THE IMPORTANCE OF ANTI-DISCRIMINATION AND WORKERS' COMPENSATION LAWS ON THE PROVISION OF WORKPLACE ACCOMMODATIONS FOLLOWING THE ONSET OF A DISABILITY

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The Americans with Disabilities Act of 1990 (ADA) was the first federal disability-based anti-discrimination law that applied to a broad range of workers. Whereas some studies have focused on its impact on workplace accommodation, this is the first to do so while accounting for previous state anti-discrimination and Workers' Compensation laws. Using data from the Health and Retirement Study, the authors find that prior to the implementation of the ADA, employers were more likely to accommodate workers if their disability onset was work-related and hence likely to be covered by Workers' Compensation laws. State anti-discrimination laws significantly increased accommodations to workers whose disabilities were not work-related, effectively bringing their accommodation rates in line with workers whose disabilities were. Though implementation of the ADA increased accommodation for all workers, the authors point out that failure to account for pre-existing state anti-discrimination and Workers' Compensation laws will underestimate its effect.

The employment rate for working-age people with a disability is not only substantially lower than that of their counterparts without a disability, but relative to them it has fallen over time.[1] This long-run trend has occurred despite efforts by state and federal

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Copies of the computer programs used to generate the results presented in this paper are available on request from Maximilian Schmeiser at Board of Governors of the Federal Reserve System, Washington, DC 20551: Email:max.schmeiser@frb.gov. Data used in this study are a restricted access version of the Health and Retirement Study containing state identifiers. To obtain access to the data please visit the HRS restricted data application process at http://hrsonline.isr.umich.edu/index.php?p=resapp.

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[1] See Houtenville et al. (2009) for the most recent evidence of this decline and the quality of the data on which it is based.

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governments to encourage the hiring of these workers via anti-discrimination laws and the experience rating of Workers' Compensation programs. The low rate has also led to a questioning of the effectiveness of these employment protection efforts as a mechanism for encouraging accommodation and ultimately the employment of working-age people with disabilities.[2]

Employment protection laws make discrimination against qualified individuals with a disability illegal and may also require provision of "reasonable accommodation." The Americans with Disabilities Act of 1990 (ADA) was the first federal disability-based anti-discrimination law that applied to a broad number of workers and is widely viewed as the centerpiece of this effort. Prior to the implementation of the ADA in 1992, however, most states already had some type of disability employment protection law in place and several, like the ADA, included reasonable accommodation requirements.

Though the overall effect of the ADA on employment has been called into question, it, along with state anti-discrimination laws, should have at least made employers more willing to provide accommodation to their workers who experience the onset of a disability. The same logic should apply for Workers' Compensation laws to the degree that the premiums employers' pay are directly related to the likelihood that their workers will move into the Workers' Compensation benefit program. Yet, despite the implementation of these state anti-discrimination laws prior to the passage of the ADA, and the even longer history of Workers' Compensation laws, little empirical evidence exists on their influence on workplace accommodations. Moreover, no prior studies have controlled for their effect when estimating the marginal influence of the implementation of the ADA on workplace accommodation.

Here we use retrospective data from all three cohorts of the Health and Retirement Study (HRS) to estimate the marginal effects of state and federal anti-discrimination laws, as well as potential eligibility for state Workers' Compensation coverage due to a work limitation resulting from an accident at work, on workplace accommodation. We do so to ascertain whether, prior to the implementation of the ADA in 1992, employers were more likely to accommodate workers if their disability onset was work-related and hence likely to be covered by state Workers' Compensation laws. If states implemented their own anti-discrimination laws, did this significantly increase the likelihood that an employer would provide an accommodation to workers whose onset was not work-related? Did the implementation of the ADA increase the likelihood of accommodation for all workers, and if so, what was the size of its marginal effects?

Federal and State Level Employment Protection Laws

The ADA intended to "establish a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities" and hence to integrate people with disabilities more fully into all aspects of American society. The act consists of four titles, the first of which focuses on disability-based discrimination on the part of employers. In addition to prohibiting employer discrimination, Title I requires employers to provide "reasonable accommodation" to their employees with disabilities. The law defines discrimination as

> not making reasonable accommodations to the known physical or mental limitations of an otherwise qualified individual with a disability who is an applicant or an employee, unless such covered entity can demonstrate that the accommodation would impose an undue hardship on the operation of the business of such covered entity. (Americans with Disabilities Act 1990)

[2] See Stapleton et al. (2003) for a review of the literature on the effect of the Americans with Disabilities Act on the relative employment of working-age people with disabilities.

"Reasonable accommodation" includes changes in the physical environment like making facilities more accessible but can also include increases in job flexibility like job restructuring, part-time or modified work schedules or reassignment to a vacant position. Finally, Title I defines "undue hardship" as an action requiring significant difficulty or expense.

The U.S. Equal Employment Opportunity Commission (EEOC) is responsible for enforcing Title 1 of the ADA.[3] If the EEOC finds evidence that a violation of Title I of the ADA has occurred, it will first attempt conciliation with the employer. If this proves unsuccessful, it will either file a suit in federal court or close the case, thus allowing the person filing the charge 90 days to file a lawsuit. Unlike other anti-discrimination legislation, compensatory or punitive damages may not be awarded to the charging party under the ADA if an employer can demonstrate that "good faith" efforts were made to provide reasonable accommodation.

The implementation of the ADA has been controversial. Some policymakers have argued that the courts did not properly interpret Congressional intent and hence have diluted the intended power of the law to reduce discrimination. For instance, most ADA reasonable accommodation charges are closed as a non-merit resolution, either because the charge lacks sufficient evidence of a violation of the ADA or because it does not meet other technical requirements (McMahon et al. 2008). From 1993 to 2009, the EEOC received an average of approximately 17,000 charges of discrimination under the ADA each year, more than 75% of which ended in non-merit resolutions (Equal Employment Opportunity Commission 2010). In response, Congress has attempted to express more clearly its intent to provide more powerful means of addressing discrimination against people with disabilities in the workforce in the Americans with Disabilities Act Amendments of 2008.

In considering the importance of the ADA as a means of reducing discrimination and increasing workplace accommodations following the onset of a work disability, it is necessary to recognize other laws with similar objectives but that were not as comprehensive as the ADA. The Rehabilitation Act of 1973 included antidiscrimination standards for public employers. In addition, most states had passed some form of legislation prohibiting discrimination against workers with disabilities prior to the ADA (Hotchkiss 2003; Jolls and Prescott 2004). However, the coverage and effectiveness of these state laws varied. The states enacted their anti-discrimination laws for persons with disabilities at different times and used different definitions and regulations, and coverage varied by the size of the employer.

Workers' Compensation Laws

State-level laws designed to protect workers who experience the onset of a work-limiting disability in the workplace go back to the beginning of the twentieth century. The Workers' Compensation system, based on 50 independently created state-level statutes and one for the District of Columbia is designed to provide workers with protection against the loss of work capacity due to work-related injuries. Workers who show that their injury is work-related may file a claim for cash and medical benefits.

Benefits are financed through insurance purchased by employers. Insurance premiums are higher for employers who experience more Workers' Compensation claims, a practice referred to as experience rating. Employers who are able to minimize claims pay lower premiums. Experience rating provides an incentive for employers to engage in activities that limit claims. Some activities may directly benefit the employee, such as a workplace change that reduces the risk of work-related injuries or increases in their offer of reasonable

[3] Some state and/or local governments have their own anti-discrimination laws that are enforced by Fair Employment Practice Agencies (FEPAs), and a person's discrimination charge may be covered by both the ADA and these laws. If an antidiscrimination charge covered by the ADA is filed with a FEPA, FEPA will "dual file" the charge with the EEOC and will generally be responsible for handling the case.

workplace accommodations.[4] Other activities may not benefit the employee, such as when an employer contests a Workers' Compensation award (Hyatt and Kralj 1995).

Workers' Compensation is among the largest social insurance programs. In 2007, it paid out $28.2 billion in cash benefits and $27.2 billion in medical care (Sengupta et al. 2009). The growth in expenditures has varied, however, over time and across states. Mont et al. (2000) and Thomason et al. (2001) were the first to report systematically that Workers' Compensation expenditures on medical and cash benefits, which increased at a rapid pace in real terms over the 1970s and 1980s, were flat between 1992 and 1998, the most recent years of their data. Guo and Burton (2010), using more recent data, showed that expenditure growth since then has remained below 1980s levels. McInerney and Simon (Forthcoming), using slightly different methods, found the same patterns. Reduced expenditure growth during the 1990s has been attributed to program amendments designed to reduce costs through a combination of benefit reductions, coverage limits, and administrative efficiencies.[5]

Incidence of Workplace Accommodations

Most workplace accommodation research focuses on its incidence. None has examined the degree to which workplace accommodation is influenced by state anti-discrimination laws. What researchers do know is that a substantial minority of workers who experienced the onset of a disability prior to the passage of the ADA received a workplace accommodation from their employer at onset. Using data from the 1978 Survey of Disability and Work, Burkhauser et al. (1995) showed that, contrary to anecdotal evidence presented to Congress prior to the passage of the ADA, about 30% of men with work-limiting disabilities received a workplace accommodation. This finding was confirmed using retrospective data from the 1992 Health and Retirement Study (HRS) showing that prior to the implementation of the ADA, about 27% of men and women who experienced the onset of a disability while employed received a workplace accommodation (Daly and Bound 1996; Burkhauser, Butler, and Weathers 2002).

There is also some evidence that employer accommodation increased after the passage of the ADA but that the effect was small. Charles (2004) used the HRS cohort of people aged 51–61 who were first interviewed in 1992 and subsequently interviewed in 1994 and 1996 to show that the incidence of workplace accommodation increased after passage of the ADA. Employer accommodation was 28% for those whose disability onset occurred before the ADA and 33% for those whose disability onset occurred afterward—an effective increase of five percentage points. Charles concluded that the ADA did not result in a dramatic improvement in employer-provided accommodation. However, his analysis did not take into account prior state-level discrimination laws, nor did it explicitly account for the influence of Workers' Compensation laws on the provision of workplace accommodations. His analysis was also limited to data on a post-ADA population close to retirement age and hence not representative of the entire working-age population. Though our study uses the HRS, we extend the analysis to individuals who experienced disability onset at all ages by including retrospective self-reports of disability onset and workplace accommodations. As a result, more than half of our reports of disability onset occurred prior to the implementation of the ADA, and our sample distribution of age at onset more closely approximates the national working-age population. However, as in Charles (2004), the age of individuals in this study

[4] When the employer undertakes expenditures that, for example, improve employee safety, we would expect to see a corresponding decrease in wages given the reduced need for a compensating differential to offset the relative risk of injury or death at that employer. See Ruser and Butler (2010) for a more detailed discussion of the importance of experience rating on safety and occupation health.

[5] See Hunt (2004) for a more detailed description of the history of the Workers' Compensation programs.

who are subject to the ADA is somewhat higher than that of the general working-age population.

Empirical Methods

We construct an analytic model in which an employer will supply a workplace accommodation if the expected net cost of doing so is less than the expected benefit of retaining the disabled worker, which may include the avoidance of a penalty for failure to provide a workplace accommodation.[6] The expected benefit to the employer may include maintaining the firm-specific human capital invested in the employee and avoiding the costs associated with employee turnover. The expected costs may include the direct cost of changing the workplace environment and the indirect costs of any changes in productivity resulting from accommodations such as altering work schedules. The employer may also consider the expected penalty from any failure to accommodate a worker in the form of either an employee filing a discrimination charge or higher premiums that may accompany Workers' Compensation claims.

We use this analytical framework to specify an empirical model in which the dependent variable is equal to one if the employer supplies a workplace accommodation at the time that an employee's health condition first began to limit his or her ability to work and is equal to zero otherwise. We use the substantial variation in time and location over which disability onset took place to capture the impact of state anti-discrimination laws on the employers' decision to provide accommodation, and we exploit the variation over time to quantify the impact of federal anti-discrimination laws on accommodation. We divide workers into three anti-discrimination groups: (1) workers who experienced the onset of a disability after 1992 when the ADA was in place, (2) workers who experienced the onset of a disability prior to 1992 in a state with some type of state anti-discrimination law, and (3) workers who experienced the onset of a disability prior to 1992 in a state with no anti-discrimination law in place.[7]

To examine the influence of potential eligibility for Workers' Compensation, we compare the propensity for an employer to provide a workplace accommodation for those whose disability was a result of an accident at work to those whose disability occurred in some other way. Our hypothesis is that those who are potentially eligible for Workers' Compensation benefits are more likely to be provided an accommodation because their employer may otherwise be subject to increased Workers' Compensation costs. However, since we cannot identify those who were actually eligible for the Workers' Compensation program, our estimates may also include the effects of other factors that may induce an employer to be more likely to provide an accommodation for a worker injured at work—e.g. a reputation effect or a sense of responsibility for the employee's injury.

The multivariate model shown in Equation (1) specifies the employer's provision of a workplace accommodation as a function of the type of anti-discrimination law in place when the worker experienced the onset of a disability, an indicator identifying potential eligibility for Workers' Compensation, an interaction between Workers' Compensation and the anti-discrimination law in place, a set of individual-level characteristics and state-level labor market characteristics.

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[6] Other researchers (e.g., Chirikos 2000) have omitted the role that the expected penalty of not providing a workplace accommodation would play on the employer's decision to provide an accommodation.

[7] We had previously estimated models that separated out the effects of state laws requiring accommodation from those that were only anti-discrimination-based; however, in doing so, we found no statistically significant differences in the estimated effect of these laws on accommodation rates. It appears that the exact requirements of the law were less important than simply the presence of some form of work protections for the disabled. As such, we have grouped these two types of laws together. Results including both types of state laws are available upon request by writing to the second author.

$$A_{ist} = \alpha + State\,Law_{ist}\gamma_1 + ADA_{ist}\gamma_2 + WC_{ist}\delta + (State\,Law_{ist} * WC_{ist})\theta_1 + (ADA_{ist} * WC_{ist})\theta_2 + X'_{ist}\beta + S''_{st}\lambda + \varepsilon_{ist}. \quad (1)$$

In Equation (1) we use a discrete variable that is equal to one if the employer supplies a workplace accommodation to worker (i) who experienced the onset of a work limiting disability in state (s) at time (t), and is equal to zero otherwise. State Law is a dummy variable equal to one if the worker experienced the onset of a disability after a state anti-discrimination law was in effect and zero otherwise, and ADA is a dummy variable equal to one if the worker experienced the onset of a disability when the ADA workplace accommodation provisions were in effect and zero otherwise. The corresponding coefficients that describe the relationship of the introduction of each type of anti-discrimination law on the provision of an employer accommodation are γ_1 and γ_2. *WC* is a dummy variable equal to one if the employee is potentially eligible for Workers' Compensation and zero otherwise. The coefficient δ indicates whether those injured on the job are given accommodations at different rates than those not injured on the job. We also include a set of interaction terms between each anti-discrimination law group and potential eligibility for Workers' Compensation; the θs are the associated coefficients. The other variables in the model are the constant (α), a vector of individual level characteristics (X) that may factor into the employer's decision to supply a workplace accommodation, a corresponding vector of coefficients β, a vector of state-level labor market characteristics, state fixed effects and a state specific linear time trend (S) with corresponding coefficient vector λ, and an error term (ε).

We estimate different specifications of Equation (1) to determine the extent to which the omission of controls for previous state anti-discrimination laws and the source of the work limitation affects our estimates of the effect of the ADA on the probability of accommodation. First, we include only the ADA variable and the set of demographic and state controls. Next, we add the indicator for the work limitation resulting from an accident at work, as well as an interaction of this indicator with the ADA indicator, to account for any differential effect of the ADA by source of limitation. We then remove the work accident indicator and add the indicator for the presence of a state anti-discrimination law. Finally, we estimate the full model (1) as specified above, with both the controls for state anti-discrimination laws and source of work limitation.

The key parameters for our hypothesis that anti-discrimination laws affect the likelihood that an employer will supply a workplace accommodation are the coefficients γ_1 and γ_2, which describe the relationship between federal- and state-level anti-discrimination laws compared to no law (our reference group). We hypothesize that anti-discrimination laws increase the likelihood that an employer will provide workplace accommodations such that γ_1 and $\gamma_2 > 0$. The omission of controls for pre-existing state anti-discrimination laws may bias downward the estimated effect of the ADA, γ_2, on accommodation, since the ADA is likely to have a smaller effect in these states than on states lacking pre-existing laws.

The key parameter for the influence of potential eligibility for Workers' Compensation on the probability of a workplace accommodation being provided is δ. Our hypothesis that potential eligibility for Workers' Compensation also increases the likelihood of a workplace accommodation implies $\delta > 0$. The omission of a control for the source of the employee's work limitation would bias estimates of the ADA's effect on workplace accommodation if the share of workers who experienced a workplace injury changes pre- and post-1992, or if the employer incentives to accommodate workers injured on the job changes over time. Since the rate of work injuries has declined over time (Wegman and Mcgee 2004), we would expect the omission of this control to bias the effect of the ADA downwards by artificially inflating the average accommodation rate prior to the ADA's implementation given the higher rate of work injury and these workers' higher rate of accommodation.

The vector of coefficients on the interaction terms θ allow us to assess whether federal and state anti-discrimination laws differentially affect those injured on the job, and if so, to what extent. The incentives to supply workplace accommodations to individuals potentially eligible for Workers' Compensation may have a strong influence on an employer's decision, and anti-discrimination laws for these workers may not lead to as large an increase in an employer's likelihood to supply workplace accommodations as it would for other workers. In this case, the coefficients on the interaction terms would be negative.

We use a logit to estimate this discrete choice model and calculate the marginal effects as the mean of individual marginal effects. Following Ai and Norton (2003), we calculate the marginal coefficients of interaction variables as the cross partial derivatives and use the delta method to estimate standard errors. We then re-estimate our final specification using a linear probability model (LPM) to confirm the magnitude and significance of our logit results.

Data and Definition of Variables

Our data come from three cohorts of men and women who participated in the HRS. The first cohort is referred to as the HRS baseline cohort. It includes men and women born between 1931 and 1941, along with their spouses. The HRS baseline cohort was first interviewed in 1992 and has been re-interviewed every two years thereafter. The second cohort is referred to as the war babies cohort. It includes men and women born between 1942 and 1947, along with their spouses. The war babies cohort was first interviewed in 1998 and has been re-interviewed every two-years thereafter. The third cohort is referred to as the early baby boomer cohort. It includes men and women born between 1948 and 1953, along with their spouses. The early baby boomer cohort was first interviewed in 2004 and has been re-interviewed every two years thereafter. Combined, these cohorts provide information on the receipt of workplace accommodations before and after implementation of the ADA.[8]

All sample members were asked: "Do you have any impairment or health problem that limits the kind or amount of paid work you can do?" Those who responded "Yes" were then asked, "Is this a temporary condition that will last for less than three months?" We define those who said "No" to be disabled.

More than 50% of persons in each cohort who reported a disability also reported that they were employed at the time of onset. Such workers were asked: "At the time your health started to limit your ability to work, did your employer do anything special to help you out so that you could stay at work?" This is our measure of workplace accommodation. We know the type of accommodation provided by the employer. However, the HRS contains no information on the employer or occupation at the time of disability onset; moreover, we are unable to determine whether respondents were eligible for specific programs or benefits such as vocational rehabilitation. The tables that provide information on the type of accommodation include the precise questions used by the HRS to obtain the information.

The data on state-level disability employment protection laws come from Jolls and Prescott (2004) and are shown in Table 1. As is evident, there is substantial variation across states in the type of anti-discrimination laws in place prior to the ADA. Three states and the District of Columbia did not have anti-discrimination laws in place before the ADA, 29 States had anti-discrimination laws in place that did not include reasonable accommodation provisions, and 18 states had anti-discrimination laws that included reasonable accommodation provisions. Our analysis combines these two types of state anti-discrimination laws.[9] There is also

[8] Please visit the HRS website http://hrsonline.isr.umich.edu/ for more information on the HRS survey design.

[9] Because Jolls and Prescott (2004) differentiated between anti-discrimination laws that contain reasonable accommodation provisions and those that do not, it is possible to test the relative importance of this aspect of state anti-discrimination laws in our model. In tables not presented here but available upon request by writing to the second

Table 1. Employment Protection Laws By State

State	*Protection without Accommodation*	*Reasonable Accommodation*	*No Protection*	*Date of Traditional Anti-Discrimination Prohibition*	*Date of Reasonable Accommodation Requirement*
Alabama			x		
Alaska	x			1969	
Arizona		x		1985	1985
Arkansas			x		
California	x			1973	
Colorado		x		1977	1977
Connecticut	x			1973	
District of Columbia			x		
Delaware		x		1988	1988
Florida	x			1977	
Georgia	x			1981	
Hawaii	x			1975	
Idaho		x		1988	1988
Illinois	x			1971	
Indiana	x			1975	
Iowa		x		1972	1987
Kansas	x			1974	
Kentucky	x			1976	
Louisiana		x		1980	1980
Maine	x			1973	
Maryland	x			1974	
Massachusetts		x		1972	1983
Michigan	x			1976	
Minnesota		x		1973	1983
Mississippi			x		
Missouri	x			1978	
Montana	x			1974	
Nebraska	x			1973	
Nevada	x			1971	
New Hampshire	x			1975	
New Jersey	x			1972	
New Mexico		x		1973	1983
New York	x			1974	
North Carolina		x		1973	1985
North Dakota	x			1983	
Ohio	x			1976	
Oklahoma	x			1981	
Oregon		x		1973	1979
Pennsylvania		x		1974	1985
Rhode Island		x		1973	1986
South Carolina	x			1983	
South Dakota	x			1986	
Tennessee	x			1976	
Texas	x			1975	
Utah	x			1979	
Vermont		x		1973	1981
Virginia		x		1975	1985
Washington		x		1973	1978
West Virginia	x			1981	
Wisconsin		x		1965	1981
Wyoming		x		1985	1985

Source: Jolls and Prescott (2004).

variation across time in the introduction of the state-level anti-discrimination laws. Table 1 shows that 28 states introduced some type of anti-discrimination legislation before 1975; another 9 introduced them between 1975 and 1980, and 10 introduced them after 1980. In addition, 9 states introduced reasonable accommodation provisions between 1977 and 1983 and 9 states introduced reasonable accommodation provisions after 1983.

We created our dummy variables for federal and state anti-discrimination laws by combining these data with HRS data on the year the person experienced the onset of a disability from the HRS and his or her state of residence. Each dummy variable is equal to one if onset occurred in a year within a state where a federal or state law was (or was not) in place, and zero otherwise. The retrospective data on the time of disability onset combined with data on current residence may lead to some degree of measurement error in our measure of the state employment protection laws if a person happens to have experienced a disability onset while living in another state. We are not able to identify the extent to which this occurs in our data. However, others have examined moving behavior among HRS sample members and have found that 30% of homeowners within the HRS cohort moved during the 1992–2004 period though the distance that most moved was less than 20 miles (Calvo et al. 2009). This finding is consistent with other research on migration. Thus, we do not believe that our results are subject to substantive measurement error and we suspect that the measurement error would result in underestimates of our coefficients (i.e., bias toward 0).

More precise definitions of key variables used in the analysis are reported in Table 2. Table 3 presents the means and standard deviations for all the variables in the accommodation model, disaggregated by whether sample members were provided with a workplace accommodation by their onset employer. Column 1 of Table 3 shows mean values for the entire sample—28.0% of sample members reported that they were provided with a workplace accommodation at the onset of their work limitation by their onset employer, 23.0% of the sample were potentially eligible for Workers' Compensation because their disability was a result of an accident at work, and 51.6% reported that the onset of their disability occurred after the implementation of the ADA. The remaining rows show the distribution of the interaction terms and the distribution of characteristics that we include as controls in our model. Table 3 also provides descriptive statistics for those who were and were not provided a workplace accommodation.

Results

The first three columns of Table 4 report the overall incidence of accommodation and the types of accommodation provided before 1992 and thereafter and the difference between these incidence rates. As column 1 shows, a significant minority of workers (26.0%) were accommodated by their employers prior to the implementation of the ADA in 1992. Since then, this percentage has gone up to 29.9% (column 2), an increase of 3.9 percentage points (column 3), which is significant at the .05 level. These results are similar to those of previous studies. The remaining values in these columns show which types of accommodations were significantly increased. Almost all involved some change in job flexibility (receive help from someone, have the work day shortened, have the times going to or leaving work modified, and be allowed to take more breaks and rest periods) rather than changes in the physical environment that are easily captured in explicit costs.

author, we distinguish between these two types of state anti-discrimination laws but find no significant difference in accommodation outcomes between them. This may be in part because only about 9% of our sample experiences their onset of a work limitation in a state with an anti-discrimination law, which included a reasonable accommodation provision. This should not be too surprising because in several of the states these laws were introduced only a few years before the ADA, providing a limited observation period for these cases.

Table 2. Definitions of Variables

Variable	*Definition*
Work-limiting health condition	A health condition or impairment that limits the kind or amount of paid work that can be performed. The health condition or impairment is expected to last at least 3 months.
Employer Accommodation	Value equals 1 if at time of onset of the work-limiting health condition the employer did anything special to help the person out so that the person could stay at work; 0 otherwise.
Reasonable Accommodation Laws	
State Employment Protection Laws	Value equals 1 if the state employment protection regime at time of onset was classified as anti-discrimination or reasonable accommodation; 0 otherwise.
ADA	Value equals 1 if the onset of the disability occurred after the implementation of the Americans with Disabilities Act in 1992; 0 otherwise.
Cause of Work Limitation	
Accident at work	Value equals 1 if the work-limiting health condition was a result of an accident that occurred at work; 0 otherwise.
Demographics	
Age at onset	Age at onset.
Age at onset squared	Age at onset squared.
Not White	Value equals 1 if race is non-white; 0 otherwise.
Female	Value equals 1 if sex is female; 0 otherwise.
Human Capital	
High School Diploma	Value equals 1 if years of education attained is exactly equal to 12; 0 otherwise.
Some College	Value equals 1 if years of education attained is greater than 12, but less than 16; 0 otherwise.
Four-Year Degree	Value equals 1 if years of education attained is greater than or equal to 16; 0 otherwise.
Health Condition	
Two or more health conditions at onset	Value equals 1 if person has two or more health conditions at onset; 0 otherwise.
Musculoskeletal	Value equals 1 if the condition was in one of the following categories; 0 otherwise. • Arthritis; rheumatism; bursitis. • Back/neck/spine problems; chronic stiffness, deformity, or pain; disc problems; scoliosis; spinal bifida; "bad back." • Stiffness, deformity, numbness, or chronic pain in foot, leg, arm, or hand; "bad knee"; hip problems; hip replacement. • Hernias; hiatal hernia. • Muscular dystrophy. • Other musculoskeletal or connective tissue problems; lupus; osteoporosis; pinched nerve; carpal tunnel syndrome; fibrositis.
Cardiovascular	Value equals 1 if the condition was in one of the following categories; 0 otherwise. • Heart problems: heart attack (coronary) or failure; arteriosclerosis; aneurysms; heart deformities; angina; "bad heart"; congestive heart disease. • High blood pressure (hypertension). • Stroke; cerebral hemorrhage or accident. • Blood disorders: anemia; hemophilia; polycythemia; "bad blood"; toxemia. • Other circulatory problems; phlebitis, clots, embolisms; varicose veins; hemorrhoids; low blood pressure.
Economic Conditions	
Unemployment Rate at Onset	Unemployment rate for each state and for each year from 1976 through 2006. The national unemployment rate is used pre-1976.
Time Controls	
Time Trend	Calendar Year at Onset

Source: Constructed by authors from HRS survey questionnaire.

Table 3. Descriptive Statistics

	All		*Accommodated*		*Not Accommodated*		*No State Law*		*State Law*		*ADA*	
Variable	*Mean*	*S.E.*	*Mean*	*S.E.*	*Mean*	*S.E.*	*Mean*	*S.E.*	*Mean*	*S.E.*	*Mean*	*S.E.*
Employer Accommodation	0.280	(0.449)	1.000	0.000	0.000	0.000	0.233	(0.423)	0.287	(0.452)	0.298	(0.458)
Reasonable Accommodation Laws												
No State Employment Protection Law	0.129	(0.335)	0.107	(0.310)	0.137	(0.344)	1.000	0.000	0.000	0.000	0.057	(0.233)
State Employment Protection Laws	0.871	(0.335)	0.893	(0.310)	0.863	(0.344)	0.000	0.000	1.000	0.000	0.943	(0.233)
ADA	0.516	(0.500)	0.550	(0.498)	0.504	(0.500)	0.229	(0.421)	0.559	(0.497)	1.000	0.000
Cause of Work Limitation												
Accident at work	0.230	(0.421)	0.278	(0.448)	0.212	(0.409)	0.251	(0.434)	0.227	(0.419)	0.186	(0.390)
Laws and Accident at Work Interaction												
No State Employment Protection Law*Accident	0.032	(0.177)	0.042	(0.201)	0.029	(0.167)	0.251	(0.434)	0.000	0.000	0.004	(0.064)
State Employment Protection Laws*Accident	0.198	(0.399)	0.235	(0.425)	0.184	(0.387)	0.000	0.000	0.227	(0.419)	0.182	(0.386)
ADA*Accident	0.096	(0.295)	0.124	(0.329)	0.086	(0.280)	0.016	(0.127)	0.108	(0.311)	0.186	(0.390)
Demographics												
Age at onset less than 50	0.500	(0.500)	0.486	(0.500)	0.506	(0.500)	0.763	(0.426)	0.461	(0.499)	0.267	(0.442)
Age at onset 50–54	0.284	(0.451)	0.318	(0.466)	0.271	(0.445)	0.144	(0.351)	0.305	(0.461)	0.393	(0.489)
Age at onset greater than 54	0.216	(0.411)	0.196	(0.397)	0.223	(0.417)	0.094	(0.292)	0.234	(0.423)	0.341	(0.474)
White	0.803	(0.398)	0.830	(0.376)	0.793	(0.405)	0.752	(0.432)	0.811	(0.392)	0.802	(0.399)
Not White	0.197	(0.398)	0.170	(0.376)	0.207	(0.405)	0.248	(0.432)	0.189	(0.392)	0.198	(0.399)
Female	0.500	(0.500)	0.493	(0.500)	0.502	(0.500)	0.410	(0.492)	0.513	(0.500)	0.512	(0.500)
Human Capital												
Less than High School	0.277	(0.448)	0.269	(0.444)	0.280	(0.449)	0.318	(0.466)	0.271	(0.445)	0.242	(0.428)
High School Diploma	0.348	(0.476)	0.321	(0.467)	0.358	(0.480)	0.355	(0.479)	0.347	(0.476)	0.332	(0.471)
Some College	0.229	(0.420)	0.235	(0.424)	0.227	(0.419)	0.202	(0.402)	0.233	(0.423)	0.264	(0.441)
Four-Year Degree	0.146	(0.353)	0.175	(0.381)	0.135	(0.342)	0.125	(0.331)	0.149	(0.357)	0.162	(0.369)
Health Condition												
Two or more health conditions at onset	0.328	(0.470)	0.318	(0.466)	0.332	(0.471)	0.327	(0.470)	0.328	(0.470)	0.296	(0.457)
Musculoskeletal	0.567	(0.496)	0.588	(0.493)	0.559	(0.497)	0.571	(0.496)	0.567	(0.496)	0.561	(0.497)
Cardiovascular	0.132	(0.339)	0.118	(0.323)	0.137	(0.344)	0.140	(0.348)	0.131	(0.337)	0.127	(0.333)
Economic Conditions												
Unemployment Rate at Onset	5.977	(1.792)	5.782	(1.765)	6.052	(1.797)	5.913	(1.674)	5.986	(1.809)	5.373	(1.433)
Time Controls												
Time Trend	1990.65	(9.42)	1990.83	(9.62)	1990.58	(9.35)	1979.34	(12.36)	1992.32	(7.59)	1997.835	(3.935)
Sample Size	2744		747		1997		452		2292		1148	

Source: Authors' calculations using the HRS data.

Table 4. Prevalence of Employer-Provided Accommodation at the Time of Disability Onset

	All				*Accident at Work*				*Not a Work Accident*			
			Difference				*Difference*				*Difference*	
Type of Accommodation	*Before 1992 (n = 1577)*	*1992 or Later (n = 1136)*	*Mean*	*S.E.*	*Before 1992 (n = 422)*	*1992 or Later (n = 201)*	*Mean*	*S.E.*	*Before 1992 (n = 1155)*	*1992 or Later (n = 935)*	*Mean*	*S.E.*
Did your employer . . .												
do anything?	26.0%	29.9%	3.9**	(1.4)	31.8%	37.1%	5.3**	(2.6)	23.8%	28.2%	4.4**	(1.6)
get someone to help you?	9.1%	13.1%	4.0**	(1.0)	9.6%	14.2%	4.6	(2.4)	8.9%	12.9%	4.0**	(1.2)
shorten your work days?	6.6%	9.1%	2.4**	(0.8)	5.9%	9.2%	3.3**	(1.3)	6.9%	9.0%	2.1	(0.9)
allow you to change the time you came and left from work?	8.1%	11.4%	3.3**	(1.0)	6.0%	9.9%	3.9**	(1.4)	8.9%	11.8%	2.9**	(1.1)
allow you more breaks and rest periods?	9.3%	12.1%	2.8**	(0.8)	9.1%	13.8%	4.7**	(2.0)	9.4%	11.7%	2.3**	(0.9)
arrange for special transportation?	1.4%	1.7%	0.3	(0.4)	1.2%	2.1%	0.8	(0.9)	1.4%	1.6%	0.2	(0.4)
change the job to something you could do?	11.5%	10.8%	–0.7	(1.1)	18.4%	18.9%	0.5	(2.5)	8.9%	8.9%	0.0	(1.0)
help you learn new job skills?	4.8%	4.6%	–0.2	(0.7)	6.9%	10.7%	3.8	(2.1)	4.0%	3.2%	–0.9	(0.6)
get you special equipment for the job?	3.3%	4.8%	1.5**	(0.6)	3.7%	5.5%	1.8	(1.2)	3.1%	4.6%	1.5**	(0.6)
other?	6.1%	7.3%	1.1	(0.9)	5.7%	10.1%	4.3**	(1.8)	6.3%	6.6%	0.3	(0.9)

Notes: The difference in rates of any accommodation between those who experienced an accident at work and those who did not is significant at the .01 level both before and after 1992.

**Statistically significant at the .05 level.

Source: Authors' calculations using the HRS data.

The remaining columns of Table 4 provide a first glimpse of the relative importance of potential eligibility for Workers' Compensation on accommodation. Based on our model, such accommodations are more likely to the degree that an accident on the job was responsible for the worker's onset of a work limitation. A comparison of overall accommodation reported in columns 5 and 9 bear this out. Before 1992, 31.8% of workers (column 5) whose disability was related to a work accident were accommodated while only 23.8% of those whose disability was not related to a work accident (column 7) were accommodated. Accommodation incidence significantly increased for both groups thereafter, but once again occurred primarily via changes in job flexibility. These findings suggest some relationship between anti-discrimination and Workers' Compensation laws and accommodation, but they do not control for other factors that can influence employer accommodation.

Table 5 uses a logit model to control more fully for these other factors and to examine the effect of omitting pre-existing state laws and workplace injury on the estimated impact of the ADA on accommodation. Column 1 reports the marginal effects from the logit estimates of the effect of the ADA on workplace accommodation excluding controls for state laws or work limitation caused by an accident at work. The original logit coefficients are reported in Appendix Table 1. Here, workers who experienced the onset of their work limitation following the implementation of the ADA were 5.4 percentage points more likely to be accommodated than workers who experienced onset prior to the ADA, significant at the .05 level. In column 2 we then add controls for whether the work limitation resulted from an accident at work, which increases the estimated effect of the ADA to a 5.8 percentage-point increase in accommodation rate. The work limitation resulting from an accident at work is estimated to increase the probability of accommodation by 6.9 percentage points, significant at the .05 level. This is consistent with our hypothesis that employers put more effort into accommodating workers injured on the job, likely due in part to potential Workers' Compensation costs. We also add an ADA*accident interaction effect which has a very small and insignificant effect.

In column 3, we drop the controls for accident at work and instead include an indicator for the presence of state anti-discrimination laws at the time of disability onset. With the control for pre-existing state laws, the magnitude of the effect of the ADA on the probability of accommodation increases to 6.1 percentage points from the baseline 5.4 percentage-point increase and is again significant at the .05 level. As expected, workers who experienced the onset of their work limitation in a state with anti-discrimination laws prior to 1992 were 3.3 percentage points more likely to be provided an accommodation than were those living in states without such protection at the onset of their work limitation; however, in this specification the effect of state laws is insignificant.

In column 4 we include controls for both the work limitation resulting from an accident at work and the presence of state anti-discrimination laws at the time of disability onset. We also include interactions between both the ADA and state law variables and the indicator for the work limitation resulting from an accident at work to account for the possibility that these laws differentially affect those injured at work. In the full specification, the ADA is estimated to increase the probability that a worker receives an accommodation by 6 percentage points, significant at the .05 level, whereas state laws are estimated to increase the probability of accommodation by a comparable 6.2 percentage points. The state law coefficient is, however, again insignificant. With the inclusion of controls for the state laws, and the interaction of state and federal laws and accidents at work, workers whose work limitation was caused by an accident at work, and hence were potentially eligible for Workers' Compensation benefits, were 16 percentage points more likely to be accommodated by their employers than those whose work limitation was not related to work. The magnitude of the effect of a work accident on the likelihood of accommodation exceeds our estimate for either the effect of state anti-discrimination laws or the ADA, and is statistically significant at the .01 level.

Table 5. Logit Model of the Characteristics Associated with Employer Accommodation

	(1)	(2)	(3)	(4)	(5)
Variable	*Marginal Effect*	*Marginal Effect*	*Marginal Effect*	*Marginal Effect*	*LPM*
Reasonable Accommodation Laws					
ADA	0.054**	0.058**	0.061**	0.060**	0.062**
	(0.027)	(0.028)	(0.029)	(0.030)	(0.030)
State Employment Protection Laws			0.033	0.062	0.049
			(0.045)	(0.045)	(0.050)
Cause of Work Limitation					
Accident at work		0.069**		0.160***	0.144***
		(0.028)		(0.056)	(0.051)
Laws and Accident at Work Interaction					
State Employment Protection Laws*Accident				–0.098**	–0.101*
				(0.045)	(0.057)
ADA*Accident		–0.004		0.017	0.022
		(0.040)		(0.043)	(0.044)
Demographics					
Age at onset 50–54	0.015	0.017	0.016	0.017	0.017
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Age at onset greater than 54	–0.004	0.000	–0.003	0.001	0.001
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Not White	–0.045**	–0.047**	–0.044**	–0.046**	–0.046**
	(0.020)	(0.020)	(0.020)	(0.020)	(0.021)
Female	–0.015	–0.004	–0.015	–0.004	–0.003
	(0.017)	(0.018)	(0.017)	(0.018)	(0.018)
Human Capital					
High School Diploma	–0.000	0.003	–0.000	0.002	0.001
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
Some College	0.031	0.033	0.031	0.033	0.032
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Four-Year Degree	0.043	0.048	0.043	0.048	0.050*
	(0.030)	(0.030)	(0.030)	(0.030)	(0.029)
Health Condition					
Two or more health conditions at onset	0.007	0.005	0.007	0.005	0.005
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)
Musculoskeletal	0.037*	0.024	0.037*	0.025	0.026
	(0.019)	(0.020)	(0.019)	(0.020)	(0.020)
Cardiovascular	0.012	0.021	0.011	0.021	0.023
	(0.028)	(0.029)	(0.028)	(0.029)	(0.028)
Economic Conditions					
Unemployment Rate at Onset	0.009	0.008	0.007	0.007	0.006
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Other Controls					
State-Specific Time Trend	X	X	X	X	X
State Fixed Effects	X	X	X	X	X
log-likelihood	1533.89	1528.47	1533.23	1526.52	N/A
Observations	2745	2745	2745	2745	2745

Notes: Standard errors clustered at the state level in parentheses. Standard errors for Marginal Effects calculated using the delta method. The marginal coefficients of interaction variables are calculated as the cross partial derivatives (Ai and Norton 2003). Column 5 presents linear probability model coefficients for comparison with logit marginal effects in column 4.

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level.

Source: Authors' calculations using the HRS data.

When we interact the effect of anti-discrimination laws and potential eligibility for Workers' Compensation, we find that prior to 1992, the implementation of state anti-discrimination laws had limited impact on the likelihood that those workers potentially eligible for Workers' Compensation were provided accommodation since the 6.2 percentage-point increase in accommodation from state anti-discrimination laws is more than fully offset by the 9.8 percentage-point estimate on the interaction term. This effect is statistically significant at the .05 level, suggesting that the implementation of state anti-discrimination laws substantially leveled the playing field in terms of an employer's provision of accommodation with respect to the source of the onset of a disability. Though it was still the case that those whose onset was a work-related accident were more likely to be accommodated following the implementation of state anti-discrimination laws, the difference was much smaller than it was prior to their implementation. In contrast, the coefficient on the ADA work accident variable is positive, increasing the probability of accommodation by 1.7 percentage points, and insignificant. These opposing findings, as well as the fact that the magnitude of the effect on accommodation of the state law work accident interaction term exceeds the magnitude of the state law itself on accommodation, suggests that the effect of one's work limitation resulting from an accident at work on the probability one receives accommodation may have changed substantially over time.[10] Column 5 re-estimates the column 4 specification using a linear probability model (LPM). Doing so, we find the magnitude and significance of all coefficients are nearly identical.

In addition to these policy variables, we also controlled for demographic effects, human capital effects, health conditions, general employment conditions, and a time trend. The only demographic characteristic significantly related to probability of accommodation is being non-White. Having a college degree narrowly misses significance in column 4, and is significant at the .10 level in column 5 when estimated using the LPM. These differential rates of accommodation likely reflect differences in occupations, and the ease of making accommodations, by race and level of education. A time trend was also statistically significant. None of the individual control variables, even when significantly different from zero, have marginal impacts on the likelihood of an employer providing a workplace accommodation of similar magnitude to the two policy variables we have explored.

To examine further the possibility that a secular change in accommodation rates occurred and is being picked up by our ADA and ADA*work accident interaction term, we split the data into pre-ADA (prior to 1992) and post-state law (after 1987) periods and redo our analysis separately for the state anti-discrimination laws and the ADA.[11] In columns 1 and 2 of Table 6 we present the coefficient and marginal effect, respectively, from the sample restricted to the pre-ADA time period to examine the influence of state anti-discrimination provisions and work accidents on the provision of an employer accommodation. In contrast to the finding in Table 5, the marginal effect of state employment protection laws is significant at the .01 level and implies an increase in the probability of accommodation of 9.5 percentage points. The marginal effect for work limitation resulting from an accident at work is a slightly higher 16.3 percentage points for the pre-ADA period, again significant at the .01 level. The interaction effect of state employment laws and potential eligibility for Workers' Compensation is a decrease of 9.6 percentage points in the probability of accommodation, significant at the .05 level. Given that the increase in the probability of

[10] We explored this possibility further in Table 6, in which we split our analysis sample into a purely pre-ADA (prior to 1992) sample and one running from the year following the implementation of the final state anti-discrimination law (1988) through the end of our sample in 2006.

[11] We selected the pre-1992 period for our analysis of state laws since the ADA was implemented in 1992. We selected 1988 as the first year for our analysis of the ADA since 1987 was the last year in which a state implemented an anti-discrimination law. Our analysis is not sensitive to the first year of analysis being one or two years earlier or later.

Table 6. Logit Model of the Characteristics Associated with Employer Accommodation, Separately for Pre-ADA and Post-ADA Period

	(1) Pre-ADA Period		*(2) Post-1987 Period*	
Variable	*Coefficient*	*Marginal Effect*	*Coefficient*	*Marginal Effect*
Reasonable Accommodation Laws				
ADA			0.315	0.055
			(0.202)	(0.034)
State Employment Protection Laws	0.640**	0.095***		
	(0.321)	(0.032)		
Cause of Work Limitation				
Accident at work	0.907***	0.163***	0.405*	0.074*
	(0.296)	(0.053)	(0.243)	(0.045)
Laws and Accident at Work Interaction				
State Employment Protection Laws*Accident	–0.641*	–0.096**		
	(0.329)	(0.046)		
ADA*Accident			–0.180	–0.031
			(0.297)	(0.050)
Demographics				
Age at onset 50–54	0.148	0.025	–0.057	–0.010
	(0.167)	(0.028)	(0.154)	(0.027)
Age at onset greater than 54	0.380*	0.065*	–0.076	–0.013
	(0.218)	(0.038)	(0.157)	(0.028)
Not White	–0.228	–0.037	–0.305**	–0.052**
	(0.152)	(0.025)	(0.147)	(0.025)
Female	0.112	0.018	–0.092	–0.016
	(0.129)	(0.021)	(0.121)	(0.022)
Human Capital				
High School Diploma	0.078	0.013	0.063	0.011
	(0.149)	(0.025)	(0.150)	(0.026)
Some College	0.112	0.019	0.184	0.033
	(0.182)	(0.031)	(0.168)	(0.030)
Four-Year Degree	0.173	0.029	0.246	0.044
	(0.214)	(0.037)	(0.195)	(0.036)
Health Condition				
Two or more health conditions at onset	–0.120	–0.020	0.226*	0.040*
	(0.129)	(0.021)	(0.126)	(0.022)
Musculoskeletal	0.114	0.019	0.186	0.033
	(0.146)	(0.023)	(0.135)	(0.023)
Cardiovascular	0.231	0.039	0.042	0.007
	(0.199)	(0.035)	(0.196)	(0.035)
Economic Conditions				
Unemployment Rate at Onset	0.017	0.003	0.126**	0.022**
	(0.041)	(0.007)	(0.059)	(0.010)
Other Controls				
Stat- Specific Time Trend	X	X	X	X
State Fixed Effects	X	X	X	X
log-likelihood	844.38		928.76	
Observations	1596		1680	

Notes: Standard errors clustered at the state level in parentheses. Standard errors for Marginal Effects calculated using the delta method. The marginal coefficients of interaction variables are calculated as the cross partial derivatives (Ai and Norton 2003).

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level.

Source: Authors' calculations using the HRS data.

accommodation from the implementation of state anti-discrimination laws is fully offset by the decrease in the probability of accommodation implied by the interaction, this further suggests that the introduction of state anti-discrimination laws primarily improved the likelihood of accommodation for those not injured on the job.

In columns 3 and 4 of Table 6 we restrict the sample to the post-1987 time period and focus on the influence of the ADA and work accidents on accommodation in this later time period. As column 4 shows, the magnitude of the effect of the ADA on the probability of accommodation is similar to that presented in Table 5 and implies a 5.5 percentage-point increase in the probability of accommodation. However, the estimate is no longer significant owing to reduction in the precision of the estimate. Our results for work limitation resulting from an accident at work are much smaller during this period, falling by more than half to a 7.4 percentage-point increase in the likelihood of accommodation, but remain significant at the .10 level. The interaction term is again not statistically significant. The decline in the importance of Workers' Compensation during this period supports the finding of a retrenchment in coverage and generosity of the program in the 1990s, reported most recently by McInerney and Simon (Forthcoming) and Guo and Burton (2010).

Conclusions

Our cost-benefit model predicts employers' willingness to provide accommodation to their workers following the onset of a work limitation. The model allows employers to consider the expected penalty of refusing to provide reasonable accommodations, which include the costs associated with an employee filing a discrimination charge and the costs associated with experience rating under the Workers' Compensation program. Our findings support this view of employer behavior. Prior to the implementation of the ADA, employers in states with anti-discrimination laws were significantly more likely to provide their employees workplace accommodation following the onset of a disability. Though the probability of accommodation increased after the passage of the ADA, the marginal effect was somewhat smaller than that of previous state anti-discrimination laws in those states.[12]

Our findings also suggest that employers are more likely to supply workplace accommodations to workers potentially eligible for Workers' Compensation.[13] Given that experience-rating within the Workers' Compensation system has been shown to influence other types of employer behavior (Hyatt and Karlj 1995; Guo and Burton 2010), it is likely that this also motivates the decision to supply workplace accommodation. We also found that the interaction between state-level anti-discrimination laws and Workers' Compensation laws is important. The implementation of state anti-discrimination laws increased the likelihood of accommodation for those whose disability was not job-related significantly more than it did for those whose disability was job-related. We did not see the same effect for the interaction

[12] Our findings are limited to the influence of anti-discrimination and Workers' Compensation laws on the willingness of employers to accommodate their current workers following a disability onset. We are unable to determine their overall effect on the employment of working age people with disabilities since we cannot measure their influence on the willingness of employers to hire workers with disabilities. Hence we cannot directly relate our finding to those of DeLeire (2000) and Acemoglu and Angrist (2001), who found significant and large negative effects of the implementation of the ADA on the relative employment of working-age people with disabilities.

[13] Two caveats should be emphasized here with respect to our findings on Workers' Compensation. First, we do not know if an individual is actually covered and thus must infer this based solely on whether the work limitation occurred at work. Second, we are unable to identify whether the respondent was at a firm that was experience-rated or self-insured versus manually rated at the time of disability onset. Firms that are manually rated are less likely to save money by providing accommodations since they pay the class rate for their insurance. However, both of these caveats would serve only to bias our Workers Compensation coefficient towards zero, thus making the results presented here a lower bound of its effect on accommodation.

between the ADA and Workers' Compensation laws. This did not appear to be the case with respect to the ADA.

Our incremental analysis of the ADA's effect on accommodation has demonstrated that failure to control for pre-existing state anti-discrimination laws and whether the employee's work limitation resulted from an accident at work biases downward the estimated effect of the ADA. Similar to Charles (2004), we find that the ADA increased the probability of accommodation by 5.4 percentage points when these controls were omitted from the model; however, with their inclusion, the effect of the ADA on accommodation increased to 6 percentage points. This downward bias is consistent with our hypothesized effect of excluding these controls.

Our findings have several implications beyond the fact that anti-discrimination and Workers' Compensation laws increased employers' willingness to provide accommodations following the onset of a work limitation. First, they show that the ADA was only one of a series of anti-discrimination laws passed since 1965, and that the ADA had a relatively small marginal impact on accommodation for the vast majority of workers in 1992, since most were already living in states with some form of anti-discrimination laws in place and hence were already protected by these state accommodation laws. The lack of a major ADA impact on accommodation does not mean the overall effect of employment protection laws is small. Rather, it suggests that state anti-discrimination laws and Worker's Compensation had already had a significant effect on accommodation and that the ADA modestly added to this effect.

Second, our results suggest that proposed changes to federal disability policy that involve some form of experience rating may increase workplace accommodations. Some researchers and policymakers have proposed experience rating the employer contribution to the payroll tax for the Social Security program (Berkowitz and Burton 1970; Burton and Berkowitz 1971). Berkowitz and Dean (1996) noted that this would increase the incentive for employers to invest in actions that reduce or delay disability onset and help their employees continue to work thereafter, because employers would bear a greater cost of the long-term public benefits paid to workers who did not return to work. Our results provide some evidence suggesting that experience rating may be responsible for the higher accommodation rate of workers in our sample whose disability was job-related.

Finally, our results show that even though the implementation of anti-discrimination and Workers' Compensation laws have had an important positive impact on workplace accommodations, by themselves they were unable to achieve the ambitious employment goals set forth by their advocates and by the Congress since, despite their positive effect on employer accommodation, the employment rates of working-age people with disability have continuously trended downward since the 1980s.

Appendix Table 1
Logit Model of the Characteristics Associated with Employer Accommodation

	(1)	*(2)*	*(3)*	*(4)*
Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Reasonable Accommodation Laws				
ADA	0.283**	0.306**	0.321**	0.319**
	(0.141)	(0.149)	(0.151)	(0.158)
State Employment Protection Laws			0.180	0.350
			(0.255)	(0.273)

continued

Appendix Table 1
Logit Model of the Characteristics Associated with Employer Accommodation Continued

	(1)	*(2)*	*(3)*	*(4)*
Variable	*Coefficient*	*Coefficient*	*Coefficient*	*Coefficient*
Cause of Work Limitation				
Accident at work		0.354**		0.798***
		(0.138)		(0.268)
Laws and Accident at Work Interaction				
State Employment Protection Laws*Accident				–0.572*
				(0.296)
ADA*Accident		–0.021		0.087
		(0.217)		(0.224)
Demographics				
Age at onset 50–54	0.081	0.088	0.084	0.091
	(0.122)	(0.123)	(0.122)	(0.123)
Age at onset greater than 54	–0.020	0.003	–0.014	0.007
	(0.138)	(0.139)	(0.138)	(0.139)
Not White	–0.245**	–0.255**	–0.243**	–0.253**
	(0.111)	(0.111)	(0.111)	(0.111)
Female	–0.079	–0.022	–0.080	–0.019
	(0.092)	(0.094)	(0.092)	(0.094)
Human Capital				
High School Diploma	–0.001	0.015	–0.001	0.011
	(0.113)	(0.113)	(0.113)	(0.114)
Some College	0.160	0.171	0.161	0.172
	(0.130)	(0.130)	(0.130)	(0.130)
Four-Year Degree	0.220	0.246	0.219	0.248*
	(0.150)	(0.151)	(0.150)	(0.151)
Health Condition				
Two or more health conditions at onset	0.035	0.028	0.036	0.029
	(0.096)	(0.096)	(0.096)	(0.096)
Musculoskeletal	0.198*	0.131	0.198*	0.134
	(0.103)	(0.106)	(0.103)	(0.106)
Cardiovascular	0.061	0.111	0.059	0.110
	(0.148)	(0.149)	(0.148)	(0.149)
Economic Conditions				
Unemployment Rate at Onset	0.046	0.043	0.038	0.036
	(0.030)	(0.030)	(0.032)	(0.032)
Other Controls				
State Specific Time Trend	X	X	X	X
State Fixed-Effects	X	X	X	X
log-likelihood	1533.89	1528.47	1533.23	1526.52
Observations	2745	2745	2745	2745

Notes: Standard errors clustered at the state level in parentheses.
*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level.
Source: Authors' calculations using the HRS data.

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