimination Laws	
	Minimum Firm Size	Broader Definition of Disability	Larger Damages Than ADA	Minimum Firm Size	Larger Damages Than ADEA
Louisiana	20	No	No (no punitive)	20	Yes
Maine	1	No	Yes	1	Yes
Maryland	15	No	No (same as ADA)	15	Yes
Massachusetts	6	No	Yes (uncapped)	6	Yes
Michigan	1	No	No (no punitive)	1	Yes
Minnesota	1	No ("materially limits" only)	No (punitive capped at US$25k)	1	Yes
Mississippi	No law	No law	No law	No law	No law
Missouri	6	No	Yes (uncapped)	6	Yes
Montana	1	No	No (no punitive)	1	Yes
Nebraska	15	No	No (no punitive)	20	No
Nevada	15	No	Yes	15	No
New Hampshire	6	No	No (no punitive)	6	Yes
New Jersey	1	Yes	Yes (uncapped)	1	Yes
New Mexico	4	No	No (no punitive)	4	Yes
New York	4	Yes	No (no punitive)	4	Yes
North Carolina	15	No	Yes	15	No
North Dakota	1	No	No (no damages)	1	No
Ohio	4	No	Yes (uncapped)	4	Yes
Oklahoma	15	No	No (no punitive)	15	No
Oregon	6	No	Yes (uncapped)	1	Yes

Table 1. (continued)

State	Disability Discrimination Laws			Age Discrimination Laws	
	Minimum Firm Size	Broader Definition of Disability	Larger Damages Than ADA	Minimum Firm Size	Larger Damages Than ADEA
Pennsylvania	4	No	No (no punitive)	4	No
Rhode Island	4	No	Yes (uncapped)	4	Yes
South Carolina	15	No	No (same as ADA)	15	No
South Dakota	1	No	No (no punitive)	No law	No law
Tennessee	8	No	No (no punitive)	8	Yes
Texas	15	No	No (same as ADA)	15	Yes
Utah	15	No	No (no punitive)	15	No
Vermont	1	No	Yes (uncapped effective May 13, 1999, previously no punitive damages)	1	Yes
Virginia	1	No	No (no punitive)	6	No
Washington	8	Yes (effective May 4, 2007)	No (no punitive)	8	Yes
West Virginia	12	No	Yes (uncapped)	12	No
Wisconsin	1	No	No (no damages)	1	No
Wyoming	2	No	No (no punitive)	2	No

Note. For the states listed as "Yes" under larger damages than ADA, but not uncapped, details are as follows: AK—uncapped compensatory damages, punitive damages capped above ADA levels; ME—exceeds ADA cap for firms of 201+ employees; NV—uncapped compensatory damages except against government, punitive damages capped at the larger of US$300k or 3× compensatory damages; NC—uncapped compensatory damages except against government, punitive damages capped at the larger of US$250k or 3× compensatory damages. ADEA = Age Discrimination in Employment Act; ADA = Americans with Disabilities Act.

HRS interview, but also questions on labor market transitions between the interviews, or "interwave" information. Employment transitions from self-employed or not working to employed are coded as hires, as are transitions from employed at wave $t - 1$ to working for a different employer at wave t (HRS waves are 2 years apart). Respondents who make transitions from nonemployment at wave $t - 1$ to self-employed or nonemployment at wave t are coded as hires if they report working for a wage or salary between waves, and otherwise are coded as nonhires.[5]

We focus on those initially nonemployed (in period $t - 1$), asking if they were hired as of period t. Job-to-job transitions are harder to interpret. They capture new hiring as well as outcomes from adverse outcomes at the previous job, whereas we can assume that nonemployed workers who become employed were looking to get hired. Thus, the estimated effects of disability discrimination laws on hiring of the previously nonemployed better isolate the effects of these laws on hiring. Nonetheless, we have examined all of our analyses using all hiring instead, and the qualitative conclusions are unchanged; these results are in an appendix available from the authors upon request.

We do not exclude those who report that they are retired, or out of the labor force, from those at risk of being hired, because there are frequent transitions back to employment for workers classified this way. In the RAND HRS, the hiring rate out of retirement is 0.09, versus 0.125 overall. To be sure, the hiring rate is much higher for, say, the unemployed (0.642). But there are far more retired than unemployed workers, so that for our sample, hires out of retirement constitute 54.7% of hires, versus 25.1% for hires out of unemployment. Similarly, the hiring rate for those who report "out of the labor force" is 0.358.

Survey of Income and Program Participation (SIPP) Data

To look at a larger age range needed for our difference-in-differences analysis, we use SIPP data. To correspond to the years covered by the HRS, we use data from the 1992, 1993, 1996, 2001, and 2004 SIPP panels. The last panel extends into 2007, and we use the age range 15–69. Like with the HRS, we do not use the most recent SIPP data (the 2008 panel), to avoid the Great Recession, and we restrict our analysis to men.

We exploit the longitudinal nature of the data to construct person-month hiring data. Our hiring measure is mainly based on respondents' employment status, and information on whether a worker reported changing employers and when they began working for the new employer. Although respondents

report their employment status at both a weekly and monthly frequency, the information on when they began working for the new employer is only available at the monthly level. If respondents report having a job for at least 1 week during the reference month, we record them as employed. If they report having a job for at least 1 week during the reference month and owning their own business, we define them to be self-employed. If they report having no job, we define them to be not working. If they make a transition from self-employed or not working to employed, we code them as hired. If they are employed at $t-1$ and employed at t and report that they started their job at t, then we code them as hired at t. As in the HRS analysis, we focus on the sample not employed at period $t-1$, and estimate models for whether these respondents were hired as of period t.[6]

The SIPP interviews respondents every 4 months and reports about their previous 4 months. A well-known limitation of the SIPP is a strong tendency for individuals to report the same value within a 4-month interview period ("seam bias"; Ham, Li, & Shore-Sheppard, 2009). We address this seam bias by including an indicator for being on a seam between two interview waves. Other control variables are described in the notes to the tables and figures discussed below.

Like with the HRS, self-reported retirement does not preclude hiring. The hiring rate is 0.049 for those who say they have never retired, 0.013 for those who say they have ever retired, and 0.034 for those who report that they are out of the labor force. (Hiring rates are much lower in the SIPP because of the higher frequency of the data.)

Disability

We focus on self-reported work-impairing disabilities. The HRS question is "Do you have any impairment or health problem that limits the kind or amount of paid work you can do?" The SIPP question is very similar: "[Do you] have a physical, mental, or other health condition that limits the kind or amount of work [you] can do?"[7] These questions are asked in each wave. We use reported disability as of time t and whether one was hired at time t (out of nonemployment in $t-1$).[8]

We also explore an alternative definition based on self-reported fair or bad health (the additional options are good, very good, or excellent). This definition has the advantage of not being tied to whether one is working, although it does not refer specifically to whether a disability or medical condition limits work. Self-reported health data in the SIPP are only

collected in topical modules in selected waves of each panel, and hence may less accurately reflect disability status at the time when hiring is measured.[9]

The two disability measures overlap but are not identical. In the HRS, 59% of those who report a work-limiting disability report fair or bad health, and 64% of those who report fair or bad health also report a work-limiting disability. However, the two measures have similar relationships with difficulties in activities and instrumental activities, functional limitations, and doctor-diagnosed medical problems (table available upon request).

Empirical Analysis

Methods

We study the effects of disability discrimination laws on hiring in a number of ways. We have to rely on cross-state variation in the strength of state disability discrimination laws, because there are virtually no changes in these laws during the periods we study. For both data sets, we present a rich analysis of differences in hiring rates by single-year age cells, for both the nondisabled and the disabled, in states with stronger and weaker disability discrimination laws along each of the dimensions discussed earlier.

We also estimate difference-in-differences models for the nondisabled only, using the SIPP to leverage differences between younger and older workers. In particular, perhaps our central focus is the effects of disability discrimination laws on the hiring of nondisabled older workers, who could be adversely affected because of a high probability of developing a disability and becoming protected by these laws.

Our difference-in-differences strategy is based on a rather sharp rise in disability rates (see Figure 1) at around age 50, and the plausibility of the assumption that employers are little concerned with younger nondisabled workers becoming disabled and protected by disability discrimination laws. In this strategy, differences in hiring rates for those who are nondisabled and under age 50 (or similar thresholds) capture state differences arising from factors that might be coincidentally correlated with state disability discrimination laws, and hence control for these factors in a similar way to how older workers prior to the advent of these laws would serve as controls in a difference-in-differences estimator using only older workers, if there were variation in these state laws over time. Thus, the differences associated with these laws for those who are nondisabled and over age 50 relative to those
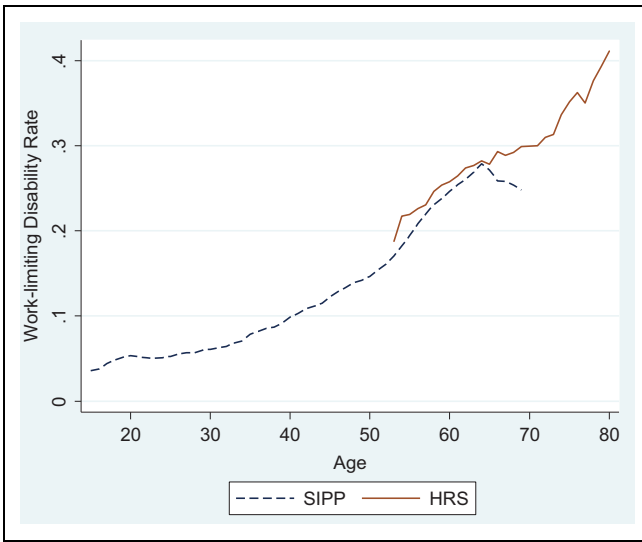
Figure 1. Disability by age in HRS and SIPP data. The disability rates are based on raw data, without adjustment. In the HRS, the disability definition is based on the question "Do you have any impairment or health problem that limits the kind or amount of paid work you can do?" In the SIPP, the disability definition is based on the question "[Do you] have a physical, mental, or other health condition that limits the kind or amount of work [you] can do?" In the SIPP, this question is asked only for respondents aged 69 or younger. HRS = Health and Retirement Study; SIPP = Survey of Income and Program Participation.

who are nondisabled and under age 50 are more likely to reflect the causal effects of these laws.

In using this strategy, we are trading off a stronger assumption in the hopes of getting more convincing causal evidence. Of course, we cannot decisively rule out effects of disability discrimination laws on younger nondisabled workers. Finally, reflecting this, it would not make any sense to implement this strategy for the disabled because hiring of the disabled of all ages could be affected by disability discrimination laws.

Descriptive Statistics

Figure 1 shows self-reported work-impairing disability rates by age. In the HRS data, these rates rise largely monotonically with age, from around 15% near age 55 to 25% at age 65–70.[10] The larger age range in the SIPP data

reveals more nonlinearity in this relationship. The disability rates in the age range covered by the HRS are quite similar, but the figure reveals quite low and stable disability rates through about age 40, in the 5–8% range, a slight steepening during the 40s, and then fairly sharp increases beginning in the 50s.[11]

Table 2 reports descriptive statistics for the variables used in our analysis. For the SIPP, we report these for both the full sample and those aged 53–69, which provides a better comparison for the ages common to the SIPP and the HRS for which we also have the disability question. The measured hiring rate is much higher in the HRS, because of the biennial frequency in the HRS versus the monthly frequency in the SIPP. The descriptive statistics for the control variables are comparable in the two data sets, for the same age ranges.

Hiring Rates by Age and Disability Discrimination Laws

Figures 2 and 3 present information on hiring rates by age. Each figure has three panels, with two graphs in each—one for the nondisabled and one for the disabled. Each panel displays predicted hiring rates, for single-year age cells, for states with a stronger disability discrimination law provision and states without that stronger provision, in turn for broader definition of disability, larger damages, and a lower minimum firm-size cutoff.

The predictions come from a probit model for hiring including the controls listed in the notes to the figures, a set of dummies for every age in single years, and a full set of interactions between these age dummy variables and a dummy variable for the stronger disability discrimination protection under consideration.[12] Using the probit estimates, we compute the predicted hiring probability at each age, for each set of states (with and without the stronger provision), setting the other controls at their sample means. Thus, these figures show the differences in hiring rates by age for otherwise identical workers, based on whether that worker resides in a state with the stronger disability discrimination protection or not.

In Figure 2, based on HRS data, Panel A focuses on the distinction between states with or without the broader definition of disability than the ADA. For the nondisabled (left-hand graph), it appears that hiring rates are generally lower in states with the broader definition, consistent with the conjecture that stronger disability discrimination laws can deter hiring of older nondisabled workers. For the disabled (right-hand graph), the evidence looks similar albeit more pronounced, suggesting that stronger protections can lower hiring of older disabled workers.

Table 2. HRS and SIPP Descriptive Statistics.

| | HRS | | | SIPP | | | |
| | Age 53–69 | | | Full Sample (Age 15–69) | | Age 53–69 | |
Variables	Nondisabled (1)	Disabled (2)		Nondisabled (1)	Disabled (2)	Nondisabled (1)	Disabled (2)
Dependent variable							
Hired from nonemployment	0.217 (0.008)	0.079 (0.005)	Hired from nonemployment	0.067 (0.0004)	0.016 (0.0003)	0.018 (0.0004)	0.006 (0.0002)
Individual-level controls							
High school	0.355 (0.008)	0.380 (0.009)	High school	0.253 (0.001)	0.339 (0.001)	0.330 (0.001)	0.315 (0.002)
Some college	0.227 (0.076)	0.192 (0.008)	Some college	0.185 (0.001)	0.168 (0.001)	0.196 (0.001)	0.158 (0.001)
College	0.256 (0.008)	0.118 (0.006)	College	0.116 (0.0005)	0.066 (0.001)	0.223 (0.001)	0.083 (0.001)
Partnered (unmarried)	0.044 (0.004)	0.048 (0.005)	Married	0.316 (0.001)	0.467 (0.001)	0.778 (0.001)	0.659 (0.002)
Divorced	0.164 (0.007)	0.239 (0.009)	Widowed	0.016 (0.0002)	0.029 (0.0004)	0.054 (0.001)	0.054 (0.001)
Single	0.048 (0.005)	0.062 (0.005)	Divorced	0.073 (0.0004)	0.189 (0.001)	0.110 (0.001)	0.195 (0.001)
Black	0.081 (0.004)	0.154 (0.006)	Single	0.173 (0.001)	0.199 (0.001)	0.091 (0.001)	0.144 (0.001)
Other race	0.032 (0.003)	0.047 (0.004)	Black	0.045 (0.0003)	0.022 (0.0003)	0.024 (0.0004)	0.023 (0.001)
Suburban	0.234 (0.007)	0.246 (0.008)	Asian	0.011 (0.0001)	0.017 (0.0003)	0.005 (0.0001)	0.015 (0.0004)
Ex-urban	0.314 (0.008)	0.394 (0.009)	Other race				
			Metro	0.781 (0.001)	0.716 (0.001)	0.750 (0.001)	0.698 (0.002)
			On seam	0.262 (0.001)	0.262 (0.001)	0.260 (0.001)	0.262 (0.001)
N	5,240	4,802	N	744,365	311,272	204,456	152,736

Note. Standard errors of means are reported in parentheses. Person-level sampling weights are used. HRS = Health and Retirement Study; SIPP = Survey of Income and Program Participation.
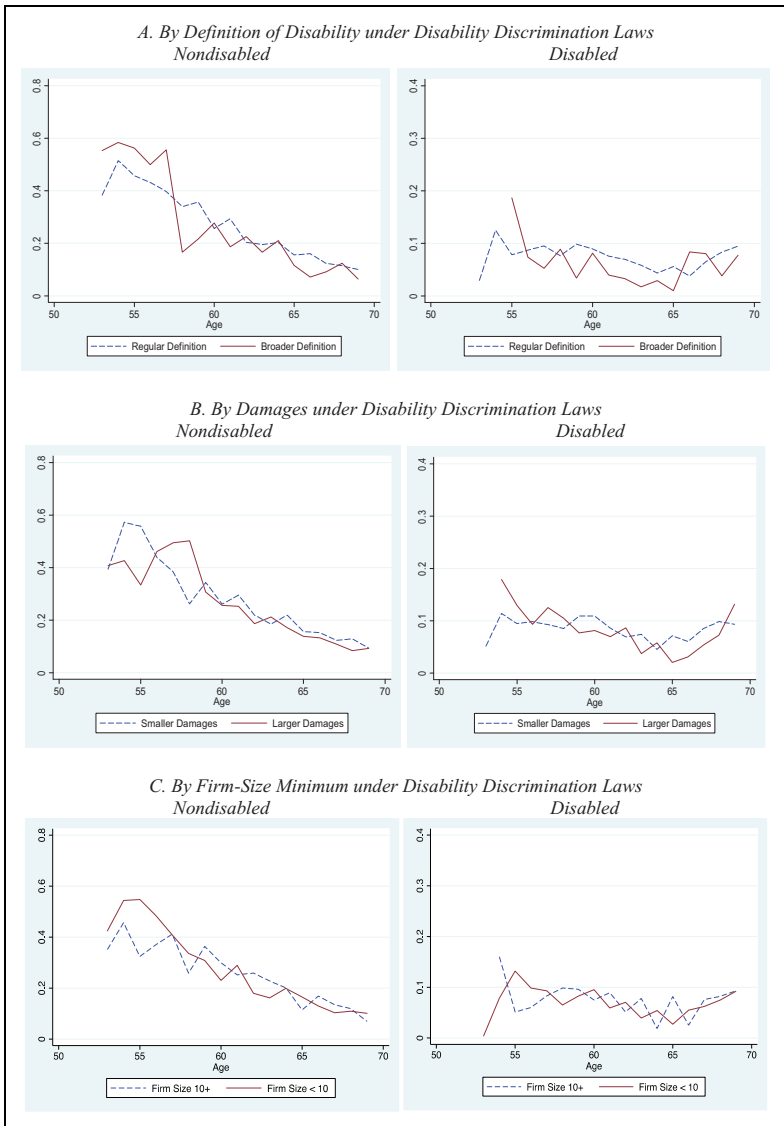
Figure 2. HRS hiring rates (from nonemployment) using interwave information, for nondisabled and disabled. We use 1992–2008 HRS data for this analysis. HRS restricted data with state identifiers are used. The sample period for this analysis is 1992 through 2008. We restrict the sample to males who are 53–69 and use

Panels B and C present similar analyses for larger damages and a lower firm-size cutoff, respectively. These figures show much less evidence of a systematic relationship between stronger state laws and hiring of older workers. In states with larger damages, the hiring rate of the nondisabled is generally lower for those in their 60s, but the difference is small. For the disabled, there is no clear difference.[13] For the lower firm-size cutoff, there is no clear evidence of a difference in hiring rates for either the nondisabled or the disabled.

Table 3 summarizes the information from these figures, in the columns labeled ''HRS.'' Based on the estimates by single-year ages, we form different age ranges, for each of which we compute the average difference in hiring rates between states with and without the stronger provision, the percentage of the estimates that are positive, and the p value for the joint test that the estimated (single-year) differences in that age range are equal to 0.

For example, the evidence from Panel A of Figure 2, indicating that hiring rates for the nondisabled were lower in states using the broader definition of disability, is reflected most strongly in the fifth row of column (1), for the 62–69 age range. On average, the difference in the estimated hiring rates was −0.130; the sign is negative because hiring rates at these ages are lower for states using the broader definition. The majority of the estimates are negative, as the figure also shows. However, the hiring rate differences over this age range are not statistically significant; the p value from the joint test that the differences in this age range are all 0 is .694.

Figure 2. (continued) person-level HRS sampling weights. We use probit models to calculate the predicted hiring probability for each age in years conditional on respondents being not working at $t - 1$. The models are estimated separately for the nondisabled and the disabled. Each specification includes year fixed effects, single-year age dummy variables, and interactions between these age dummy variables and a dummy variable for the stronger disability discrimination protection indicated in the graph. The individual-level controls include urban–rural status, race, marital status, education level. Urban–rural status includes suburban and ex-urban residence; race includes black and other; marital status includes partnered, separated/divorced/widowed, and never married; education includes General Educational Development (GED) or high school graduate, some college, and college and above. The predicted probability of hiring at each age is evaluated at the sample means of the controls. See the text and Table 1 for discussion and classification of states by characteristics of disability discrimination laws. See the notes to Figure 1 for the definition of disability in the HRS. HRS = Health and Retirement Study.
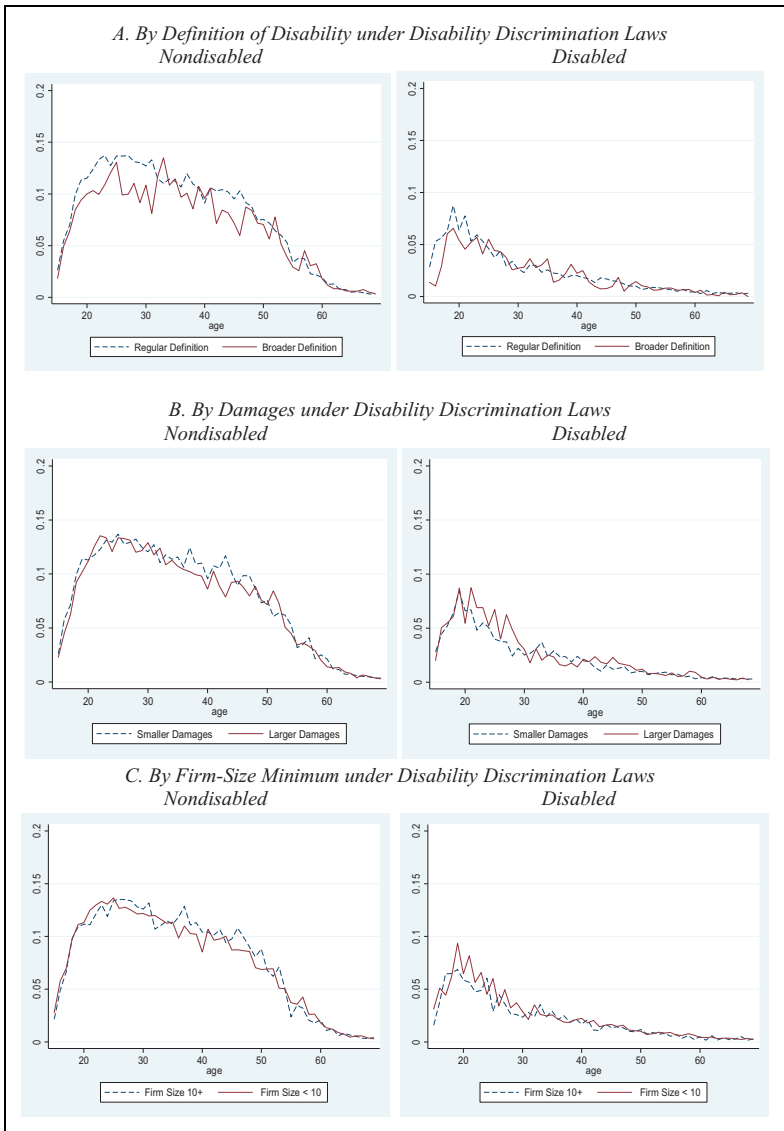
Figure 3. SIPP hiring rates (from nonemployment), for nondisabled and disabled. We use SIPP 1992, 1993, 1996, 2001, and 2004 for this analysis, so the sample period for this analysis is January 1992 through December 2007. Maine, Vermont, North

The remaining entries in columns (1) and (2) report similar information for the disabled as well, and for some age ranges that align better with the SIPP data. While the point estimates are consistent with the broader definition of disability lowering hiring rates for older disabled and nondisabled workers, for age ranges that encompass the 60s, the differences are not statistically significant.[14]

Columns (5)–(6) and (9)–(10) provide similar information for the other two dimensions of strong state disability protections (from Panels B and C of Figure 2). The weaker indications of differences in hiring rates at older ages associated with larger damages and a lower firm-size cutoff are reflected in these columns. None of the estimated differentials for the age ranges considered in this table is jointly significant, although for larger damages the estimated differentials for all three of the older age ranges for nondisabled workers are negative (column (5)), and for smaller firm size the estimated differentials for all three of the older age ranges for disabled workers are negative (column (10)).

Figure 3 presents results for the SIPP data, covering a broader age range. In Panel A, which focuses on the broader definition of disability than the ADA, the evidence for the same age ranges covered by the HRS is different, with no clear indication that hiring rates for nondisabled older workers are lower in states with the broader definition, and no apparent difference at any ages for the disabled. This is reflected, for example, in the fifth row (ages 62–69) of columns (3) and (4) of Table 3, where the average differences in hiring

Figure 3. (continued) Dakota, South Dakota, and Wyoming are deleted from the sample from SIPP 1992, 1993, 1996, and 2001 because they are not uniquely identified. We use probit models to calculate the predicted hiring probability for each age in years conditional on respondents being not working at $t - 1$. The models are estimated separately for the nondisabled and the disabled. We restrict the sample to adult males who are 15 or older and use person-level SIPP sampling weights. Each specification includes year fixed effects, single-year age dummy variables, and interactions between these age dummy variables and a dummy variable for the stronger disability discrimination protection indicated in the graph. The individual-level controls include education, marital status, metropolitan status, and race. Education includes GED or high school graduate, some college, and college; marital status includes married, widowed, and divorced; metropolitan status includes metropolitan, and not-identified; race includes black, Asian, or other. All analyses include a dummy variable whether the hiring occurred during the last month of each wave to control for the seam bias. The predicted probability of hiring at each age is evaluated at the sample means of the controls. See the notes to Figure 1 for the definition of disability in the SIPP. SIPP = Survey of Income and Program Participation.

Table 3. Estimation Results and Significance Tests for Disability Discrimination Law Provisions, Hiring From Nonemployment.

		Broader Definition of Disability				Larger Damages				Firm-Size Minimum < 10			
		HRS		SIPP		HRS		SIPP		HRS		SIPP	
		Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled
Age Ranges		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age 20–29	Avg. diff.	—	—	−0.025	−0.004	—	—	0.0002	0.013	—	—	0.001	0.009
	% pos.			0	30			50	90			60	80
	p value			.000	.014			.053	.032			.076	.026
Age 30–39	Avg. diff.	—	—	−0.010	0.003	—	—	−0.005	−0.005	—	—	−0.006	−0.001
	% pos.			40	70			20	20			30	40
	p value			.000	.000			.027	.218			.016	.578
Age 40–49	Avg. diff.	—	—	−0.015	−0.002	—	—	−0.010	0.005	—	—	−0.008	0.002
	% pos.			10	40			30	90			20	80
	p value			.000	.000			.126	.131			.005	.456
Age 50–61	Avg. diff.	—	—	−0.002	0.001	—	—	0.0001	0.001	—	—	0.001	0.001
	% pos.			33.3	67.7			50	66.7			75	58.3
	p value			.000	.000			.000	.001			.000	.102
Age 62–69	Avg. diff.	−0.130	−0.230	0.0001	−0.002	−0.085	−0.151	0.0004	−0.0005	−0.058	−0.005	0.0002	0.000
	% pos.	37.5	25	75	25	12.5	37.5	75	25	25	37.5	50	50
	p value	.694	.396	.000	.000	.860	.504	.260	.974	.342	.115	.000	.194
Age 40–52	Avg. diff.	—	—	−0.012	−0.001	—	—	−0.006	0.004	—	—	−0.007	0.001
	% pos.			15.4	53.8			38.5	92.3			30.8	61.5
	p value			.000	.000			.000	.093			.000	.598
Age 53–61	Avg. diff.	0.020	−0.100	−0.002	0.0003	−0.019	0.033	−0.003	0.001	0.138	−0.111	0.002	0.002
	% pos.	66.7	28.6	33.3	55.6	44.4	50	44.4	55.6	66.7	44.4	77.8	77.8
	p value	.539	.509	.000	.000	.418	.976	.000	.003	.808	.420	.000	.157

(continued)

Table 3. (continued)

	Broader Definition of Disability				Larger Damages				Firm-Size Minimum < 10			
	HRS		SIPP		HRS		SIPP		HRS		SIPP	
	Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age Ranges												
Age 53–69 Avg. diff.	−0.050	−0.169	−0.001	−0.001	−0.050	−0.059	−0.001	0.0002	0.045	−0.061	0.001	0.001
% pos.	52.9	26.7	52.9	41.2	29.4	43.8	58.8	41.2	47.1	41.2	64.7	64.7
p value	.704	.469	.000	.000	.729	.890	.000	.001	.641	.184	.000	.016

Notes. The estimates and tests in this table are based on the model estimates used to construct Figures 2 and 3. See notes to Figures 2 and 3 for details. For each age range, in each entry the table reports (1) the average across the covered ages of the estimated differences in hiring rates between states with stronger and weaker disability discrimination laws; (2) the share of ages in the range for which the estimated hiring rate is higher with the stronger law; and (3) *p* values for a joint (Wald) test of no difference for each age in the range between states with and without the stronger law. Avg. diff. = average difference; % pos. = percentage of positive estimates; HRS = Health and Retirement Study; SIPP = Survey of Income and Program Participation.

rates are much smaller than those for the same age ranges in columns (1) and (2), and effectively 0. Nonetheless, in the last two rows of the table, for the nondisabled aged 53–61 and 53–69, for both the broader definition of disability and larger damages, the estimates are negative and statistically significant. The estimated differences are very small—in the −0.001 to −0.003 range—but the SIPP hiring rate for the nondisabled aged 53–69 is only 0.018, so a difference of −0.002 represents about a 10% lower hiring rate. However, the percentages of positive estimates are often quite close to 50, suggesting this evidence is not strongly indicative of an effect in one direction.

Curiously, Panel A of Figure 3 suggests that the hiring rate for the non-disabled tends to be lower in states using the broader definition of disability—up to the late 40s—as do the estimates in the top rows of columns (3) and (4) of Table 3, where for the nondisabled the average estimated differences in hiring rates between states that use the broader definition and states that do not are negative for ages 20–29, 30–39, and 40–49—in all cases statistically significant.[15] The estimated differences are larger than for the older ranges, but these are relative to a much higher hiring rate (about 0.12, as shown in Figure 3), and hence are more similar in relative terms. For the disabled, there are no clear differences in hiring rates in the SIPP at young ages based on the definition of disability. Finally, the differences in hiring rates for older disabled workers are very small and not in a consistent direction.

Panel B of Figure 3 examines larger damages in the SIPP data. There is less evidence of lower hiring for the younger nondisabled in states with stronger laws; see also column (7) of Table 3, compared to column (3). There is evidence of more hiring of the disabled at many ages, most pronounced at younger ages. As Table 3 shows, though, the estimated differences at younger ages are small except for ages 20–29, and generally not statistically significant. Finally, Panel C of Figure 3 reports the results for the lower firm-size minimum, which is not associated with differential hiring.

Thus, there is some evidence from the HRS that using a broader definition of disability reduces hiring of both nondisabled and disabled older workers, and larger damages reduce hiring of older, nondisabled workers. However, this evidence is not statistically significant. The point estimates for the disabled are consistent with a broader definition of disability deterring hiring of older disabled workers, which could stem from higher costs of employing or terminating a disabled worker. The point estimates for the nondisabled are consistent with stronger protections deterring hiring of nondisabled older workers, perhaps because employers regard it as relatively likely that these workers will become disabled and fall under these stronger protections.

The results from the SIPP are partly consistent, with some evidence— albeit weak—of lower hiring rates for nondisabled older workers in states with a broader disability definition and larger damages. However, the estimates indicate lower hiring rates for nondisabled younger workers in states with stronger protections, especially the broader disability definition, which is hard to understand because employers seem unlikely to be concerned that nondisabled younger workers will become disabled. Of course, this evidence for nondisabled younger workers may not be causal, instead just reflecting correlations of stronger disability discrimination protections with other state-level factors influencing employment. This perspective underlies our difference-in-differences strategy—discussed below—estimating the effects of stronger disability discrimination protections on nondisabled workers from the relative effects of these protections on older versus younger non-disabled workers, using the younger workers to control for other influences on hiring that are correlated with disability discrimination laws.

To see whether the results are sensitive to the definition of disability, in Table 4 we repeat the analysis defining disability based on self-reported fair or bad health. The results are in many respects similar.[16] Turning to the key HRS results, for older nondisabled workers, hiring is lower in states with a broader definition of disability or larger damages. In columns (1) and (5), all but one of the estimates are negative, and all the shares positive are low, although again none of the estimates is statistically significant. The SIPP evidence summarized in columns (3) and (7) is less clear. The estimates are similar to those in Table 3, but often smaller in absolute value, and less consistently negative. For younger workers in the SIPP data, there is less evidence that stronger state disability discrimination laws reduce employment of nondisabled younger workers (e.g., the smaller estimates for $20-29$, $30-39$, and $40-49$ year-olds in column (7), and the fact that all of the estimates for the nondisabled in these age-groups are less negative in Table 4 than in Table 3). Overall, though, there are not systematic differences using the alternative disability measure.

Difference-in-Differences Estimates

Finally, we turn to the difference-in-differences results. These are based on linear probability models of hiring of the form:

$$H_{ist} = \alpha + LAW_s \times OLD_{ist}\beta + X_{ist}\delta + \sum_a A_a\omega_a + \sum_s S_s\theta_s + \sum_t T_t\rho_t + \varepsilon_{ist},$$

where H_{ist} is the hiring outcome for individual i in state s in time t.

Table 4. Estimation Results and Significance Tests for Disability Discrimination Law Provisions, Hiring From Nonemployment, Substituting Fair or Bad Health as a Disability Measure.

		Broader Definition of Disability				Larger Damages				Firm-Size Minimum < 10			
		HRS		SIPP		HRS		SIPP		HRS		SIPP	
		Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled
Age Ranges		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age 20–29	Avg. diff.	—	—	−0.017	−0.004	—	—	0.003	0.007	—	—	0.004	0.005
	% pos.			10	30			70	50			60	70
	p value			.000	.000			.237	.002			.151	.075
Age 30–39	Avg. diff.	—	—	−0.004	0.003	—	—	−0.002	−0.0002	—	—	−0.006	0.001
	% pos.			40	50			20	50			30	50
	p value			.000	.000			.001	.086			.077	.044
Age 40–49	Avg. diff.	—	—	−0.012	0.001	—	—	−0.0004	0.002	—	—	−0.007	0.0002
	% pos.			10	40			50	40			10	50
	p value			.000	.000			.024	.008			.062	.132
Age 50–61	Avg. diff.	—	—	0.001	0.001	—	—	−0.001	0.002	—	—	−0.001	0.001
	% pos.			58.3	58.3			33.3	66.7			58.3	66.7
	p value			.000	.000			.000	.158			.000	.073
Age 62–69	Avg. diff.	−0.157	—	−0.0001	−0.001	−0.119	−0.007	−0.0001	0.0004	−0.078	0.004	0.000	0.001
	% pos.	12.5		37.5	50	12.5	14.3	37.5	50	12.5	37.5	37.5	50
	p value	.664		.000	.000	.447	.615	.276	.003	.668	.969	.046	.000
Age 40–52	Avg. diff.	—	−0.089	−0.009	0.002	—	—	0.001	0.003	—	—	−0.008	0.001
	% pos.		28.6	23.1	46.2			53.8	53.8			15.4	61.5
	p value		0.760	.000	.000			.000	.000			.002	.061
Age 53–61	Avg. diff.	0.005	−0.149	0.001	−0.001	−0.086	−0.000	−0.003	0.001	0.132	0.043	0.002	0.001
	% pos.	44.4	50	55.6	55.6	33.3	33.3	22.2	55.6	33.3	66.7	66.7	55.6
	p value	.490	.774	.000	.000	.524	.616	.000	.457	.462	.752	.008	.038

(continued)

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Table 4. (continued)

		Broader Definition of Disability				Larger Damages				Firm-Size Minimum < 10			
		HRS		SIPP		HRS		SIPP		HRS		SIPP	
Age Ranges		Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled	Nondisabled	Disabled
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age 53–69	Avg. diff.	−0.071	−0.117	0.0002	−0.001	−0.101	−0.003	−0.002	0.001	0.033	0.025	0.001	0.001
	% pos.	29.4	38.5	47.1	52.9	23.5	25	29.4	52.9	23.5	52.9	52.9	52.9
	p value	.647	.879	.000	.000	.534	0.697	.000	.001	.624	.959	.000	.000

Notes. Notes from Table 3 apply, with the exception that the definition of disability used is based on self-reported health being fair or bad (other options are good, very good, or excellent). Avg. diff. = average difference; % pos. = percentage of positive estimates; HRS = Health and Retirement Study; SIPP = Survey of Income and Program Participation.

The models include the individual-level (X) and other controls (A, for single-year age dummy variables) as before, with two changes relative to the earlier specifications. First, the models include fixed state effects (S) in addition to the fixed year effects (T).[17] Second, rather than including interactions between all of the single-year age dummy variables and the indicator for a stronger state disability discrimination protection (LAW), a simple interaction between the latter indicator and a dummy variable for older workers (OLD) is included—using alternatively thresholds of 50, 55, and 60. The state fixed effects subsume main effects of the disability discrimination law dummy variables, capturing differences among states in hiring rates of younger workers.[18] The $LAW \times OLD$ interactions capture the differential effects of state disability discrimination laws on older versus younger workers. Assuming that variation across states in hiring rates for younger workers does not reflect the effects of these laws, the $LAW \times OLD$ interactions capture the effects of state disability protections on older workers.

We use the SIPP data for this analysis because we need the younger workers as controls. The results are reported in Table 5. In columns (1)–(3), we introduce each of our stronger features of state disability discrimination laws separately, and in column (4) they are all included. The estimates paint a rather clear picture. Regardless of the age threshold used, the broader definition of disability, and in some cases larger damages, appears to raise rather than to lower hiring of nondisabled older workers. For the broader definition of disability, this is true for each age threshold in column (1), as well as in column (4), where the effects of the broader definition, larger damages, and a lower firm-size cutoff are estimated simultaneously. The estimates are sizable—elevating the hiring rate by approximately 0.014—and statistically significant in all six cases (4 at the 5% significance level). There is similar evidence for larger damages in two cases (column (2), for the age 50 and age 55 thresholds), but no such evidence for a lower firm-size cutoff.

The evidence that stronger disability discrimination protections increase hiring of nondisabled older workers is inconsistent with the conjecture that such laws deter hiring of older, nondisabled workers, and points in the opposite direction. A positive effect of stronger disability protections on the hiring of older nondisabled workers might seem counterintuitive. One possibility is that these results stem from defining disability based on the work-limiting questions, as past work has shown that results can be sensitive to the measure used (Kruse & Schur, 2003). For example, some older workers who do not report work-limiting disabilities may nonetheless exhibit health-related characteristics that employers perceive as making them likely to later

Table 5. Difference-in-Differences Estimates of Effects of Stronger Disability Discrimination Laws on Hiring of Nondisabled Older Workers, SIPP Data, Hiring From Nonemployment.

Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Age ≥ 50 × Broader definition of disability	0.015** (0.007)	–	–	0.017* (0.009)	0.014** (0.006)	–	–	0.019* (0.009)
Age ≥ 50 × Larger damages	–	0.009** (0.005)	–	0.011** (0.006)	–	0.008 (0.006)	–	0.011* (0.006)
Age ≥ 50 × Firm size < 10	–	–	0.007 (0.005)	–0.001 (0.005)	–	–	0.004 (0.005)	–0.006 (0.006)
Age ≥ 50 × Age discrimination larger damages	–	–	–	–	0.0003 (0.005)	0.001 (0.005)	0.002 (0.005)	–0.001 (0.004)
Age ≥ 50 × Age discrimination firm size < 10	–	–	–	–	0.006 (0.004)	0.004 (0.005)	0.004 (0.004)	0.007 (0.004)
Age ≥ 55 × Broader definition of disability	0.015** (0.007)	–	–	0.015* (0.008)	0.014** (0.006)	–	–	0.018** (0.009)
Age ≥ 55 × Larger damages	–	0.007* (0.004)	–	0.008 (0.005)	–	0.006 (0.006)	–	0.009 (0.006)
Age ≥ 55 × Firm size < 10	–	–	0.008 (0.005)	0.002 (0.005)	–	–	0.005 (0.004)	–0.004 (0.005)
Age ≥ 55 × Age discrimination larger damages	–	–	–	–	–0.001 (0.004)	0.0002 (0.005)	0.0001 (0.005)	–0.003 (0.004)
Age ≥ 55 × Age discrimination firm size < 10	–	–	–	–	0.008* (0.004)	0.007 (0.006)	0.005 (0.004)	0.009** (0.004)

(continued)

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Table 5. (continued)

Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Age ≥ 60 × Broader definition of disability	0.011** (0.005)	–	–	0.013** (0.007)	0.012** (0.005)	–	–	0.016** (0.007)
Age ≥ 60 × Larger damages	–	0.007* (0.004)	–	0.008** (0.004)	–	0.006 (0.005)	–	0.009** (0.004)
Age ≥ 60 × Firm size < 10	–	–	0.003 (0.004)	−0.003 (0.004)	–	–	−0.0001 (0.003)	−0.009** (0.004)
Age ≥ 60 × Age discrimination larger damages	–	–	–	–	−0.003 (0.004)	−0.002 (0.004)	−0.001 (0.004)	−0.004 (0.003)
Age ≥ 60 × Age discrimination firm size < 10	–	–	–	–	0.005 (0.004)	0.004 (0.005)	0.006 (0.004)	0.009** (0.004)

Notes. The linear probability model is used for estimation conditional on respondents being not working at $t − 1$. Standard errors reported in parentheses are clustered at the state level. Each panel reports estimates of a separate specification using the different specified age-groups. The data are described in the notes to Figure 3. We restrict the sample to nondisabled adult males who are 31 or older and use person-level SIPP sampling weights. Each specification includes state and year fixed effects, single-year age dummy variables, and the same individual-level controls described in the notes to Figure 3. All analyses include a dummy variable for whether the hiring occurred during the last month of each wave to control for seam bias. The main effects of the discrimination law dummy variables are not reported, as they are subsumed in the state fixed effects. There was a law change in Vermont for larger damages in 2000, but Vermont is not uniquely identified in SIPP prior to the 2004 panel. The disability definition is based on self-reported variable "[Do you] have a physical, mental, or other health condition that limits the kind or amount of work [you] can do?" This question is asked only for those 69 years or younger. SIPP = Survey of Income and Program Participation. Sample size (N) = 322,697.

*Estimates are statistically significant at the 10% level. **Estimates are statistically significant at the 5% level. ***Estimates are statistically significant at the 1% level.

Table 6. Difference-in-Differences Estimates of Effects of Stronger Disability Discrimination Laws on Hiring of Nondisabled Older Workers, SIPP Data, Hiring From Nonemployment, Substituting Fair or Bad Health as a Disability Measure.

Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Age ≥ 50 × Broader definition of disability	0.010 (0.008)	–	–	0.009 (0.009)	0.009 (0.008)	–	–	0.009 (0.010)
Age ≥ 50 × Larger damages	–	0.002 (0.004)	–	0.002 (0.006)	–	0.001 (0.005)	–	0.002 (0.006)
Age ≥ 50 × Firm size < 10	–	–	0.006 (0.004)	0.003 (0.005)	–	–	0.006 (0.004)	0.002 (0.006)
Age ≥ 50 × Age discrimination larger damages	–	–	–	–	0.002 (0.003)	0.004 (0.004)	0.002 (0.004)	0.001 (0.004)
Age ≥ 50 × Age discrimination firm size < 10	–	–	–	–	0.003 (0.003)	0.003 (0.004)	−0.001 (0.003)	0.002 (0.005)
Age ≥ 55 × Broader definition of disability	0.009 (0.008)	–	–	0.007 (0.009)	0.008 (0.008)	–	–	0.008 (0.010)
Age ≥ 55 × Larger damages	–	0.003 (0.005)	–	0.002 (0.006)	–	0.001 (0.006)	–	0.002 (0.006)
Age ≥ 55 × Firm size < 10	–	–	0.008 (0.005)	0.005 (0.005)	–	–	0.007** (0.004)	0.003 (0.006)
Age ≥ 55 × Age discrimination larger damages	–	–	–	–	−0.0005 (0.004)	0.001 (0.005)	−0.0005 (0.004)	−0.002 (0.004)
Age ≥ 55 × Age discrimination firm size < 10	–	–	–	–	0.005 (0.004)	0.005 (0.005)	0.0005 (0.003)	0.003 (0.004)
Age ≥ 60 × Broader definition of disability	0.006 (0.007)	–	–	0.006 (0.007)	0.006 (0.006)	–	–	0.007 (0.008)
Age ≥ 60 × Larger damages	–	0.002 (0.003)	–	0.002 (0.004)	–	0.001 (0.005)	–	0.003 (0.005)
Age ≥ 60 × Firm size < 10	–	–	0.004 (0.004)	0.002 (0.004)	–	–	0.002 (0.003)	−0.001 (0.004)
Age ≥ 60 × Age discrimination larger damages	–	–	–	–	−0.002 (0.003)	−0.001 (0.004)	−0.002 (0.003)	−0.003 (0.003)
Age ≥ 60 × Age discrimination firm size < 10	–	–	–	–	0.004 (0.003)	0.004 (0.004)	0.003 (0.003)	0.005 (0.004)

Notes. Notes from Table 5 apply, with the exception that the definition of disability used is based on self-reported health being fair or bad (other options are good, very good, or excellent). SIPP = Survey of Income and Program Participation. Sample size (N) = 322,697.
**Estimates are statistically significant at the 5% level.

qualify for protections under disability discrimination laws. To assess this possibility, columns (1)–(4) of Table 6 report results defining disability based on self-reported fair or bad health, which might be more of a signal to employers of the likelihood of future disabilities. The estimates no longer point to significant positive effects of a broader definition of disability on the hiring or nondisabled older workers; the estimates are still positive, but smaller than in Table 5, and almost none of them are statistically significant. Thus, with this alternative definition of disability, the counterintuitive finding of stronger disability discrimination protections helping nondisabled older workers is no longer present.

The most significant and broader point, however, is that we find no evidence of adverse effects of disability discrimination laws on older workers. Although some of earlier results using only cross-state variation (in Tables 3 and 4) suggested that stronger disability discrimination protections reduce hiring or older nondisabled workers, the difference-in-differences analysis gives no such indication.

Finally, columns (5)–(8) of Tables 5 and 6 add interactions between our older worker thresholds and the two indicators of stronger age discrimination laws that were significant influences on employment of older workers in Neumark and Song (2013)—larger damages and a firm-size minimum of fewer than 10 employees. The estimated effects of disability discrimination laws are robust to controlling separately for state age discrimination protections. We also reestimated these models dropping 40- to 49-year olds, to get a cleaner distinction between older ages at which disability is rising and younger ages when it is not (see Figure 1). The results were qualitatively very similar (available upon request).

Conclusions

We explore the effects of disability discrimination laws on hiring of older workers. These laws are supposed to help disabled workers, but may have unintended adverse effects on hiring, by raising the cost of terminations and the cost of employment stemming from accommodating disabled workers. This unintended adverse effect could also arise for younger disabled workers of any age and could be stronger because of longer projected tenure with an employer. The new hypothesis we also explore in this article is that disability discrimination laws can deter hiring of *older* nondisabled workers, for whom the probability of developing a work-related disability is sizable. We use state variation in disability discrimination protections, which can strengthen

the coverage relative to the ADA by using a broader definition of disability, allowing larger damages, or applying to smaller firms.

Our best evidence comes from difference-in-differences specifications that compare hiring of nondisabled older and younger workers in states with stronger and weaker disability discrimination protections. This evidence suggests that stronger state disability discrimination laws do not lower the hiring of nondisabled older workers, using either of the two definitions of disability. Although disability discrimination laws may imply future costs of hiring older nondisabled workers, age discrimination protections may deter employers from acting on this behavior; alternatively, hiring of older workers may be sufficiently short term that these future costs have little influence on employer behavior or employers may simply be myopic. When we use a work-limiting measure of disability, we also find evidence that a broader definition of disability or larger damages may boost hiring of older workers. All of this evidence is inconsistent with the conjecture that stronger disability protections deter hiring of older, nondisabled workers. Although simpler evidence from cross-state variation in laws and hiring rates of older workers suggests that stronger state disability protections may reduce hiring of older, nondisabled workers, this is not statistically or substantively strong, and is less plausibly causal. Finally, there is no indication that stronger disability discrimination laws deter hiring of disabled workers. Overall, then, we find little or no evidence of adverse effects of disability discrimination laws on older workers, and some of our more compelling evidence points to positive effects.

These results may also have more general implications for thinking about antidiscrimination laws. If there are adverse effects of discrimination protections on hiring, they may be most likely to arise for disability discrimination laws, because the accommodation requirements of disability laws can imply higher costs, and there are weaker defenses available to employers. In that sense, this article may provide a particularly informative test of whether discrimination laws have the unintended consequence of reducing hiring of protected groups. Moreover, these unintended consequences could in principle arise for nondisabled older workers for whom employers could face future costs from disability, but who are not yet protected by disability discrimination laws. The fact that we do not find such evidence might, therefore, mitigate concerns about adverse unintended consequences of antidiscrimination laws for the groups they protect.

It could also be the case, however, that this conclusion does not extend beyond protections that are important for older workers (both age discrimination laws and disability discrimination laws). Given the low expected

tenure with the employer, termination costs for older workers may not loom large in employers' calculations. Consistent with this idea, Neumark and Button (2014) found that it was only in the period *after* the Great Recession that stronger age discrimination laws appeared to reduce hiring of older workers. In a period of extreme uncertainty about product and hence labor demand, employers may have been more concerned that they would want to terminate an older worker well before that worker wanted to leave the firm.

Authors' Note

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Notes

1. Unlike the Age Discrimination in Employment Act, the Americans with Disabilities Act (ADA) does not include an exception for bona fide occupational qualifications (BFOQs). BFOQ exceptions arise when age is strongly associated with other factors that pose legitimate business or safety concerns (e.g., Posner, 1995; Starkman, 1992; Stock & Beegle, 2004). Furthermore, age-related disabilities might be judged as amenable to "reasonable accommodation" by employers under disability discrimination laws, which usually require reasonable accommodation of the worker, making it much harder to justify an apparently discriminatory practice on the basis of business necessity (Gardner & Campanella, 1991).

2. Table 1 also lists information on state age discrimination laws (from Neumark & Song, 2013), which we use in some analyses. Details are provided in the same appendix referenced above.

3. There is not enough variation in state laws to estimate separate effects of having two particular laws (or all three). Table 1 shows that the set of states with the broader definition is quite small, and only one state (New Jersey) overlaps this dimension of state laws with larger damages. The same is true for larger damages and smaller firm size (West Virginia). There is no overlap between broader definition and smaller firm size.

4. Health and Retirement Study (HRS) respondents go down to age 51 in the first wave, but we can only observe hiring outcomes starting with the second wave, which is 2 years later.

5. In some cases, we have to make a determination even when the information is not decisive. 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 interwave information and classified as "inapplicable or partial interview" in the codebook. For cases with missing data, and transitions from wave $t - 1$ to t between disabled, retired, and not in the labor force, we assumed no hire occurred.

6. There is other information that could in principle be used to identify hiring, in particular the unique job identification number across waves. However, we do not use this information due to reported inconsistency in implementation (Stinson, 2003).

7. This disability variable in the Survey of Income and Program Participation (SIPP) is asked only for individuals who are 69 years or younger, which determines our upper age limit.

8. In results available upon request, we show that the age profile of disability is quite similar using a more persistent definition based on repeated answers that one has a work-limiting disability and that our key results are robust to using this more persistent definition.

9. Since SIPP interviews respondents with high frequency, we backfill the self-reported health status with the first available information, then update disability status as respondents are asked subsequently.

10. In the following analyses, we restrict the HRS sample to be no older than 69, to line up with the oldest age for which this disability question is asked in the SIPP.

11. The slight dip after age 60 may be related to the relationship between whether one works and how one answers this question, although it is not clear why this differs in the two data sets.

12. Note that we do not control for the unemployment rate or another aggregate labor market indicator, which would be endogenous with respect to hiring (especially of the large nondisabled workforce).

13. We experimented with distinguishing between states with larger damages than the ADA but damages that are still capped, and states with uncapped damages (Table 1). There were no distinct differences between these two groups of states, perhaps in part because there are only four uncapped states and two of them (Alaska and Maine) have very small populations. Thus, all results reported in this artice group together the states with larger damages than the ADA.

14. Moreover, these joint tests for the age ranges reported in Table 3 do not mask any consistent evidence of significant effects for other age ranges (such as smaller ranges within those reported in the table). There is only a smattering of significant coefficient estimates on the Age × Law interactions at isolated single-year ages.

15. Standard errors in the SIPP data are much lower because of far larger samples.

16. The corresponding figures are available upon request.

17. As we noted earlier, there is no variation in state disability discrimination laws in our sample period for states in the SIPP that are uniquely identified, which is why we cannot include fixed state effects in the regressions underlying Tables 3 and 4 and Figures 2 and 3. For the difference-in-differences analysis, however, we focus on the nondisabled only and make the assumption that the *differential* effects of these laws on older workers represent the effect of disability discrimination protections on older nondisabled workers. Under this assumption, there are differences, within state, in the effects of these laws on older and younger workers, which is why the fixed state effects are separately identified.

18. There are two changes in state disability laws from 1992 through 2008. One change in Washington for definition of disability and another change in Vermont for larger damages. However, our sample period does include the change in Washington noted in Table 1, and Vermont is not uniquely identified for earlier SIPP panels during the period when there was a law change regarding larger damages. Hence, main effects from both specifications are subsumed by state fixed effects.

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