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The Limitations of Disability Antidiscrimination Legislation: Policymaking and the Economic Well-being of People with Disabilities

MICHELLE MAROTO and DAVID PETTINICCHIO

Although Congress passed the Americans with Disabilities Act (ADA) to address, in large part, the declining economic well-being of people with disabilities—twenty years later—the trend has not reversed. To shed light on this puzzle, we use multilevel models to analyze Current Population Survey data from 1988 through 2012 matched with state-level predictors. We take a more nuanced approach than previous research and consider institutional factors related to the creation, enforcement, and interpretation of legislation, as well as individual demographics and employment situations. Our results show continual gaps in employment and earnings by disability status connected to the enactment of state-level antidiscrimination legislation, the number of ADA charges brought to the Equal Employment Opportunity Commission, and the results of ADA court settlements and decisions. Our findings suggest a complex relationship between legislative intent and policy outcomes, showcasing the multilayered institutional aspects behind the implementation of disability antidiscrimination legislation.

When Senators Weicker and Larkin first introduced the Americans with Disabilities Act (ADA; Public Law No. 101–336 [1990]) in 1988, only 30 percent of people with disabilities in the United States were employed. Title I, the section of the ADA pertaining to employment discrimination, sought to address this persistent nonemployment among people with disabilities. The law served to extend antidiscrimination provisions of the Rehabilitation Act of 1973 (Public Law No. 93–112 [1973]) to the private sector and to clarify congressional intent on disability rights. As former Representative Tony Coelho, a cosponsor of the ADA, stated in a 2008 congressional hearing:

> America and Congress, when it passed the ADA, proposed a true model to the rest of the world—because of our goal and dedication to the full inclusion of all Americans into the mainstream of life. This includes our understanding and belief that people who have disabilities are fully capable of working in

Address correspondence to Michelle Maroto, University of Alberta—Sociology, 6-23 Tory Building Edmonton Alberta T6G2H4, CN. Telephone: 780.492.0478; E-mail: maroto@ualberta.ca.

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> competitive employment and being productive members of society. (US House. Committee on the Judiciary 2007).

Since Coelho gave this statement, however, employment for people with disabilities has declined. In 2008, employment was at 23 percent. By 2012, twenty years after the ADA took effect, just 18 percent of working age people with disabilities were employed, compared to 64 percent of people without disabilities (US Bureau of Labor Statistics [BLS] 2013). Additionally, when people with disabilities do work, they occupy lower-level positions, work fewer hours, and earn less money than people without disabilities (She and Livermore 2007; Unger 2002; Haveman and Wolfe 1990).

The continuing labor market disparities for people with disabilities have prompted much research into the topic organized around two main streams. One stream offers multiple individual- and occupational-level explanations for the limited employment of people with disabilities. These explanations include the simple inability to work, a lack of human capital, the nature of the work, the role of occupational norms and practices, the extension of disability benefits, and employer discrimination, to name a few. A second stream of more policy-focused research has revolved around two dominant perspectives: unintended harm and judicial resistance. The former suggests that the ADA inadvertently created disincentives for employers in hiring people with disabilities, while the latter argues that policy enforcement and conservative court decisions have limited the ADA's efficacy. Although these explanations highlight different mechanisms supporting the relationship between policy and labor market outcomes, both are premised on the ability of antidiscrimination legislation to shape public perceptions and both allude to certain limitations associated with disability antidiscrimination policy (see Lee 2003; Russell 2002; Acemoglu and Angrist 2001).

Despite a general interest in the employment and earnings of people with disabilities, few studies have attempted to integrate multiple explanations when investigating these outcomes. Many policy-oriented approaches have ignored supply and demand-side factors at the individual and organizational levels, and studies have also narrowed their analyses of policy effects to the ADA, overlooking other institutional factors and state legislation (Kruse and Schur 2003; Acemoglu and Angrist 2001; DeLeire 2000). The few state-level analyses, like that of Beegle and Stock (2003) and Jolls and Prescott (2004), have casted some doubt on the unintended harm thesis, showing that people with disabilities fared better in states that enacted disability antidiscrimination laws early on. However, many studies have not adequately considered the relationship between federal and state-level policymaking and variation in policy enforcement, given the limited number of years in their analyses, nor have they provided an integrated framework for understanding the link between multiple institutions and labor market outcomes (see Donahue, Stein, and Griffin 2011 for a critique). Finally, it remains unclear whether antidiscrimination policies at the federal and state levels should affect

barriers to employment and workplace conditions, including earnings, in the same way.

We address these limitations by linking individual and occupational factors with more institutional arguments to ascertain how these components have shaped employment and earnings outcomes for people with disabilities over the past twenty-five years. While our article contributes to existing empirical work on disability employment trends by incorporating more recent data, we also take a more nuanced approach that considers institutional factors related to specific pieces of legislation, enforcement through the Equal Employment Opportunity Commission (EEOC), and court decisions, as well as individual demographics and employment situations. This approach allows us to demonstrate how policymaking and enforcement at the state and federal levels shape employment outcomes, while accounting for individual capacities, demographics, and employment characteristics. Few studies have offered such an integrated analysis of individual, occupational, and institutional factors at multiple levels.

Using this integrated approach, we investigate two main research questions: How much do individual-level factors, the availability of government assistance, employment situations, and state-level variation explain trends in employment and earnings for people with disabilities over the past twenty-five years? And, which federal and state-level institutional factors of legislation, EEOC complaints, and court cases explain disparities in employment and earnings by disability status since the introduction of the ADA? In addressing these questions, our article contributes both theoretically and empirically to existing work on disability antidiscrimination policy and labor market outcomes.

We begin this article by reviewing the contributions and limitations of previous research on the effects of the ADA. We then discuss different levels of explanations for disparities in earnings and employment by disability status. Because we seek to integrate multiple levels of analysis, we use multilevel models to analyze Current Population Survey (CPS) data from 1988 through 2012 matched with state-year-level predictors. Accounting for institutional layering, which includes the complex relationship between congressional intent, executive branch regulation, judicial interpretation, and state-level policymaking, provides a useful framework for specifying how certain policy-oriented explanations affect labor market inequalities net of individual and occupational factors. After describing our analytical framework, we present results that help to disentangle the effects of policy interventions on removing barriers to employment on the one hand, and improving workplace conditions on the other.

EXPLAINING DISABILITY LABOR MARKET DISPARITIES

Although the ADA sought to address discrimination and persistent unemployment among people with disabilities, like many policies, it did not specify

how to deal with particular individual and labor market complexities, nor did it propose a method by which to change attitudes and behavior in the workplace (see Hunt and Hunt 2004). As a result, many disability advocates pointed to a "failure" on the part of the federal government in addressing the declining economic well-being of people with disabilities and sought to reopen the ADA through the ADA Amendments Act, which was enacted in 2008 (ADAAA or the ADA Restoration Act; Public Law No. 110–325 [2008]; US House. Committee on Education and Labor 2008). While it may be too early to tell, employment conditions for people with disabilities have not improved much in the last five years despite these efforts (BLS 2013).

Not surprisingly, many researchers have narrowed their analyses of disability antidiscrimination policy effects to the ADA. Most of these studies have attempted to explain the ADA's inability to improve economic outcomes for people with disabilities using difference-in-difference models that compare employment rates before and after the ADA (Donahue et al. 2011; Kruse and Schur 2003; Acemoglu and Angrist 2001; DeLeire 2000). These have produced inconsistent findings. DeLeire's (2000) study, which used data from the Survey of Income and Program Participation (SIPP) from 1986 to 1995, claimed that the ADA led to a decreasing employment rate for men with disabilities relative to men without disabilities. Acemoglu and Angrist (2001) found similar results in weeks worked for people with disabilities using 1988–97 March CPS data, but, analyzing 1990–94 SIPP data, Kruse and Schur (2003) showed that employment declined only in the years immediately following the ADA. Importantly though, these employment trends are sensitive to the disability measure employed, the time period analyzed, and the specific samples used (Donahue et al. 2011; Kruse and Schur 2003).[1]

In addition to certain methodological limitations, with a primary focus on the effects of the ADA, previous research tends to overlook alternative explanations for changes in labor market outcomes for people with disabilities over time. Even though they control for multiple components, many researchers miss specific institutional factors that influence economic outcomes for different groups. In addition, there are multiple paths through which the ADA influences labor market outcomes for people with disabilities as well as a variety of individual- and occupational-level factors that affect this relationship.

On an individual level, impairments can limit productivity and the ability to work. Many people with disabilities require more time off and are less able to work for continuous periods of time. People with disabilities could also differ from the rest of the population in their levels of human capital and in their job preferences (Blanck et al. 2003, 2007). Health and work limitations often lead people with disabilities into part-time employment and nonstandard work arrangements, which have large earnings effects, even if the transition is voluntary (Schur 2002, 2003). Additionally, the presence of other income sources in the form of Supplemental Security Income (SSI) and government assistance can limit the motivation to work (Haveman and Wolfe 1990, 2000).

Variation in employment and earnings also exists by occupation, industry, and job level. Here, demand-side aspects related to employer attitudes can affect labor market outcomes for people with disabilities, particularly because of assumptions that people with disabilities will be less productive workers (Kaye, Jans, and Jones 2011; Stein 2003; Unger 2002; Schwochau and Blanck 2000). For instance, employees with disabilities have described experiences of marginalization and harassment in large, bureaucratic organizations that managers tolerated and even, at times, encouraged (Robert and Harlan 2006). Certain occupational norms and practices also partially explain the uneven distribution of people with disabilities across occupations and sectors (Domzal et al. 2008). The limited research on occupational segregation has shown that people with disabilities tend to be employed in lower-paid and lower-skilled jobs (Kaye 2009; Domzal et al. 2008; Lewis and Allee 1992), partly explaining continual gaps in earnings.

This brief overview demonstrates how multiple factors influence economic outcomes for people with disabilities, but the link between individual characteristics, employer attitudes, and policy interventions remains unclear. Consequently, existing explanations have not been able to address whether the ADA decreased employment for people with disabilities or whether it simply did not help to increase employment. Assessing whether the ADA had any effect on employment outcomes requires extending the analysis beyond its enactment to consider its interpretation and enforcement as well as the role of state-level policymaking. Thus, although we center our discussion on policy and state-level explanations for continuing employment and earnings disparities, we also account for individual and occupational factors in order to address these existing limitations and omissions in the literature. We therefore consider the ways in which multiple institutional layers interact to shape the outcomes of antidiscrimination legislation. Federal and state legislation likely intersect with individual and occupational factors to affect employment and earnings. It is therefore necessary to combine institutional factors like the role of courts, enforcement agencies, and state policy with individual and workplace factors in order to link antidiscrimination legislation to economic outcomes.

THE MULTIPLE INSTITUTIONAL LAYERS OF DISABILITY RIGHTS POLICYMAKING

Disability antidiscrimination legislation shares much in common with other laws meant to improve employment disparities among protected groups. Disability rights policy has, however, also faced a set of unique challenges that highlight the institutional complexities of US policymaking more generally (Blanck et al. 2003, 2007; Reskin 2001; Wilgosh and Skaret 1987). Although Congress and state legislatures enact antidiscrimination legislation, the ability of such laws to affect employer attitudes and labor market

outcomes is contingent upon the capabilities of state and federal agencies to enforce laws and the courts to interpret policy. Disability policy is not an isolated case of American policymaking. Rather, it provides an especially salient example of America's institutional contexts and arrangements within which legislative intent is interpreted and carried out.

An integrated approach, which takes into account institutional layering in policymaking, is necessary for shedding light on the link between antidiscrimination legislation and labor market outcomes. This approach emphasizes how different institutions, in this case branches of government, intersect to influence policy outcomes. It also helps speak to two key policy explanations—unintended harm and judicial resistance—because these perspectives hypothesize about the efficacy of legislation in encouraging and discouraging employer behaviors.

The logic underlying unintended harm revolves around the notion that rights-oriented policy can undermine the provision of public and private goods to persons with disabilities. Policies like the ADA create real or perceived burdens on employers associated with the costs of hiring people with disabilities (see Acemoglu and Angrist 2001; DeLeire 1995).[2] This perspective assumes that if not for these additional burdens, employers would hire people with disabilities. This in turn may explain declines in employment following legislation, although it does not directly speak to the workplace conditions of those already employed.

Alternatively, proponents of judicial resistance[3] argue that employers would not necessarily hire persons with disabilities without antidiscrimination legislation, which undermines prejudicial and discriminatory attitudes and practices (see Dovidio and Hebl 2005; Arrow 1998). However, given the complexities in American antidiscrimination policymaking and enforcement, the ADA may never have been fully implemented as a result of a narrow judicial interpretation of legislative intent. In that case, employers would continue to overlook people with disabilities.

Both perspectives point to the broader role institutions play in shaping policy outcomes. They highlight the interplay between state and federal polices, as well as enforcement and legal interpretation. Given that these policy-related explanations rest on the notion that legislation shapes attitudes and behaviors, then understanding whether policies are actually efficacious in doing so requires knowing about the institutional contexts of policy implementation. In this case, the interaction between Congress, the executive branch, and the courts in shaping disability antidiscrimination legislation not only predates the ADA, but it also helps to explain policy outcomes following the ADA.

CREATING DISABILITY ANTIDISCRIMINATION LEGISLATION

The modern origins of disability antidiscrimination legislation can be traced back to Section 504 of the 1973 Rehabilitation Act, the first federal disability

civil rights statute making it illegal to discriminate on the grounds of disability status "under any program or activity receiving Federal financial assistance." Along with Sections 501 and 503,[4] Section 504 exemplifies advocates' varied attempts at extending civil rights legislation to minority and disadvantaged groups in the early 1970s (see Skrentny 1996). Indeed, in 1971, Senator Hubert Humphrey and Representative Charles Vanik first introduced a bill that sought to include disability as grounds for discrimination in the Civil Rights Act. Leaders, however, were reluctant to associate minority rights with disability and were concerned that including disability would weaken the protections of the act (O'Brien 2001). The following year, reauthorization of the Vocational Rehabilitation Act (what would become the 1973 Rehabilitation Act) quietly created an opportunity for political entrepreneurs within Congress and in the executive branch to insert the equal rights and antidiscrimination language of Humphrey and Vanik's bill (Pettinicchio 2012, 2013; Scotch 2001).[5]

Following the introduction of the legislation, conflict within the government stalled the enforcement of the Rehabilitation Act, and when courts eventually began to address disability antidiscrimination legislation, they constrained the reach of these policies through narrow and conservative interpretations. Several developments in the late 1970s and 1980s illustrate the conflict leading up to the ADA. These developments include congressional retreat from disability rights; a weakening position of the executive branch to enforce antidiscrimination provisions; the narrow interpretation of existing antidiscrimination provisions (namely, Section 504) by the courts; and disputes over antidiscrimination policies at the state level as more states began to enact legislation.

During this process, the private sector expressed concerns about new legislation that would regulate employment, especially disability rights legislation that could impose costs on employers. Despite the opposition, legislative compromises meant to assuage the business community (Batavia and Schriner 2001), as well as political entrepreneurship and disability advocacy (Pelka 2012; Altman and Barnartt 1993), led to the enactment of the ADA. Support from key Republicans and the ADA's fit with the president's campaign for a "kinder and gentler" conservatism also facilitated its passage. However, as the case of disability policy illustrates, legislative compromises and weak enforcement of regulations limit the intended effects of policy, which often leaves much interpretation up to the courts.

ENFORCING DISABILITY ANTIDISCRIMINATION LEGISLATION

Along with these new rights policy initiatives came important efforts at developing and extending antidiscrimination enforcement measures. A set of 1972 Title VII amendments increased the powers of the EEOC—"the sole arm of the federal government with an exclusive focus on eradicating job discrimination" (White 1995, 53). Then, in 1974, an executive order granted

the Office of Civil Rights (OCR) in the Health, Education, and Welfare (HEW) Department jurisdiction over the Rehabilitation Act's Section 504 regulations.[6] In both cases, enforcement of antidiscrimination legislation was generally met with opposition. Underfinancing limited the EEOC's ability to execute legislation, while placing the burden of enforcement on victims of discrimination (Reskin 2001; Burstein 1990). With the Rehabilitation Act, a growing reluctance among HEW leadership delayed the publication of rights-based regulations until 1978—nearly four years after the agency was charged with the task.

In addition to these institutional limitations, the enforcement of this legislation has also faced resistance from nonstate actors—especially the business community. By the time the ADA was introduced in 1988, the private sector had developed a strong opposition to disability antidiscrimination legislation. Reports and congressional testimony suggest that the US Chamber of Commerce and the National Federation of Independent Business had mounting concerns about losing autonomy in the workplace due to increased regulation following the ADA (US House. Committee on Education and Labor 1989). Employers worried that they would have to hire unqualified workers, reimburse expensive medical bills, and pay other increased costs associated with hiring people with disabilities (Lee 2003). Businesses also expressed concerns about the ambiguity surrounding terms like "reasonable accommodation" and the outcomes of litigation (Stuhlbarg 1990).

With this pushback from the private sector, scholars have argued that EEOC charges might signal to employers that laws increase the costs of hiring people with disabilities (Acemoglu and Angrist 2001; DeLeire 1995). When data on complaints filed through the EEOC were first made public, employers expressed apprehension because the vast majority of persons filing complaints were not those with severe disabilities, but rather those with backaches and heart problems, conditions that are prevalent in the population. As a result of these concerns, employers might choose to refrain from hiring applicants with disabilities so as to avoid the costs of accommodation and litigation altogether—as might be expected from the unintended harm perspective. This illustrates the tension between effective government enforcement of antidiscrimination legislation and growing antagonism on the part of employers who apply policy to workplace settings. The courts then become an increasingly relevant site for interpreting legislative intent so as to address the conflict between these agents.

INTERPRETING DISABILITY ANTIDISCRIMINATION LEGISLATION

Without clear regulations and the ability to implement and enforce legislation, laws remain largely inaccessible to regular citizens. Ambiguities surrounding legal violations make lodging complaints with enforcement agencies and filing lawsuits problematic. Not surprisingly, the first Supreme Court case based on Section 504 was heard in 1979—a year after HEW

published the regulations. In *Davis v Southeastern Community College* (1979), the Court ruled against the disabled plaintiff, overturning a lower court decision and setting a precedent for how federal courts would interpret congressional intent. Since then, the courts have played a tremendous role in influencing how disability rights legislation has impacted the lives of people with disabilities. Because Congress remained detached from disability rights policy implementation (see Donahue, Stein, and Griffin 2011; White 1995), the courts have continued to act as the interpreters of legislative intent following the ADA—oftentimes, to the chagrin of the EEOC.[7]

Approximately 70 percent of all disability employment discrimination Supreme Court cases were heard after the ADA took effect in 1992. But in comparison to race and sex, the Supreme Court has heard relatively few disability rights cases, and only about one-quarter of those disability cases involved employment discrimination. Sixty-five years of Supreme Court case characteristics from the Supreme Court Database (SCDB) show that in disability cases, petitioners, including employers of public and private corporations, are fairly successful at overturning liberal lower court decisions.[8] Consequently, court interpretations of the law created major hurdles for plaintiffs with disabilities (Lee 2003; Stein 2003; Russell 2002; DeLeire 1995).

The ADA's language already granted employers wide discretion in making decisions about hiring, firing, and accommodation as well as about disability status. Unlike women and racial minorities, individuals filing suit under the ADA are also required to prove that they have a disabling condition and demonstrate that their disability impairs performance in a "major life activity" (Colker and Milani 2010). Following the *Sutton* (1999) case (until the ADAAA), disabled plaintiffs had to show that they were "disabled enough" so as to be precluded from an entire class of jobs, not just the job at hand. Additionally, if plaintiffs were able to mitigate their disabilities with medical supply, technology, or medication, they were not considered disabled by the courts and could not file under the ADA (Lee 2003; see *Williams v Toyota* [2002]). In turn, few cases made it beyond determining whether a person is qualified under the law, leaving very little judicial precedence for dealing with reasonable accommodation (Lee 2003; DeLeire 1995). Not surprisingly, activists have repeatedly accused the Supreme Court of serving as an effective tool for public and private institutions to undermine antidiscrimination legislation (O'Brien 2001; Mayerson 1997).

Supreme Court rulings garner the most attention and likely influence labor market outcomes for people with disabilities, but many ADA cases never make it to the Supreme Court. While employment discrimination plaintiffs have generally fared poorly in federal district courts (Clermont and Schwab 2004, 2009), SCDB data suggest that plaintiffs with disabilities do better in lower courts only to have the Supreme Court overturn these rulings. However, many of these cases also result in settlements and do not reach the Supreme Court (Moss et al. 2005). Consequently, much like what has been suggested about the effects of EEOC charges, the results of these settlements

may also create concerns for the business community that can limit the employment and earnings of people with disabilities. Although research on the possible role of lower court litigation in shaping employment and earning outcomes is limited, we can draw from the judicial resistance and unintended harm perspectives, which have been applied to EEOC complaints and Supreme Court cases (see O'Brien 2001). According to the former, when lower-level courts have upheld federal disability antidiscrimination laws, it should positively impact disabled workers. In terms of the latter, these should hurt employment among people with disabilities. Thus, the role of the courts in disability policymaking is relevant to understanding unintended harm and judicial resistance arguments, where outcomes of lower and Supreme Court cases will likely affect employment outcomes for people with disabilities.

STATE-LEVEL DISABILITY ANTIDISCRIMINATION LEGISLATION

Although the creation, enforcement, and interpretation of disability antidiscrimination legislation at the federal level have likely influenced outcomes for people with disabilities, so too have state-level policies. By the time federal courts became more relevant in disability antidiscrimination policymaking, about half of all US states had enacted their own legislation. To some extent, state-level policies created a political opportunity for the federal government to revisit disability antidiscrimination legislation in the 1980s. They also served to demonstrate the importance of implementing legislation early on.

Before 1970, no state had a policy that prohibited discrimination on the grounds of disability in the private sector. Considerable variation also existed in how states addressed disability antidiscrimination policy and in how they enforced the laws. Nonetheless, like the federal government, states usually addressed employment in the public sector first and later in private industries. State governments typically extended existing disability-related legislation to include employment protection or amended employment protection laws to include disability. However, states that sought to address disability employment discrimination early on had, by the 1980s, policies comparable to, or more liberal than, the federal government (Flaccus 1986).

Taking into account state-level policy provides additional information about the variation in employment outcomes as a result of disability antidiscrimination legislation, but few studies have done this. One exception is Beegle and Stock (2003) who demonstrated how states with a history of antidiscrimination legislation saw better outcomes for people with disabilities. They found that individuals with disabilities had higher rates of labor force participation in states that enacted ADA-like laws by 1980 and that the presence of reasonable accommodations (which should increase costs to employers and reduce disability employment) did not negatively affect employment. Even though by 1980, labor force participation had declined for people with disabilities in all states, but especially in those with ADA-like legislation, the latter were more likely to see a subsequent rebound

in disability employment. Overall, Beegle and Stock's (2003) findings seem to be incongruent with an unintended harm understanding of why legislation like the ADA is ineffective in improving economic conditions among people with disabilities.

To summarize, the enforcement and implementation of disability antidiscrimination legislation at the federal and state levels, as well as judicial interpretations of the law by the courts, have been as critical in the development of disability rights policy as Congress's and state legislatures' role in enacting legislation. Disability rights policy not only highlights institutional layering in US policymaking, but it also demonstrates how the interaction between legislature, enforcement agencies, courts, and states contributes to the ways in which laws affect economic outcomes. We therefore expect that employment and earnings outcomes for people with disabilities will vary with state legislation, EEOC complaints, and the results of various court decisions.

DATA AND METHODS

We present a multilayered analysis that accounts for individual and occupational characteristics, the role of federal and state-level legislation, and policy enforcement in two parts. First, we extend existing work by analyzing pooled Current Population Survey Annual Social and Economic Supplement (CPS-ASEC) data from 1988 through 2012 for every available year where the survey consistently asked about disability status. This time frame includes at least twenty post-ADA years, periods of economic growth and recession, and the politics surrounding the ADAAA. This is an improvement over prior studies that have included fewer years. Although the monthly CPS survey contains general demographic data, the ASEC Supplement, collected every March, contains detailed earnings and labor force information for household members fifteen years and older. This data set also includes information about each respondent's disability status in relation to work, which makes it very useful for an analysis of disability and employment.

We use our full data set to track trends in disability employment and earnings over time in the first part of our analysis. After removing missing data and restricting our sample to working-age adult respondents (i.e., respondents between twenty-five and sixty-one years of age), our full CPS sample consisted of 2,159,440 observations over twenty-five years. In order to address changes in earnings, we also analyzed a restricted subsample of respondents with annual earnings between $1 and $200,000 (approximately three standard deviations above the mean level of earnings) and usual weekly working hours between one and ninety-eight hours. These restrictions resulted in a sample size of 1,650,886 observations.

For the second part of our analysis, we conduct a more thorough investigation that applies multilevel modeling techniques to distinguish how individual- and state-level relationships affect employment and earnings for

people with disabilities over time. We focus primarily on the institutional factors that have influenced economic well-being for people with disabilities by investigating state ADA-like laws, EEOC complaints, and court cases. We therefore seek to integrate previous findings by incorporating state-level measures of legislation and enforcement as well as covariates related to individual demographics and work experience. Our multilevel models in this institutional-based analysis shed light on the ways in which unintended harm and judicial resistance arguments have been used to explain declining economic well-being among people with disabilities.

Because we merge our CPS data with yearly state-level information on EEOC complaints and federal court cases, we restrict this sample to 1992 onward, the year the ADA took effect and EEOC enforcement began. Our full post-ADA CPS sample consisted of 1,787,449 observations. In addition to our full sample, we analyzed a subsample of respondents who answered an earnings supplement questionnaire that contained more detailed information about their jobs. We also restricted this subsample to working-age adult respondents with yearly earnings of $1 to $200,000 and work hours of one to ninety-eight hours per week. These restrictions resulted in a sample size of 364,547 observations.

We then divided these samples by the respondent's disability status in order to compare the effects of certain predictor variables for people with and without disabilities. Thus, for the full sample we analyzed two subsamples of 137,329 people with a disability and 1,650,120 people without a disability. For the smaller employed sample we analyzed two subsamples of 19,296 people with a disability and 345,251 people without a disability.

ANALYTIC STRATEGY

In the first part of our analysis, we use logit models to estimate employment disparities and ordinary least squares (OLS) regression models to estimate earnings disparities by disability status and year. For the second part, we rely on multilevel varying-intercept models—also known as random effects, mixed effects, or hierarchical models—because our data consist of individuals nested in states, nested in years. Multilevel models, which use both within- and between-group variation, produce estimates for each individual weighted by the amount of available information (Gelman and Hill 2007). In these models, person, *j*, in group, *i*, is the unit of analysis at the first level, while group, *i*, becomes the unit of analysis at the second level. Correlates at each level can then be added. For example, Equation 1, which incorporates correlates at two levels of analysis, predicts whether an individual, *j*, nested in state-year, *i*, was employed. Equation 2 then estimates logged earnings for individual, *j*, nested in state-year, *i*,

$$\log\left(\frac{\Pr(y_{ij}=1)}{1-\Pr(y_{ij}=1)}\right) = X_i\alpha_i + \beta W_{ij} + \varepsilon_{ij} \quad (1)$$

$$y_{ij} = X_i\alpha_i + \beta W_{ij} + \varepsilon_{ij} \quad (2)$$

where i indexes the state-year and j indexes the individual within the state-year, $X_i\alpha_i$ represents vectors of state-year-level coefficients and predictor variables, βW_{ij} represents vectors of individual-level coefficients and predictor variables, and ε_{ij} is the error term. These models assume that α_i is normally distributed with a mean of zero and constant variance, and is independent of all other predictor variables in the model.

KEY OUTCOME AND PREDICTOR VARIABLES

We use two outcome variables in our analyses: *employment status* and *earnings*. Employment status is a dichotomous variable that measures whether the respondent was employed. We use employment status instead of unemployment in order to account for potentially "discouraged" workers who may still want to work but are unable to find a job. We measure earnings as the respondent's logged total annual earnings from wages and salary. All earnings variables are adjusted for inflation and appear in 2012 US dollars.

Our primary predictor variable in our first set of analyses is the respondent's *disability status*, which the CPS defines as whether the respondent has "a health problem or a disability which prevents him/her from working or which limits the kind or amount of work" he or she can engage in. Researchers have criticized this measure as being too narrow and limited in capturing the population with a disability; however, employment and earnings trends of this population have been shown to mirror those based in other data sets (Weathers 2009; Burkhauser et al. 2002, 2006). In addition, the CPS was the only available national data set that consistently collected information on disability and employment as far back as 1988. This measure is also appropriate for our analyses because we are specifically interested in employment outcomes. Overall, the percentage of respondents with disabilities is fairly constant across this time frame; 7 to 8 percent of respondents in our data reported a disability each year. Table 1 presents additional descriptive statistics by disability status for 1988–2012.

STATE-YEAR-LEVEL VARIABLES

Because we are interested in how individual employment and earnings for people with disabilities vary in relation to certain policies, we analyze variables at the state-year level in the second set of analyses. We coded for the *presence of pre-ADA laws* across states following the work of Beegle and Stock (2003) and Jolls and Prescott (2004). We include a categorical variable that indicates whether the state had any pre-ADA-like law before 1980, had a pre-ADA law that included reasonable accommodation before 1980, implemented a disability discrimination law between 1980 and 1992, or

Table 1. Descriptive Statistics for CPS Data, 1988–2012

	Full Sample		Employed Sample	
	Disability	**No Disability[2]**	**Disability**	**No Disability[2]**
Employed[1]	23.3	81.6	*	*
Earnings (mean dollars)	*	*	23472.1	43470.0
Age (mean years)	46.6	41.2	44.0	40.9
Educational attainment				
High school diploma	34.5	30.4	33.9	30.4
Less than a high school degree	32.7	17.0	23.3	15.3
Some college	22.9	25.1	27.9	25.9
Bachelor's degree	6.7	17.4	9.7	18.0
Professional or graduate degree	3.2	10.1	5.2	10.5
Marital status				
Married	47.8	69.1	52.5	67.8
Never married	23.1	16.2	21.1	16.9
Separated, widowed, or divorced	29.2	14.7	26.4	15.3
Any children	20.3	38.2	24.7	37.1
Female	52.5	51.9	50.6	48.6
White	76.6	83.3	82.3	83.4
Black	17.1	9.8	12.0	10.0
Hispanic	12.5	14.7	10.5	14.0
Received government assistance	37.1	2.6	27.4	1.8
Usual hours worked per week (mean hours)	*	*	35.3	40.6
Occupation				
Management, professional, and related	*	*	19.9	30.6
Service	*	*	11.4	9.9
Sales and office	*	*	4.4	5.1
Natural resources, construction, and maintenance	*	*	3.3	3.9
Production, transportation, and material moving	*	*	8.4	6.9
"Other" occupation	*	*	23.6	3.9
Employer provided health insurance	*	*	41.1	60.0
Government employee	*	*	12.6	17.7
Self-employed	*	*	4.4	5.0
CPS-ASEC, 1988–2012, Working-age adults	N = 163,963	N = 1,995,477	N = 49,066	N = 1,601,820

Notes: [1]All values presented as percentages unless otherwise specified.
[2]ANOVA, t tests, and Chi square tests all showed statistically significant differences in means and proportions across the disability and no disability samples. However, in certain cases, these results are likely influenced by the large sample sizes.

implemented a disability discrimination law that included reasonable accommodation between 1980 and 1992. In total, twenty-nine states incorporated pre-ADA-like laws before 1980, four states had pre-ADA laws that included reasonable accommodation before 1980, four states implemented disability

discrimination laws between 1980 and 1992, twelve states implemented disability discrimination laws that included reasonable accommodation between 1980 and 1992, and two states (Alabama and Mississippi) did not pass any ADA-like laws. We list states by their ADA laws in Appendix A1. We use this variable in order to determine if there is a difference between states that adopted ADA-like laws very early on and those that adopted laws closer to the passing of the ADA, in addition to whether the content of these laws made a difference for the continuing employment and earnings of people with disabilities.

To measure the role of the EEOC, we include the *lagged yearly per capita number of ADA charges by state* filed through the EEOC. We lagged this variable by one year in order to better ascertain causal effects within this relationship. We also include the *yearly amount of benefits paid out for ADA charges* in our models (also lagged by one year), but we were only able to include measures at the national level for ADA benefits due to data availability restrictions. We use these variables to help determine whether changes in the number of ADA charges affect employers' willingness to hire people with disabilities, as predicted by the unintended harm argument.

We also include indicators for different levels of ADA court cases to measure the effects of court intervention on outcomes for people with disabilities. Because we are interested in whether court rulings can improve employment and earnings, we include three indicator variables, lagged by one year. The lower-level US district court case variables measure whether there was an *ADA-related settlement or a consent decree* issued by a federal court in one of the eighty-nine districts across the fifty states in the previous year. Consent decrees are quite common in employment discrimination cases resulting in an agreed-upon settlement by both parties with no admission of guilt. Consent decrees usually involve the employer making changes to employment policies and practices so as to avoid future discrimination (Smith, Craver, and Turner 2011). We coded these variables using information from US Department of Justice (US DOJ) Civil Rights Division catalogue of ADA enforcement activities and court decisions (US DOJ 2014). The higher-level court case variable indicates *whether the US Supreme Court issued a liberal ruling* in an ADA case in the previous year. We calculated this variable using SCDB data (Spaeth et al. 2013). Although Supreme Court rulings often have the broadest reach, lower-level federal court settlements and consent decrees should also affect outcomes.

As a set of control variables, we also incorporate state spending and the state-level economic situation in our models. We include a measure for the state's *unemployment rate* to account for local employment conditions that vary by region and time. In order to gauge state spending and generosity, we include measures of the dollar amount of *state transfer receipts from government, state retirement and disability insurance benefits*, and *state SSI benefits*, all lagged by one year and coded as rates per person in the state population.[9] We expect that unemployment rates and state benefits will more strongly

affect the employment and earnings of people with disabilities than those without. Finally, we also include *year indicator* variables in each model to account for any unobservable yearly changes that could affect people's employment and earnings.

INDIVIDUAL- AND EMPLOYMENT-LEVEL COVARIATES

The other predictor variables we include in this analysis incorporate demographic, employment, and family differences, variables commonly used in studies that predict employment and earnings inequality (Leicht 2008). We control for the respondent's *age* and include a *squared term* to account for the nonlinear relationship between age and employment outcomes. We measure *education* based upon degree attainment and use a variable with five categories: whether the respondent obtained a high school degree (the referent category); less than a high school degree; one or more years of college without a degree; a Bachelor's degree; and a professional or graduate degree. We measure *marital status* with three categories: currently married (the referent category); never married; and separated, widowed, or divorced. We also include a binary variable, *presence of children*, which indicates whether children of any age were present in the respondent's home. In terms of demographics we include binary variables indicating the respondent's *sex, race, and Hispanic origin*. As a final control, we include a variable to indicate whether the respondent *received any government assistance income* through disability, welfare, supplemental social security, or workers' compensation.[10] Overall, we expect that these individual characteristics will explain a large portion of the gap in earnings and employment by disability status.

In addition to these individual-level variables, we incorporate multiple organizational and work variables into our earnings models. Because certain occupations may be more or less open to hiring people with disabilities, we account for the respondent's *major occupation* in our models by including the following occupational categories: management, professional, and related (the referent category); service; sales and office; natural resources, construction, and maintenance; and production, transportation, and material moving. Furthermore, previous research has shown that the employment of people with disabilities may vary by *firm size* (Unger 2002; Acemoglu and Angrist 2001). Because of how the CPS codes this variable, we use a categorical variable divided into the following categories: fewer than ten employees; ten to twenty-four employees; twenty-five to ninety-nine employees; 100 to 499 employees; and 500 or more employees (the referent category). We also control for the respondent's *usual weekly hours of work* and for whether the respondent had *employer provided insurance*, was a *union member*, worked in a *federal or state government job*, or was *self-employed*. With the exception of usual hours worked per week, we measure these employment aspects as dichotomous variables.

FINDINGS

In order to evaluate the gaps in employment and earnings by disability status over time, we first estimated separate models for each year using only the individual-level predictor variables and state indicator variables. We applied logit models to predict the probability of employment and OLS models to predict earnings by the respondent's disability status. Figures 1 and 2 summarize the results from the regressions of employment and earnings on disability status with and without control variables.[11] In all figures, vertical dotted lines mark the passages of the ADA and the ADAAA, and shaded gray rectangles denote recessionary periods in the United States. The triangles depict results from models that include only disability status, the circles depict results from models with all covariates, and the squares depict results from models that also control for the receipt of government assistance.

We include two panels in Figure 1 to illustrate the effects of disability at the mean and averaged across the population (estimates appear in Table A2). Figure 1A plots the marginal effects of disability on the probability of employment when all variables are held at their means, and Figure 1B plots the average marginal effects of disability in the population. Figure 2 plots the average percent decrease in earnings associated with disability (estimates appear in Table A3).

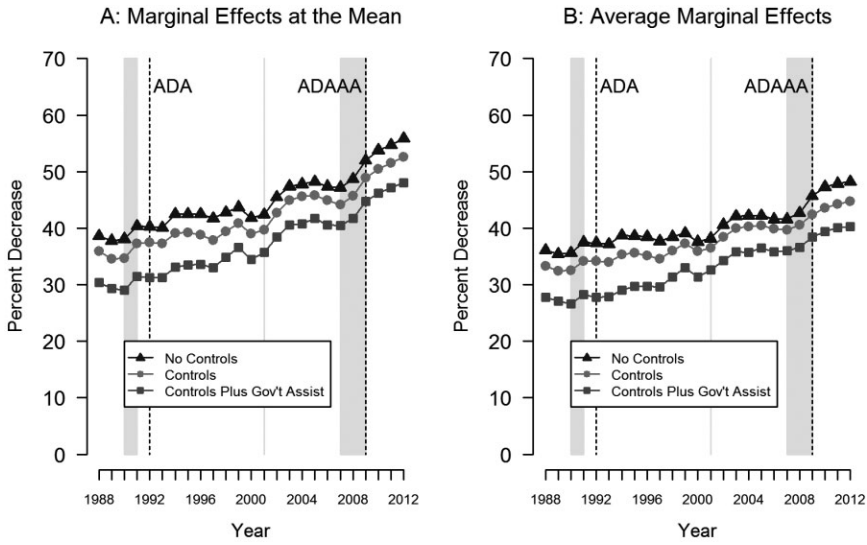

Figure 1. Earnings Effects of Disability Status, 1988–2012.
Notes: Estimates obtained through logit models predicting employment. Panel A presents the marginal effects of disability on employment when all variables are held at their mean. Panel B presents average marginal effects of disability on employment.

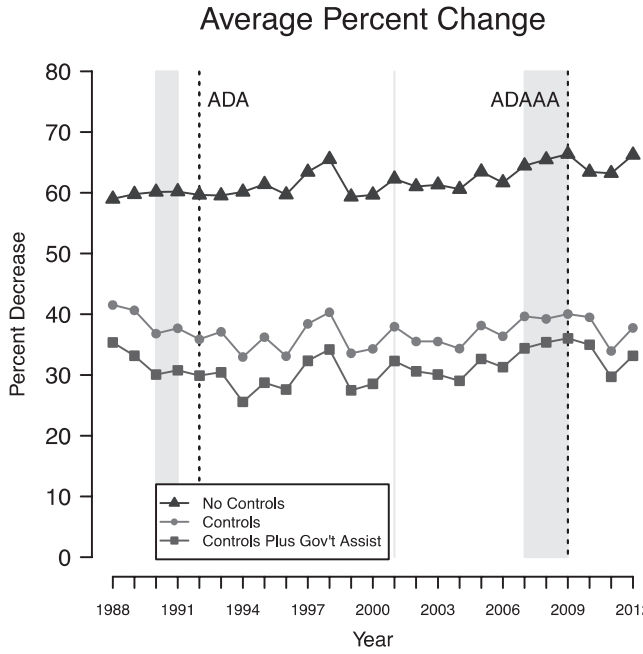

Figure 2. Earnings Effects of Disability Status, 1988–2012.
Notes: Estimates obtained through OLS models predicting earnings. This figure presents the average percent difference in earnings for the presence of a work-limiting disability when all variables are held at their mean.

Across all sample years, approximately 23 percent of adults between the ages of twenty-five and sixty-one with a disability were employed compared to 82 percent of working-age adults without a disability (Table 1). Looking at rates over time in Figure 1A, the employment gap by disability status increased for the average person since 1988. Accounting for individual characteristics, state differences, and the receipt of government assistance decreased this gap, but it did not change the overall trend. Averaging the effects of disability across the population in Figure 1B, which helps to account for observable changes in the population over time, shows smaller disparities in employment rates, but also an increasing gap. Thus, by even the most conservative estimates from models of the average marginal effects of disability that incorporate all covariates, we find that employment disparities increased with each recession, remained fairly stable after the ADA, but then increased consistently through the late 1990s into present day, where the employment rate was 40 percent lower for people with work-limiting disabilities.

There has also been a consistent gap in average earnings by disability status for workers across the past twenty-five years. Measuring the effects of disability as the average percent change in earnings in Figure 2 shows that the earnings gap has remained relatively stable since 1988. Individual

characteristics, employment situations, and the receipt of government assistance explained a large portion of the gap in earnings by disability status, as they did with the differences in the employment rate. Unlike the employment rate, however, the gap in earnings decreased after the recent recession, and it is now about where it was in 1988. Adult workers with disabilities earned about 33 percent (approximately $19,000 at the mean) less than workers without disabilities in 2012, after controlling for individual characteristics and government assistance.[12] Despite declines in the earnings gap after the recent recession, employed persons with work-limiting disabilities still earn much less than the rest of the population, even after accounting for background characteristics.

This first part of our analysis demonstrates that employment conditions for people with disabilities have actually worsened since the ADA, a trend that also continued on through the ADAAA. A smaller percentage of people with disabilities are employed and the employment gap with the rest of the population has grown, potentially indicating that, over this period of time, the ADA has done little to improve the employment situation of people with disabilities. In addition, employed persons with disabilities have seen very little change in earnings, even after controlling for differences in demographic and education variables. Individual characteristics and state-level variation explain a large part of the employment disparities by disability status, but the question of "why" remains. Despite our inclusion of these factors, we cannot tell if these trends stem from specific laws or broadly changing social situations in the United States. Therefore, in this next part of our analysis, we use multilevel models to investigate how state-level institutional variables could explain this lack of improvement.

EMPLOYMENT

In order to determine how our predictor variables affected employment for adults with and without disabilities, we analyzed separate samples based on the respondent's disability status.[13] Table 2 presents the average marginal effects and the unstandardized coefficients for these two samples. As the intercept coefficients indicate, at the state-year average, the predicted probability of employment was much lower for respondents in the disability sample. When model covariates were held at their means about 25 percent of people with disabilities were employed compared to 87 percent of the sample without disabilities.[14]

When comparing states based upon their ADA-like laws, key differences emerged in the outcomes for people with and without disabilities. In this model we compared state differences in these laws to the best-case scenario—states that passed disability discrimination laws that covered the private sector and included specifications for reasonable accommodation before 1980. Compared to these states, there was a small difference (1.8 percentage points) in the average employment rate for people with disabilities in states

Table 2. Results from Multilevel Models Predicting Employment for the Full Sample Divided by Disability Status

	Disability Sample				No Disability Sample[4]			
	b	SE	AME[3]	SE	b	SE	AME[3]	SE
Intercept	−.350***	(.092)			2.629***	(.044)		
Legislation								
State pre-ADA law *(Ref: ADA law with RA[2] pre-1980)*								
ADA-like law pre-1980	−.119***	(.033)	−.018	(.005)	.017	(.017)	.002	(.002)
ADA-like law 1980–92	−.288***	(.048)	−.044	(.007)	.033	(.024)	.004	(.003)
ADA-like law with RA 1980–92	−.142***	(.037)	−.022	(.006)	.027	(.019)	.004	(.002)
No ADA-like law	−.358***	(.066)	−.055	(.010)	.103***	(.031)	.014	(.004)
Enforcement								
Per capita ADA charges[1]	−.017***	(.003)	−.003	(.000)	−.003*	(.001)	.000	(.000)
Amount of ADA benefits paid (millions)[1]	−.018***	(.003)	−.003	(.000)	−.007***	(.001)	−.001	(.000)
Court Cases								
Lower court case settlement	−.018	(.024)	−.003	(.004)	−.032**	(.012)	−.004	(.002)
Lower court case consent decree	.038	(.042)	.006	(.006)	−.009	(.021)	−.001	(.003)
Supreme Court case liberal decision	−.548***	(.098)	−.084	(.015)	−.308***	(.047)	−.041	(.006)
Controls								
Unemployment rate[1]	−.058***	(.008)	−.009	(.001)	−.098***	(.004)	−.013	(.001)
Per capita state transfer receipts from gov't[1]	.020	(.018)	.003	(.003)	.023*	(.009)	.003	(.001)
Per capita retirement and disability insurance benefits[1]	−.318***	(.036)	−.048	(.005)	.000	(.017)	.000	(.002)
Per capita SSI benefits[1]	−2.547***	(.319)	−.388	(.048)	−1.148***	(.162)	−.154	(.022)
Individual-level variables	X		X		X		X	
Year indicator variable	X		X		X		X	
Number of State-Years (Groups)	1020				1020			
State-Year Variance	.172				.121			
AIC	129820				1418105			
BIC	130263				1418660			
CPS-ASEC, 1993–2012, Working-age adults		N = 137,329				N = 1,650,120		

Notes: [1]Variable is mean centered.
[2]Reasonable accommodation.
[3]AME refers to the average marginal effects of the predictor variable, averaged over the population. Because of the multiple sources of variation in multilevel models, the average marginal effects set the random intercepts to zero and assume that all state-years have the same probability of employment.
[4]Testing for differences in coefficients across samples showed that only per capita state transfer receipts from government and educational attainment as less than a high school degree did not exhibit statistically significant differences in the effects on employment for people with and without disabilities. All other differences were statistically significant at the p = 0.05 level or lower.
***** p < .001, ** p < .01, * p < .05**

that passed early legislation that did not contain specifications for reasonable accommodation. The employment rate of people with disabilities was 4.4 percentage points lower in states that waited until after 1980 to pass disability discrimination legislation without reasonable accommodation, but the rate was only 2.2 percentage points lower in those states that included reasonable accommodation later on. Finally, in states that did not pass their own ADA-like legislation, the employment rate for people with disabilities was about 5.5 percentage points lower.

The effects of state-level ADA legislation were much larger in the sample with disabilities than in the sample without disabilities. Compared to the best case scenario, the average employment rates for people without disabilities living in states with later ADA-like laws generally differed by less than one percentage point. This suggests that state-level ADA legislation continues to be associated with the employment situation for people with disabilities, but not for people without disabilities. This finding shows that at the state-level, people with disabilities did better in states that passed ADA legislation early on and included considerations for reasonable accommodation. The improvement in labor market conditions in states with ADA-type laws also indicates that, when properly enforced, antidiscrimination policies can help to change behaviors on the part of employers so as to increase employment and economic well-being. Having put these laws into effect long ago, the further entrenchment of these policies in "early-riser" states has likely led to a continuing positive relationship with employment for people with disabilities. Not only does this illustrate the importance of setting reform into motion early on, but it also highlights the political salience of disability rights across state legislatures.

Other state-year-level covariates also affected employment across the subsamples. Among these variables, the state-year unemployment rate had similar effects for people with or without disabilities, despite Kruse and Schur's (2003) finding that people with disabilities were especially susceptible to labor market tightness. A one-percentage-point increase in the unemployment rate in a state-year was associated with about a one-percentage-point decrease in the employment rate for people with and without disabilities in that state-year. State-years with higher levels of disability, retirement, and SSI benefits were associated with a larger decrease in the employment rate for people with disabilities than for those without. However, there were no differences in the effects of per capita state transfer receipts on employment across samples.

In addition, the average employment rate for adults with disabilities was lower in state-years with more ADA charges and in years with larger payouts from ADA discrimination cases. These variables were also significantly associated with employment rates for adults without disabilities, but the strength of these associations was lower, providing further support for the link between EEOC cases and employment outcomes for people with disabilities. In contrast to our findings related to state-level ADA laws, this finding shows

that the enforcement of ADA laws may affect employer attitudes and behaviors so as to preclude the hiring of people with disabilities, supporting the unintended harms perspective.

Contradicting the judicial resistance argument, lower-level court settlements and consent decrees did not affect average employment levels across states for either group. However, a liberal Supreme Court decision resulted in a decrease in employment levels for people with and without disabilities in the following year. The effects of this variable were greater for the sample of people with disabilities. These decisions decreased the average employment rate within a state for people with disabilities by 8.4 percentage points and for people without disabilities by 4.7 percentage points. Thus, even though we did not find evidence for judicial resistance in lower-level courts, we did see effects at the federal level, perhaps connected to the broader visibility of Supreme Court cases.

The effects of individual-level variables on employment for people with and without disabilities differed in magnitude, but generally not in direction, which is why we placed these results in Appendix Table A4. Most of these variables presented stronger associations with employment for people with disabilities than for people without disabilities. For instance, the protective effects of educational attainment were much greater for people with disabilities, which resulted in larger gaps between respondents with more and less education in this sample compared to the sample of people without disabilities.[15] The gender gap in employment was much larger in the nondisability sample, but the gaps across racialized groups were larger in the disability sample. Finally, indicators of family status—marriage and the presence of children—showed weaker associations with employment for respondents with disabilities.

EARNINGS

For our earnings outcome, we again analyzed separate samples for respondents with and without disabilities. Table 3 presents the results when we regressed logged earnings on the predictor variables for employed respondents with earnings in these two samples. Interpreting the intercept for the average employed person in the average state-year, adjusting for variation in the population, the predicted average yearly earnings for an employed respondent with a disability were approximately $8,071, which is about $14,500 less than those for a similar respondent without a disability.[16] Thus, across these models people with and without disabilities began at very different baselines.

Compared to states that passed an ADA law with reasonable accommodation before 1980, the average earnings of workers with and without disabilities were lower in states that passed laws later or did not include reasonable accommodation in their laws. In addition, the average earnings for both groups were higher in states with larger per capita state transfer

Table 3. Results from Multilevel Models Predicting Logged Earnings for the Sample with Earnings Divided by Disability Status

	Disability Sample				No Disability Sample			
	b	**SE**	**Std(b)[3]**	**SE**	**b**	**SE**	**Std(b)[3]**	**SE**
Intercept	9.405***	(.099)	8.849	(.012)	10.153***	(.023)	9.980	(.003)
Legislation								
State pre-ADA law *(Ref: ADA law with RA[2] pre-1980)*								
ADA-like law pre-1980	−.059	(.031)	−.029	(.015)	−.020*	(.008)	−.009	(.004)
ADA-like law 1980–92	−.097*	(.047)	−.023	(.011)	−.083***	(.012)	−.019	(.003)
ADA-like law with RA 1980–92	−.090*	(.036)	−.034	(.014)	−.065***	(.009)	−.025	(.003)
No ADA-like law	−.136*	(.067)	−.020	(.010)	−.111***	(.016)	−.017	(.002)
Enforcement								
Per capita ADA charges[1]	−.005	(.003)	−.020	(.010)	.002**	(.001)	.007	(.002)
Amount of ADA benefits paid[1]	.002	(.003)	.033	(.056)	.000	(.001)	.002	(.014)
Court Cases								
Lower court case settlement	.050*	(.023)	.021	(.010)	.024***	(.006)	.010	(.003)
Lower court case consent decree	.002	(.040)	.000	(.009)	.021*	(.011)	.005	(.003)
Supreme Court case liberal decision	−.116	(.099)	−.058	(.050)	−.008	(.024)	−.004	(.012)
Controls								
Unemployment rate[1]	−.007	(.008)	−.014	(.016)	−.012***	(.002)	−.024	(.004)
Per capita state transfer receipts from gov't[1]	.051**	(.017)	.061	(.020)	.049***	(.004)	.060	(.005)
Per capita retirement and disability insurance benefits[1]	−.179***	(.035)	−.070	(.014)	−.117***	(.009)	−.045	(.003)
Per capita SSI benefits[1]	.599*	(.286)	.033	(.016)	−.191*	(.081)	−.010	(.004)
Individual-level variables	X		X		X		X	
Employment variables	X		X		X		X	
Year indicator variable	X		X		X		X	
Number of State-Years (Groups)	1020				1020			
State-Year Variance	.077				.053			
R-squared	.437				.498			
AIC	60361				834767			
BIC	60825				835401			
CPS-ASEC, 1993–2012	N = 19,296				N = 345,251			

Notes: [1]Variable is mean centered.
[2]Reasonable accommodation.
[3]Std(b) refers to the coefficients obtained when all variables are standardized. Due to the two sources of variation in multilevel models, variables cannot be standardized as they would in regular OLS regression. However, this process of standardization still allows for a better comparison of results across models than comparing the unstandardized coefficients.
***** p < .001, ** p < .01, * p < .05**

receipts, but the opposite was true for states that spent more per capita on retirement and disability. Interestingly, SSI spending increased the average earnings of people with disabilities but decreased the average earnings of people without disabilities in certain states. Finally, per capita ADA charges and benefits were not significantly related to earnings for people with disabilities. In this situation the effects of enforcement may more often appear at the point of employment, which indirectly affects earnings.

At the state-year level, our results suggest a fairly weak relationship between overall employment context and disability earnings for employed adults. We found that the earnings of people without disabilities were more susceptible to the economic environment than the earnings of people with disabilities, as evidenced by the different effects of the unemployment rate across samples. This relationship again contradicts Kruse and Schur's (2003) finding that people with disabilities were especially disadvantaged within tight labor markets. In terms of court case results, the presence of a lower-level court settlement showed a small and positive association with average earnings in the following year for both samples, and the presence of a consent decree showed a small and positive association with average earnings for people without disabilities. Liberal Supreme Court rulings, however, were not associated with this outcome.

As shown in Appendix A5, most individual-level variables had effects of similar magnitude on earnings for people with and without disabilities. Only the variables of education, marital status, sex, and Hispanic origin showed statistically significant differences in the effects on earnings for people with and without disabilities. In terms of human capital differences, education, particularly receiving a college degree, mattered more for disability employment than nondisability employment, which suggests that education helps overcome any "burden" that employers may associate with disability (Bambra and Pope 2007). Or in other words, education may help mitigate the negative effect of disability on earnings, especially if a person with a disability is overskilled for a job (Jones and Sloane 2010).

After taking into account controls, income and work variables had similar effects on earnings in terms of the direction of the effect across the two samples, but the coefficients for certain variables differed in terms of magnitude and statistical significance (Appendix A5). Employees with disabilities who received employer health insurance and were union members (presumably because they were in better jobs) did much better earnings-wise compared to other workers with disabilities. Comparing these effects across samples with the standardized coefficients emphasizes the stronger relationships in the disability sample. It is important to remember, though, that with the different baselines for these two samples, the actual dollar difference was often greater in the sample without disabilities. Thus, even though being unionized and receiving employer health insurance had a bigger effect for disabled employees, the lower baseline earnings of disabled workers led to smaller dollar differences.

DISCUSSION

The case of disability rights highlights the importance of considering the multilayered institutional aspects of policymaking and implementation. All three branches of government, as well as state-level policymaking and enforcement, influence how policies affect the day-to-day lives of citizens. The ways in which policies shape attitudes and behaviors rely heavily on how they are interpreted, applied, and enforced by Congress and state legislatures, enforcement agencies, and the courts. Our analysis therefore demonstrates the complexities in determining the so-called successes and failures of anti-discrimination legislation. We provide an integrated understanding of the relationship between unintended harm and judicial resistance vis-à-vis institutional layering in the policymaking process and its role in influencing labor market outcomes net the effects of individual and occupational variables.

Although federal and state disability antidiscrimination legislation was predicated on improving the employment situation for people with disabilities, it is obvious that people with disabilities still lag behind the rest of the population in terms of labor market outcomes. Our results show continual gaps in employment and earnings by disability status, despite our inclusion of numerous control variables in each model. Net of multiple individual-level factors, in 2012, the employment rate for people with disabilities was 40 percent lower than the rate for people without disabilities. Employed people with disabilities also earned an average of 33 percent less than workers without disabilities, even after controlling for human capital and occupational characteristics. Perhaps this situation would have been worse if not for the presence of these laws, but barring a true counterfactual case, it is difficult to determine whether changes in employment and earnings occur because or in spite of the ADA.

Research tracking trends in employment outcomes by disability status is not new. Acemoglu and Angrist (2001) investigated these outcomes using CPS data over a decade ago. Other researchers have looked at these trends in different data sets, but explanations remain mixed (Jones 2008; Kruse and Schur 2003; Burkhauser et al. 2002; DeLeire 1995, 2000, 2001; Haveman and Wolfe 1990). In our study, we used data from 1988 to 2012 to identify trends in employment and earnings by disability status, net of individual and workplace characteristics, as well as state fixed effects. Compared to previous studies, we conducted a more nuanced analysis that better illustrates the changes in employment and earnings for people with disabilities over time and applies multilevel modeling techniques to distinguish individual- and state-year-level relationships. Our results therefore confirm and extend findings from Acemoglu and Angrist (2001), DeLeire (2000), Kruse and Schur (2003), and Beegle and Stock (2003). Employment decreases for people with disabilities, but wages remain about the same over time. However, we refrain from making broad conclusions about the role of the ADA in shaping these trends, and instead, we focus on how multiple institutional arrangements can affect policy outcomes.

Despite our large sample size and inclusion of multiple control variables, our analyses do face certain limitations. In terms of measurement, the CPS's measure of disability might not cover the full population of people with disabilities. Because it asks whether the person has a disability that limits work, the CPS could overlook people with less severe disabilities. The data set also does not contain information about the respondent's type of disability; these outcomes will likely differ by the severity of a disability. Additionally, our earnings analyses are subject to sample selection bias in terms of which respondents select into employment. Researchers often correct for selection bias using two-stage tobit or a Heckman correction (Heckman 1979). However, because most variables that predict employment also predict earnings, the lack of appropriate exclusion restrictions can lead to collinearity between the correction term and the included predictors (Stolzenberg and Relles 1990). Because we could not adhere to the specifications of such a model, we make sure to connect these results to only the population with earnings. Finally, like most studies of this kind, we cannot definitely determine if the gaps in employment and earnings by disability are due to unintentional harm, judicial resistance, discrimination, or other factors. Although we control for multiple individual- and state-level predictors of employment and earnings, these other factors, including discrimination, ability, personality, and work effort (all of which are difficult to systematically measure longitudinally) could contribute to these gaps.

Despite its limitations, our article situates an updated analysis of individual- and state-level factors within a theoretical framework that links debates in the disability antidiscrimination policy literature to broader institutional considerations, which few previous studies have done. Although we could not explicitly identify the mechanism contributing to the employment and earnings gaps by disability status, we used approximate measures collected at the state-year level to test policy-related explanations, and we included control variables to rule out other potential explanations. We found that the average employment rate for people with disabilities was higher in precisely those states with ADA-like laws, even after controlling for state spending. In addition, states that included provisions for reasonable accommodation also saw better employment outcomes. The same was true for earnings, although the relationship was weaker. These findings therefore mirror those of Beegle and Stock (2003). Given that people with disabilities fare better in progressive states with a longer history of disability antidiscrimination legislation, we suggest this is evidence *against* the unintended harms argument. Rather, our findings allude to the importance of antidiscrimination legislation in improving the economic well-being of people with disabilities.

In a similar vein, the unintended harm argument claims that laws serve to increase the costs of hiring people with disabilities and that the business community expressed concerns about legal mobilization following the ADA. We therefore expected EEOC charges and liberal court case rulings, consent

decrees, and settlements to adversely affect disability employment. Increases in the number of per capita EEOC ADA charges and in the amount of benefits paid out were associated with a decrease in the employment rate, but they were not associated with average earnings for employed workers with disabilities. Our court case findings were more ambiguous. We found that liberal Supreme Court rulings decreased employment levels for people with disabilities, and lower-level court settlements slightly increased earnings. Considering these relationships together, our findings indicate that, on the one hand, the creation of legislation has positively affected employment outcomes, but, on the other, the enforcement of legislation has had negative effects.

Overall, we situated our discussion of two seemingly competing views about the so-called failure of the ADA within the broader legislative, regulatory, and judicial context of antidiscrimination legislation. Our findings therefore extend Acemoglu and Angrist's (2001) research to present day but also go further in demonstrating some of the contradictions between the creation and enforcement of legislation, which alludes to distinct processes. We suggest that, like all antidiscrimination legislation, disability antidiscrimination policies were meant to change attitudes and curb behaviors that can lead to unequal outcomes in the workplace and beyond. Given that the intention of such policies is to negatively sanction discriminatory practices and support positive ones, our article demonstrates the importance of both implementation and enforcement in shaping these policy outcomes.

CONCLUSION

In the late-2000s, Congress acknowledged the ADA's failure in improving the economic well-being of people with disabilities. At the hearings regarding the ADA Restoration Act, the unintended harm and judicial resistance arguments surfaced once more. Proponents of the new legislation framed their argument around judicial undermining of the ADA, while opponents argued that what they saw as expansion of the ADA through these amendments would have a further negative impact on employment. Testimony also alludes to a growing overlap between the arguments used to explain economic well-being following the ADA and the more political ideological perspectives regarding the role of government in regulating work.

Disability has faced some unique political challenges. It is clear that early on, political entrepreneurs had the language of the 1964 Civil Rights Act in mind when it came to drafting disability antidiscrimination legislation. But, rather than being integrated into a comprehensive civil rights agenda, disability rights policy took a separate parallel course. Today, important differences exist in the laws governing disability employment discrimination (and their interpretation and application) and those governing sex or race discrimination. It is plausible to assume that a separate disability rights policy framework, while perhaps better suited for addressing specific needs,

has made it easier for the courts to narrow the impact of the law. Limited enforcement and judicial interpretations of disability antidiscrimination legislation have led to disparate outcomes. One such outcome, as our analysis suggests, is that potential underlying causes for the continuing gaps in employment and earnings—namely, attitudes—have not markedly changed over time. Many scholars and activists agree that changing norms and attitudes in the workplace and beyond was an important objective of the ADA (Lee 2003; Acemoglu and Angrist 2001). But the case of disability antidiscrimination legislation raises more fundamental questions about whether it is the government's obligation to change these attitudes while ensuring equal opportunity for its citizens to work and how might it effectively do that.

For many individuals with disabilities, employment undermines stereotypes of helplessness and dependency (Robert and Harlan 2006; Bagenstos 2003; Russell 2002). As Jenkins (1991, 557) noted, "In a society where active citizenship for those other than the very rich is associated with individualistic notions of 'earning your keep', the perceived inability to do so poses a problem in terms of one's overall social membership." In light of the importance of work for both personal and economic well-being, it is crucial to better explain the employment and earnings gaps between people with and without disabilities and the role of legislation in affecting those disparities. Time will tell whether the ADA Amendment Act will improve disability employment and economic well-being net the effects of individual and labor market characteristics, and the role of the courts and enforcement agencies in implementing it.

NOTES

1. Additionally, their difference-in-difference models focus on comparing only time periods before and after the ADA through interaction terms between disability status and year. This process neglects year-to-year variation due to the way that the interaction terms are structured with the comparison year.
2. The notion that disability rights legislation would lead to negative unintentional outcomes for persons with disabilities dates back to the 1960s and 1970s when an emerging rights policy framework came into direct conflict with the extant client-service policy approach (see Pettinicchio 2012; Katzmann 1986).
3. For examples, see the well-known cases of *Williams v Toyota* (2002) and *Sutton et al. v United Airlines* (1999).
4. Section 501 required affirmative action and nondiscrimination by the federal government, and Section 503 extended provisions to any agency with a federal government contract in the excess of $10,000.
5. Although Congress held hearings regarding reauthorization and the nature of rehabilitation programs, rights did not play a role in the political discourse surrounding the Rehabilitation Act nor were rights the basis for any reservations surrounding the law. Rather, concerns were based on the costs associated with rehabilitative services (see Scotch 2001).
6. The EEOC originally enforced equal employment opportunity laws (EEO) that did not include disability. The EEOC only became relevant to disability when it was assigned responsibility for enforcing Title I of the ADA in 1992.

7. Although the EEOC has helped plaintiffs access the courts, increasing their chances of a favorable outcome (Colker 2005), the Supreme Court has routinely ignored EEOC interpretations and guidelines. The Court has generally taken the position that the EEOC does not have the authority in substantive legislative rulemaking.
8. Only about 13 percent of petitioners in Supreme Court cases were people with disabilities (21 percent in employment discrimination cases). Approximately 52 percent of respondents and 72 percent of respondents in remanded, vacated, or reversed cases were people with disabilities. Petitioners win about half the time in disability rights cases and 72 percent of the time in disability employment discrimination cases.
9. These variables come from the Regional Economic Information System operated by the Bureau of Economic Analysis.
10. It is important to note that the receipt of government assistance is also a likely outcome of limited employment and low earnings. However, we include it in our models for thoroughness and to address changes in the availability of government assistance over time.
11. In these models all variables (continuous and categorical) are mean centered; therefore, the estimates are for the average person in that year.
12. Because many of these coefficients exceed 0.1, we use the following formula to determine the percent change in earnings for a one-unit change in each predictor variable: $\%\Delta(y) = 100 * (e^b - 1)$.
13. An alternative would have been to analyze the combined sample and include interactions between these variables and disability. These models showed that most interactions were statistically significant. Splitting the samples resulted in a more straightforward interpretation of outcomes.
14. Although we do present unstandardized coefficients, we use predicted probabilities to discuss our findings and average marginal effects to compare findings across models (Mood 2010; Gelman and Hill 2007). In general predicted probabilities at the mean can be obtained using intercept and coefficients with the following formula: $(1/(1 + e^{-x}))$ while holding all controls at their means. However, these estimates are conditional on specific values of observed variables and may not be comparable across models. We therefore compute the average marginal effects, which are averaged across all observations and comparable across models because they are unaffected by unobserved heterogeneity unrelated to the predictor variables (Mood 2010).
15. As noted by a reviewer, the effects of education may be larger for people with disabilities because those with more education may be less severely disabled; however, we cannot determine this with our data.
16. These estimates are slightly lower than the average earnings reported in Table 2 because we are modeling logged earnings.

MICHELLE MAROTO *is an assistant professor in the Department of Sociology at the University of Alberta. Her research interests include social stratification, social policy, discrimination, credit and labor markets, economic sociology, and organizations. She has published in* Social Forces, Work and Occupations, *and* Gender & Society.

DAVID PETTINICCHIO *is a sociology postdoctoral fellow at Nuffield College, University of Oxford. His research interests include political sociology, law and policy, and social movements. He has published in* British Journal of Social Psychology, Research in Social Movements, Conflict and Change, *and* Social Research Indicators.

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APPENDIX TABLE A1. STATE ADA-LIKE LAWS

No ADA-like law	ADA-like law no RA pre-1980	ADA-like law with RA pre-1980	ADA-like law no RA 1980–92	ADA-like law with RA 1980–92
Alabama	Alaska	Maryland	Arkansas	Arizona
Mississippi	California	Ohio	Georgia	Colorado
	Connecticut	Pennsylvania	Oklahoma	Delaware
	District of Columbia	Washington	South Carolina	Idaho
	Florida			Louisiana
	Hawaii			Missouri
	Illinois			North Carolina
	Indiana			North Dakota
	Iowa			Rhode Island
	Kansas			South Dakota
	Kentucky			West Virginia
	Maine			Wyoming
	Massachusetts			
	Michigan			
	Minnesota			
	Montana			
	Nebraska			
	Nevada			
	New Hampshire			
	New Jersey			
	New Mexico			
	New York			
	Oregon			
	Tennessee			
	Texas			
	Utah			
	Vermont			
	Virginia			
	Wisconsin			

Sources: Jolls and Prescott (2004); Beegle and Stock (2003).

APPENDIX TABLE A2. ESTIMATES FOR FIGURE 1 MODELS PREDICTING EMPLOYMENT BY DISABILITY STATUS AND YEAR

		Model 1				Model 2				Model 3			
		MFX		AME		MFX		AME		MFX		AME	
Year	Disability (%)	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
1988	6.97	−.386	(.006)	−.361	(.006)	−.359	(.006)	−.333	(.006)	−.304	(.006)	−.278	(.006)
1989	7.07	−.378	(.006)	−.354	(.006)	−.346	(.006)	−.324	(.006)	−.293	(.006)	−.271	(.006)
1990	7.17	−.381	(.005)	−.356	(.005)	−.347	(.005)	−.325	(.005)	−.290	(.006)	−.266	(.006)
1991	7.18	−.404	(.006)	−.375	(.006)	−.373	(.006)	−.342	(.006)	−.315	(.006)	−.283	(.006)
1992	7.40	−.403	(.006)	−.374	(.006)	−.375	(.006)	−.342	(.006)	−.313	(.006)	−.278	(.006)
1993	7.55	−.401	(.006)	−.372	(.006)	−.373	(.006)	−.340	(.006)	−.313	(.006)	−.279	(.006)
1994	7.94	−.425	(.006)	−.387	(.006)	−.391	(.006)	−.353	(.006)	−.331	(.006)	−.290	(.006)
1995	7.95	−.425	(.006)	−.386	(.006)	−.392	(.006)	−.356	(.006)	−.335	(.006)	−.297	(.006)
1996	8.03	−.425	(.006)	−.385	(.006)	−.388	(.006)	−.351	(.006)	−.336	(.006)	−.297	(.006)
1997	8.10	−.417	(.006)	−.377	(.006)	−.379	(.006)	−.346	(.006)	−.330	(.006)	−.296	(.006)
1998	7.83	−.428	(.006)	−.385	(.006)	−.394	(.006)	−.360	(.006)	−.349	(.006)	−.314	(.006)
1999	7.67	−.437	(.006)	−.391	(.006)	−.409	(.006)	−.373	(.006)	−.366	(.006)	−.330	(.006)
2000	7.78	−.418	(.006)	−.376	(.006)	−.390	(.006)	−.359	(.006)	−.345	(.006)	−.314	(.006)
2001	7.39	−.424	(.005)	−.382	(.005)	−.397	(.005)	−.365	(.005)	−.357	(.005)	−.326	(.005)
2002	7.52	−.455	(.005)	−.406	(.005)	−.427	(.005)	−.384	(.005)	−.384	(.005)	−.343	(.005)
2003	7.40	−.474	(.005)	−.421	(.005)	−.449	(.005)	−.400	(.005)	−.406	(.005)	−.358	(.005)
2004	7.80	−.478	(.005)	−.422	(.005)	−.456	(.005)	−.403	(.005)	−.408	(.005)	−.357	(.005)
2005	7.80	−.482	(.005)	−.422	(.005)	−.458	(.005)	−.405	(.005)	−.417	(.005)	−.365	(.005)
2006	7.77	−.474	(.005)	−.416	(.005)	−.449	(.005)	−.399	(.005)	−.406	(.005)	−.358	(.005)
2007	7.34	−.472	(.005)	−.416	(.005)	−.442	(.005)	−.397	(.005)	−.405	(.005)	−.360	(.005)
2008	7.36	−.487	(.005)	−.427	(.005)	−.457	(.005)	−.406	(.005)	−.417	(.006)	−.366	(.006)
2009	7.71	−.520	(.006)	−.457	(.006)	−.489	(.006)	−.424	(.006)	−.447	(.006)	−.384	(.006)
2010	7.68	−.538	(.006)	−.473	(.006)	−.505	(.006)	−.436	(.006)	−.462	(.006)	−.394	(.006)
2011	7.61	−.547	(.006)	−.479	(.006)	−.515	(.006)	−.443	(.006)	−.472	(.007)	−.401	(.007)
2012	7.96	−.559	(.006)	−.482	(.006)	−.526	(.006)	−.447	(.006)	−.480	(.007)	−.403	(.007)

CPS-ASEC, 1988–2012, Working-age adults, N = 2,159,440

Notes: Model 1 includes only disability status. Model 2 includes disability status and all individual-level covariates. Model 3 includes disability status, all individual-level covariates, and the receipt of government assistance. MFX refers to the marginal effects of disability on employment when all variables are held at their means. AME refers to the average marginal effects of disability, averaged over the population.

APPENDIX TABLE A3. ESTIMATES FOR FIGURE 2 MODELS PREDICTING EARNINGS BY DISABILITY STATUS AND YEAR

		Model 1		Model 2		Model 3	
Year	**Disability (%)**	**b**	**SE**	**b**	**SE**	**b**	**SE**
1988	3.32	−.892	(.025)	−.537	(.019)	−.436	(.019)
1989	3.39	−.910	(.026)	−.522	(.019)	−.403	(.020)
1990	3.56	−.920	(.024)	−.459	(.017)	−.358	(.018)
1991	3.34	−.921	(.024)	−.473	(.017)	−.368	(.018)
1992	3.52	−.908	(.023)	−.444	(.017)	−.355	(.018)
1993	3.46	−.905	(.024)	−.464	(.018)	−.363	(.018)
1994	3.51	−.920	(.024)	−.400	(.018)	−.295	(.018)
1995	3.48	−.952	(.024)	−.450	(.018)	−.339	(.018)
1996	3.61	−.909	(.024)	−.402	(.019)	−.323	(.019)
1997	3.63	−1.006	(.024)	−.485	(.018)	−.391	(.019)
1998	3.21	−1.064	(.025)	−.516	(.019)	−.419	(.020)
1999	3.06	−.900	(.025)	−.409	(.019)	−.321	(.020)
2000	3.21	−.908	(.024)	−.420	(.019)	−.336	(.019)
2001	3.09	−.975	(.019)	−.477	(.015)	−.390	(.015)
2002	3.06	−.942	(.019)	−.439	(.015)	−.365	(.015)
2003	2.78	−.950	(.020)	−.439	(.016)	−.358	(.016)
2004	2.81	−.931	(.020)	−.421	(.016)	−.343	(.016)
2005	2.72	−1.007	(.021)	−.481	(.016)	−.395	(.017)
2006	2.72	−.959	(.021)	−.452	(.016)	−.375	(.017)
2007	2.49	−1.034	(.021)	−.505	(.017)	−.421	(.017)
2008	2.50	−1.063	(.021)	−.498	(.016)	−.437	(.017)
2009	2.55	−1.090	(.021)	−.512	(.017)	−.447	(.017)
2010	2.33	−1.006	(.023)	−.503	(.018)	−.431	(.018)
2011	2.31	−1.000	(.023)	−.415	(.018)	−.352	(.018)
2012	2.24	−1.085	(.024)	−.474	(.019)	−.403	(.019)

CPS-ASEC, 1988–2012, Working-age adults with earnings, N = 1,650,886

Notes: Model 1 includes only disability status. Model 2 includes disability status and all individual-level covariates. Model 3 includes disability status, all individual-level and work-related covariates, and the receipt of government assistance. "b" refers to the coefficient for logged earnings with the presence of a work-limiting disability. Graphed values equal $(\exp(b) - 1) * 100\%$.

APPENDIX TABLE A4. RESULTS FROM MULTILEVEL MODELS PREDICTING EMPLOYMENT FOR THE FULL SAMPLE DIVIDED BY DISABILITY STATUS

	Disability Sample				No Disability Sample[4]			
	B	**SE**	**AME[3]**	**SE**	**b**	**SE**	**AME[3]**	**SE**
Intercept	−.350***	(.092)			2.629***	(.044)		
State-Year-level								
State pre-ADA law *(Ref: ADA law with RA[2] pre-1980)*								
ADA-like law pre-1980	−.119***	(.033)	−.018	(.005)	.017	(.017)	.002	(.002)
ADA-like law 1980–92	−.288***	(.048)	−.044	(.007)	.033	(.024)	.004	(.003)
ADA-like law with RA 1980–92	−.142***	(.037)	−.022	(.006)	.027	(.019)	.004	(.002)
No ADA-like law	−.358***	(.066)	−.055	(.010)	.103***	(.031)	.014	(.004)
Unemployment rate[1]	−.058***	(.008)	−.009	(.001)	−.098***	(.004)	−.013	(.001)
Per capita state transfer receipts from gov't[1]	.020	(.018)	.003	(.003)	.023*	(.009)	.003	(.001)
Per capita retirement and disability insurance benefits[1]	−.318***	(.036)	−.048	(.005)	.000	(.017)	.000	(.002)
Per capita SSI benefits[1]	−2.547***	(.319)	−.388	(.048)	−1.148***	(.162)	−.154	(.022)
Per capita ADA charges[1]	−.017***	(.003)	−.003	(.000)	−.003*	(.001)	.000	(.000)
Amount of ADA benefits paid (millions)[1]	−.018***	(.003)	−.003	(.000)	−.007***	(.001)	−.001	(.000)
Lower court case settlement	−.018	(.024)	−.003	(.004)	−.032**	(.012)	−.004	(.002)
Lower court case consent decree	.038	(.042)	.006	(.006)	−.009	(.021)	−.001	(.003)
Supreme Court case liberal decision	−.548***	(.098)	−.084	(.015)	−.308***	(.047)	−.041	(.006)
Individual-level								
Age[1]	−.036***	(.001)	−.005	(.000)	−.001***	(.000)	.000	(.000)
Age squared[1]	−.001***	(.000)	.000	(.000)	−.003***	(.000)	.000	(.000)
Educational attainment *(Ref: HS Degree)*								
Less than a high school degree	−.612***	(.021)	−.093	(.003)	−.609***	(.007)	−.082	(.001)
Some college	.368***	(.017)	.056	(.003)	.268***	(.006)	.036	(.001)
Bachelor's degree	.785***	(.024)	.120	(.004)	.416***	(.006)	.056	(.001)
Professional or graduate degree	1.191***	(.034)	.182	(.005)	.760***	(.009)	.102	(.001)
Marital status *(Ref: Married)*								
Never married	−.162***	(.020)	−.025	(.003)	.020**	(.007)	.003	(.001)
Separated, widowed, or divorced	−.100***	(.017)	−.015	(.003)	.307***	(.006)	.041	(.001)
Any children	.065***	(.018)	.010	(.003)	−.173***	(.005)	−.023	(.001)
Female	−.179***	(.014)	−.027	(.002)	−1.085***	(.005)	−.145	(.001)
Black	−.462***	(.022)	−.070	(.003)	−.068***	(.007)	−.009	(.001)
Hispanic	−.204***	(.024)	−.031	(.004)	−.056***	(.006)	−.007	(.001)
Received any gov't assistance	−.884***	(.016)	−.135	(.002)	−1.321***	(.011)	−.177	(.002)
Year indicator variable	X	X			X		X	
Number of State-Years (Groups)	1020				1020			
State-Year Variance	.172				.121			
AIC	129820				1418105			
BIC	130263				1418660			
CPS-ASEC, 1993–2012, Working-age adults	N = 137,329				N = 1,650,120			

Notes: [1]Variable is mean centered.
[2]Reasonable accommodation.
[3]AME refers to the average marginal effects of the predictor variable, averaged over the population. Because of the multiple sources of variation in multilevel models, the average marginal effects set the random intercepts to zero and assume that all state-years have the same probability of employment.
[4]Testing for differences in coefficients across samples showed that only per capita state transfer receipts from government and educational attainment as less than a high school degree did not exhibit statistically significant differences in the effects on employment for people with and without disabilities. All other differences were statistically significant at the p = 0.05 level or lower.
***** p < .001, ** p < .01, * p < .05**

APPENDIX TABLE A5. RESULTS FROM MULTILEVEL MODELS PREDICTING LOGGED EARNINGS FOR THE SAMPLE WITH EARNINGS DIVIDED BY DISABILITY STATUS

	Disability Sample				No Disability Sample[4]			
	B	**SE**	**Std(b)[3]**	**SE**	**b**	**SE**	**Std(b)[3]**	**SE**
Intercept	9.405***	(.099)	8.849	(.012)	10.153***	(.023)	9.980	(.003)
State-Year-level								
State pre-ADA law *(Ref: ADA law with RA[2] pre-1980)*								
ADA-like law pre-1980	−.059	(.031)	−.029	(.015)	−.020*	(.008)	−.009	(.004)
ADA-like law 1980–92	−.097*	(.047)	−.023	(.011)	−.083***	(.012)	−.019	(.003)
ADA-like law with RA 1980–92	−.090*	(.036)	−.034	(.014)	−.065***	(.009)	−.025	(.003)
No ADA-like law	−.136*	(.067)	−.020	(.010)	−.111***	(.016)	−.017	(.002)
Unemployment rate[1]	−.007	(.008)	−.014	(.016)	−.012***	(.002)	−.024	(.004)
Per capita state transfer receipts from gov't[1]	.051**	(.017)	.061	(.020)	.049***	(.004)	.060	(.005)
Per capita retirement and disability insurance benefits[1]	−.179***	(.035)	−.070	(.014)	−.117***	(.009)	−.045	(.003)
Per capita SSI benefits[1]	.599*	(.286)	.033	(.016)	−.191*	(.081)	−.010	(.004)
Per capita ADA charges[1]	−.005	(.003)	−.020	(.010)	.002**	(.001)	.007	(.002)
Amount of ADA benefits paid (millions)[1]	.002	(.003)	.033	(.056)	.000	(.001)	.002	(.014)
Lower court case settlement	.050*	(.023)	.021	(.010)	.024***	(.006)	.010	(.003)
Lower court case consent decree	.002	(.040)	.000	(.009)	.021*	(.011)	.005	(.003)
Supreme Court case liberal decision	−.116	(.099)	−.058	(.050)	−.008	(.024)	−.004	(.012)
Individual-level								
Age[1]	.005***	(.001)	.049	(.009)	.006***	(.000)	.058	(.002)
Age squared[1]	.000*	(.000)	−.021	(.009)	.000***	(.000)	−.047	(.001)
Educational attainment *(Ref: HS Degree)*								
Less than a high school degree	−.183***	(.024)	−.071	(.009)	−.222***	(.005)	−.068	(.002)
Some college	.098***	(.020)	.045	(.009)	.134***	(.004)	.061	(.002)
Bachelor's degree	.276***	(.031)	.081	(.009)	.341***	(.004)	.135	(.002)
Professional or graduate degree	.512***	(.045)	.099	(.009)	.464***	(.005)	.135	(.002)
Marital status *(Ref: Married)*								
Never married	−.295***	(.024)	−.120	(.010)	−.183***	(.004)	−.071	(.002)
Separated, widowed, or divorced	−.187***	(.020)	−.085	(.009)	−.119***	(.004)	−.044	(.001)
Any children	.002	(.021)	.001	(.009)	−.016***	(.003)	−.008	(.002)
Female	−.149***	(.018)	−.075	(.009)	−.268***	(.003)	−.134	(.001)
Black	−.042	(.025)	−.014	(.009)	−.086***	(.005)	−.027	(.001)
Hispanic	.059*	(.029)	.018	(.009)	−.073***	(.005)	−.024	(.002)
Income and Work								
Usual hours worked per week[1]	.046***	(.001)	.638	(.009)	.040***	(.000)	.429	(.002)
Occupation *(Ref: Management, professional, and related)*								
Service	−.063	(.037)	−.016	(.009)	−.104***	(.005)	−.029	(.001)
Sales and office	−.067	(.058)	−.010	(.009)	.024***	(.007)	.005	(.001)
Natural resources, construction, and maintenance	.000	(.063)	.000	(.009)	.021**	(.008)	.004	(.001)
Production, transportation, and material moving	−.184***	(.041)	−.041	(.009)	−.087***	(.006)	−.021	(.001)
"Other"	−.505***	(.020)	−.252	(.010)	−.578***	(.004)	−.203	(.001)
Employer provided health insurance	.810***	(.020)	.385	(.009)	.494***	(.003)	.246	(.002)
Union status	.307***	(.045)	.061	(.009)	.101***	(.005)	.033	(.002)
Firm size *(Ref: 500+ employees)*								
Fewer than 10 employees	−.200***	(.024)	−.078	(.010)	−.226***	(.005)	−.078	(.002)
10–24 employees	−.060*	(.029)	−.019	(.009)	−.133***	(.005)	−.041	(.001)
25–99 employees	−.058*	(.027)	−.019	(.009)	−.108***	(.004)	−.037	(.001)
100–499 employees	−.070**	(.026)	−.024	(.009)	−.084***	(.004)	−.030	(.001)
Government employee	.003	(.035)	.001	(.009)	.053***	(.004)	.020	(.002)
Received any government assistance	−.221***	(.019)	−.102	(.009)	−.497***	(.009)	−.077	(.001)
Year indicator variable	X		X		X		X	
Number of State-Years (Groups)	1020				1020			
State-Year Variance	.077				.053			
R-squared	.437				.498			
AIC	60361				834767			
BIC	60825				835401			
CPS-ASEC, 1993–2012	N = 19,296				N = 345,251			

Notes: [1]Variable is mean centered.
[2]Reasonable accommodation.
[3]Std(b) refers to the coefficients obtained when all variables are standardized by subtracting their grand mean and dividing by the standard error. Due to the two sources of variation in multilevel models, variables cannot be standardized as they would in regular OLS regression. However, this process of standardization still allows for a better comparison of results across models than comparing the unstandardized coefficients.
[4]Testing for differences in coefficients across samples showed that per capita SSI benefits, per capita ADA charges, marital status, Hispanic origin, usual hours worked per week, employer provided health insurance, union employment, and the receipt of government assistance did not exhibit statistically significant differences in the effects on earnings for people with and without disabilities. All other differences were statistically significant at the p = 0.05 level or lower.
***** p < .001, ** p < .01, * p < .05**