Disaggregating Employment Protection: The Case of Disability Discrimination

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Abstract

Studies of the effects of employment protection frequently examine protective legislation as a whole. From a policy reform perspective, however, it is often critical to know which particular aspect of the legislation is responsible for its observed effects. The American with Disabilities Act (ADA), a 1990 federal law covering over 40 million Americans, is a clear case in point. Several empirical studies have suggested that the passage of the ADA reduced rather than increased employment opportunities for individuals with disabilities. To the extent this is true, it is crucial to credibly disentangle the different features of this complex and multi-faceted law. Separately evaluating the distinct aspects of the ADA is important not only for determining how the law might best be reformed if some aspects of it produce negative employment effects, but also for improving our understanding of the potential consequences of ADA-like provisions in race and other civil rights laws. This paper exploits state-level variation in pre-ADA legal regimes governing disability discrimination to separately estimate the employment effects of each of the ADA's two primary substantive provisions. We find strong evidence that the immediate post-enactment employment effects of the ADA are attributable to its requirement of "reasonable accommodations" for disabled employees rather than to its potential imposition of firing costs for such employees. Moreover, the pattern of the ADA's effects across states suggests, contrary to widely-discussed prior findings based on national-level data, that declining disabled employment after the immediate post-ADA period may reflect other factors rather than the ADA itself.

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Heckman 1991). The ADA, in potentially generating these firing costs, parallels other civil rights statutes, such as Title VII of the Civil Rights Act of 1964 and the Age Discrimination in Employment Act of 1967. The large existing literature on Title VII's effects contains competing suggestions on whether the law has increased (contrary to the firing costs prediction) or decreased (consistent with the firing costs prediction) employment levels of protected workers (Chay 1998; Heckman and Payner 1989; Donohue and Siegelman 1991). In light of the existing empirical uncertainty about the validity of the firing costs account, an empirical investigation of the role of firing costs under the ADA is an important next step in this literature.

Because the ADA imposed both a reasonable accommodations requirement and potential firing costs at the same time (upon its initial enactment), existing studies comparing disabled employment levels before and after the ADA—including the studies by DeLeire and by Acemoglu and Angrist as well as more recent studies by Kruse and Schur (2003), Hotchkiss (2004), and Houtenville and Burkhauser (2004)—are not well-suited to separating out the effects of the ADA's reasonable accommodations requirement and its potential imposition of firing costs.[1] The present study seeks to isolate and evaluate the two distinct explanations for reduced disabled employment after the ADA by exploiting the substantial state-level variation in disability discrimination regimes that existed prior to the ADA's enactment. During the pre-ADA period, some states' disability discrimination regimes tracked the ADA in both requiring reasonable accommodations for disabled workers and subjecting employers to a "traditional antidiscrimination prohibition" (forbidding discrimination on the basis of disability in hiring, firing, and terms and conditions of employment), with its associated firing costs. During the same period, other states imposed traditional antidiscrimination prohibitions but departed from the eventual approach

[1] Acemoglu and Angrist briefly attempt to examine the issue of the relative role of the two distinct types of legal requirements under the ADA by testing whether "separation rates" for disabled workers fell during the post-ADA period; they find no discernible effect on separation rates and therefore tentatively suggest that negative effects of the ADA may result primarily from the law's reasonable accommodations requirement. However, as Acemoglu and Angrist emphasize, the separation rate information is "plagued by considerable measurement error," and this noise may explain their failure to find an effect of the ADA on separation rates. In contrast to Acemoglu and Angrist, Baldwin and Schumacher (2002) find that the relative rate of involuntary job changes for disabled compared to nondisabled workers fell between 1990 and 1993, although again accuracy of measurement may be affecting these results. Overall, separation rate data does not seem to be a reliable way to disaggregate the employment effects of the ADA's distinct provisions.

of the ADA in not requiring employers to make reasonable accommodations. Finally, a third group of states imposed no limits whatever on private employers' treatment of disabled workers in the pre-ADA period. By separately evaluating the effects of the ADA—with its dual imposition of a reasonable accommodations requirement and a traditional antidiscrimination prohibition with its accompanying firing costs—on disabled employment in each of these three distinct state groups, we are able to provide a measure of the relative importance of the ADA's reasonable accommodations requirement and its traditional antidiscrimination prohibition in driving the disabled employment effects of the ADA's enactment.

We estimate that in the years just after its enactment the ADA produced approximately a 10 percent decline in disabled employment in states in which the law's reasonable accommodations requirement was an innovation, compared to states in which a similar requirement existed at the state level prior to the ADA's enactment. By contrast, we consistently find little to no effect of the ADA's enactment on disabled employment in states in which the law's traditional antidiscrimination prohibition, with its associated firing costs, was an innovation, compared to states with similar preexisting prohibitions—although for reasons described below we are not able to measure the effect of the ADA's traditional antidiscrimination prohibition as confidently as we are able to measure the effect of the law's reasonable accommodations requirement. Our finding of a clear near-term employment effect of the ADA's reasonable accommodations requirement contrasts with the more inconclusive findings of Beegle and Stock (2003), who use Census data to explore the employment effects of the initial enactment of state laws requiring reasonable accommodations and find no effects; we discuss their study at length in section III.C below.

The state-law variation in pre-ADA disability discrimination regimes not only allows us to disaggregate the relationship between the ADA's enactment and post-ADA employment patterns, but also provides a valuable source of variation for probing the robustness of the causal relationship suggested by some studies between the ADA and the employment trends observed over the 1990s (DeLeire 2000,

2003; Acemoglu and Angrist 2001). As the significant scholarly debate over the ADA's employment effects, culminating in a recent book-length treatment by David Stapleton and Richard Burkhauser (2003), clearly illustrates, a perennial concern with any study of outcomes before and after the implementation of a new federal program is that concurrent unmeasured changes other than the passage of the new law—including shifts in the economic, social, and technological environment—may be the actual causes of the observed changes in outcomes. Our research, by separately studying the effects of the ADA in those states that had similar regimes in place prior to the ADA's enactment, in those states in which the ADA was an innovation only with respect to imposing a reasonable accommodations requirement, and in those states in which the ADA was a complete innovation, provides an important new lens on the voluminously debated question of the causal relationship between the ADA and declines in disabled employment over the 1990s (DeLeire 2000, 2003; Acemoglu and Angrist 2001; Stapleton, Houtenville and Goodman 2001; Bound and Waidmann 2002; Kruse and Schur 2003; Stapleton and Burkhauser 2003; Hotchkiss 2004; Houtenville and Burkhauser 2004). While other authors have briefly mentioned pre-ADA state-level regimes in their analyses of the ADA, our primary focus on employing state-law variation to disaggregate the effects of the ADA's provisions leads naturally to a more comprehensive treatment of the law's differential effects across state groups.[2] Our findings clearly support a causal relationship between the ADA and declines in disabled employment in the years immediately following the law's enactment, but beyond that period our findings—contrary to the existing work by DeLeire and by Acemoglu and Angrist—provide some evidence that disabled employment declines may not be causally linked to the ADA. In particular, while relative disabled employment was lower in those later years than in the period immediately before the ADA's enactment, we find no *difference* in the employment reduction between states in which the ADA was and was not an innovation.

[2] In the existing literature, Acemoglu and Angrist briefly employ state-law information as an instrument in their empirical analysis and, in so doing, restrict attention to a limited number of pre-ADA state-law regimes that provided for "misdemeanor charges or civil penalties" in the event of an employer violation. We do not characterize state regimes along the dimension of whether or not such sanctions were available because the ordinary set of sanctions—money damages along with nonmonetary relief such as reinstatement—did not vary significantly across the states with pre-ADA disability discrimination regimes. Hotchkiss (2004) also makes some use of certain information about pre-ADA state-level regimes; see section III.C below for further discussion.

(consisting of Alabama, Arkansas, and Mississippi), which we term the "no protection" states, set no limits whatsoever on private employers' treatment of disabled workers prior to the ADA's enactment.[3] We address at length in section III.C below concerns that all of these states are from the southern United States; we also explain how, even with those concerns, our estimated effect of imposing the ADA's reasonable accommodations requirement—as distinguished from our estimated effect of imposing its traditional antidiscrimination prohibition—is wholly independent of the composition of the "no protection" state group.

B. Disability Status and Other Individual Data

For the disability status of individuals—as well as for other variables such as employment levels and various demographic and other controls—we draw on the March Current Population Survey (CPS). Throughout, we refer to data by its year of observation (the year preceding the March survey), and we restrict attention to individuals aged 21 through 58. Variables and summary statistics for the years 1988 to 1998 are reported in Table 3.

The CPS variable for disability requires some discussion.[4] The CPS definition of disability comes from the March income supplement and reflects the subject's answer to the question, "Does [respondent] have a health problem or a disability which prevents him/her from working or which limits the kind or amount of work he/she can do?" Under the ADA, meanwhile, an individual is disabled if he or she has a physical or mental impairment that substantially limits a major life activity, has a record of such an impairment, or is regarded as having such an impairment. An affirmative answer to the CPS question certainly does not map perfectly or even that closely onto the ADA's definition of disability (Schwochau and Blanck 2000:299-300).

[3] All three of the "no protection" states did prohibit disability discrimination by public employers (akin to the employment provisions of the federal Rehabilitation Act of 1973), but they did not prohibit such discrimination by private employers. Naturally, given our interest in this paper in examining the effects of the ADA, we focus on the pre-ADA state-law regimes governing private employers.

[4] Burkhauser and Daly (2002:219-20) describe varying approaches to the definition of disability. As Acemoglu and Angrist (2001) note, while the CPS disability question seems to refer to the individual's status at the time of the March survey, the question actually serves as a lead-in question for a series of questions about disability income in the preceding year.

The reasons that the CPS and ADA definitions may diverge are several. First, individuals who answer the CPS question affirmatively may be incorrectly reporting health conditions or impairments that limit work—perhaps because they are unable to find work—and may not in fact be truly impaired (see Kreider and Pepper 2002). Second, only certain types of genuine impairments that may limit work have been deemed by the Supreme Court to be covered by the ADA (Sutton v. United Airlines, 527 U.S. 471 (1999)). Third, alongside these respects in which the CPS measure may be broader than the ADA measure, the CPS measure may be narrower in not including those with a record of impairment or who are regarded as impaired, but who are not actually impaired.[5]

While the CPS measure would clearly provide a poor basis for some empirical conclusions—such as the absolute number of people protected by the ADA at a given point of time—the estimates we report are not vulnerable on this ground because our approach uses the CPS measure to assess changes in employment levels after the ADA's enactment. Burkhauser, Daly, Houtenville, and Nargis (2002) provide evidence from National Health Interview Survey (NHIS) data that employment changes over time for populations defined by work limitations (as under the CPS) are not significantly different from employment changes over time for populations defined by impairments (closer to the ADA's approach). Thus, we think that the CPS disability question has enough overlap with the definition of disability under the ADA that studying how those who answer "yes" to the survey question were affected by the ADA in terms of their employment levels allows one to learn something important about the effects of the law on disabled employment.[6]

The most important potential concern with the use of the CPS measure of disability or, indeed, the use of any survey-based measure of disability for purposes of examining pre- and post-ADA employment levels of individuals with disabilities is that the ADA's enactment could itself have altered

[5] The Equal Employment Opportunity Commission (EEOC) claims data (available at http://www.eeoc.gov/stats/ada.html) suggest that about 15 percent of EEOC claims under the ADA involve the "record" and "regarded as" prongs of the ADA's disability definition.

[6] In the future, the CPS is likely to include disability-related questions that map more closely onto the ADA's definition (see Kruse and Hale 2003:6-9). No matter how precise this information, however, it will obviously not be available for either the time period in which the ADA was passed or for the years prior to the ADA's enactment. In this light, use of the CPS measure from the pre-ADA and immediate post-ADA periods is a reasonable step in seeking to measure the effects of the ADA on disabled employment.

the composition of the group responding "yes" to the disability survey question. Kruse and Schur (2003) describe several routes by which the passage of the ADA could alter the nature of the group of individuals answering "yes" to a disability survey question such as the one in the CPS. If such changes occurred, then apparent disemployment effects of the ADA could actually be effects of the law on the nature of the population being counted as disabled. In section IV below, we closely examine the time trend in affirmative answers to the CPS disability question, and, consistent with prior work on the prospect of such composition bias (Acemoglu and Angrist 2001:935; Beegle and Stock 2003:855-56), we do not find evidence that compositional changes are driving our findings.[7]

III. Empirical Approach and Results

The ADA was enacted in July of 1990, so throughout the empirical analysis we compare employment levels in two-year periods starting in 1990 to employment levels in the two-year period immediately preceding 1990. Because the ADA did not go into effect until two years after its enactment, it is possible that effects lagged behind the 1990 enactment date; alternatively, the time immediately following enactment might have witnessed the largest employment effects as employers in the "protection without accommodation" and "no protection" states—while facing new potential costs of employing disabled workers down the road—were not yet restricted by ADA (or ADA-like) provisions and thus could, for instance, discharge or refuse to hire someone because of the person's need for reasonable accommodations without incurring any sort of legal risk during this period. Extensive enactment-period media coverage of the ADA suggests that many managerial employees in fact learned of the ADA right at the point of its enactment.[8] With respect to our "pre-ADA" period of 1988-1989, because the ADA actually received widespread media coverage as early as the latter half of 1989—when the law was already widely anticipated—our use of 1988-1989 as the period against which to measure the law's

[7] The CPS was redesigned between the 1993 and 1994 surveys, corresponding to observation years 1992 and 1993. Acemoglu and Angrist (2001:925, 951) offer analysis suggesting that the redesign does not materially affect an understanding of the ADA's employment effects.

[8] A search of the Lexis-Nexis News Group File for mentions of the ADA in 1990 yielded 965 hits.

effects will, if anything, tend to bias our estimates *against* finding an effect of the ADA, as employers' behavior conceivably could have been affected as early as the second half of 1989.[9]

A. Univariate Results

Mean employment levels across our three state groups provide a first view of the basic effect of the ADA's reasonable accommodations requirement and its traditional antidiscrimination prohibition, with its associated firing costs, on disabled employment after the ADA's enactment. Table 4 reports the mean employment levels in weeks per year for disabled and nondisabled workers, before (1988-1989) and after (all subsequent pairs of years) the passage of the ADA, separately for each of our three state groups: the "protection without accommodation" group, containing states with traditional antidiscrimination prohibitions but no reasonable accommodations requirements prior to the ADA's enactment; the "ADA-like" group, with states that had both traditional antidiscrimination prohibitions and reasonable accommodations requirement prior to the ADA's enactment; and the "no protection" group, containing states that imposed no restrictions on private employers' treatment of disabled workers prior to the ADA's enactment. We use two-year windows before and after the change in the legal setting (similar to Katz 1998 and Autor, Donohue, and Schwab 2002).

Table 4's top panel compares disabled versus nondisabled employment levels before and after the ADA in "protection without accommodation" states with disabled versus nondisabled employment levels before and after the ADA in "ADA-like" states. Because the absence or presence of a pre-ADA

[9] During the latter half of 1989, media sources frequently referred to the certain or virtually certain passage of the ADA the following year. In the legal literature, for instance, Chatoff (1989) stated that the ADA "inevitably will" become law, while Gardner (1989) wrote that Congress "seems almost certain to enact" the ADA "in the very foreseeable future." In the popular media, Shapiro (1989) stated of the ADA that "President Bush . . . guaranteed the bill's passage with his support," while Calkins (1989) quoted a disability advocate's confident declaration that "for the first time ever, people with disabilities will have civil rights protection under federal law equal to the protection already afforded to members of minority groups and to women." Of particular interest are industry periodicals targeted to employers and their managerial employees; in this category, Romeo (1989) reports in an article in *Nation's Restaurant News* that at a meeting of the National Restaurant Association the "Americans with Disabilities Act was mentioned several times"; that a member of the Association's Human Resources Committee stated that the law "will affect us in the very near future"; and that another Association official stated that the "ADA seems certain to pass." Similarly, an editorial entitled "Accommodating Disabled Workers in the Construction Industry," published in October of 1989 in the *Engineering News-Record*, stated that passage of the ADA "seems certain to follow."

reasonable accommodations requirement is the dimension along which the two state groups differ, this first comparison provides a measure of the effect of the ADA's imposition of a reasonable accommodations requirement. As Table 4 shows, in "protection without accommodation" states, where the ADA's reasonable accommodations requirement was an innovation, disabled employment declined by 1.35 weeks per year in 1990-1991 compared to 1988-1989, while nondisabled employment showed a far smaller decline of 0.23 weeks per year; by contrast, in "ADA-like" states, in which the substantive requirements of the pre-ADA state-level regimes tracked those of the ADA, disabled employment actually increased by 0.83 weeks per year in 1990-1991 compared to 1988-1989, while nondisabled employment was virtually unchanged (a decline of 0.03 weeks per year).

Taking the difference between the two within-state-group differences for 1990-1991 compared to 1988-1989, the mean-based difference-in-difference-in-difference (DDD) estimate for the change in disabled employment generated by the imposition of a reasonable accommodations requirement is –1.98 weeks per year (column 3 of Table 4). Given the base number of weeks employed for disabled workers prior to the ADA's enactment—16.25 in the "protection without accommodation" states and 18.22 in the "ADA-like" states—the drop of 1.98 weeks represents over a 10 percent decline in disabled employment. The evidence of declining relative disabled employment in "protection without accommodation" states compared to "ADA-like" states continues in 1991-1992 and 1992-1993, and then disappears in 1993-1994 and subsequent pairs of years—the first suggestion of a near-term but not long-term effect of the ADA's reasonable accommodations requirement. We discuss this timing pattern in further detail below. Notice the reassuring fact that in all of the near-term post-ADA comparisons, nondisabled employment—in contrast to disabled employment—is relatively stable between the pre- and post- ADA periods in both the "protection without accommodation" and the "ADA-like" states.

The bottom panel of Table 4 compares "no protection" states, with no pre-ADA legal restrictions on private employers' treatment of disabled workers, to "protection without accommodation" states, with only traditional antidiscrimination prohibitions prior to the ADA's enactment. This comparison thus

provides a measure of the effect of imposing a traditional antidiscrimination prohibition (an innovation in the "no protection" states but not in the "protection without accommodation" states). Our mean-based DDD estimate for imposing such a prohibition bounces between negative and positive over the 1990-1991 through 1997-1998 "after" periods and is always small in magnitude and statistically indistinguishable from zero. Because this measure is identified based on the experience of three small southern states (the "no protection" states, in which the ADA's traditional antidiscrimination prohibition was an innovation), however, we explore a variety of robustness checks on this finding in the regression analysis below.

B. Regression Framework

Our regression analysis employs a straightforward DDD specification like that used, for example, in Gruber (1994) and Collins (2003). All regressions take the form (for each specified two-year post-ADA period in Tables 5-6 and A3-A5):

$$\begin{aligned} Y_{ijt} = \; & \beta_0 + \beta_1 X_{ijt} + \beta_2 ADA_t + \beta_3 DIS_i + \beta_4 LP_j + \beta_5 NP_j + \beta_6 (ADA_t * DIS_i) \\ & + \beta_7 (ADA_t * LP_j) + \beta_8 (ADA_t * NP_j) + \beta_9 (DIS_i * LP_j) + \beta_{10} (DIS_i * NP_j) \\ & + \beta_{11} (ADA_t * DIS_i * LP_j) + \beta_{12} (ADA_t * DIS_i * NP_j), \end{aligned} \tag{1}$$

where Y is weeks worked; i indexes individuals, j indexes states, and t indexes years; X is a vector of demographic and state-level economic characteristics; ADA is a dummy variable equal to 1 in the post-ADA period; DIS is a dummy variable equal to 1 for disabled individuals; LP is a dummy variable equal to 1 for states offering limited protection in the form of a traditional antidiscrimination prohibition prior to the ADA's enactment (the "protection without accommodation" state group); and NP is a dummy variable equal to 1 for states in the "no protection" state group. The LP and NP dummy variables measure effects relative to those in the "ADA-like" group.[10]

[10] Instead of looking at such relative effects, one could examine separate effects within each of the three state groups. In that model the coefficients of interest would be $ADA_t * DIS_i * LP_j$, $ADA_t * DIS_i * NP_j$, and $ADA_t * DIS_i * AD_j$, where AD is a dummy variable equal to 1 for states in the "ADA-like" group. Table A3 reports results from specifications that omit $ADA_t * DIS_t$ and instead estimate the coefficient on $ADA_t * DIS_i * AD_j$. In these specifications, the coefficients on $ADA_t * DIS_i * LP_j$ and $ADA_t * DIS_i * NP_j$ measure overall effects rather than

The coefficients of interest in equation (1) are the coefficients on the triple interaction terms, $ADA_t * DIS_i * LP_j$ and $ADA_t * DIS_i * NP_j$. The coefficient β_{11} on the first of these terms measures the change between the pre- and post-ADA periods in disabled versus nondisabled outcomes in "protection without accommodation" states (those with traditional antidiscrimination prohibitions but no reasonable accommodations requirements prior to the ADA) relative to this same change in "ADA-like" states (those with both reasonable accommodations requirements and traditional antidiscrimination prohibitions prior to the ADA). In other words, β_{11} tells us how relative disabled outcomes changed in states in which the ADA's reasonable accommodations requirement, but not its traditional antidiscrimination prohibition, was new (the "protection without accommodation" group) compared to how these outcomes changed in states in which neither substantive requirement of the ADA was new (the "ADA-like" group).

Our approach here does not assume that the enactment of the ADA made no difference at all in states that had substantively comparable pre-ADA protections (the "ADA-like" states); among other things the enactment of the federal statute made available Equal Employment Opportunity Commission (EEOC) enforcement and altered other procedural aspects of pre-existing disability discrimination law, such as the availability of federal court adjudication (see generally Neuborne 1977), and these changes may have influenced disabled outcomes. Effects of the federal regime that are identical across states are permissible within a DDD framework, although such effects cannot be identified.

Of course, if the ADA had *differential* effects across the "protection without accommodation" and "ADA-like" groups for reasons unrelated to the substantive legal provisions in effect in these groups, then our estimate of β_{11} would pick up those additional effects along with the effect of imposing a reasonable accommodations requirement. If, for example, states in the "ADA-like" group tended to be systematically more vigorous in accepting and enforcing civil rights claims brought by disabled individuals than states in the "protection without accommodation" group, then β_{11} would measure not

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effects relative to the "ADA-like" states. Returning to the original specification reflected in equation (1), because there are three (nonoverlapping) groups of states in our study, several of the interactions between the dummy variables are always zero (in particular, $LP_j * NP_j$, $ADA_t * LP_j * NP_j$, $DIS_i * LP_j * NP_j$, and $ADA_t * DIS_i * LP_j * NP_j$), and thus these drop out of equation (1).

only the effect of imposing a reasonable accommodations requirement but also the effect of supplementing moderate or limited enforcement of disability discrimination law in the "protection without accommodation" states with the more robust procedures provided by the ADA. Any attempt to control directly for cross-state variation in pre-ADA enforcement behavior using the number of discrimination charges brought under the various state laws would be confounded by the significant endogeneity of charge rates and the employment level (our dependent variable). Acemoglu and Angrist (2001) address this endogeneity issue in their use of discrimination charge data by instrumenting for state charge rates with a variable for whether the state had a particular type of pre-ADA disability discrimination law (one providing for "misdemeanor charges or civil penalties"), but that approach is not open to us here given the role the state-law information already plays in our analysis.

Nonetheless, we think it is quite unlikely that our estimate of β_{11} will be picking up enforcement differences that could confound the effect on disabled employment of imposing a reasonable accommodations requirement. The timing of the state-law enactments suggests that the "ADA-like" states are not the systematically more aggressive, pro-disabled-worker states; in most cases the states that had reasonable accommodations requirements prior to the ADA's enactment were those that instituted disability discrimination regimes relatively *late* in the game, while the "protection without accommodation" states were those "early to the party" in protecting civil rights of disabled workers (see date columns in Tables 1 and 2). Thus, if anything, our estimate of β_{11} will tend to *understate* the potential disemployment effect for disabled workers of imposing a reasonable accommodations requirement, given the most plausible direction of any pre-ADA enforcement differences between the two state groups.

While β_{11} measures the effect of imposing a reasonable accommodations requirement, equation (1) also provides us with a direct measure of the effect of simultaneously imposing both a reasonable accommodations requirement and a traditional antidiscrimination prohibition. The coefficient β_{12} measures the change between the pre- and post-ADA periods in disabled versus nondisabled outcomes in

nondisabled workers, then our measure of the effect of imposing the ADA's traditional antidiscrimination provision could capture this unobserved shock in addition to any effect caused by the enactment of the ADA (because our measure of the effect of the ADA's traditional antidiscrimination prohibition depends on the experience of the "no protection" states). Relatedly, it is possible that states with higher levels of disabled individuals—a group that includes states in the South—experienced unobserved labor-market changes differentially affecting disabled and nondisabled workers between the pre- and post- ADA periods; again our estimate of the effect of imposing the ADA's traditional antidiscrimination prohibition could capture these unobserved shifts because the "no protection" group consists exclusively of southern states.[11]

A straightforward strategy to alleviate these concerns about a possible trend differentially affecting states in the "no protection" group is simply to re-estimate equation (1) on just the southern states—with their more similar populations—from each of our three state groups. The "protection without accommodation" group in this regression includes Georgia, Kentucky, South Carolina, and Tennessee, while the "ADA-like" group contains Louisiana and North Carolina. (The "no protection" group is, as before, Alabama, Arkansas, and Mississippi.) Using the metric of the representation of disabled individuals in the population, these "southern-only" state groups are much more similar to the "no protection" group than were the state groups in the original 50-state sample.[12] Although, not surprisingly, the precision of our estimated effects falls with the reduction in sample size, the top panel of Table A5 shows that the result of estimating the basic fixed-effects specification from the middle panel of Table 5 on the nine-state southern subsample follow the same basic pattern as the results from the full 50-state sample.

Our finding of a significant negative employment effect of imposing a reasonable accommodations requirement contrasts with the conclusions of a recent paper by Beegle and Stock

[11] In terms of the representation of disabled individuals in the population across states, the mean proportion of disabled individuals over 1988-1998 was .085 in the "no protection" states, compared to .067 in the "protection without accommodation" states and .068 in the "ADA-like" states. See Figure 1.

[12] The mean proportion of disabled individuals over 1988-1998 is now .087 in the "protection without accommodation" group and .075 in the "ADA-like" group, far higher than in the original groups and much closer to the level (.085) observed in the "no protection" group.

(2003), whose results in some cases also point in a direction opposite that of DeLeire (2000, 2003) and Acemoglu and Angrist (2001). Beegle and Stock use Census data for 1970, 1980, and 1990 to study the effects of the enactment of state laws governing disability discrimination in the pre-ADA period (whereas we examine the effects of the ADA across different groups of states characterized by their varying pre-ADA legal regimes). Beegle and Stock find no significant effect of the enactment of reasonable accommodations requirements (in contrast with our finding) and, in specifications in which they include disability*year fixed effects, no significant effect of the enactment of disability discrimination law in general (in contrast with the findings of DeLeire and of Acemoglu and Angrist). While, as just noted, incorporating disability*year fixed effects has a significant impact on Beegle and Stock's results, the bottom panel of Table A4 shows that including these effects (along with the other fixed effects utilized by Beegle and Stock) has little effect on our results.

The differences between Beegle and Stock's results and ours are attributable, we think, to various differences in econometric approach, and possibly also to the imprecision of some of the state-law information used by Beegle and Stock. With respect to econometric approach, it may be that Beegle and Stock's empirical methodology is less well suited than ours to pinning down the employment effects of reasonable accommodations requirements and traditional antidiscrimination prohibitions imposed by disability discrimination law. Beegle and Stock employ a framework in which some states have promulgated a particular law during a given time period while others have not, and in which changes in outcomes across the two groups of states are then compared. In that setting, a risk always exists that adjustments in the relative labor market outcomes in the different states reflect not the policy shifts under study but rather some set of underlying state-level social or economic changes that simultaneously *caused*, or at least occurred contemporaneously with, the changes in the state laws (see Besley and Case 2000). As Beegle and Stock note, "[i]f laws were disproportionately passed in states where the disabled were [already] faring better, we would expect the laws to have smaller effects and our empirical results to underestimate the negative impact of the legislation (relative to random assignment of the laws, including

states where the negative impact of the laws would be larger)." Examining the enactment of the ADA against a background of a well-established diversity of state law, by contrast, reduces the concern about this sort of omitted-variables bias because there is less reason to fear that the degree to which the ADA was an innovation in a given state is correlated with state-specific social or economic changes, given that virtually all of the state laws in question were enacted well before the ADA (see Tables 1 and 2).[13]

Returning to our empirical results, the 93-94 through 97-98 columns of Table 5 show that in this period neither imposing a reasonable accommodations requirement nor imposing a traditional antidiscrimination prohibition had a statistically significant effect on disabled employment using our measures for the effects of the two legal changes; estimates for β_{11}, the effect of imposing a reasonable accommodations requirement, range from –0.60 to 0.70, while those for $\beta_{12} - \beta_{11}$, the effect of imposing a traditional antidiscrimination prohibition, range from –0.25 to 0.87. In other words, beginning in 1993-

[13] As noted, the difference between Beegle and Stock's results and ours may also stem in part from the imprecision of some of the state-law information used by Beegle and Stock. Our legal background allowed us to obtain information exclusively from primary legal sources, while Beegle and Stock rely on secondary sources, which in some cases prove to be inaccurate and in any event do not allow them to identify the year of a law's enactment (just the year when the law is first referred to in the secondary source in question). The imprecision in the information about state laws will affect Beegle and Stock's empirical analysis when the dating errors cross decade markers, as they do in a number of cases. For instance, Beegle and Stock, relying on a secondary source, state that Arkansas had a law, §20-14-303, prohibiting private sector disability discrimination by 1987. However, this statute did not, in 1987, cover *employment* discrimination, although it did cover private sector discrimination in other areas, such as access to restaurants and other public places. (The full text of the statute is available in the AR-STANN87 historical legislative database on Westlaw.) In alphabetical order, other states that are incorrectly classified by Beegle and Stock in terms of the decade in which private sector employment discrimination laws relating to disability were enacted include Colorado, Louisiana, Massachusetts, Missouri, North Carolina, Oregon, and Rhode Island. Of this group, Colorado and Louisiana are misclassified as to both the decade in which a traditional antidiscrimination prohibition was enacted and the decade in which a reasonable accommodations requirement was enacted; Missouri, North Carolina, and Rhode Island are misclassified as to the decade in which a traditional antidiscrimination prohibition was enacted; and Massachusetts and Oregon are incorrectly classified as to the decade in which a reasonable accommodations requirement was enacted. See Tables 1 and 2 below for state-law enactment information. This noise in the coding of the state-law explanatory variable will tend to bias estimates toward zero (see Autor, Donohue, and Schwab 2002:28), and this may help to explain the difference between Beegle and Stock's findings and ours.

Hotchkiss (2004) also makes some use of the pre-ADA state disability discrimination regimes, and differs from Beegle and Stock in relying on primary legislative materials rather than secondary sources. However, she nonetheless incorrectly categorizes a substantial number of states, in many instances because a state statute prior in time to the one she located also regulated disability discrimination in employment. States miscategorized by Hotchkiss, in terms of date of enactment, include Alaska, California, Colorado, Hawaii, Illinois, Massachusetts, New Jersey, North Carolina, South Carolina, South Dakota, Texas, and Virginia. (In the case of Alaska, California, and South Dakota, Hotchkiss explicitly notes that "exact original coverage [is] not available.") Some of the dating errors will not affect Hotchkiss's empirical results; she examines the effects of state laws enacted between 1981 and 1991, and, thus, a dating error outside this period will not affect her results. However, in the case of six states—Alaska, Hawaii, Massachusetts, North Carolina, South Carolina, and Texas—the dating error affects the classification of states over the 1981-1991 period.

1994 and going forward the ADA's enactment had statistically indistinguishable effects across the three state groups. What is especially striking about these later "post-ADA" years is that it is precisely in 1993-1994 that the estimated coefficient on the term ADA_t*DIS_i, measuring the common effect of the ADA across states, becomes negative and statistically significant; therefore, from 1993-1994 forward, movements in relative disabled employment were downward *and similar in magnitude* across all three state-law regimes—a sharp contrast with the clear differential pattern, based on pre-ADA state legal regimes, in the early years after the ADA's enactment. The bottom panel of Table 5 underlines the point by showing that in a specification that simply ignores state-law information entirely (by setting $NP_j = LP_j = 0$ in equation (1)), the estimated coefficients on ADA_t*DIS_i in 1993-1994 and forward are quite similar to the estimated coefficients on these variables in the top and middle panels, in which the separate effects of being in the "protection without accommodation" and "no protection" state groups are not restricted to zero.

Thus, our results for 1993-1994 and forward, while consistent with existing findings of a persistent decline in disabled employment over the 1990s relative to the pre-ADA period, reveal the absence of any link between the degree of employment effects in this later period and the degree to which the ADA was actually a legal innovation relative to pre-ADA state law. The juxtaposition of a clear state-group pattern, in a predictable direction, in the period immediately following the ADA's enactment (through 1992-1993) and no state-group differences in the later years raises potential questions about the longevity of any negative employment effects of the ADA. These questions, as well as possible interpretations of our results that are consistent with a longer-term negative effect of the ADA, are discussed further in the next section.

D. Discussion

Our empirical results suggest that in the near-term after the ADA's enactment, the law's reasonable accommodations requirement, but not its traditional antidiscrimination prohibition with its

potential firing costs, had a measurable negative effect on disabled employment. The significant negative effect of the reasonable accommodations requirement on disabled employment in the period just after the ADA's enactment may reflect the fact that many accommodations, including physical alterations to the workplace and modification of workplace policies, impose obvious but often one-time costs on employers—costs that may well have been exaggerated or particularly salient in employers' minds just after the ADA's enactment.[14] Employers might naturally have responded to such perceived costs by curtailing their hiring of disabled workers, particularly in the period between the ADA's enactment and effective dates because in that period curtailed hiring on account of accommodation costs would not have been illegal in the states in which the ADA's reasonable accommodations requirement was an innovation. Further reasons that the effect of the ADA's reasonable accommodations requirement on disabled employment could have been more negative in the short term than in the medium and long term include the ADA's important symbolic effect and the resulting changes in attitudes over time; the possibility that reasonable accommodations could ultimately increase the flow of qualified disabled applicants following a short-term reduction as disabled individuals responded to the ADA by pursuing more education (see Jolls 2000); declining accommodation costs in response to technological changes and judicial refinements of the ADA's requirements; and enforcement of the ADA's prohibition on refusal to hire based on accommodation costs after the end of the waiting period between the ADA's enactment and effective dates.[15]

The possibility that the true employment effects of the ADA are short-term rather than longer-term effects is consistent with Kirchner (1986), who emphasizes that the consequences of laws such as the

[14] While some observers have pointed to evidence that accommodation costs may often be modest (Blanck 1996), measurement issues and skewed samples of accommodations suggest that relatively limited weight should be attached to such evidence (Stein 2000:1677). In any event it is quite clear that some legally mandated accommodations—for instance, the need to hire readers for blind employees, as specified by federal regulations (see 29 CFR § 1630.2(o))—are in fact extremely costly for employers.

[15] With respect to the short-term negative employment effects of the ADA's reasonable accommodations requirement, a more positive account than the one given in the text is that negative employment effects were *themselves* reasonable accommodations to the scheduling needs of disabled workers (see Tolin and Patwell 2003). Given that we observe declines in weeks worked, not hours worked per week, however, and that the decline is limited to the period immediately after the ADA was enacted, it seems difficult to view the negative employment effects as the fact, rather than the potential consequence, of mandated accommodation.

ADA may differ significantly over different time horizons. A potential interpretation of our findings—pointing against a causal role for the ADA in the longer-term employment trends of individuals with disabilities over the 1990s—is that the apparent negative effect of the ADA on disabled employment in 1993-1994 and subsequent years reflects not the impact of the ADA itself but, rather, other contemporaneous changes disproportionately affecting individuals with disabilities. In support of this view is the fact that it is not otherwise immediately clear why the magnitude of the disabled disemployment effect after the ADA (in 1993-1994 and forward) would have no relationship to the degree to which the ADA was a legal innovation in a given state, when such a relationship did clearly exist in the immediate post-enactment period.

It is conceivable, however, that the significant decline in disabled employment across all states in 1993-1994 and forward reflects a longer-term effect of aspects of the ADA that were innovations in *all* states. As noted earlier, the ADA's enactment made available EEOC enforcement and federal court adjudication for disability discrimination claims, and thus one possible story is that such heightened enforcement generated firing costs associated with the ADA's traditional antidiscrimination prohibition to a point that encouraged disemployment; under this theory, firing costs in states with traditional antidiscrimination prohibitions prior to the ADA were not large enough to discourage disabled employment because of more limited enforcement, so effects of the ADA were observed across all states. In terms of timing, this story requires at least some lag between the ADA's enactment (July 1990) and effective (July 1992) dates, on the one hand, and the time at which the law affected disabled employment, on the other. (A story of delayed effects seems less likely a priori with reasonable accommodations requirements because, compared to firing costs, the costs of making accommodations are more tangible and immediate.) On balance, our findings do not by themselves rule out a continuing link between the ADA's enactment and disabled employment in 1993-94 and forward, although they do raise the possibility of an alternative, more short-term account of the ADA's effects on disabled employment.

IV. Further Robustness Checks

This section further probes the robustness of our basic finding in Tables 4 and 5 that in the years just after the ADA's enactment, the imposition of the law's reasonable accommodations requirement, but not its traditional antidiscrimination prohibition, produced a significant decline in disabled employment. We also examine the possible role of composition effects and preexisting state-group specific employment trends in our analysis.

A. Robustness to the Timing of State-Law Enactment

The upper left-hand panel of Table 6 shows the results (for post-ADA years 1990-1991, 1991-1992, and 1992-1993) of estimating the basic fixed-effects specification from the middle panel of Table 5 on a subsample of observations from states in which the state-level pre-ADA disability discrimination regime was already in place prior to 1980. We perform this check on the theory that these early enactors—which, as noted earlier, are predominantly "protection without accommodation" states—may have differed systematically in their degrees of "civil rights orientation," and thus in their enforcement environments, from the later enactors. The fact that in two of the three regressions the estimate of β_{11} becomes even more negative than in Table 5 provides some support for our suggestion above that the estimates based on the full 50-state sample may actually *understate* the effect of imposing a reasonable accommodations requirement. However, some degree of caution is warranted in interpreting these results because only three states in the "ADA-like" group (Colorado, Oregon and Washington) had their pre-ADA regimes in place prior to 1980. Subject to the caveat just noted, the robustness of our estimate of β_{11} in a sample of states with more uniform enactment dates also responds to the possible concern that, if there are either lags or bursts in state law effectiveness shortly after a state law is put on the books, then our 50-state results could be confounded by the different average enactment dates across the "protection without accommodation" and "ADA-like" state groups. Our estimate of $\beta_{12} - \beta_{11}$, the effect of imposing a traditional antidiscrimination prohibition, is also quite stable across the broader (all states) and narrower

(pre-1980 enactors only) samples.

B. Robustness to Variation in Employer-Size Coverage Thresholds

As shown in Tables 1 and 2, pre-ADA state legal regimes varied significantly in the numerical employer-size thresholds they established for coverage by the state legal regime. To mitigate any concern with bias from these significantly varying thresholds, we re-estimated the basic fixed-effects specification from the middle panel of Table 5 using only observations from states with employer-size coverage thresholds of 15 employees (the ultimate ADA threshold) or higher. (Only one state, Delaware, had a threshold of greater than 15 employees.) Our results, reported in the upper right-hand panel of Table 6, again point to a negative effect of imposing a reasonable accommodations requirement and essentially no effect of imposing a traditional antidiscrimination prohibition. The fact that controlling for variation in employer-size coverage thresholds does not affect our basic finding provides some further support for our earlier suggestion that "protection without accommodation" and "ADA-like" states are not differentially affected by the ADA's enactment because of a difference in the general civil-rights orientation of these two state groups, as such a difference in general civil-rights orientation would probably tend to correlate at least to some degree with a more versus less aggressive approach to the coverage of small employers.

C. Robustness to Alternative Measures of Disability Benefits

At around the time the ADA was enacted, the generosity of federal disability benefits was increasing substantially (Bound and Waidmann 2002). Higher disability benefit levels provide an independent ground for reduced disabled employment because higher benefit levels reduce disabled individuals' need or desire for wage-based income. The increase in the number of disabled individuals receiving disability benefits, as well as the decrease in weeks worked for individuals with disabilities, over the 1990s are readily apparent from the summary statistics reported in Table 3.

While all of the regressions reported thus far contain controls for disability benefits, the shift in

federal disability benefit levels is actually of less concern for our study than for prior studies that compare overall disabled employment outcomes before and after the ADA's enactment (DeLeire 2000, 2003; Acemoglu and Angrist 2001) because our DDD framework examines disabled employment levels in one group of states *relative to* disabled employment levels in other state groups, and thus changes in federal benefits levels are not as likely to matter for our results. Still, changes in federal disability benefits could affect our analysis if for some reason the resulting changes in disabled individuals' need or desire for wage income (and thus their work incentives) differed systematically across our three state groups. Autor and Duggan (2003), for instance, note that work incentives depend on the relationship between disability benefit levels and wages, and thus states experiencing smaller wage increases (or larger wage declines) would tend to have more individuals receiving federal disability benefits, and thus not seeking and obtaining employment, at any given federal level of these benefits. If wage levels across states were for some reason correlated with pre-ADA state-law disability discrimination regimes, then the effects of changes in federal disability benefits generosity (mediated through the Autor-Duggan mechanism) might be captured by, and therefore bias, our results.

The regressions reported thus far control for disability benefits receipt using a dummy variable for whether individuals received federal disability benefits through either the Disability Insurance (DI) program or the Supplemental Security Income (SSI) program.[16] Because such individual disability benefit receipt may be a consequence as well as a cause of employment status, this approach raises potential endogeneity issues, although Acemoglu and Angrist (2001) find empirically that approaches taking account of these endogeneity issues yield results similar to those that do not. Nonetheless, we explore alternatives to the use of individual disability benefit receipt by including, in lieu of such individual information, state-level DI and SSI applications and receipts in the population from Social Security Administration records. The lower panel of Table 6 reports the results of re-estimating the basic fixed-effects specification from the middle panel of Table 5 using, respectively, the percent of the state

[16] The CPS provides information on receipt of benefits from the Old-Age, Survivors, and Disability Insurance (OASDI) and SSI programs. However, because our sample does not include individuals 59 and older, OASDI benefits should be exclusively from the DI program.

population receiving disability benefits interacted with the disability status dummy variable (left-hand panel) and the percent of the state population applying for disability benefits interacted with the disability status dummy variable (right-hand panel). (Including state fixed effects means we cannot separately identify main effects of the new disability benefits variables.) Our results for the effects of imposing a reasonable accommodations requirement versus a traditional antidiscrimination prohibition are, once again, quite consistent with our benchmark estimates from Table 5.

D. Robustness to Variation in Economic Environment

As noted above, our basic specification controls for variation in states' economic environments by including state unemployment rate and the interaction of disability and state unemployment rate. However, as a further check on the possibility that *unobservable* economic variation across states might be influencing our results, we re-estimated the basic fixed-effects specification from the middle panel of Table 5 without state unemployment rate information; if removing these controls does not affect our results, then it seems unlikely that further unobservable economic differences are playing an important role. The results, shown in the upper panel of Table A5, are quite similar to those in the benchmark specification reported in Table 5.

E. Composition of the Disabled Group

As noted earlier, an important question that arises with the use of a survey-based disability measure, such as the CPS measure used in our analysis, is the possibility of law-driven changes in the composition of the group answering the survey question affirmatively. If the group of individuals identifying themselves as disabled in response to the CPS survey question changed in shape or size as a result of the ADA's enactment, then measured changes in disabled employment levels between the pre- and post-ADA periods may capture differences in the nature of the group answering "yes" to the survey question rather than employer-side effects of the new legal regime. Kruse and Schur (2003:49), for

instance, find evidence from Survey of Income and Program Participation data of higher numbers of individuals reporting severe limitations in 1993 than in 1991, and it would not be surprising for those with severe limitations to have lower chances of employment.

An important advantage of the framework we employ is that changes over time in the shape or size of the group of individuals identifying themselves as disabled in response to the CPS question will not affect our analysis unless these changes vary with the pre-ADA legal regime of the state in which an individual lives. While nationwide changes certainly seem plausible, state-varying changes are less likely. This is not to say that they are inconceivable, however; one obvious possibility is that legal reform may make disability more socially accepted and thus lead more people to identify themselves as disabled. If this were the case, then changes in disability identification with the ADA could be more substantial in states in which the ADA was a more significant innovation.

For state-group specific changes in individuals' identification as disabled to confound our results, one of three things would have to be the case. First, significant innovation through the ADA in the "protection without accommodation" and "no protection" states could for some reason have made individuals with worse employment prospects than those who identified as disabled prior to the ADA *more* likely to identify themselves as disabled. This could produce an apparent disemployment effect for disabled workers in the states in which the ADA was a significant innovation. However, if anything one would think it would be those closest to the line between disability and nondisability, and thus those with relatively *good* employment prospects, who might switch from identifying as nondisabled to identifying as disabled in a state in which the ADA was a significant innovation (say because the innovation made disability more socially acceptable). Put another way, it seems rather difficult to tell a story in which those who are severely limited switch from answering the CPS question "no" to answering it "yes" when the ADA constitutes a significant innovation in their state, while those who are less severely limited do not exhibit a similar change.[17]

[17] Even if it is the case (as suggested by Kruse and Schur 2003:49) that the proportion of disabled individuals who report severe disabilities has increased on a nationwide basis in the post-ADA years, it is unclear how this effect could plausibly be correlated with the degree to which the ADA was a significant legal innovation in a given state.

The second possibility for a confounding effect on our results is that individuals with reasonably good employment prospects became *less* likely in the wake of significant legal innovation through the ADA in "protection without accommodation" or "no protection" states to identify themselves as disabled, precisely because the reform helped them to obtain and retain jobs (see Kirchner 1986:83). Again, this could produce an apparent disemployment effect for disabled workers in states in which the ADA was a significant innovation. If the legal reform did lead to a decline in the reporting of disability, then the proportion of disabled individuals should either shrink or grow more slowly in "protection without accommodation" and "no protection" states than in "ADA-like" states. Figure 1 graphs the proportion of disabled individuals over time across our three state groups from 1988 to 1998, while Figure 2 presents corresponding fourth-order polynomial trend lines. (As suggested in section 3 above, the difference between the "no protection" group and the other two state groups in terms of the absolute levels of disabled individuals seems to reflect in large part the higher concentration of individuals with disabilities in the southern states.) Over the 1988-1998 period it does not appear that disability rates declined in states in which the ADA was a significant innovation (states in the "protection without accommodation" and "no protection" groups) relative to the "ADA-like" states. With respect to the "no protection" states, measuring changes between 1988 and the post-ADA years 1990-1993, Figure 1 shows that the proportion of individuals answering the CPS disability question affirmatively increased more in the "no protection" states than in the "ADA-like" states for year pairings 1988-1991 and 1988-1993, while this proportion increased more in the "ADA-like" states than the "no protection" states for year pairings 1988-1990 and 1988-1992. With respect to the "protection without accommodation" states, meanwhile, Figure 1 reveals that over 1990 and 1991 (relative to 1988) the proportion of individuals answering the CPS disability question affirmatively increased more in the "ADA-like" states (implying slower growth in the "protection without accommodation" states); but precisely the same trend was apparent in 1989, even before the ADA was enacted. In 1992 and 1993 (the other years in which we find a negative effect of the ADA on disabled employment in "protection without accommodation" states relative to "ADA-like"

states), by contrast, Figure 1 shows that disability rates are virtually identical across the two state groups, as they also were in the 1988 start year.

A final possibility with respect to the composition of the disabled group, suggested by the work of Autor and Duggan (2003), is that states in which the ADA was a significant legal innovation also for some reason happened to be states that were experiencing smaller wage increases or larger wage declines around the time of the ADA's enactment; as described above, individuals in such states would both tend to be more likely to identify as disabled (to get federal disability benefits) and tend to be more likely not to be employed (again to be eligible for federal disability benefits). This effect could produce a spurious correlation between the ADA's enactment and employment effects across states if for some reason state-level wage changes were correlated with pre-ADA state disability discrimination regimes. The regression results reported above (Tables 5 and 6), however, show that our results are robust to a range of controls for disability benefits receipts and applications. In sum, although we cannot entirely rule out an effect on our results of changes in the composition of the group responding affirmatively to the CPS disability question, our basic finding of a negative near-term effect of the ADA's reasonable accommodations requirement on disabled employment does not appear to be driven by such changes.

F. Preexisting State-Group Specific Trends in Disabled Employment

Our conclusion that declining disabled employment in "protection without accommodation" states relative to "ADA-like" states in the near-term post-ADA period reflects the ADA's imposition of a reasonable accommodations requirement obviously rests on the premise that the observed pattern of effects did not predate the ADA "experiment." Figure 3 graphs disabled employment trends in the "protection without accommodation" and "ADA-like" states from 1987, the first observation year in which the general disability status question was asked in the CPS, to 1992, the last year in which disabled employment in the two state groups moved in significantly different ways. (As the results reported above suggest, convergence between the two state groups began in 1993. As the earlier results from Table 4

also show, nondisabled employment was relatively stable in both state groups over the relevant period, so Figure 3 focuses on disabled employment.) These data paint a reassuring picture in which disabled employment moved roughly in tandem across the two state groups prior to 1990 and then diverged markedly in 1990-1992 (see Figure 3). A longer pre-ADA window would obviously be preferable, but the available data point to a genuine break in trend upon the ADA's enactment.

V. Conclusion

This paper uses pre-ADA state-law variation to disaggregate the disabled employment effects of the two central provisions of the ADA, its reasonable accommodations requirement and its traditional antidiscrimination prohibition with associated firing costs. Our effort to disaggregate the ADA's effects in this way reflects a desire to evaluate policy reforms more tailored and more politically realistic than the broadscale recommendation that the ADA be abandoned (see DeLeire 2003). However, our empirical approach ultimately yielded a more profound challenge to the existing literature suggesting ongoing negative employment effects of the ADA. Our results suggest that while the ADA's reasonable accommodations requirement had a significant negative effect on disabled employment in the near-term after the ADA's enactment, the law may well have had no causal link to the declines in disabled employment through much of the 1990s.

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Table 1: Pre-ADA State Laws Prohibiting Disability Discrimination – "Protection Without Accommodation" States

In the states listed in this table, pre-ADA statutory or judicial law imposed traditional antidiscrimination prohibitions but no reasonable accommodations requirements on private employers:

	Statutory Section(s)	Traditional Antidiscrimination Prohibition – Date Adopted	Reasonable Accommodations Requirement – Date Adopted	Employer-Size Threshold for Coverage[a]
Alaska	18.80.220(a)(1)[*]	1969[†]	n/a	1
California	Govt. 12940(a), 12994[*]	1973[†]	n/a [‡]	5
Connecticut	46a-60(a)(1)[*]	1973[†]	n/a	3
Florida	760.10(1)[*]	1977	n/a	15
Georgia	34-6A-4(a)	1981	n/a	15
Hawaii	378-2(1)	1975[†]	n/a	1
Illinois	68:1-103(Q), 2-102(A)[*]	1971	n/a	15
Indiana	22-9-1-3(l)	1975	n/a	6
Kansas	44-1009(a)(1)	1974	n/a	4
Kentucky	207.150(1)	1976	n/a	8
Maine	5:4572(1)(A)	1973	n/a	1
Maryland	49B:16(a)[*]	1974	n/a	15
Michigan	37.1102(2), 1202(1)	1976[†]	n/a[‡]	4
Missouri	213.055.1(1)[*]	1978	n/a	6
Montana	49-2-303(a), 49-4-101[*]	1974[†]	n/a	1
Nebraska	48-1104	1973	n/a	15
Nevada	613.330(1)	1971[†]	n/a	15
New Hampshire	354-A:8(I)	1975	n/a	6
New Jersey	10:5-4.1, -12(a), -29.1	1972[†]	n/a	1
New York	Exec. 296(1)(a)	1974	n/a	4
North Dakota	14-02.4-03	1983	n/a	10
Ohio	4112.02(A)	1976	n/a	4
Oklahoma	25:1302(A)	1981	n/a	15
South Carolina	43-33-530	1983	n/a	1
South Dakota	20-13-10, 23.7, 23.8	1986	n/a[‡]	1
Tennessee	8-50-103(a)	1976[†]	n/a	n/a[b]
Texas	Civ. Art. 5221k:5.01[*]	1975[†]	n/a[‡]	15
Utah	34-35-6(1)(a)(i)	1979	n/a	15
West Virginia	5-11-9(a)(1)[*]	1981	n/a	12

[*] Original statutory section differed from statutory section in effect immediately prior to the ADA: See Table A1 for details.

[†] Substantive amendment(s) subsequent to adoption: See Table A1 for details.

[‡] Potential ambiguity over the existence of a reasonable accommodations requirement: See Table A2 for legal description and effect on our results of alternative characterizations.

[a] Number of employees, as of 1989. The column lists the number of individuals a firm had to employ before it was subject to coverage by the state's disability discrimination law.

[b] Neither statutory nor judicial law provided an employer-size threshold for coverage.

Table 2: Pre-ADA State Laws Prohibiting Disability Discrimination – "ADA-Like" States

In the states listed in this table, pre-ADA statutory or judicial law imposed both traditional antidiscrimination prohibitions and reasonable accommodations requirements on private employers:

	Statutory Section(s)	Traditional Antidiscrimination Prohibition – Date Adopted	Reasonable Accommodations Requirement – Date Adopted	Employer-Size Threshold for Coverage[a]
Arizona	41-1463(B)	1985	1985	15
Colorado	24-34-402(1)(a)[*]	1977	1977[b]	1
Delaware	19:723(b), 724(a), 724(e)(2)	1988	1988	20
Idaho	67-5909(1)	1988	1988	10
Iowa	601A.6(1)(a)[*]	1972	1987[‡, c]	4
Louisiana	46:2254(A), (C)	1980	1980	15
Massachusetts	151B:4(16)[*]	1972[†]	1983	6
Minnesota	363.03:1(2), (6)	1973	1983[†, d]	1
New Mexico	28-1-7(A), (J)[*]	1973[†]	1983	4
North Carolina	168A-4, 5(a)[*]	1973[†]	1985	15
Oregon	659.425(1)	1973[†]	1979	6
Pennsylvania	43:955(a), (b)	1974	1985[c]	4
Rhode Island	28-5-7(1)[*]	1973[†]	1986	4
Vermont	21:495(a)(1), 495d(6)[*]	1973	1981	1
Virginia	51.5-41(A), (C)[*]	1975	1985	n/a[e]
Washington	49.60.180	1973	1978[c]	8
Wisconsin	111.321, 322(1), 34(1)(b)[*]	1965[†]	1981[‡]	1
Wyoming	27-9-105(a), (d)	1985	1985	2

[*] Original statutory section differed from statutory section in effect immediately prior to the ADA: See Table A1 for details.

[†] Substantive amendment(s) subsequent to adoption: See Table A1 for details.

[‡] Potential ambiguity over the timing of adoption of a reasonable accommodations requirement: See Table A2 for details.

[a] Number of employees, as of 1989. The column lists the number of individuals a firm had to employ before it was subject to coverage by the state's disability discrimination law.

[b] Statutory language is somewhat ambiguous but is clarified by an administrative regulation, 3 CCR 708-1, Rule 60.2(C).

[c] Judicial interpretation: Iowa—Cerro Gordo County Care Facility v. Iowa Civil Rights Comm'n, 401 N.W.2d 192 (Iowa 1987); Pennsylvania—Jenks v. Avco Corp., 940 A.2d 912 (Pa. Super. 1985); Washington—Holland v. Boeing Co., 583 P.2d 621 (Wash. 1978). In the case of Washington, the 1978 decision briefly mentions the existence of an administrative regulation requiring reasonable accommodations, but this regulation plays only a minor role in the court's opinion.

[d] Applicable only to employers with 50 or more employees.

[e] Neither statutory nor judicial law provided an employer-size threshold for coverage.

Table 3: Descriptive Statistics

Nondisabled	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Age	36.9	37.1	37.2	37.3	37.5	37.6	37.8	38.1	38.2	38.5	38.6
White	87.8%	87.1%	87.0%	86.7%	86.1%	85.5%	84.3%	86.4%	86.3%	86.2%	86.3%
Post-High School	44.5%	45.5%	45.8%	50.0%	51.8%	53.6%	54.3%	54.0%	54.4%	55.0%	55.6%
Working	87.5%	87.4%	87.2%	87.1%	86.8%	87.0%	87.3%	87.6%	88.0%	88.3%	88.4%
Weeks Worked	40.8	40.8	40.6	40.4	40.3	40.5	40.9	41.3	41.6	42.0	42.2
Weekly Wage	$397	$422	$433	$447	$462	$481	$508	$561	$572	$595	$625
SSI/DI	1.32%	1.39%	1.38%	1.31%	1.54%	1.61%	1.66%	1.59%	1.60%	1.43%	1.27%
Obs.	67,907	74,616	74,980	74,192	73,525	70,999	70,686	61,300	62,088	62,338	63,137

Disabled	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Age	42.5	42.5	42.2	42.2	42.1	42.6	43.0	43.2	43.2	43.8	44.0
White	83.7%	83.5%	82.6%	83.5%	83.6%	81.0%	79.5%	80.8%	80.9%	82.0%	80.6%
Post-High School	23.3%	23.6%	25.7%	28.5%	30.8%	31.3%	32.1%	32.9%	34.0%	34.9%	35.6%
Working	45.0%	45.8%	43.4%	43.2%	42.7%	40.8%	40.8%	39.7%	40.2%	37.4%	36.6%
Weeks Worked	16.4	17.2	15.9	15.9	15.8	15.1	14.7	14.8	15.0	14.0	13.8
Weekly Wage	$307	$308	$314	$335	$317	$347	$376	$435	$396	$366	$469
SSI/DI	32.98%	31.67%	34.33%	35.29%	37.66%	38.55%	38.10%	40.24%	42.41%	45.07%	44.68%
Obs.	4,396	4,884	5,025	5,100	5,311	5,307	5,336	4,680	4,775	4,655	4,579

Notes: Descriptive statistics are unweighted. Data are for individuals aged 21-58 and are reported by observation year (the year preceding the survey). "SSI/DI" reflects the percentage of individuals who received federal disability benefits through either the Disability Insurance (DI) program or the Supplemental Security Income (SSI) program.

Table 4a: Means Analysis by State, Time, and Disability Status: "Protection Without Accommodation" States versus "ADA-Like" States

	88-89	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98
Protection Without Accommodation States									
Disabled workers	16.25	14.90	14.67	14.34	14.43	14.47	14.33	14.00	13.48
	(0.29)	(0.27)	(0.26)	(0.26)	(0.26)	(0.27)	(0.28)	(0.27)	(0.27)
	[5,680]	[6,101]	[6,298]	[6,486]	[6,521]	[6,058]	[5,677]	[5,741]	[5,684]
Time Diff.		-1.35	-1.57	-1.91	-1.82	-1.78	-1.92	-2.25	-2.77
		(0.39)	(0.39)	(0.39)	(0.39)	(0.39)	(0.40)	(0.40)	(0.40)
Nondisabled workers	40.68	40.45	40.23	40.19	40.48	40.94	41.26	41.64	42.02
	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
	[88,630]	[93,449]	[92,335]	[89,407]	[86,473]	[80,671]	[75,509]	[75,872]	[76,201]
Time Diff.		-0.23	-0.46	-0.49	-0.20	0.25	0.58	0.96	1.34
		(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
Group-Time Diff.		-1.12	-1.12	-1.42	-1.62	-2.03	-2.50	-3.21	-4.10
		(0.40)	(0.40)	(0.40)	(0.40)	(0.41)	(0.41)	(0.41)	(0.41)
ADA-Like States									
Disabled workers	18.22	19.05	19.26	17.79	16.51	15.79	15.97	15.98	14.65
	(0.43)	(0.42)	(0.42)	(0.42)	(0.40)	(0.40)	(0.42)	(0.43)	(0.43)
	[2,680]	[2,881]	[2,923]	[2,868]	[2,928]	[2,862]	[2,677]	[2,617]	[2,471]
Time Diff.		0.83	1.04	-0.43	-1.71	-2.43	-2.25	-2.24	-3.57
		(0.60)	(0.60)	(0.60)	(0.59)	(0.59)	(0.60)	(0.61)	(0.61)
Nondisabled workers	41.50	41.47	41.48	41.75	42.04	42.36	42.55	42.81	43.04
	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.10)	(0.09)	(0.09)
	[40,849]	[40,727]	[40,238]	[38,892]	[39,111]	[36,821]	[33,504]	[33,818]	[34,207]
Time Diff.		-0.03	-0.02	0.25	0.54	0.86	1.05	1.31	1.54
		(0.13)	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)
Group-Time Diff.		0.86	1.05	-0.68	-2.25	-3.29	-3.30	-3.55	-5.11
		(0.61)	(0.61)	(0.61)	(0.60)	(0.60)	(0.61)	(0.62)	(0.62)
Group-Time-State Diff.		**-1.98**	**-2.17**	**-0.74**	**0.62**	**1.26**	**0.80**	**0.35**	**1.00**
		(0.73)	(0.73)	(0.73)	(0.72)	(0.72)	(0.74)	(0.74)	(0.74)

Notes: Means reflect average weeks worked by state group, category of worker (disabled versus nondisabled), and time period. All estimates are weighted using CPS survey weights. Standard errors are in parentheses beneath mean estimates, and the numbers of observations in each state group-time period-category of worker cell are in square brackets below mean estimates. See Tables 1 and 2 and the text for the states in each group.

Table 4b: Means Analysis by State, Time, and Disability Status: "No Protection" States versus "Protection Without Accommodation" States

	88-89	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98
No Protection States									
Disabled workers	12.19	10.40	11.39	11.11	10.57	11.58	11.41	10.64	10.70
	(0.88)	(0.81)	(0.85)	(0.84)	(0.86)	(0.93)	(0.90)	(0.91)	(0.93)
	[473]	[533]	[532]	[524]	[477]	[450]	[466]	[450]	[432]
Time Diff.		-1.79	-0.80	-1.08	-1.62	-0.61	-0.78	-1.55	-1.49
		(1.19)	(1.23)	(1.22)	(1.23)	(1.28)	(1.26)	(1.26)	(1.28)
Nondisabled workers	39.89	39.96	40.22	40.34	40.75	41.01	41.55	41.94	42.03
	(0.27)	(0.26)	(0.26)	(0.27)	(0.27)	(0.28)	(0.28)	(0.28)	(0.28)
	[5,222]	[5,337]	[5,289]	[5,085]	[4,816]	[4,592]	[4,499]	[4,446]	[4,309]
Time Diff.		0.07	0.32	0.45	0.85	1.12	1.66	2.05	2.14
		(0.38)	(0.38)	(0.38)	(0.38)	(0.38)	(0.38)	(0.39)	(0.39)
Group-Time Diff.		-1.85	-1.12	-1.53	-2.47	-1.73	-2.44	-3.60	-3.63
		(1.25)	(1.28)	(1.27)	(1.29)	(1.33)	(1.32)	(1.32)	(1.34)
Protection Without Accommodation States									
Disabled workers	16.25	14.90	14.67	14.34	14.43	14.47	14.33	14.00	13.48
	(0.29)	(0.27)	(0.26)	(0.26)	(0.26)	(0.27)	(0.28)	(0.27)	(0.27)
	[5,680]	[6,101]	[6,298]	[6,486]	[6,521]	[6,058]	[5,677]	[5,741]	[5,684]
Time Diff.		-1.35	-1.57	-1.91	-1.82	-1.78	-1.92	-2.25	-2.77
		(0.39)	(0.39)	(0.39)	(0.39)	(0.39)	(0.40)	(0.40)	(0.40)
Nondisabled workers	40.68	40.45	40.23	40.19	40.48	40.94	41.26	41.64	42.02
	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
	[88,630]	[93,449]	[92,335]	[89,407]	[86,473]	[80,671]	[75,509]	[75,872]	[76,201]
Time Diff.		-0.23	-0.46	-0.49	-0.20	0.25	0.58	0.96	1.34
		(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
Group-Time Diff.		-1.12	-1.12	-1.42	-1.62	-2.03	-2.50	-3.21	-4.10
		(0.40)	(0.40)	(0.40)	(0.40)	(0.41)	(0.41)	(0.41)	(0.41)
Group-Time-State Diff.		**-0.73**	**-0.01**	**-0.11**	**-0.85**	**0.30**	**0.06**	**-0.40**	**0.48**
		(1.31)	(1.34)	(1.33)	(1.35)	(1.39)	(1.38)	(1.38)	(1.40)

Notes: Means reflect average weeks worked by state group, category of worker (disabled versus nondisabled), and time period. All estimates are weighted using CPS survey weights. Standard errors are in parentheses beneath mean estimates, and the numbers of observations in each state group-time period-category of worker cell are in square brackets below mean estimates. See Tables 1 and 2 and the text for the states in each group.

Table 5: Basic Regression Results

Basic Specification	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98
Coeff. on ADA*DIS	1.23	1.67	0.51	-0.99	-1.92	-1.46	-1.23	-2.67
	(0.63)	(0.78)	(0.51)	(0.52)	(0.49)	(0.61)	(0.70)	(0.58)
	[0.93]	[0.96]	[0.98]	[0.88]	[0.82]	[0.92]	[0.93]	[0.88]
Coeff. on ADA*DIS*LP	-2.14	-2.51	-1.54	-0.08	0.70	0.12	-0.60	0.02
	(0.69)	(0.73)	(0.68)	(0.76)	(0.68)	(0.79)	(0.88)	(0.74)
	[1.07]	[1.04]	[1.10]	[1.04]	[0.98]	[1.05]	[1.07]	[0.99]
Coeff. on ADA*DIS*NP	-2.63	-1.96	-1.12	-0.34	1.57	0.44	-0.56	0.24
	(0.86)	(0.94)	(0.87)	(1.22)	(1.44)	(1.19)	(0.87)	(0.68)
	[1.21]	[1.24]	[1.23]	[1.19]	[1.33]	[1.30]	[1.05]	[1.07]
Coeff. on ADA*DIS*NP – Coeff. on ADA*DIS*LP	-0.49	0.55	0.42	-0.25	0.87	0.32	0.04	0.22
	(0.71)	(0.76)	(0.96)	(1.24)	(1.38)	(1.11)	(0.80)	(0.68)
	[0.96]	[0.97]	[0.98]	[1.00]	[1.17]	[1.07]	[0.76]	[0.82]
Specification with State, Year, and State*Year Fixed Effects	**90-91**	**91-92**	**92-93**	**93-94**	**94-95**	**95-96**	**96-97**	**97-98**
Coeff. on ADA*DIS	1.33	1.72	0.55	-0.96	-1.89	-1.41	-1.19	-2.68
	(0.59)	(0.72)	(0.43)	(0.48)	(0.48)	(0.58)	(0.70)	(0.50)
	[0.77]	[0.82]	[0.80]	[0.69]	[0.67]	[0.77]	[0.79]	[0.74]
Coeff. on ADA*DIS*LP	-2.22	-2.56	-1.54	-0.06	0.76	0.14	-0.61	0.11
	(0.62)	(0.63)	(0.50)	(0.64)	(0.57)	(0.69)	(0.78)	(0.58)
	[0.84]	[0.85]	[0.88]	[0.81]	[0.79]	[0.88]	[0.89]	[0.81]
Coeff. on ADA*DIS*NP	-2.76	-2.03	-1.17	-0.36	1.59	0.42	-0.55	0.27
	(0.66)	(0.82)	(0.79)	(1.18)	(1.49)	(1.07)	(0.78)	(0.52)
	[0.96]	[1.07]	[1.05]	[1.06]	[1.22]	[1.21]	[0.90]	[0.90]
Coeff. on ADA*DIS*NP – Coeff. on ADA*DIS*LP	-0.53	0.53	0.37	-0.30	0.83	0.29	0.06	0.16
	(0.44)	(0.60)	(0.85)	(1.17)	(1.42)	(0.95)	(0.57)	(0.48)
	[0.69]	[0.82]	[0.88]	[0.94]	[1.11]	[1.05]	[0.65]	[0.68]
Specification Omitting State-Law Variables, but Including State, Year, and State*Year Fixed Effects	**90-91**	**91-92**	**92-93**	**93-94**	**94-95**	**95-96**	**96-97**	**97-98**
Coeff. on ADA*DIS	-0.14	0.24	-0.29	-0.94	-1.29	-1.29	-1.65	-2.65
	(0.37)	(0.53)	(0.46)	(0.36)	(0.28)	(0.32)	(0.33)	(0.33)
	[0.39]	[0.48]	[0.47]	[0.37]	[0.34]	[0.36]	[0.38]	[0.36]
No. of Observations	292,562	291,149	286,796	283,860	274,988	265,866	266,478	266,838

Notes: The dependent variable is weeks worked per year. The pre-ADA period is 1988-1989. The post-ADA period is as stated. Robust standard errors clustered on state-disability interactions are in parentheses below coefficient estimates, and robust standard errors clustered on state-disability-year interactions are in square brackets below coefficient estimates. All regressions are OLS regressions, employ CPS survey weights, and include the individual control variables listed in the text plus controls for state unemployment rate (in regressions without state, year, and state*year fixed effects) and the interaction of disability and state unemployment rate. See equation (1) for further details.

Table 6: Robustness Checks

(1) Sample Includes Only Observations from Pre-1980 Enactors	90-91	91-92	92-93
Coeff. on ADA*DIS	2.95	2.65	-0.17
	(0.74)	(1.99)	(1.00)
	[1.29]	[1.75]	[2.17]
Coeff. on ADA*DIS*LP	-3.80	-3.54	-1.07
	(0.85)	(2.02)	(1.12)
	[1.37]	[1.79]	[2.25]
Coeff. on ADA*DIS*NP	-4.38	-2.97	-0.43
	(0.79)	(2.03)	(1.20)
	[1.41]	[1.88]	[2.27]
Coeff. on ADA*DIS*NP – Coeff. on ADA*DIS*LP	-0.58	0.58	0.64
	(0.48)	(0.66)	(0.96)
	[0.70]	[0.86]	[0.97]
No. of Observations	192,885	191,815	188,956

(2) Sample Includes Only Observations from High-Employer-Size-Threshold States	90-91	91-92	92-93
Coeff. on ADA*DIS	0.48	1.14	0.99
	(1.25)	(0.97)	(0.70)
	[0.93]	[0.73]	[0.87]
Coeff. on ADA*DIS*LP	-1.40	-2.47	-1.93
	(1.39)	(1.10)	(1.11)
	[1.16]	[0.99]	[1.16]
Coeff. on ADA*DIS*NP	-1.93	-1.52	-1.62
	(1.30)	(1.07)	(0.98)
	[1.11]	[1.02]	[1.11]
Coeff. on ADA*DIS*NP – Coeff. on ADA*DIS*LP	-0.53	0.95	0.31
	(0.71)	(0.75)	(1.11)
	[0.93]	[1.00]	[1.04]
No. of Observations	93,566	92,864	91,464

(3) Specification with State-Level Disability Benefits Receipt Information	90-91	91-92	92-93
Coeff. on ADA*DIS	1.00	1.28	0.68
	(0.70)	(0.81)	(0.59)
	[0.78]	[0.85]	[0.85]
Coeff. on ADA*DIS*LP	-2.03	-2.41	-1.43
	(0.76)	(0.74)	(0.54)
	[0.88]	[0.90]	[0.91]
Coeff. on ADA*DIS*NP	-2.54	-1.55	-0.01
	(0.75)	(0.81)	(0.79)
	[1.61]	[1.67]	[1.38]
Coeff. on ADA*DIS*NP – Coeff. on ADA*DIS*LP	-0.50	0.86	1.42
	(0.43)	(0.53)	(0.74)
	[1.46]	[1.52]	[1.23]
No. of Observations	292,562	291,149	286,796

(4) Specification with State-Level Disability Benefits Application Information	90-91	91-92	92-93
Coeff. on ADA*DIS	1.45	1.95	1.23
	(0.69)	(0.81)	(0.68)
	[0.79]	[0.86]	[0.88]
Coeff. on ADA*DIS*LP	-1.78	-1.99	-0.92
	(0.76)	(0.74)	(0.62)
	[0.87]	[0.88]	[0.91]
Coeff. on ADA*DIS*NP	-1.82	-0.68	0.93
	(0.81)	(0.79)	(1.01)
	[1.87]	[1.89]	[1.67]
Coeff. on ADA*DIS*NP – Coeff. on ADA*DIS*LP	-0.03	1.31	1.85
	(0.55)	(0.67)	(1.00)
	[1.73]	[1.77]	[1.57]
No. of Observations	292,562	291,149	286,796

Notes: The dependent variable is weeks worked per year. The pre-ADA period is 1988-1989. The post-ADA period is as stated. Robust standard errors clustered on state-disability interactions are in parentheses below coefficient estimates, and robust standard errors clustered on state-disability-year interactions are in square brackets below coefficient estimates. All regressions are OLS regressions, employ CPS survey weights, and include state, year, and state*year fixed effects. Control variables are as stated in Table 5. In the upper panel of the present table, columns (1)-(3) use observations from states in which the state-level pre-ADA disability discrimination regime was in place prior to 1980; columns (4)-(6) use observations from states with ADA-like employer-size thresholds. See Tables 1 and 2 for details on employer-size thresholds; observations from Tennessee and Virginia, whose pre-ADA statutory and judicial law did not specify an employer-size threshold, are not included in the samples used in column (4)-(6). In the lower panel, columns (1)-(3) replace individual receipt of disability benefits with the percent of the state population receiving disability benefits interacted with disability status; columns (4)-(6) replace individual receipt of disability benefits with the percent of the state population applying for disability benefits interacted with disability status. Fixed effects included in these regressions preclude inclusion of the percent of the state population receiving or applying for disability benefits alone.

Figure 1: Percentage of Individuals Reporting Disability By State Group

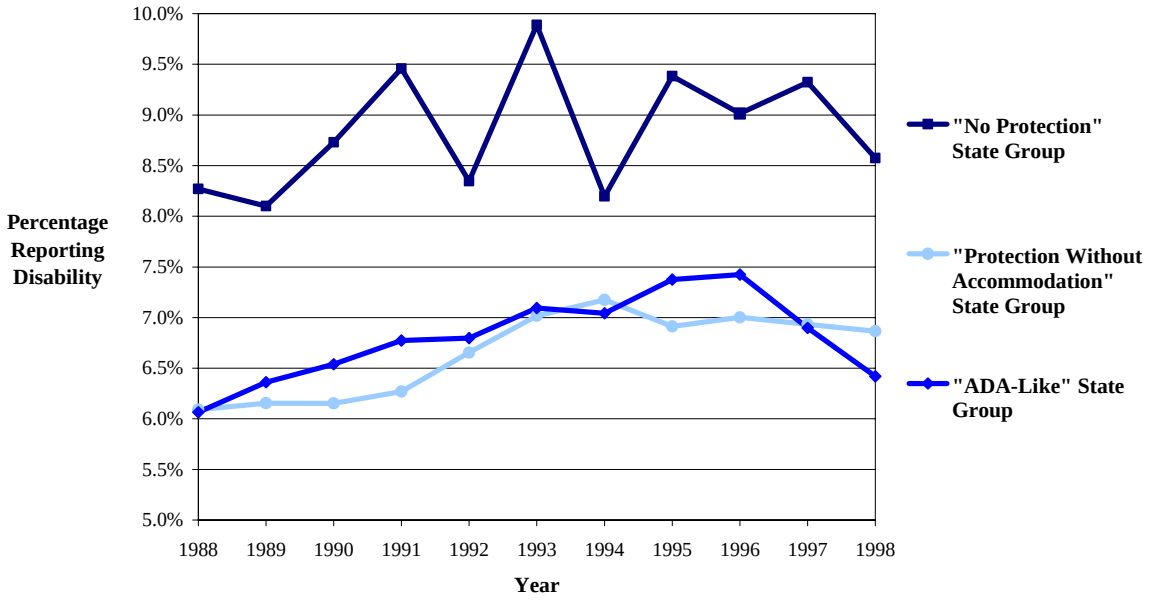
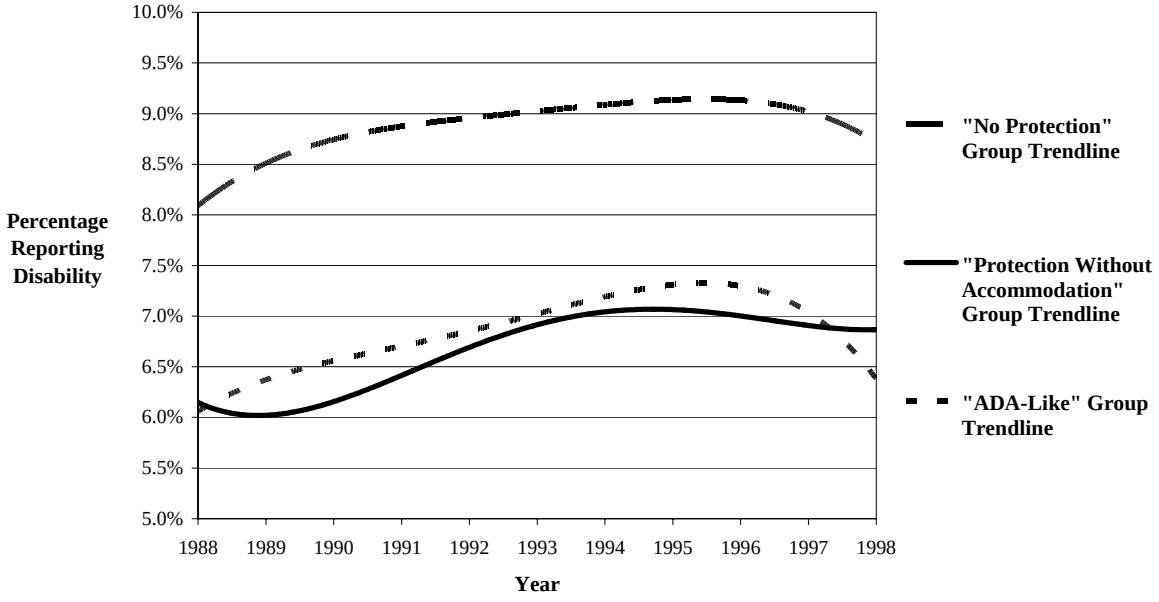


Figure 2: Percentage of Individuals Reporting Disability By State Group – Trendlines



Note: All trendlines are fourth-order polynomials.

Figure 3: "ADA-Like" and "Protection Without Accommodation" State Disabled Employment Trends

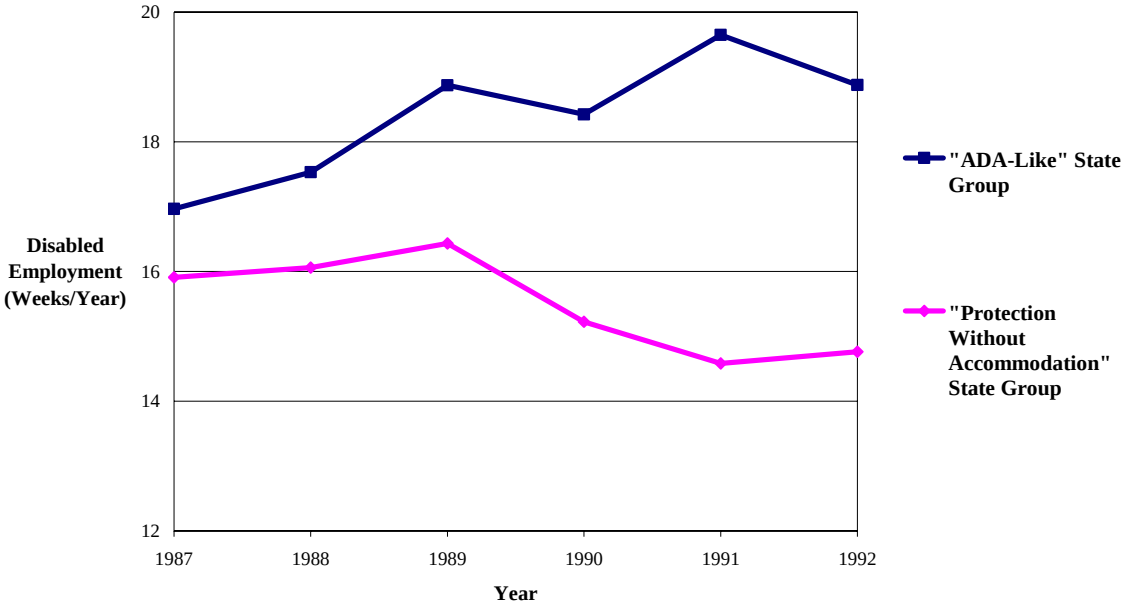
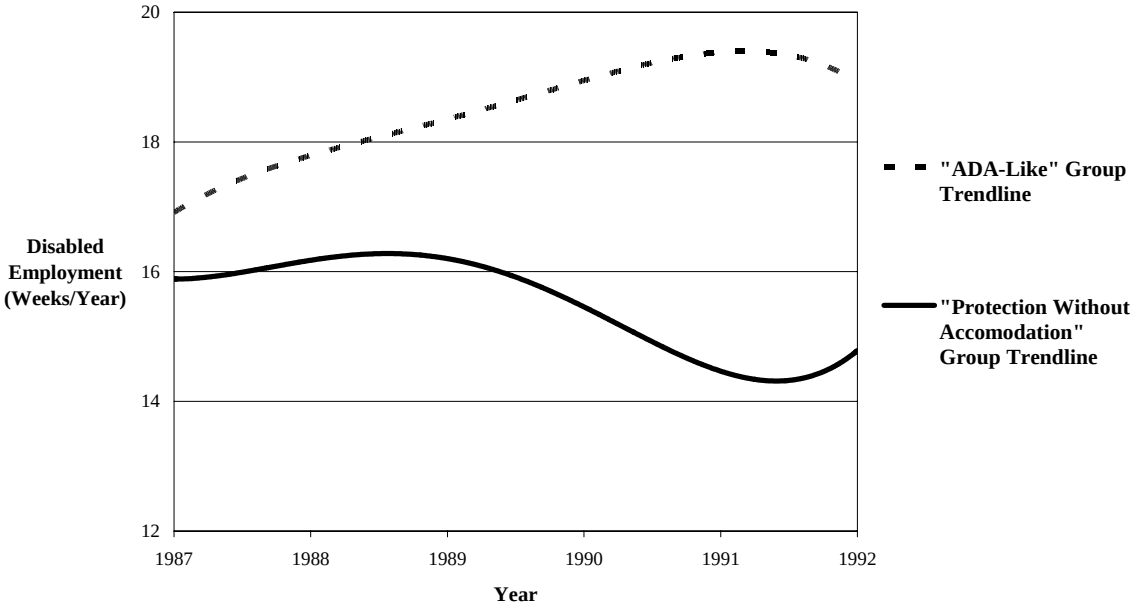


Figure 4: "ADA-Like" and "Protection Without Accommodation" State Disabled Employment Trendlines



Note: All trendlines are fourth-order polynomials.

Table A1: Pre-ADA State Laws Prohibiting Disability Discrimination by Private Employers – Original Statutory Sections and Substantive Pre-ADA Amendments

Protection Without Accommodation States	Original Statutory Section(s)	Substantive Pre-ADA Amendments	
		Date of Amendment(s)	Nature of Amendment(s)
Alaska	18.80.220(1)	1987	Broadened coverage to mental as well as physical disability
California	Lab. 1420(a)	1975	Broadened coverage to "medical conditions" as well as physical disability
Connecticut	31-126(a)	1978; 1979	Broadened coverage to mental retardation (1978) and mental disorders (1979) as well as physical disability
Florida	13-261(1) (later 23.167(1))	n/a	n/a
Hawaii	n/a	1981	Broadened scope of liability
Illinois	38:65-23(1) (later 48-853-3(a))	n/a	n/a
Maryland	49B:19(a)	n/a	n/a
Michigan	n/a	1980	Broadened scope of liability
Missouri	296.020(1)	n/a	n/a
Montana	1974 S.L. ch. 77, sec. 3 (later 64-306(a))	1975	Broadened coverage to mental as well as physical disability and broadened scope of liability
Nevada	n/a	1973; 1981	Added protection for use of guide dogs (1973); broadened coverage to "aural" as well as "physical" and "visual" handicaps (1981)
New Jersey	n/a	1978	Broadened coverage to mental as well as physical disability and broadened scope of liability
Tennessee	n/a	1986; 1987	Broadened scope of liability (1986); corrected omission of private employers from 1986 amendment (1987)
Texas	Art. 4419e(f) (later Hum. Res. Code 121.003(f))	1983	Broadened scope of liability
West Virginia	5-11-9(a)	n/a	n/a

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Table A1 (Continued): Pre-ADA State Laws Prohibiting Disability Discrimination by Private Employers – Original Statutory Sections and Substantive Pre-ADA Amendments

"ADA-Like" States	Original Statutory Section(s)	Substantive Pre-ADA Amendments	
		Date of Amendment(s)	Nature of Amendment(s)
Colorado	24-34-306(1)(a)	n/a	n/a
Iowa	105A.7(1)(a)	n/a	n/a
Massachusetts	149:24K	1983	Broadened scope of liability
Minnesota	n/a	1987; 1989	Altered definition of "undue hardship" (1987); refined definition of reasonable accommodations (1989)
New Mexico	4-33-7(A)	1987	Broadened coverage to "medical conditions" as well as physical and mental disabilities
North Carolina	168-6	1985	Made various revisions to liability provisions
Oregon	n/a	1979	Broadened scope of liability
Rhode Island	28-5-7(A)	1981	Broadened coverage to mental as well as physical disability
Vermont	21:498(a)	n/a	n/a
Virginia	40.1-28.7 (later 51.01-41(A),(C))	n/a	n/a
Wisconsin	111.32(5)(a), 111.36(4) (later 111.325)	1967; 1975; 1981	Rephrased and clarified prohibitions (1967, 1975, 1981)

Notes: The original statutory section often differs from the source reported in Tables 1 and 2 because states frequently renumbered their statutes in this period. The substantive amendments reported in this table are amendments to pre-ADA statutory sections imposing traditional antidiscrimination prohibitions or reasonable accommodations requirements, and do not reflect changes in other statutory sections of states' disability discrimination laws.

Table A2: Effects of Alternative Characterizations of Pre-ADA State Laws Prohibiting Disability Discrimination by Private Employers

State	Legal Description	Effect on Results for Post-ADA Years 90-91, 91-92, and 92-93
California	Prior to 1981, Cal. Govt. § 12994 expressly stated that accommodations were not required. In 1981, the section was amended to provide that an employer shall not be required "to make any accommodation for an employee who has a physical handicap that would produce undue hardship to the employer." There is no pre-ADA caselaw indicating whether the 1981 amendment was meant to impose affirmatively a requirement of reasonable accommodations unless such accommodations would be an undue hardship.	Categorizing California as an "ADA-like" state, rather than a "protection without accommodation" state, does not alter the basic pattern of our results. Our estimates of β_{11} (the effect of imposing a reasonable accommodations requirement) are somewhat smaller in magnitude and slightly less precise. Our estimates of $\beta_{12} - \beta_{11}$ (the effect of imposing a traditional antidiscrimination provision) remain insignificant in all years.
Delaware	Law prohibiting disability discrimination by private employers was not enacted until 1988.	Categorizing Delaware as a "no protection" state, rather than an "ADA-like" state, has virtually no effect on our estimates of β_{11} (the effect of imposing a reasonable accommodations requirement). Our estimates of $\beta_{12} - \beta_{11}$ (the effect of imposing a traditional antidiscrimination provision) remain insignificant in all years.
Idaho	Law prohibiting disability discrimination by private employers was not enacted until 1988, and the statutory language is somewhat ambiguous as to the existence of a reasonable accommodations requirement.	Categorizing Idaho as a "no protection" state or a "protection without accommodation" state, rather than an "ADA-like" state, has virtually no effect on our estimates of β_{11} (the effect of imposing a reasonable accommodations requirement). Our estimates of $\beta_{12} - \beta_{11}$ (the effect of imposing a traditional antidiscrimination provision) remain insignificant in all years.
Iowa	The Iowa Supreme Court adopted a reasonable accommodations requirement in 1987 as a freestanding interpretation of the statutory language, but earlier courts had mentioned and applied administrative regulations requiring reasonable accommodations.	This change cannot affect our results (because the timing of state law adoption does not enter into our categorization of states).
Michigan	Limited accommodation provision, not expressly requiring reasonable accommodations, was adopted in 1976. Administrative decisional law, summarized in Wardlow v. Great Lakes Express Co., 339 N.W.2d 670 (Mich. Ct. App. 1983), adopted a reasonable accommodations requirement, but in 1986 the Michigan Supreme Court, in Carr v. General Motors Corp., 389 N.W.2d 686 (Mich. 1986), adopted a conception of the Michigan statute inconsistent with the administrative decisional law's reasonable accommodations requirement.	Categorizing Michigan as an "ADA-like" state, rather than a "protection without accommodation" state, reduces the absolute magnitude of our estimates of β_{11} (the effect of imposing a reasonable accommodations requirement) by about 10%, while the precision of the estimates generally improves. Our estimates of $\beta_{12} - \beta_{11}$ (the effect of imposing a traditional antidiscrimination provision) remain insignificant in all years.

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Table A2 (continued): Effects of Alternative Characterizations of Pre-ADA State Laws Prohibiting Disability Discrimination by Private Employers

State	Legal Description	Effect on Results for Post-ADA Years 90-91, 91-92, and 92-93
Pennsylvania	Pennsylvania's reasonable accommodations requirement was imposed only by an intermediate court, rather than by the state's highest court.	Categorizing Pennsylvania as a "protection without accommodation" state, rather than an "ADA-like" state, does not alter the basic pattern of our results. Our estimates of β_{11} (the effect of imposing a reasonable accommodations requirement) are somewhat smaller in magnitude and slightly less precise. Our estimates of $\beta_{12} - \beta_{11}$ (the effect of imposing a traditional antidiscrimination provision) remain insignificant in all years.
South Dakota	Limited accommodation provision, not expressly requiring reasonable accommodations, was adopted in 1986.	Categorizing South Dakota as an "ADA-like" state, rather than a "protection without accommodation" state, improves the precision of our estimates of β_{11} (the effect of imposing a reasonable accommodations requirement), with little effect on their magnitudes. Our estimates of $\beta_{12} - \beta_{11}$ (the effect of imposing a traditional antidiscrimination provision) remain insignificant in all years.
Texas	Remedy provisions refer to reasonable accommodations (Civ. Art. 5221k:6.01(d) and 7.01(f)).	Categorizing Texas as an "ADA-like" state, rather than a "protection without accommodation" state, does not alter the basic pattern of our results. Our estimates of β_{11} (the effect of imposing a reasonable accommodations requirement) are somewhat smaller in magnitude and also somewhat less precise. Our estimates of $\beta_{12} - \beta_{11}$ (the effect of imposing a traditional antidiscrimination provision) remain insignificant in all years.
Wisconsin	The Wisconsin legislature adopted a reasonable accommodations requirement in 1981, but in the preceding period some Wisconsin lower courts judicially imposed a reasonable accommodations requirement (e.g., Teggatz v. Labor & Industry Review Comm'n, 1978 WL 3436 (Cir. Ct. Wisc.)), while others did not impose such a requirement (e.g., Samens v. Labor & Industry Review Comm'n, 1981 WL 11474 (Cir. Ct. Wisc.)).	This change cannot affect our results (because the timing of state law adoption does not enter into our categorization of states).

Table A3: Basic Regression Results – Overall State-Group Effects

Specification with ADA*DIS*AD	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98
Coeff. on ADA*DIS*LP	-0.91	-0.84	-1.03	-1.08	-1.21	-1.34	-1.84	-2.64
	(0.41)	(0.55)	(0.65)	(0.60)	(0.46)	(0.51)	(0.53)	(0.51)
	[0.57]	[0.57]	[0.63]	[0.60]	[0.54]	[0.53]	[0.56]	[0.56]
Coeff. on ADA*DIS*NP	-1.40	-0.29	-0.61	-1.33	-0.34	-1.02	-1.80	-2.42
	(0.58)	(0.57)	(0.70)	(1.08)	(1.34)	(1.02)	(0.61)	(0.59)
	[0.77]	[0.80]	[0.74]	[0.79]	[1.05]	[0.96]	[0.62]	[0.75]
Coeff. on ADA*DIS*AD	1.23	1.67	0.51	-0.99	-1.92	-1.46	-1.23	-2.67
	(0.63)	(0.78)	(0.51)	(0.52)	(0.49)	(0.61)	(0.70)	(0.58)
	[0.93]	[0.96]	[0.98]	[0.88]	[0.82]	[0.92]	[0.93]	[0.88]
Specification with ADA*DIS*AD and State, Year, and State*Year Fixed Effects	**90-91**	**91-92**	**92-93**	**93-94**	**94-95**	**95-96**	**96-97**	**97-98**
Coeff. on ADA*DIS*LP	-0.90	-0.84	-0.99	-1.02	-1.13	-1.27	-1.79	-2.58
	(0.33)	(0.44)	(0.53)	(0.47)	(0.32)	(0.39)	(0.37)	(0.39)
	[0.39]	[0.46]	[0.54]	[0.47]	[0.41]	[0.42]	[0.44]	[0.40]
Coeff. on ADA*DIS*NP	-1.43	-0.31	-0.63	-1.32	-0.30	-0.99	-1.74	-2.41
	(0.29)	(0.44)	(0.65)	(1.07)	(1.40)	(0.89)	(0.46)	(0.44)
	[0.57]	[0.69]	[0.69]	[0.80]	[1.02]	[0.96]	[0.54]	[0.63]
Coeff. on ADA*DIS*AD	1.32	1.72	0.55	-0.96	-1.89	-1.41	-1.19	-2.68
	(0.59)	(0.72)	(0.43)	(0.48)	(0.48)	(0.58)	(0.70)	(0.50)
	[0.77]	[0.82]	[0.80]	[0.69]	[0.67]	[0.77]	[0.79]	[0.74]
No. of Observations	292,562	291,149	286,796	283,860	274,988	265,866	266,478	266,838

Notes: Results duplicate the first two panels of Table 5 except that state-group effects are overall effects for each state group rather than effects in the "protection without accommodation" and "no protection" groups relative to "ADA-like" states. ADA*DIS*AD replaces ADA*DIS in all regressions in this table. The dependent variable is weeks worked per year. The pre-ADA period is 1988-1989. The post-ADA period is as stated. Robust standard errors clustered on state-disability interactions are in parentheses below coefficient estimates, and robust standard errors clustered on state-disability-year interactions are in square brackets below coefficient estimates. All regressions are OLS regressions and employ CPS survey weights. Control variables are as stated in Table 5.

Table A4: Alternative Fixed Effects Specifications

Specification with State, State*Year, and State*Disabled Fixed Effects	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98
Coeff. on ADA*DIS	1.07	1.26	-0.06	-1.13	-1.84	-1.32	-1.02	-2.32
	(0.55)	(0.66)	(0.42)	(0.52)	(0.51)	(0.60)	(0.72)	(0.48)
	[0.46]	[0.51]	[0.59]	[0.50]	[0.51]	[0.56]	[0.54]	[0.50]
Coeff. on ADA*DIS*LP	-2.10	-2.53	-1.74	-0.21	0.63	0.05	-0.72	0.00
	(0.63)	(0.64)	(0.51)	(0.62)	(0.56)	(0.69)	(0.79)	(0.58)
	[0.53]	[0.55]	[0.67]	[0.60]	[0.59]	[0.63]	[0.62]	[0.55]
Coeff. on ADA*DIS*NP	-2.48	-1.65	-0.50	0.03	1.86	0.75	0.12	0.83
	(0.63)	(0.79)	(0.82)	(1.20)	(1.44)	(1.08)	(0.83)	(0.64)
	[0.72]	[0.80]	[0.89]	[0.90]	[0.94]	[1.01]	[0.75]	[0.77]
Coeff. on ADA*DIS*NP – Coeff. on ADA*DIS*LP	-0.38	0.89	1.24	0.24	1.23	0.70	0.84	0.83
	(0.44)	(0.60)	(0.88)	(1.14)	(1.32)	(0.88)	(0.53)	(0.47)
	[0.61]	[0.72]	[0.85]	[0.84]	[0.85]	[0.89]	[0.61]	[0.66]
Specification with State, Year, State*Year, and Year*Disabled Fixed Effects	**90-91**	**91-92**	**92-93**	**93-94**	**94-95**	**95-96**	**96-97**	**97-98**
Coeff. on ADA*DIS*LP	-2.69	-3.04	-1.98	-0.53	0.30	-0.35	-1.00	-0.25
	(0.81)	(0.81)	(0.64)	(0.64)	(0.55)	(0.78)	(0.89)	(0.70)
	[0.62]	[0.64]	[0.68]	[0.61]	[0.56]	[0.68]	[0.69]	[0.58]
Coeff. on ADA*DIS*NP	-4.66	-3.99	-3.12	-2.27	-0.18	-1.42	-2.17	-1.02
	(0.75)	(0.87)	(0.69)	(1.04)	(1.38)	(1.04)	(0.81)	(0.61)
	[0.75]	[0.84]	[0.75]	[0.90]	[1.09]	[1.10]	[0.77]	[0.66]
Coeff. on ADA*DIS*NP – Coeff. on ADA*DIS*LP	-1.96	-0.94	-1.14	-1.75	-0.48	-1.07	-1.17	-0.76
	(0.47)	(0.57)	(0.56)	(0.99)	(1.33)	(0.89)	(0.36)	(0.32)
	[0.57]	[0.67]	[0.61]	[0.85]	[1.04]	[0.99]	[0.55]	[0.48]
No. of Observations	292,562	291,149	286,796	283,860	274,988	265,866	266,478	266,838

Notes: The dependent variable is weeks worked per year. The pre-ADA period is 1988-1989. The post-ADA period is as stated. Robust standard errors clustered on state-disability interactions are in parentheses below coefficient estimates, and robust standard errors clustered on state-disability-year interactions are in square brackets below coefficient estimates. All regressions are OLS regressions, employ CPS survey weights, and include the fixed effects specified in the table. Control variables are stated in Table 5. In the upper panel of this table, the fixed effects preclude the estimation of the coefficients on ADA, LP, NP, ADA*LP, ADA*NP, DIS*LP, and DIS*NP from the basic specification in equation (1). In the lower panel, the fixed effects preclude the estimation of the coefficients on ADA, LP, NP, ADA*LP, ADA*NP, DIS*LP, DIS*NP, and ADA*DIS from this specification.

Table A5: Additional Robustness Checks

(1) Sample Includes Only Observations from Southern States	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98
Coeff. on ADA*DIS	0.32	0.93	0.06	-0.81	-1.56	-0.74	-1.05	-4.08
	(1.02)	(0.69)	(0.57)	(0.56)	(0.49)	(0.83)	(0.98)	(1.05)
	[1.49]	[1.06]	[0.29]	[0.23]	[0.64]	[0.28]	[1.10]	[1.36]
Coeff. on ADA*DIS*LP	-1.33	-1.75	-1.78	-0.85	0.59	0.04	0.86	3.50
	(1.26)	(1.06)	(1.17)	(1.07)	(0.99)	(1.42)	(1.52)	(1.46)
	[1.59]	[1.18]	[0.93]	[1.29]	[0.73]	[0.85]	[1.35]	[1.49]
Coeff. on ADA*DIS*NP	-1.68	-1.21	-0.69	-0.43	1.69	-0.05	-0.79	1.70
	(1.18)	(0.99)	(0.90)	(0.97)	(1.03)	(1.28)	(1.01)	(1.15)
	[1.53)	[1.17]	[0.76]	[1.07]	[1.43]	[0.83]	[1.05]	[1.33]
Coeff. on ADA*DIS*NP – Coeff. on ADA*DIS*LP	-0.35	0.54	1.09	0.42	1.10	-0.10	-1.64	-1.81
	(0.94)	(1.05)	(1.22)	(1.21)	(1.30)	(1.47)	(1.29)	(1.21)
	[0.58]	[0.65]	[1.12]	[1.64]	[1.34]	[1.13]	[0.84]	[0.72]
No. of Observations	41,793	41,786	41,157	40,813	39,169	37,612	37,832	37,593

(2) Specification Omitting State-Level Unemployment Variables	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98
Coeff. on ADA*DIS	1.34	1.72	0.57	-0.98	-1.91	-1.41	-1.14	-2.44
	(0.54)	(0.57)	(0.31)	(0.46)	(0.49)	(0.59)	(0.70)	(0.44)
	[0.75]	[0.76]	[0.76]	[0.68]	[0.68]	[0.77]	[0.78]	[0.72]
Coeff. on ADA*DIS*LP	-2.22	-2.56	-1.53	-0.08	0.73	0.13	-0.63	0.05
	(0.63)	(0.64)	(0.51)	(0.64)	(0.58)	(0.70)	(0.77)	(0.54)
	[0.85]	[0.85]	[0.88]	[0.81]	[0.79]	[0.87]	[0.89]	[0.81]
Coeff. on ADA*DIS*NP	-2.77	-2.03	-1.20	-0.30	1.76	0.55	-0.34	0.65
	(0.61)	(0.72)	(0.72)	(1.16)	(1.45)	(1.00)	(0.73)	(0.48)
	[0.95]	[1.03]	[1.03]	[1.05]	[1.20]	[1.19]	[0.89]	[0.90]
Coeff. on ADA*DIS*NP – Coeff. on ADA*DIS*LP	-0.55	-0.53	0.34	-0.22	1.02	0.42	0.29	0.60
	(0.43)	(0.53)	(0.76)	(1.15)	(1.40)	(0.90)	(0.42)	(0.38)
	[0.68]	[0.78]	[0.81]	[0.91]	[1.07]	[1.00]	[0.60]	[0.66]
No. of Observations	292,562	291,149	286,796	283,860	274,988	265,866	266,478	266,838

Notes: The dependent variable is weeks worked per year. The pre-ADA period is 1988-1989. The post-ADA period is as stated. Robust standard errors clustered on state-disability interactions are in parentheses below coefficient estimates, and robust standard errors clustered on state-disability-year interactions are in square brackets below coefficient estimates. All regressions are OLS regressions, employ CPS survey weights, and include state, year, and state*year fixed effects. Control variables are as stated in Table 5 minus state unemployment rate and the interaction of disability and state unemployment rate in the lower panel. The southern states used in the upper panel are as stated in the text.

Table A6: Fixed Effects Specifications with Time-Varying Covariates

Basic Specification	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98
Coeff. on ADA*DIS	0.97	2.16	1.90	0.14	-0.51	-0.42	0.98	-0.08
	(1.97)	(2.14)	(1.81)	(1.99)	(1.78)	(1.68)	(1.91)	(1.97)
	[2.45]	[2.32]	[2.19]	[2.15]	[1.91]	[1.90]	[2.03]	[2.02]
Coeff. on ADA*DIS*LP	-2.31	-2.74	-1.71	-0.27	0.47	-0.19	-0.53	0.34
	(0.63)	(0.70)	(0.69)	(0.80)	(0.72)	(0.80)	(0.93)	(0.76)
	[0.95]	[0.96]	[1.05]	[1.02]	[0.92]	[1.01]	[1.03]	[0.94]
Coeff. on ADA*DIS*NP	-3.66	-3.39	-2.68	-1.86	0.14	-0.59	-1.14	-0.09
	(0.86)	(0.91)	(0.92)	(1.33)	(1.56)	(1.27)	(0.95)	(0.76)
	[1.21]	[1.20]	[1.15]	[1.18]	[1.37]	[1.35]	[1.12]	[1.06]
Coeff. on ADA*DIS*NP – Coeff. on ADA*DIS*LP	-1.35	-0.65	-0.97	-1.59	-0.33	0.40	-0.61	-0.43
	(0.74)	(0.72)	(0.93)	(1.27)	(1.40)	(1.09)	(0.66)	(0.61)
	[0.95]	[0.90]	[0.79]	[0.90]	[1.16]	[1.07]	[0.73]	[0.72]
Specification with State, Year, and State*Year Fixed Effects	**90-91**	**91-92**	**92-93**	**93-94**	**94-95**	**95-96**	**96-97**	**97-98**
Coeff. on ADA*DIS	-0.58	-0.01	-0.63	-1.96	-2.27	-2.53	-0.74	-0.79
	(1.76)	(1.91)	(1.59)	(1.60)	(1.39)	(1.50)	(1.76)	(1.70)
	[2.14]	[2.03]	[1.91]	[1.75]	[1.58]	[1.68]	[1.81]	[1.76]
Coeff. on ADA*DIS*LP	-2.39	-2.74	-1.67	-0.18	0.69	-0.02	-0.53	0.34
	(0.61)	(0.63)	(0.54)	(0.70)	(0.59)	(0.70)	(0.83)	(0.62)
	[0.83]	[0.84]	[0.89]	[0.84]	[0.79]	[0.88]	[0.90]	[0.81]
Coeff. on ADA*DIS*NP	-3.45	-2.62	-1.65	-0.76	1.41	0.15	-0.52	0.81
	(0.70)	(0.80)	(0.80)	(1.25)	(1.55)	(1.11)	(0.83)	(0.66)
	[0.99]	[1.05]	[0.99]	[1.10]	[1.27]	[1.27]	[1.01]	[0.92]
Coeff. on ADA*DIS*NP – Coeff. on ADA*DIS*LP	-1.06	0.12	0.03	-0.58	0.72	0.17	0.01	0.47
	(0.49)	(0.59)	(0.81)	(1.19)	(1.45)	(0.98)	(0.52)	(0.52)
	[0.76]	[0.82]	[0.76]	[0.95]	[1.14]	[1.09]	[0.73]	[0.66]
No. of Observations	292,562	291,149	286,796	283,860	274,988	265,866	266,478	266,838

Notes: The dependent variable is weeks worked per year. The pre-ADA period is 1988-1989. The post-ADA period is as stated. Robust standard errors clustered on state-disability interactions are in parentheses below coefficient estimates, and robust standard errors clustered on state-disability-year interactions are in square brackets below coefficient estimates. All regressions are OLS regressions, employ CPS survey weights, and include the fixed effects specified in the table. Control variables are stated in Table 5, but in each panel control variables are free to vary for each included year.