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THE DISABILITY EMPLOYMENT PUZZLE: A FIELD EXPERIMENT ON EMPLOYER HIRING BEHAVIOR

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ABSTRACT

People with disabilities have low employment and wage levels, and some studies suggest employer discrimination is a contributing factor. Following the method of Bertrand and Mullainathan (2003), new evidence is presented from a field experiment that sent applications in response to 6,016 advertised accounting positions from well-qualified fictional applicants, with one-third of cover letters disclosing that the applicant has a spinal cord injury, one-third disclosing the presence of Asperger's Syndrome, and one-third not mentioning disability. These specific disabilities were chosen because they would not be expected to limit productivity in accounting, helping rule out productivity-based explanations for any differences in employer responses. Half of the resumes portrayed a novice accountant, and half portrayed an experienced one. The fictional applicants with disabilities received 26% fewer expressions of employer interest than those without disabilities, with little difference between the two types of disability. The disability gap was concentrated among more experienced applicants, and among private companies with fewer than 15 employees that are not covered by the ADA, although comparable state statutes cover about half of them. Comparisons above and below disability law coverage thresholds point to a possible positive effect of the ADA on employer responses to applicants with disabilities, but no clear effects of state laws. The overall pattern of findings is consistent with the idea that disability discrimination continues to impede employment prospects of people with disabilities, and more attention needs to be paid to employer behavior and the demand side of the labor market for people with disabilities.

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Introduction

People with disabilities continue to experience low employment rates 25 years after the Americans with Disabilities Act (ADA) was passed. This disparity presents a puzzle and challenge to scholars and policy-makers. Among working-age people with disabilities, only 34% were employed in 2013, compared to 74% of those without disabilities (Houtenville et al. 2014). The employment gap has not narrowed since the ADA was passed in 1990 (Stapleton and Burkhauser 2003). Among labor force participants, the unemployment rate of people with disabilities (12.5% in 2014) is twice that of people without disabilities (5.9%), indicating that their low employment is not simply due to lack of interest in finding a job (U.S. Bureau of Labor Statistics 2015). In addition, a wide range of studies find that employed people with disabilities receive lower pay levels (Baldwin & Johnson, 2006) and face a variety of disparities in job training, security, and other important employment outcomes (reviewed in Schur et al. 2013: 64-72).

Non-discriminatory factors may contribute to these disparities, including lower education and skill levels that would lead to lower market wages for people with disabilities, along with work disincentives from disability income and higher employment-related costs (e.g., for transportation) that lead to higher reservation wages and lower employment levels. Employer discrimination may also play a role, as suggested by statistical evidence that pay rates are lower among people with more stigmatized disabilities (Baldwin and Johnson 2006), psychological experiments on the attitudes of employers and co-workers (Run Ren, Paetzold and Colella 2008), and survey evidence from employers (Domzal et al. 2008, Dixon et al 2003, Bruyere 2000). Non-experimental field evidence, however, is subject to selection and other biases, and the psychological laboratory experiments may not generalize to real-world settings.

This study presents the first field experiment on disability and hiring in the United States, eliminating selection biases while generating evidence in a real-world setting. This study fits into the growing literature on field experiments in economics (Harrison and List 2004, Levitt and List 2009). Our design is similar to that used by Bertrand and Mullainathan (2003) in their study of the effects of race and gender differences. This experimental design helps eliminate not only selection biases but also other non-discriminatory factors that may lead to differences in outcomes between people with and without disabilities (e.g., job mismatch). In this experiment, 6,016 job applications were submitted to advertised openings for accounting positions using fictional resumes and cover letters, split evenly among applications that did not mention disability, ones that disclosed the applicant has a spinal cord injury, and ones that disclosed the applicant has Asperger's Syndrome. These disabilities were chosen because they would not be expected to limit productivity in an accounting position (and in fact Asperger's may sometimes help enhance productivity in occupations like accounting, as suggested by Cowen, 2011). The resumes were designed to show that applicants were highly qualified, and were randomly split between those representing novice applicants (just out of college) and experienced applicants (with CPA certification and 6 years of work experience).

To preview the key findings, job applicants with disabilities received fewer expressions of employer interest than did applicants without disabilities, with particularly low interest in the disability applications where the applicant was experienced (rather than a novice) and the employer was small (fewer than 15 employees). The gaps did not vary by type of disability. Comparisons by firm size within and across states suggest that the ADA may have a positive effect on employer responses, but do not paint a clear picture regarding the effects of state disability discrimination laws.

After a review of the literature, the methodology and data are presented in section 3, followed by the results in section 4. Section 5 contains a discussion of the results and limitations of the study, and conclusions are presented in section 6.

Literature Review

All data sources show that people with disabilities have low employment rates both in the United States and internationally (e.g., Stapleton and Burkhauser 2003, OECD 2010, Kaye 2010, Houtenville 2013, Schur et al. 2013). This is a major contributor to their low income levels and high poverty rates relative to people without disabilities (OECD 2010, WHO/World Bank 2011).

From an economic perspective, low employment can be viewed as the result of both supply-side and demand-side factors in the labor market. On the supply side, reservation wages may be high among people with disabilities due to availability of disability income. A number of studies have shown that the work disincentives associated with disability income affect the employment decisions of many people with disabilities, helping to account for their stagnant employment over the past three decades (e.g., Mashaw et al. 1996, Bound and Burkhauser 1999, Chen and der Klaauw 2006, French and Song 2009, Maestas, Mullen and Strand 2013). Employment rates remain low, however, among people with disabilities who do not receive disability income.[1] Reservation wages are also high for some people with disabilities due to extra costs of working, such as the expense of modified transportation or adaptive technologies needed for employment (Berkowitz et al. 1998), and difficulties with accessible public transportation. Reservation wages may also be increased by therapy schedules or other medical concerns that raise the time and energy costs of employment, particularly for standard work schedules (Schur 2003).

[1] Analysis of the 2013 American Community Survey shows that among working-age people who did not receive any disability income in the past 12 months, 48.0% of people with disabilities were employed compared to 76.6% of people without disabilities (calculations available on request).

On the demand side, market wages may be lower for people with disabilities in part because they tend to have lower levels of education (Schur et al. 2013). Their wages remain lower after controlling for education, however, which may be due to otherwise-unobserved limitations in skills and abilities. A need for accommodations may cause some employers to offer lower wages to people with disabilities to offset accommodation costs (Gunderson and Hyatt 1996), although this is prohibited by the ADA. Because the ADA requires employers to absorb the costs of reasonable accommodations, some studies have blamed the ADA's accommodations mandate for a decline in employment of people with disabilities at the time the law was enacted or took effect (Acemoglu and Angrist 2001, DeLeire 2000). Subsequent studies have found no decline when other measures and techniques were used (Beegle and Stock 2003, Houtenville and Burkhauser 2004, Hotchkiss 2003, 2004, Kruse and Schur 2003, Donahue et al. 2011) and that any ADA-related decline in employment was temporary (Jolls and Prescott 2004).[2] A recent study of state disability discrimination laws found that they do not appear to decrease the hiring of disabled older workers or of non-disabled older workers who may be likely to develop disabilities (Neumark, Song, and Button 2015). There are more positive results from a closer look at one state—California—that expanded state law coverage through a broader definition of disability in 2001; this study finds that employment improved for people with disabilities in California relative to the trend in other states following the policy change (Button 2015).

[2] While a majority of employers report that not knowing the cost of accommodations is a challenge in hiring people with disabilities (Domzal et al. 2008), most accommodations cost less than $500 while many do not have a monetary cost (Dixon et al. 2003, Schartz et al. 2006, Solovieva et al. 2011). Research also finds that employer-reported benefits of accommodations (e.g., improved employee retention, productivity, and morale) generally outweigh the costs (Schartz et al. 2006, Solovieva et al. 2011), and accommodations tend to have positive effects on co-worker attitudes toward the job and company (Schur et al. 2014). Also, accommodations increase expected job tenure and reduce the speed of application for SSDI following the onset of a work-limiting disability (Burkhauser et al. 1995, Burkhauser 1999).

Employer discrimination is another important potential demand-side factor. Becker's model of taste-based discrimination may apply given the well-documented history of stigma and prejudice against people with disabilities (see overviews in Yuker 1988, Nowicki and Sandiesen 2002, Muzzatti 2008, Scior 2011, Thompson et al. 2011, Westerholm et al. 2006a, 2006b). Some support for this model comes from studies finding lower wages for people who have disabilities with lower social acceptability rankings after controlling for productive characteristics (Baldwin and Johnson 2006). There is also support from psychological studies showing that stereotypical attitudes of supervisors and co-workers can affect the workplace experiences of employees with disabilities (Stone and Colella 1996, Colella 2001, Colella et al. 1998, Marti and Blanck 2000, Run Ren et al. 2008). For example, subjects had more negative views about the future employment prospects and job growth of individuals with disabilities (Colella et al. 1998), and a meta-analysis of experiments revealed negative effects of disability on performance expectations and hiring decisions (Run Ren et al. 2008).

The statistical discrimination model may also apply to people with disabilities: employers may believe, rightly or wrongly, that people with disabilities are less productive on average and make individual employment decisions based on this belief. The uncertainty that many employers express about the future performance of people with disabilities and potential costs of accommodations make statistical discrimination more likely. In addition, the employer power or monopsony model of discrimination may apply when there is limited job mobility for people with disabilities: they may, for example, face higher costs in switching jobs due to transportation problems or difficulties attaining accommodations from a new employer, which would allow their current employers to underpay them without substantial risk of turnover. The

employer power model is more applicable to explaining wage disparities than employment level disparities.

While there is no direct evidence on the statistical and employer power models of discrimination in the context of disability, studies conducted in France and Belgium provide experimental evidence that supports either the prejudice or statistical discrimination models. In the French study a representative sample of employers were sent job applications that varied by whether the (fictitious) applicant reported having paraplegia, and was highly or modestly qualified for the position (Ravaud et al. 1992). The positions were all compatible with having paraplegia. The highly qualified, able-bodied applicants were 1.78 times more likely than those with paraplegia to receive positive responses from the employers, while the equivalent ratio was 3.2 among moderately-qualified applicants. In the study in Belgium, two applications with fictitious resumes were sent to each of 768 positions in which a disability should not lower productivity, with one application not indicating a disability and the other indicating either blindness, deafness, or autism (Baert 2014). Consistent with the earlier French evidence, the employer response rate was 47% lower for applicants with disabilities. While these articles provide valuable evidence on employer reluctance to hire people with disabilities, they did not examine the effects of anti-discrimination laws on hiring decisions as done in this study.

Recent evidence analyzing wage differences controlling for job demands also points to the potential role of discrimination. An examination of job demands interacting with sensory limitations indicates that about one-third of the disability pay gap among males, and one-tenth of the disability pay gap among females, is "potentially attributable to discrimination" (Baldwin and Choe 2014a). In another study, a selection-corrected decomposition of the pay gap associated with long-lasting physical disabilities found that about 10% of the observed pay gap

for men, and 20% of the pay gap for women, is potentially attributable to discrimination (Baldwin and Choe 2014b).

The statistical evidence on discrimination is complemented by survey evidence from employers finding that one-third (32%) reported that "discomfort and unfamiliarity" are challenges in hiring people with disabilities (Domzal et al. 2008: 13); almost half (47%) said that co-worker attitudes are a reason employers do not hire people with disabilities (Kaye et al. 2011); one-fifth (20%) said that the greatest barrier to people with disabilities is discrimination, prejudice, or employer reluctance to hire them (Dixon et al 2003); and about one-fifth (22%) said that attitudes and stereotypes are a barrier to employment of people with disabilities in their own firms (Bruyere 2000). These figures are likely understated due to "social desirability" bias and the discrepancy often found between the attitudes employers express about people with disabilities on surveys and their actual hiring practices (Wilgosh and Skaret 1987). Interviews with corporate executives also found that "most employers hold stereotypical beliefs not consistent with research evidence" (Lengnick-Hall et al. 2008: 55).

Apart from direct discrimination, people with disabilities may face indirect discrimination through inhospitable corporate cultures. The policies, procedures, and workplace norms in a company may be built on assumptions about the "normal" employee (Robert and Harlan 2006, Schur et al. 2005). A company with a bureaucratic culture, for instance, may be less welcoming to people with disabilities by having strict regulations and procedures that can pit the fairness of treatment for all employees against personalized consideration for employees with disabilities and others with individualized needs (Stone and Colella 1996). In such an environment, accommodations for employees with disabilities are more likely to be seen as "special treatment" that may generate co-worker jealousy and resentment. Support for the

importance of corporate culture comes from a study of 30,000 workers that found "workers with disabilities fare better in companies viewed as fair and responsive to the needs of all employees, in part because workplace accommodations are less likely to be viewed as special treatment, while employees with disabilities are likely to fare worse in unresponsive and more rigid organizations" (Schur et al. 2009).

Employment and earnings gaps may be reduced by higher levels of education and training. One study found the wage returns to education were larger for males who experienced disability onset after reaching adulthood than for men without disabilities, although a pay gap remained between college-educated men with and without disabilities (Hollenbeck and Kimmel 2008). Another study found that a college degree was associated with faster earnings recovery following onset of a spinal cord injury (Krueger and Kruse 1995). These results suggest that higher levels of education and qualifications may help overcome skill deficits associated with disability and provide signals that applicants are well qualified, reducing employer reluctance to hire people with disabilities.

In sum, there are several mechanisms through which employer attitudes can affect the hiring and workplace experiences of people with disabilities. While some studies suggest that discrimination may play a role, little of the evidence is based on field experiments that control for potential selection biases reflecting unobservable differences. It is the purpose of this study to produce experimental evidence that provides a stronger test of employer behavior in employment decisions.

Method

This study is based on evaluating employer responses to fictional job applicants for actual job openings, using methods similar to those of Bertrand and Mullainathan (2003).[3] While they tested for race discrimination by manipulating the names at the top of otherwise-identical resumes, this study tests for disability discrimination by manipulating information on disability in the cover letter. Another difference is that their fictitious resumes were sent in response to job openings in a broad range of industries, while our resumes were designed for, and sent in response to, job openings for accounting positions. Applications were restricted to accounting positions in order to ensure that the two disabilities being examined—spinal cord injury (SCI) and Asperger's Syndrome—would not inherently limit productivity in the applied-for position.

An SCI results from damage to spinal cord nerves that impairs functioning and sensation below the level of the injury. The injury may be in the back, resulting in paraplegia that restricts lower body use, or in the neck, resulting in quadriplegia that may also restrict use of hands and arms. Almost all people with SCI use a wheelchair (DeVivo et al. 1995). The employment rate falls sharply among people who experience an SCI, and earnings and weekly hours are generally lower among those who have post-injury employment (DeVivo et al. 1995, Krueger and Kruse 1995, Berkowitz et al. 1998). Their employment rate of 27-30% is close to that of other people with severe disabilities, and lower than that of all people with disabilities (Krueger and Kruse 1995, Berkowitz et al. 1998, McNeil 2001: 15). A key factor for the purpose of this study is that an SCI does not limit productivity in all jobs, given that employed computer users with SCI's

[3] All study procedures were approved in advance by the Rutgers IRB, protocol #E13-606. The potential value of this research for identifying discrimination and contributing to scholarly and policy debates about the inequities and inefficiencies of discrimination—along with the case that this is the only way to identify certain types of discrimination—was judged to outweigh the costs of employers processing fictitious resumes.

have similar hourly and weekly earnings as computer users without SCI's (Krueger and Kruse 1995).

Asperger's Syndrome falls within the Autism Spectrum Disorder (ASD) and is defined as an impairment in social interaction (Gillberg, 1991). According to the Diagnostic and Statistical Manual of Mental Disorders (fifth edition) (DSM-V), Asperger's can impair social, professional, and other leisure activities (APA, 2012). Individuals with Asperger's disorder may have difficulties in expressing compassion and social and emotional reciprocity (Mawhood and Howlin 1999). A review of six studies found that the proportion employed among "more able adults within the autism spectrum" ranged from 5% to 44% (Howlin 2000). Studies also find that people on the autism spectrum are generally better than others at visual-attentional tasks that require focusing (Blaser et al. 2014, Milne et al. 2013, Kaldy et al. 2013), and some possess heightened abilities in mathematics (Howlin and Mawhood 1996). Being more focused with less susceptibility to distraction, and having better math skills, may give people with autism a productivity advantage in some jobs and work settings (Cowen 2011, Cook 2012). This may include professions where they mostly work alone, such as accounting. The Bureau of Labor Statistics O*Net data shows that three of the four core tasks for accountants are technical ones involving preparing and analyzing accounting records and systems, while the fourth ("report to management regarding the finances of establishments") may involve face-to-face social interaction but may also be done in writing in many cases.[4] The six most important work

[4] The other three core tasks are: 1) Prepare, examine, or analyze accounting records, financial statements, or other financial reports to assess accuracy, completeness, and conformance to reporting and procedural standards; 2) Establish tables of accounts and assign entries to proper accounts, and 3) Develop, implement, modify, and document recordkeeping and accounting systems, making use of current computer technology (http://www.onetonline.org/link/details/13-2011.01, accessed 8-20-15).

activities are technical ones.[5] Some level of social interaction is of course necessary ("communicating with supervisors, peers, or subordinates" is the seventh most important work activity), but the bulk of accountants' work can be done independently, and the social interaction may primarily involve exchanging technical information where not much social and emotional reciprocity is required. In short, accounting may be particularly suitable for many people with Asperger's. As will be seen, the results differ little between applicants with SCI—which does not impair either technical or social interaction skills—and those with Asperger's. This points to employers' general reluctance to hire people with disabilities rather than specific concerns over how potential social interaction deficits will affect the productivity of people with Asperger's.

People with SCI or Asperger's are clearly covered by the ADA.[6] State laws generally mirror the ADA or apply broader standards, and a review of the state disability definitions indicates that all of the state laws (summarized in Table 7 and Neumark, Song, and Button 2015) prohibit discrimination against people with SCI or Asperger's.

To test the effect of qualifications on the relative demand for applicants with disabilities, this study constructed two resume templates—one for a novice applicant just out of college, and the other for an experienced applicant who is a Certified Public Accountant (CPA) with six years of experience and an exemplary record following college graduation. We chose to use both novice and experienced applicants to examine whether greater experience and credentials help

[5] The six activities are: interacting with computers; processing information; getting information; evaluating information to determine compliance with standards; organizing, planning, and prioritizing work; and analyzing data or information (http://www.onetonline.org/link/details/13-2011.01, accessed 8-20-15).

[6] This is particularly clear given the more stringent standards of the ADA Amendments Act of 2008, which includes a "major bodily function" as a "major life activity" for purposes of determining whether an individual qualifies for ADA coverage based on being substantially limited in a major life activity (http://www.eeoc.gov/laws/statutes/adaaa.cfm, accessed 8-20-15). The percentage of EEOC-reported cases involving paralysis or autism is small, but this is largely because there is no question that these conditions are clearly covered by the ADA (unlike conditions such as "orthopedic and structural impairments of the back" that constitute a larger share of ADA charges in part because there is a question of whether they qualify for coverage) (http://www.eeoc.gov/eeoc/statistics/enforcement/ada-merit.cfm, accessed 8-20-15).

overcome labor market disadvantages faced by people with disabilities, as suggested by the results of Hollenbeck and Kimmel (2008). The resumes were evaluated by university career counselors, agency recruiters, and hiring managers who work in financial services to ensure they appeared legitimate, and included specific skills needed for accountant positions. The resumes were designed to make both the novice and experienced candidates appear well qualified to maximize the likelihood that employers would be interested in hiring them.

The study design created six cells, representing the permutations of disability status portrayed in the cover letter (no disability, SCI, or Asperger's syndrome) and experience level (novice or experienced). The cover letters and resumes are in Appendix A. Twelve male names were used in the applications—six were always associated with novice resumes and six were always associated with experienced resumes, and disability status was randomly rotated through each of the names (to eliminate any bias associated with particular names).[7] Disability status was revealed in the cover letter in the context of the applicant's volunteer work. Cover letters for all applicants (including those without a disability) mentioned the applicant's volunteer work for a disability organization (the fictitious "New Jersey Paraplegia Foundation" or the "Life Development Institute's Aspergers Syndrome Program"), noting that such work had helped build the applicant's ability to "work effectively with others in a supervisory capacity." The letters from the applicants with disabilities added the wording "As an individual with [a spinal cord injury/Asperger's Syndrome], I am committed to providing my time and energy to those similar to myself." To increase the likelihood that the disability status would be noticed, these letters went on to say "Please be advised that my disability does not interfere with my ability to perform

[7] The names used for novice applicants were Adam Lewis, Jack Anderson, Jayden Johnson, Josiah Washington, Kayden Jones, and Luke Mathews, and the names used for experienced applicants were Connor Ericson, Easton Carter, Hunter Richardson, Isaiah Booker, Jacob Rubinstein, and Jaxon Jones.

the skills needed in a finance environment. I would be happy to answer any questions that you may have concerning this matter."[8]

The study team used Indeed.com, an online advertising job portal, to submit the application materials. The website aggregates job solicitations from job boards, newspaper advertisements, and company career websites throughout the Internet. Between June 1 and August 31, 2013, applications were submitted to employers who advertised a U.S.-based accounting position, totaling 6,016 applications. Job openings that did not allow cover letters to be submitted were excluded. Employers who advertised more than one position received only one set of application materials, for the first position advertised. Each advertisement was assessed to determine whether a novice or expert application would be more appropriate, based on desired experience or credentials. Disability status was randomly rotated through the names and was not a factor in deciding where to submit an application. Email accounts were constructed for each of the twelve applicant names, and pre-paid telephones were purchased for each name in order to record voice messages, so that employers could respond to the applications either by email or telephone. Employers were given up to four months to respond after an application was submitted.

For purposes of analysis, employer responses were divided into three categories: 1) those expressing desire for an interview; 2) those expressing another form of active employer interest (asking the applicant for further documents or credentials, inviting the applicant to apply for another position in the company, checking that the applicant is aware that the job is in another state, or requesting the applicant to also apply through the company website); and 3) those not

[8] The 1989 study in France used a similar approach by identifying disability in the cover letter, using the sentence "As the result of an accident in 1982, I am confined to a wheelchair" (Ravaud et al. 1992). Given that job applicants are not required to reveal a disability, and most would not do so in an application, we chose to use the context of volunteer work for a disability organization as a plausible rationale for revealing the disability.

expressing any interest (including no response and explicit rejections). In the results presented here, categories 1 and 2 are combined to represent "any employer interest" while category 1 represents the more restrictive measure of "callback for interview."

Employer characteristics were coded using information on RefUSA, plus the Manta.com website or company websites when RefUSA information was not available. The coded characteristics include: state of operation; number of employees; whether the employer is either closely-held (not traded on a stock exchange), publicly-traded or a government agency; industry (NAICS code); and federal contractor status.[9] This final variable is potentially important since the federal government requires contractors to take affirmative action to hire individuals with disabilities.[10]

The methods used are likely to provide a conservative test of the effects of disability on expressions of employer interest, principally because the information on disability status in the cover letter may not be noticed in the decision-making process. Furthermore, many applications are processed by computers that search for keywords indicating relevant training and experience, which could result in some not passing the first round of evaluation (though the resumes were designed to reflect highly-qualified applicants). Even among applications read by human beings, the cover letter may not have been read. To the extent that disability status is not incorporated in the decision process, the disability gaps estimated here are likely to represent lower bounds for the true gaps.

Results

The applicants with disabilities were less likely to receive any expressions of employer interest, as shown in Table 1 and illustrated in Figures 1a and 1b. The disability applications

[9] The establishment address was used to identify state of operation for multi-establishment companies, while employment was coded for the overall company since that determines ADA and state law coverage.
[10] http://www.dol.gov/odep/topics/FederalContractorRequirements.htm, accessed 3-13-15.

received expressions of interest from 4.87% of employers compared to 6.58% for the non-disability applications (columns 1 and 2). The 1.71 percentage point gap represents a 26% lower chance of employer interest for the applicants with disabilities, and the null hypothesis of a zero gap is strongly rejected at the 99% level. There is also a gap using the more restrictive measure of a callback for an interview (0.28, representing an 11% lower callback rate, in column 7), but it is not large enough to statistically reject a zero gap.

Perhaps surprisingly, employers were especially unlikely to express interest in the more experienced applicants with disabilities. The 2.57 percentage point gap (column 3) represents a 34% lower chance of employer interest for experienced applicants with disabilities compared to those without disabilities, which is three times the size of the 0.86 point gap between novice applicants with and without disabilities. This goes against the idea that increased training, qualifications, and successful labor market experience will help to erase the disadvantages faced by people with disabilities.[11]

The specific type of disability made little difference in relative employer interest. The disability gaps are 1.78 percentage points for people with SCI's, and 1.64 points for people with Asperger's Syndrome, both strong enough to reject a zero gap at the 95% level. For both disability types the lower employer interest is concentrated among the more experienced applicants.

Employer characteristics. Table 2 provides breakdowns by employment size, ownership, federal contractor status, and broad industry, with some results illustrated in Figures 2a and 2b.

[11] Greater unobserved variance in the perceived productivity of applicants with disabilities could lead to a lower perceived likelihood that applicants with disabilities will meet the standards for the position. Neumark (2012) has shown how this issue can be addressed and tested in an audit study if there is variation in the tested qualification levels, and the returns to the qualifications are assumed to be equal between the two groups. In our data the returns to qualifications (based on comparing experienced versus novice applicants) do not appear to be equal for applicants with and without disabilities, so that we are not able to test for this mechanism in explaining the lower employer interest in applicants with disabilities.

The employment size breakdown creates four groups of roughly equal size among the private sector employers. In Table 2 and the two figures it can be seen that the disability gap in any expressions of employer interest (cols. 1-4) is largest among the smallest private-sector employers (fewer than 15 employees), and this result carries over to the more restrictive measure of a callback for an interview (cols. 5-8). Private-sector employers with fewer than 15 employees are not covered by the ADA, although many are subject to state disability discrimination laws (as will be explored).

A breakdown by ownership shows that the disability gap is concentrated among closely-held employers (-2.3 points), while the gap is smaller among government employers (-1.3 points, although the sample is small and a zero gap cannot be rejected). Publicly-held employers were slightly more likely to express interest in the applicants with disabilities compared to those without disabilities (0.9 points, although a zero gap cannot be rejected). In addition, the disability gap is largest among employers who are not federal contractors, where a zero effect can be rejected both for any employer interest and for the more restrictive measure of a callback for interview. The disability gap does not, however, vary in a noteworthy way by industry.

To explore which employment characteristics are the key drivers of the differences in Table 2, probit regressions are presented in Table 3 using "any employer interest" and "callback for interview" as the dependent variables. This table presents the results of interactions between disability status and employer characteristics, using employer characteristics and applicant name dummies as controls to adjust for any differences not captured by randomization.[12] In regressions on the full sample (column 1), it can be seen that the disability gap in any employer interest remains largest among small firms, but there are also noteworthy disability gaps for the

[12] Descriptive statistics for all variables are in Table A1. In further regressions not reported here, we controlled for firm size with linear and squared terms in addition to the size category dummies, with no noteworthy difference in results.

other firm sizes. In addition, column 1 shows that there appears to be more interest in applicants with disabilities among publicly-held firms relative to closely-held firms, and federal contractors relative to non-contractors. To probe the results, a regression using only closely-held firms (col. 2) shows the largest disability gap among small firms, although the coefficients remain sizeable for the other firm sizes, and a zero gap can be rejected for firms in the 15-99 and 100-499 size categories. A regression using only publicly-held firms (col. 3) does not show any disability interactions strong enough to reject a zero gap. Focusing on federal contractor status, column 4 shows that non-contractors have disability gaps where a zero gap can be rejected for three of the size categories (all except 15-99 employees), while the disability gaps for federal contractors in column 5 are smaller and within the margin of sampling error. Looking just within the closely-held sample, the disability gaps for non-contractors are large and a zero gap can be rejected for three of the size categories (column 6), while there are no strong disability gaps for closely-held federal contractors (column 7).

The pattern changes somewhat when the dependent variable is callbacks for interviews in columns 8 to 14: there is a negative effect of disability on callbacks by small employers in all the columns, and a positive effect of disability on callbacks by employers with 15 to 99 employees in three of the columns. This latter result occurs among non-contractors (columns 11 and 13), indicating that it is not a result of the affirmative action mandate for federal contractors.

In sum, both measures of employer responses show that small closely-held firms that are not federal contractors are less likely to express interest in disability applicants relative to non-disability applicants. The results differ for the two measures in that larger closely-held firms that are not federal contractors are also less likely to express any interest in disability applications,

while small federal contractors are also less likely to respond to disability applications with callbacks for interviews.

Experience Level and Disability Type. As shown in Table 1, the disability gap in employer interest is largest among experienced applicants, but the gaps are similar by type of disability. Tables 4 and 5 explore these results by relating them to employer characteristics. The results of Table 4 are summarized very simply: the disability gaps large enough to reject zero effects are among experienced applicants applying to small, closely-held, and non-federal-contractor employers (although the disability gap for novice applicants is also outside the margin of error for non-Federal-contractor employers).

Comparing by disability type in Table 5, the gaps in employer interest are generally concentrated among small private-sector employers for both SCI and Asperger's Syndrome. There is an interesting exception, however, in that the largest gap in any employer interest for people with Asperger's Syndrome is among employers with 500 or more employees, although the gap in employer callbacks is largest among small employers.

These results are explored in Table 6 with probit regressions using employer characteristics and applicant names as controls. Columns 1, 2, 5, and 6 confirm that disability gaps are concentrated among experienced applicants applying to small private-sector employers, with no strong disability gaps for novice applicants. Columns 3 and 7 show that small private-sector employers were the least likely to express interest in applicants with SCI, and column 8 shows the same result for callbacks to applicants with Asperger's Syndrome, although column 4 shows that the largest private sector employers (with 500 or more employees) were the least likely to express any type of interest in applicants with Asperger's Syndrome. Applicants with

Asperger's Syndrome were likely to do relatively well when applying to a publicly-held company (column 4).

Disability Discrimination Laws. The results so far indicate that disability gaps in employer interest are concentrated among closely-held firms that are not federal contractors, and may be especially large among small employers who have fewer than 15 employees and are therefore not covered by the ADA. Does coverage by the ADA or a state disability discrimination law (DDL) make a difference? As shown in Table 7, 48 states and the District of Columbia have a DDL that prohibits discrimination by private employers against employees and job applicants with disabilities, with variation in the minimum size threshold for employer coverage. Also, the DDLs in 43 states require employers to make reasonable accommodations for workers with disabilities (either explicitly or by state court interpretation). Table 7 also reports that among the 5,880 employers with necessary employment information, our sample contains 4,891 (83.2%) subject to a state DDL requiring reasonable accommodations, 266 (4.5%) subject to a state DDL not requiring accommodations, and the remaining 723 (12.3%) not subject to a state DDL. Focusing on the 1,333 small employers that are not subject to the ADA, 657 (49.3%) are subject to a state DDL requiring accommodations, only 6 (0.5%) are subject to a state DDL not requiring reasonable accommodations, and the remaining 670 (50.3%) are not subject to a state DDL.

We estimate the possible effects of the ADA and state DDL's using three approaches:

1) probit regressions across the entire sample to examine variation both within and between states in ADA and state DDL coverage;

2) a within-state difference-in-difference (DD) design that compares the disability/non-disability difference in employer interest among employers that are and are not covered by the ADA or a state DDL; and
3) regression discontinuity (RD) designs that examine how the disability/non-disability difference in employer interest changes as employment size grows and a firm becomes covered by a state DDL or the ADA.

Because the disability gap is concentrated among experienced applicants, we estimate the DD and RD designs both for the full sample and just for experienced applicants.

Results from the first approach are presented in Table 8, using the full sample with separate variables for ADA and state DDL coverage (allowing state DDL's to have an effect on top of the ADA when employers are covered by both).[13] Column 1 shows an overall disability coefficient of -.015, while column 2 shows that ADA coverage is linked to a positive effect on employer interest in applicants with disabilities, and the interaction effect of state DDL coverage with disability status is negative but not strong enough to reject a zero effect. In column 3, the disability interactions with DDL's not requiring accommodations, and with DDL's requiring accommodations, are also negative but neither is strong enough to reject a zero effect.

The estimate of most interest is in column 4, which is restricted to small employers who are not covered by the ADA. There it can be seen that the disability interaction with state DDL coverage is negative, but again not strong enough to reject a zero effect.

The estimated effects of ADA coverage are stronger when predicting a callback for an interview in columns 5 to 8. Column 6 shows that the interaction effect of disability and ADA coverage is positive and strong enough to reject a zero effect at the 99% level, with a magnitude

[13] In further regressions not reported here, we controlled for firm size with linear and squared terms in addition to the size category dummies, with little difference in results.

(.026) that largely counteracts the negative main effect of disability (-.036). Unlike the results for "any employer interest" (cols. 2 and 3), the disability interaction with state DDL coverage is positive in column 6, and positive for state DDL coverage requiring accommodations in column 7, but both are within the bounds of sampling error. When focusing on small firms in column 8, the effect of state DDL coverage interacted with disability is positive (in contrast to the column 4 estimate predicting any employer interest) but not strong enough to reject a zero effect.

Whether the ADA and state DDL's have an effect on employer behavior can be tested more rigorously with DD and RD designs (Angrist and Pischke 2009, Lee and Lemieux 2009). To compare the responses of covered and uncovered employers that are otherwise as similar as possible, these regressions are restricted to private employers with no more than 100 employees, or alternatively no more than 30 employees. The DD design is based on the following equation:

1) $Response_{is} = a + b1*Disab*ADAcov_i + b2*StateDDLcov_{is} + b3*Disab*StateDDLcov_{is} + b4*Empdum_i + b5*State_s + b6*Disab*State_s + b7*Controls + e_{is}$

Where:

$Response_{is}$ = Any employer response, or callback for interview, by employer i in state s
Disab = dummy for disability noted in cover letter
$ADAcov_i$ = employer i is covered by ADA (having 15 or more employees)
$StateDDLcov_{is}$ = employer i in state s is covered by state DDL, not by ADA
$Empdum_i$ = Dummies for number of employees
$State_s$ = State dummies
Controls = Dummies for publicly held, federal contractor, 7 industries, and 11 applicant names
i subscripts denote employer
s subscripts denote state

The key coefficients of interest are b1 and b3. The b1 coefficient measures the difference between ADA-covered employers, and those not covered by the ADA or a state DDL, in the

relative likelihood of responding to disability and non-disability applications. The b3 coefficient makes a similar comparison between employers covered by a state DDL and those not covered by the ADA or a state DDL. The comparisons are made within-state by the inclusion of state dummies and interactions between disability and state dummies.[14] The main effect of the ADA is subsumed by the full set of dummies for number of employees (since all employers with 15 or more employees are covered).

The DD results in Table 9 show an apparent positive effect of the ADA on callbacks for disability applicants, as indicated by the b1 coefficients on the interaction between disability and ADA coverage for all applicants (columns 3 and 4) and just for experienced applicants (columns 7 and 8). In contrast, coverage by a state DDL only (not by the ADA) is not linked to significantly higher or lower employer responses to applicants with disabilities, as shown by coefficients on the interaction of disability with "employer covered by state DDL, not by ADA."

The RD design provides a closer comparison of responses between employers just above and just below the disability law threshold, testing whether there is any change in responses as employer size exceeds the threshold. In examining the ADA threshold we restrict the sample to employers with 30 or fewer employees, and in examining state DDL thresholds we restrict the sample to employers with no more than 15 employees above the threshold and to states that have at least 5 disability and 5 non-disability observations both above and below the threshold (eliminating states where the DDL covers all private employers).

We test three RD models, the first of which is based on a polynomial design run separately for disability and non-disability applicants:

[14] The state dummies fully capture the effects of state DDL's in states that cover all employers, so the b2 and b3 coefficients reflect estimated effects of state DDL's in states with observations both above and below the coverage threshold.

2) $Response_i = a + b1*Coverage_i + b2*Emp_i + b3*Emp_i^2 + b4*Emp_i^3 + b5*Empspline_i + b6*Empspline_i^2 + b7*Empspline_i^3 + e_i$

Where:
Response = Any employer response, or callback for interview
Coverage = Coverage by ADA, or alternatively by state DDL
Emp = Number of employees
Empspline = Spline for number of employees above threshold (0 if below)

The estimates for coefficient b1, representing the change in employer response at the point of the threshold, are presented in columns 1 and 5 of Table 10 for all applicants and just for experienced applicants. Almost all of these estimates are exceeded by their standard error, providing no clear indication that employer responses change at the ADA or state DDL coverage thresholds.

The second RD model estimates local linear regressions on each side of the threshold, using Stata's "rd" program which bases optimal bandwidth choice on Imbens and Kalyanaraman (2009). Table 10 presents results using alternative bandwidths in columns 2 to 4 and 6 to 8. While there are significant increases in employer interest at the ADA threshold when doubling the optimal bandwidth (column 4), the change is similar for disability and non-disability applicants, and no other changes indicate noteworthy effects of either the ADA or state DDL's at the coverage thresholds.

A third RD model was run that includes both the ADA and state thresholds with employment splines at each threshold, plus disability interactions with the law and employment variables, and controls for employer characteristics. The disability interaction with ADA or state DDL coverage directly tests whether the change in employer response at the coverage threshold is different between disability and non-disability applicants. The results for this specification

(not presented but available) show that the coefficients on interactions of disability with ADA or DDL coverage are small and none are strong effect to reject a zero effect, indicating no clear change in employer behavior with respect to disability applicants at the point of the coverage threshold.

Therefore the RD results do not show a change in employer responses at the point of the coverage thresholds, while the DD results indicate more callbacks for disability applicants among ADA-covered employers. These results can be visualized in Figures 3a to 6b that show the patterns of response by number of employees, based on specification (2) above with the addition of observed means at each level of employment. As shown in Figures 3a and 3b for all applicants, and Figures 4a and 4b for experienced applicants, the fitted lines indicate high response to non-disability applicants among very small employers, but the response declines approaching the ADA threshold of 15 employees. In contrast, the fitted lines for disability applicants are fairly flat below the threshold. Taken together, these results indicate that very small employers are especially likely to respond to non-disability applicants, but the likelihood of a response converges for disability and non-disability applicants approaching the coverage threshold. This is consistent with the DD and RD results: Figures 3b and 4b illustrate the DD result from Table 9 that the general disability/non-disability difference is smaller above the ADA threshold (eliminating the disability gap below the threshold), and also illustrate the Table 10 result of only small or no changes at the point of the threshold. It is possible that employers just under the threshold anticipate ADA coverage with further growth, which would obscure the effects of the ADA under the RD design.[15]

[15] The RD tests will be biased if some employers decide to remain under the ADA threshold to avoid coverage, resulting in an uneven density of firms around the threshold (McCrary 2008). The density pattern in these data goes against that possibility, as there are fewer firms just under the ADA threshold (n=65 with 13 or 14 employees) than right at the ADA threshold (n=135 with 15 employees).

The patterns of response around the state DDL thresholds in Figures 5a to 6b do not point to any effects of the state DDL's on employer response for either disability or non-disability applicants, consistent with the results on state DDL's in Tables 8 to 10.

Overall the results from analysis of the laws point to a possible positive effect of ADA coverage on the relative likelihood of callbacks for applicants with disabilities, but no clear effects of state DDL's.

Discussion

Applicants with disabilities—both those with SCI and those with Asperger's Syndrome—received fewer expressions of employer interest than applicants without disabilities. Since the resumes indicated that the applicants were highly qualified and the applications were identical in every way except for disability status, this strongly indicates that disability status affects the hiring process.

The disability gap was concentrated among experienced applicants. One possible explanation is that employers paid closer attention to applications indicating more experience, since these applicants would receive higher pay and more responsibilities, and employers may expect or envision longer-term commitments. In this case the employers may have been more likely to read the cover letters of the experienced applicants and consequently be aware of the disability status. The much smaller disability gap among novice applicants may simply result from fewer employers being aware of the disability.

It is also possible, however, that employers were equally aware of the disability status of novice and experienced applicants, and disability played a stronger role in employer decisions regarding experienced applicants. Employers may have viewed experienced applicants with disabilities as "riskier" due to concerns over potential absences, productivity, health problems,

insurance costs, or customer or co-worker reactions; such employer concerns could also exist for novice applicants, but be magnified for experienced applicants due to their expected higher pay along with greater job responsibilities and job tenure expectations. More generally, this result casts doubt on the idea that higher qualifications help erase the disadvantages of disability (in contrast to the findings of Hollenbeck and Kimmel, 2008, on the stronger effects of education on earnings for men with disabilities).

The finding that small employers (with fewer than 15 employees) are less likely than larger employers to express interest in applicants with disabilities raises interesting questions about disability accommodations and anti-discrimination laws. Given that small employers are not subject to the ADA, this result suggests that small employers are engaging in discrimination while the ADA is constraining discriminatory behavior of medium and large employers. The story is complicated, however, by the lack of clear changes in employer responses at the ADA employment threshold (although the ADA may be affecting behavior of those just under the threshold), and by consideration of state DDL's since there is little difference in employer responses between small employers that are and are not covered by state laws. This latter result may be due to a lack of knowledge of state laws among small employers, while the federal ADA is much better known.[16] Large employers are more likely to have formal HR departments that will be aware of both the ADA and state requirements, and may be more likely to have prior experience in hiring people with disabilities so they are more comfortable in considering applicants with disabilities.

Concern over accommodation costs is another possible reason for small employers' lower interest in applicants with disabilities. Other survey evidence indicates that small employers are

[16] Lack of knowledge about state DDL thresholds is very plausible given that in searching through state laws, the authors found several states in which the employment coverage threshold was difficult to ascertain and there was even conflicting information among websites.

slightly more likely than medium or large employers to cite actual accommodation costs (although not uncertainty over accommodation costs) as a challenge in employing people with disabilities (Domzal et al. 2008: 13). It is unlikely, however, that concern over accommodation costs is an important factor in our results. Employers would have to make similar accommodations for novice and experienced employees (e.g., installing a wheelchair ramp for people with SCI). If accommodation costs were an important factor, lower interest in novice as well as experienced applicants with disabilities would have been evident. In addition, there was not a strong difference between small employers in states with DDL's requiring accommodations and those in states without such laws. To the extent that concerns over accommodation costs nonetheless play a role in employer decisions, small employers may be less likely to be aware of resources on how to make disability accommodations and access available government subsidies.[17]

Several other results deserve discussion. First, it is interesting that the disability gap is concentrated among closely-held companies, and does not appear to exist among publicly-held companies. This may reflect heightened visibility of publicly-held companies that makes them more sensitive to allegations of discrimination and outside pressure, leading them to adopt more sophisticated HR systems that decrease the likelihood of discrimination.

Second, it is noteworthy that federal contractor status appears to have a positive effect on any employer expression of interest—although not callbacks for interviews—for applicants with disabilities. This may reflect the effect of federal government guidelines on hiring people with disabilities, stipulating that federal contractors provide affirmative action for workers with

[17] The federal government sponsors an information clearinghouse through the Job Accommodations Network at askjan.org.

disabilities.[18] To the extent that the federal guidelines are having an effect, they appear to be merely erasing the disability gap in employer interest displayed by other closely-held companies, rather than causing the contractors to display greater interest in applicants with disabilities than in those without disabilities.

A third interesting finding regards government employers. While the disability gap is smaller among government employers than among private employers—and a zero gap cannot be statistically rejected—government is often held out as a "model employer" and these results do not indicate that government is leading the way in encouraging applicants with disabilities.

Limitations. This study has several limitations. We do not know how many employers read the cover letters and were aware of the disability status of the applicant. To the extent that employers did not read the cover letters, this will decrease the estimated effects of disability, so the estimated gaps may be seen as lower bound estimates. The only way to ensure that disability is clearly established is to have a face-to-face or voice-to-voice meeting where the disability is obvious or directly disclosed, or to make it prominent on the resume, although this may look artificial and attract suspicion since it would not make sense to highlight a disability on most applications.

In addition, while we can confidently say that applicants with disabilities are less likely to attract employer interest, we cannot clearly ascribe this to discrimination. Even though the applicants are highly qualified and the cover letters stated that the disability does not interfere with job performance as an accountant, employers may be concerned about the productivity of the applicants with disabilities, perhaps especially for more senior positions in which accountants would be expected to meet with clients. This might be due, for example, to concerns about physical accessibility when people with spinal cord injuries have to travel to client offices, or

[18] http://www.dol.gov/odep/topics/FederalContractorRequirements.htm, accessed 3-13-15.

concerns over the ability of people with Asperger's to consistently have positive social interaction with clients. Apart from the issue of productivity, employers may have been concerned about accommodation costs and/or difficulty in terminating employees with disabilities under the ADA and state DDL's. It may be that many smaller employers were not already accessible and would have needed to install a ramp and make other renovations for applicants with spinal cord injuries. The same pattern of lower interest among small employers, however, exists for applicants with Asperger's who would not require such accommodations. It is also noteworthy that legal accommodation mandates and employment protections do not seem to be a deterrent since employer interest is not clearly affected by state laws and is, if anything, slightly higher among those covered by the ADA's accommodation mandate and employment protections.

A final caveat is that the sample design was restricted to well-qualified male applicants for accounting positions, and the results may not be fully generalizable to other groups, including women, people with other types of disabilities, people without college degrees, and those applying for other types of jobs (e.g., service and blue collar occupations in which people with disabilities are overrepresented).

Conclusion

The main result of this paper is that that employers express less interest in job applicants with disabilities than in otherwise-similar job applicants without disabilities, even for positions where the disability should not affect the ability to do the job. Combined with similar experimental evidence from France and Belgium (Ravaud et al. 1992, Baert 2014), the pattern of results points to employer bias in hiring as an important piece of the puzzle helping to explain the low employment rate of people with disabilities. In particular, the similar findings for

applicants with two very different types of disability supports the idea that a general factor such as disability bias, rather than productivity or accommodation concerns that vary by type of disability, accounts for the lower employer interest.

A second key result is that the disability gap in employer interest is concentrated among experienced applicants, indicating that higher qualifications do not erase the labor market disadvantages associated with disability. A third key result is that the disability gap is concentrated among small private firms who are not covered by the ADA, which points to positive effects of the ADA on the recruitment of employees with disabilities. While we cannot be certain that the ADA is responsible for helping close the gap among covered employers (since there is no relative improvement at the point of the coverage threshold, and there may be other productivity- or accommodation-related reasons for the reluctance of small employers to pursue applicants with disabilities), this evidence indicates at a minimum that the ADA does not appear to be discouraging employer hiring of people with disabilities.

These results suggest there is potential for public policies and private initiatives to reduce employer reluctance to hire people with disabilities.[19] The lack of strong effects for state DDL's may reflect lack of employer awareness of state laws, particularly among small employers without HR departments, so that stronger efforts to publicize these laws and educate employers and the public may make a difference.

These results also point to the value of further research into employer behavior regarding employees and job applicants with disabilities. Such research should include additional field experiments that help to draw stronger causal links between disability and employment outcomes. While this study is focused on the accounting profession, it is likely that the results

[19] Examples include the Department of Labor's Employer Assistance Resource Network (http://www.dol.gov/odep/resources/EARN.htm) and the non-profit Business Leadership Network (http://www.usbln.org/). For overviews of public and private initiatives, see National Council on Disability (2007).

apply broadly to many other types of jobs. It would be valuable to extend this research, particularly because unlike the profiles constructed here, most people with disabilities do not have college degrees, and they are overrepresented in service and blue-collar jobs. Further research could also assess types of social information processing in hiring behavior, which can shed light on the reasons for lower interest in applicants with disabilities along with specific policies or practices that can reduce this problem. For example, how do employers react when they are confronted with an application from a person with a disability, what are the steps in their reaction, and what are the relationships among their beliefs, attitudes, and hiring behaviors? What is the role of written disability policies, training, and support from top management? Such research can not only help us understand the barriers faced by people with disabilities, but also help identify the most effective policies and practices to increase their employment opportunities.

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Appendix

RESUME FOR EXPERIENCED CANDIDATE
CANDIDATES NAME HERE
ADDRESS HERE
TELEPHONE HERE
EMAIL HERE

OBJECTIVE:
Seeking a position in the Accounting field.

EDUCATIONAL QUALIFICATIONS:

- **Bachelor of Science** in **Accounting** from the **Rutgers University**, New Brunswick, NJ: September 2003—May 2007
    - Certified Public Accountant (CPA) certified

EXPERIENCE:
GENE LLC, New York, NY
05/2010 – Present
Accounting Manager
Presently preparing monthly, quarterly and annually audited consolidated financial statements for a public healthcare company with net revenues of $500 million.

- Substantially reduced significant audit adjustments through better financial controls.
- Participated in the successful conversion to the G.T.E. hospital-based general ledger system without any interruption of accounting operations.
- Completed three years of delayed reporting for pension plans and kept it and other employee benefit plans current for more than 5,000 employees.
- Developed a system to track primary and fully diluted earnings per share calculations including common stock equivalents.
- Revised the 10K format in compliance with segment reporting requirements and other recent GAAP pronouncements.

Stone Design, New York, NY
01/2010 – 04/2010
Accounting Manager
Performed public accounting for small businesses, professionals and non-profit organizations with emphasis on financial statements, taxes and audits.

- Opened the way for a 35% growth in services and revenues.
- Provided improved controls for internal operations.
- Upgraded the ten most important clients' financial reports to the latest GAAP pronouncements.

Lance Industries, New York, NY
07/2007 – 12/2009
Junior Accountant
Performed audits for large publicly held corporations and medium-sized privately owned companies in manufacturing and retail industries. Audited pension and profit sharing plans. During this period, fulfilled professional experience that led to CPA certification in New York.

- Managed small- to medium-sized audits during the second year.
- Managed physical inventory counts for more than 25 clients.
- Improved productivity by eliminating an average of two weeks field time during audits.
- Designed and implemented a department performance evaluation system to replace a non-functioning one.
- Trained four college graduates in principles of auditing that became permanent staff.
- Charted internal control systems for non-utility subsidiaries that pointed out system weaknesses and reduced loss risks.

COMPUTER SKILLS:
Microsoft Word, Excel, Access, PowerPoint, and Outlook Express.

AFFILIATIONS:

- Volunteer for the Life Development Institute's Asperger Syndrome program
- Member of the New York Society of Certified Public Accountants
- Member for the Income Tax Support Initiative
- Member of the Accounting Honors Employment Program

RESUME FOR NOVICE CANDIDATE

CANDIDATES NAME HERE
ADDRESS HERE
TELEPHONE HERE
EMAIL HERE

OBJECTIVE:
Seeking a position in the Accounting field.

EDUCATIONAL QUALIFICATIONS:

- **Bachelor of Science** in **Accounting** from the **Rutgers University**, New Brunswick, NJ: September 2008—May 2012
    - Currently pursuing my Certified Public Accountant (CPA) certification
    - Overall GPA **4.0**/4.0; Major GPA **4.0**/4.0
    - Course work includes Auditing, Tax, Economics, Computer Science, and Public Speaking
    - Dean's List: Fall 2008; Spring 2009; Fall 2009; Spring 2010; Fall 2011; Spring 2011; Fall 2011; Spring 2012

CAREER PROFILE:

- Detail-oriented, efficient and organized with extensive experience in accounting systems.
- Possess strong analytical and problem solving skills, with the ability to make objective decisions.
- Excellent written and verbal communication skills.
- Resourceful in the completion of projects, effective at multi-tasking.

EXPERIENCE:

GENE Construction, New York, NY **06/2012 - Present**
Accounting Assistant

- Perform accounts payable functions for construction expenses.
- Manage vendor accounts, generating weekly on-demand checks.
- Manage financial departments with responsibility for Budgets, Forecasting, Payroll, Accounts Payable and Receivable.
- Create budgets and forecasts for the management group.
- Ensure compliance with accounting deadlines.
- Prepare company accounts and tax returns for audit.
- Coordinate monthly payroll functions for 200+ employees.
- Liaise with bankers, insurers and solicitors regarding financial transactions.

Stone Design, New York, NY **01/2010 – 05/2012**
Accounting Intern

- Managed accounts payable, accounts receivable, and payroll departments.

- Generated budgets and forecasts on a quarterly basis and presented data to the management team.
- Reported on variances in quarterly costing reports.
- Prepared annual company accounts and reports.
- Administered online banking functions.
- Managed payroll function for 140 employees.
- Monitored and recorded company expenses.

Lance Industries, New York, NY **09/2008 – 12/2009**
Administrative Assistant

- Performed general office duties and administrative tasks.
- Prepared weekly confidential sales reports for presentation to management.
- Managed the internal and external mail functions.
- Provided telephone support.
- Scheduled client appointments and maintained up-to-date confidential client files.

COMPUTER SKILLS:
Microsoft Word, Excel, Access, PowerPoint, and Outlook Express.

AFFILIATIONS:

- Volunteer for the Life Development Institute's Asperger Syndrome program
- Member for the Income Tax Support Initiative
- Member of the Accounting Honors Employment Program

COVER LETTER FOR EXPERT CANDIDATE WITH SPINAL CORD INJURY

CANDIDATES NAME HERE
ADDRESS HERE
TELEPHONE HERE
EMAIL HERE

To Whom It May Concern:

I am responding to the advertised position in your finance department. I am a licensed public accountant with a B.S. in Accounting from Rutgers University. Presently, I am working as an Accounting Manager at GENE LLC where I prepare monthly, quarterly and annually audited financial statements for a public healthcare company with net revenues of $500 million.

In addition to my professional experience at GENE LLC, I volunteer for the New Jersey Paraplegia Foundation, where I organize conferences for people to meet, share stories and help one another. As an individual with a spinal cord injury, I am committed to providing my time and energy to those similar to myself. I believe that my volunteer experience has allowed me to learn how to effectively work with others in a supervisory capacity.

Please be advised that my disability does not interfere with my ability to perform the skills needed in a finance environment. I would be happy to answer any questions that you may have concerning this matter.

I look forward to hearing from you so that we can discuss my qualifications in more detail.

Sincerely,

CANDIDATES NAME HERE

COVER LETTER FOR NOVICE CANDIDATE WITH SPINAL CORD INJURY

CANDIDATES NAME HERE
ADDRESS HERE
TELEPHONE HERE
EMAIL HERE

To Whom It May Concern:

I am responding to the advertised position in your finance department. I am a graduate from Rutgers University with a B.S. in Accounting. Presently, I am an Accounting Assistant at GENE Construction where I perform accounts payable functions for construction expenses.

In addition to my experience at GENE Construction, I volunteer for the Income Tax Support Initiative. I also volunteer for the New Jersey Paraplegia Association, where I organize events for people to meet, share stories and help one another. As an individual with a spinal cord injury, I am committed to providing my time and energy to those similar to myself. I believe that my volunteer experiences have allowed me to learn how to effectively work with others in a supervisory capacity.

Please be advised that my disability does not interfere with my ability to perform the skills needed in a finance environment. I would be happy to answer any questions that you may have concerning this matter.

I look forward to hearing from you so that we can discuss my qualifications in more detail.

Sincerely,

CANDIDATES NAME HERE

COVER LETTER FOR EXPERT CANDIDATE WITH ASPERGER'S

CANDIDATES NAME HERE
ADDRESS HERE
TELEPHONE HERE
EMAIL HERE

To Whom It May Concern:

I am responding to the advertised position in your finance department. I am a licensed public accountant with a B.S. in Accounting from Rutgers University. Presently, I am an Accounting Manager at GENE LLC where I prepare monthly, quarterly and annually audited financial statements for a public healthcare company with net revenues of $500 million.

In addition to my professional experience at GENE LLC, I volunteer for the Life Development Institute's Asperger Syndrome program where I participate in enhancing the quality of life for individuals with AS. As an individual diagnosed with AS, I am committed to providing my time and energy to those similar to myself. Further, I feel that my volunteer experience has helped me learn how to effectively work with others in a supervisory capacity.

Please be advised that my disability does not interfere with my capability to perform the skills needed in a finance environment. I would be happy to answer any questions that you may have concerning this matter.

I look forward to hearing from you so that we can discuss my qualifications in more detail.

Sincerely,

CANDIDATES NAME HERE

COVER LETTER FOR NOVICE CANDIDATE WITH ASPERGER'S

CANDIDATES NAME HERE
ADDRESS HERE
TELEPHONE HERE
EMAIL HERE

To Whom It May Concern:

I am responding to the advertised accountant position in your finance department. I am a Rutgers University graduate with a B.S. in Accounting. Presently, I am an Accountant Assistant at GENE Construction where I manage vendor accounts, and monthly payroll functions.

Alongside my professional experience at GENE Construction, I volunteer for the Income Tax Assistance Program. I also volunteer for the Life Development Institute's Asperger Syndrome program where I participate in enhancing the quality of life for individuals with AS. As an individual diagnosed with AS, I am committed to providing my time and energy to those similar to myself. Further, I believe that these experiences have helped me learn how to work effectively with others in a supervisory capacity.

Please be advised that my disability does not interfere in any way with my ability to perform the skills needed in a finance environment. I would be happy to answer any questions that you may have concerning this matter.

I look forward to hearing from you so that we can discuss my qualifications in more detail.

Sincerely,

CANDIDATES NAME HERE

COVER LETTER FOR EXPERT CANDIDATE WITH NO DISABILITY

CANDIDATES NAME HERE
ADDRESS HERE
TELEPHONE HERE
EMAIL HERE

To Whom It May Concern:

I am responding to the advertised position in your finance department. I am a licensed public accountant with a B.S. in Accounting from Rutgers University. Presently, I am an Accounting Manager at GENE LLC where I prepare monthly, quarterly and annually audited financial statements for a public healthcare company with net revenues of $500 million.

In addition to my professional experience at GENE LLC, I volunteer for the Life Development Institute's Asperger Syndrome program where I participate in enhancing the quality of life for individuals with AS. I believe that these experiences have helped me learn how to work effectively with others in a supervisory capacity.

I look forward to hearing from you so that we can discuss my qualifications in more detail.

Sincerely,

CANDIDATES NAME HERE

COVER LETTER FOR NOVICE CANDIDATE WITH NO DISABILITY

CANDIDATES NAME HERE
ADDRESS HERE
TELEPHONE HERE
EMAIL HERE

To Whom It May Concern:

I am responding to the advertised accountant position in your finance department. I am a Rutgers University graduate with a B.S. in Accounting. Presently, I am an Accountant Assistant at GENE Construction where I manage vendor accounts, and monthly payroll functions.

Alongside my professional experience at GENE Construction, I volunteer for the Income Tax Assistance Program. I also volunteer for the Life Development Institute's Asperger Syndrome program where I participate in enhancing the quality of life for individuals with AS. I believe that these experiences have helped me learn how to work effectively with others in a supervisory capacity.

I look forward to hearing from you so that we can discuss my qualifications in more detail.

Sincerely,

CANDIDATES NAME HERE

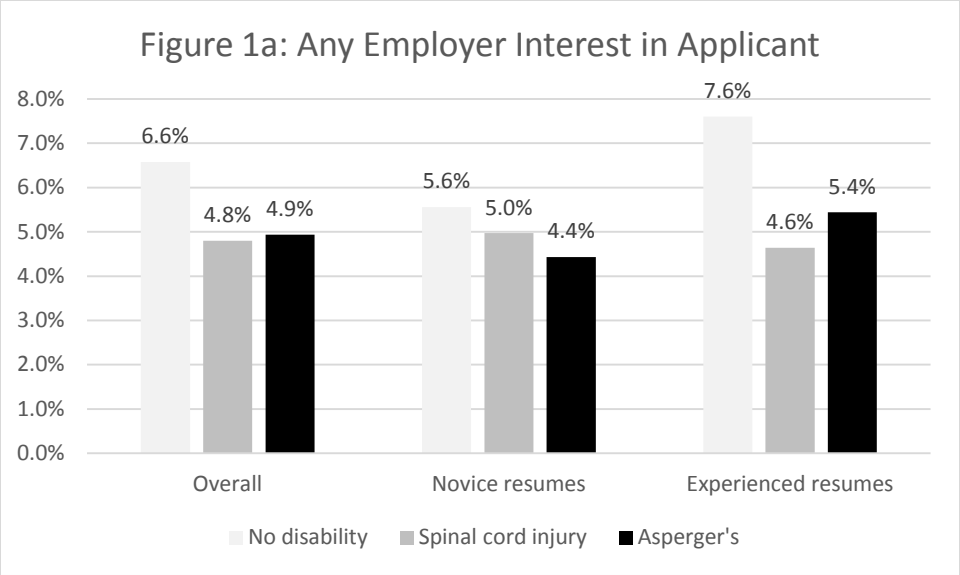


Figure 1a: Any Employer Interest in Applicant
8.0%
7.0%
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
6.6%
4.8%
4.9%
5.6%
5.0%
4.4%
7.6%
4.6%
5.4%
Overall
Novice resumes
Experienced resumes
No disability
Spinal cord injury
Asperger's

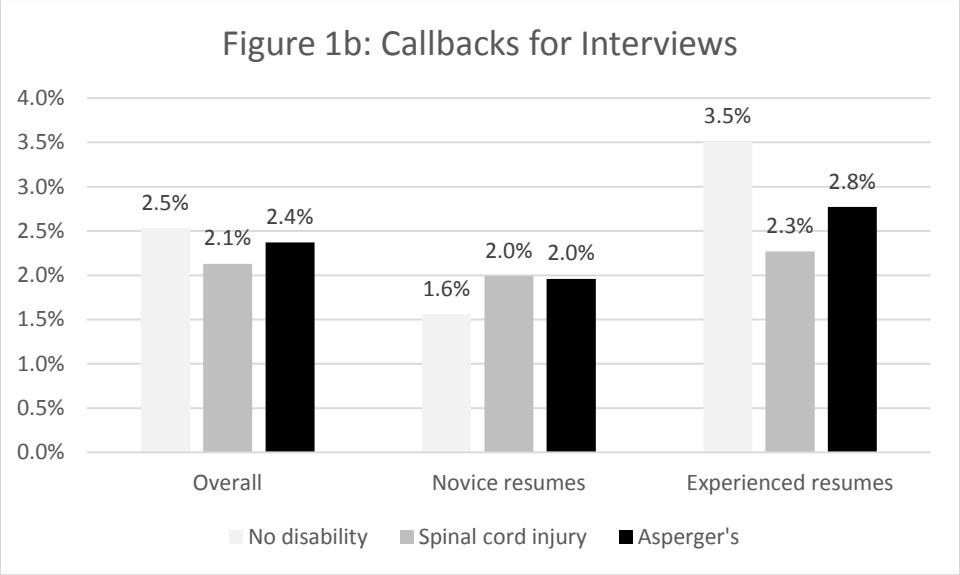


Figure 1b: Callbacks for Interviews
4.0%
3.5%
3.0%
2.5%
2.0%
1.5%
1.0%
0.5%
0.0%
2.5%
2.1%
2.4%
1.6%
2.0%
2.0%
3.5%
2.3%
2.8%
Overall
Novice resumes
Experienced resumes
No disability
Spinal cord injury
Asperger's

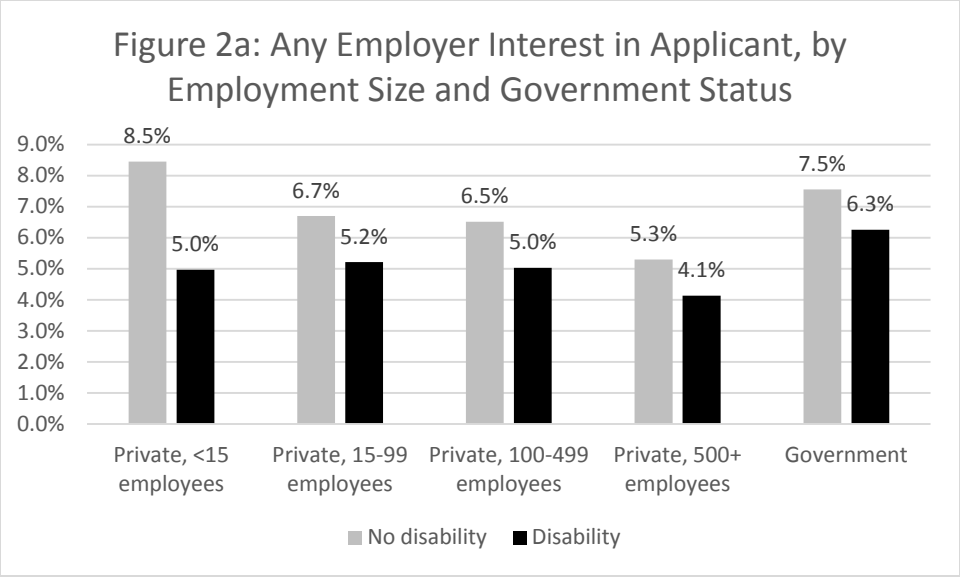


Figure 2a: Any Employer Interest in Applicant, by Employment Size and Government Status
9.0%
8.0%
7.0%
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
8.5%
5.0%
6.7%
5.2%
6.5%
5.0%
5.3%
4.1%
7.5%
6.3%
Private, <15 employees
Private, 15-99 employees
Private, 100-499 employees
Private, 500+ employees
Government
No disability
Disability

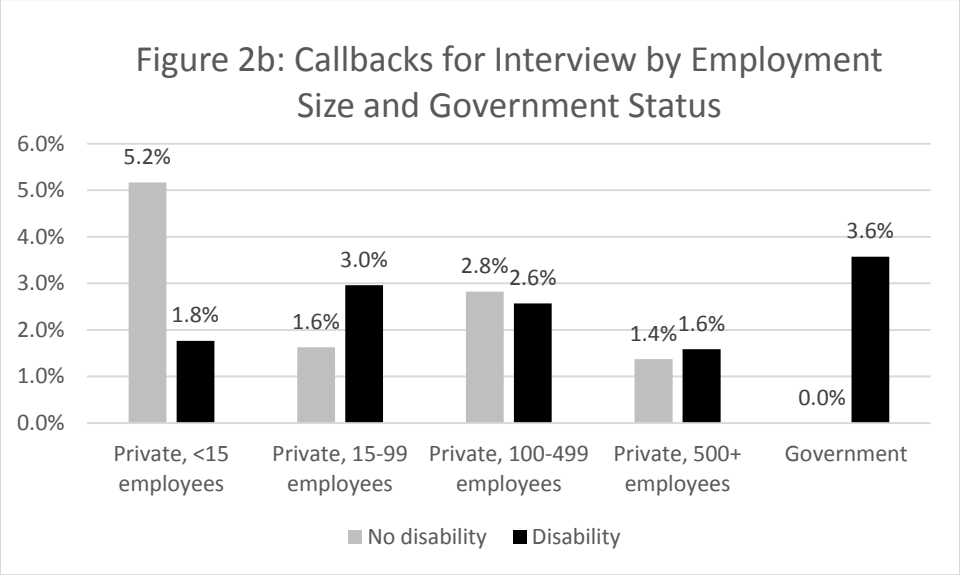
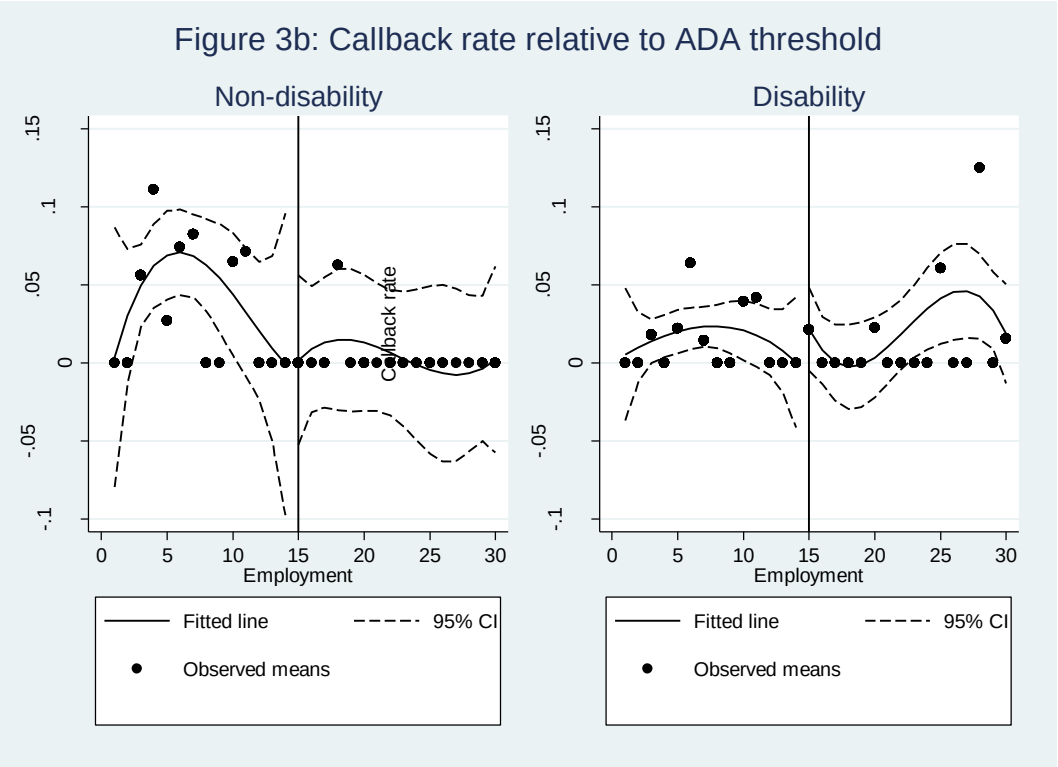


Figure 2b: Callbacks for Interview by Employment Size and Government Status
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
5.2%
1.8%
1.6%
3.0%
2.8%
2.6%
1.4%
1.6%
0.0%
3.6%
Private, <15 employees
Private, 15-99 employees
Private, 100-499 employees
Private, 500+ employees
Government
No disability
Disability



Based on polynomial models reported in Table 10, columns 1 and 5.

Figure 4a: Rate of employer interest relative to ADA threshold--Experienced applicants

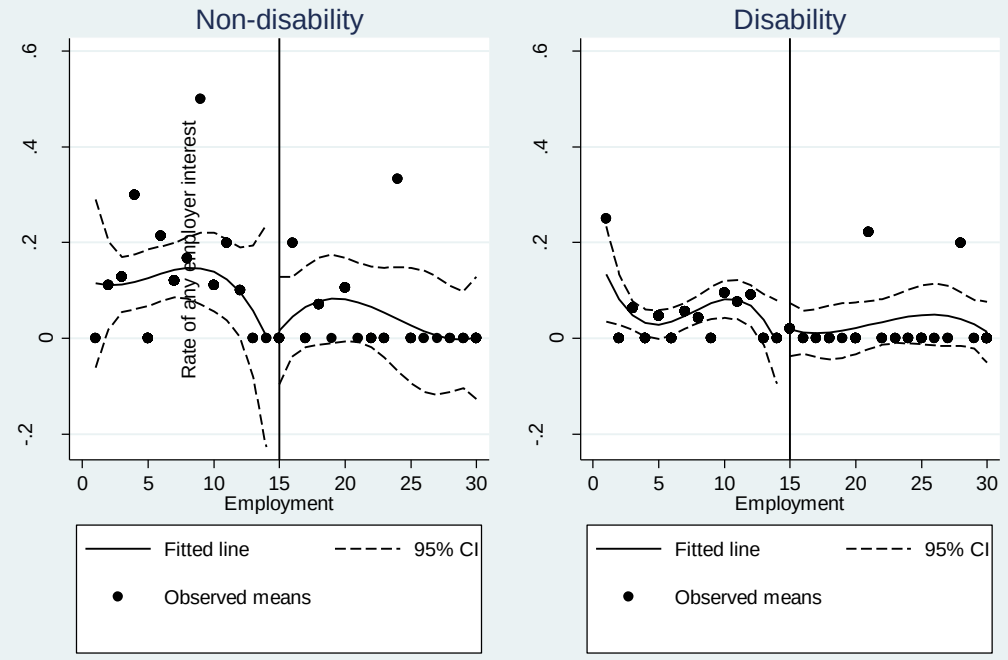
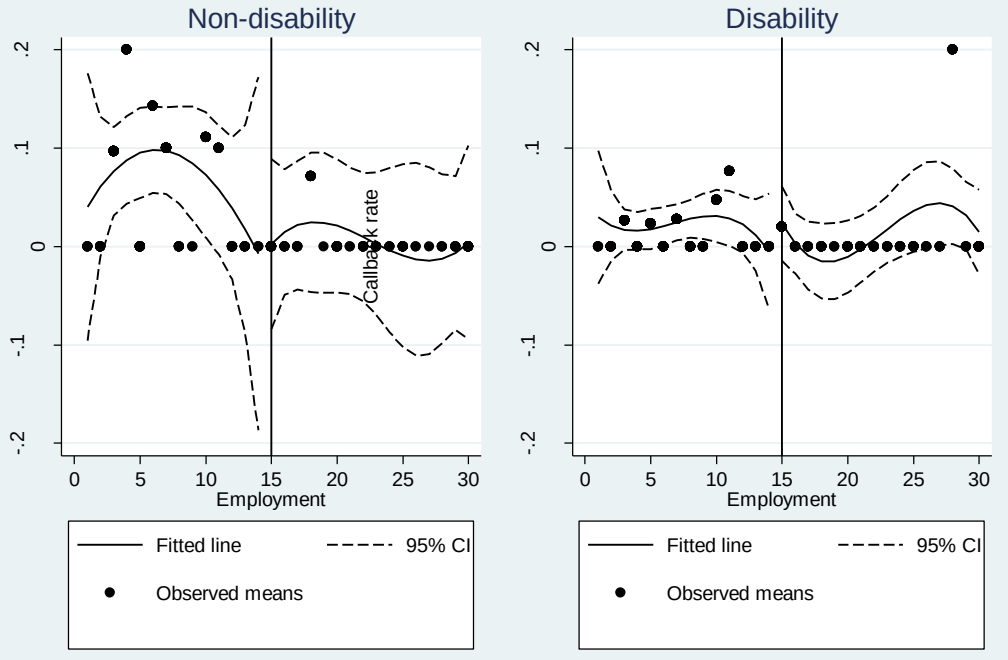
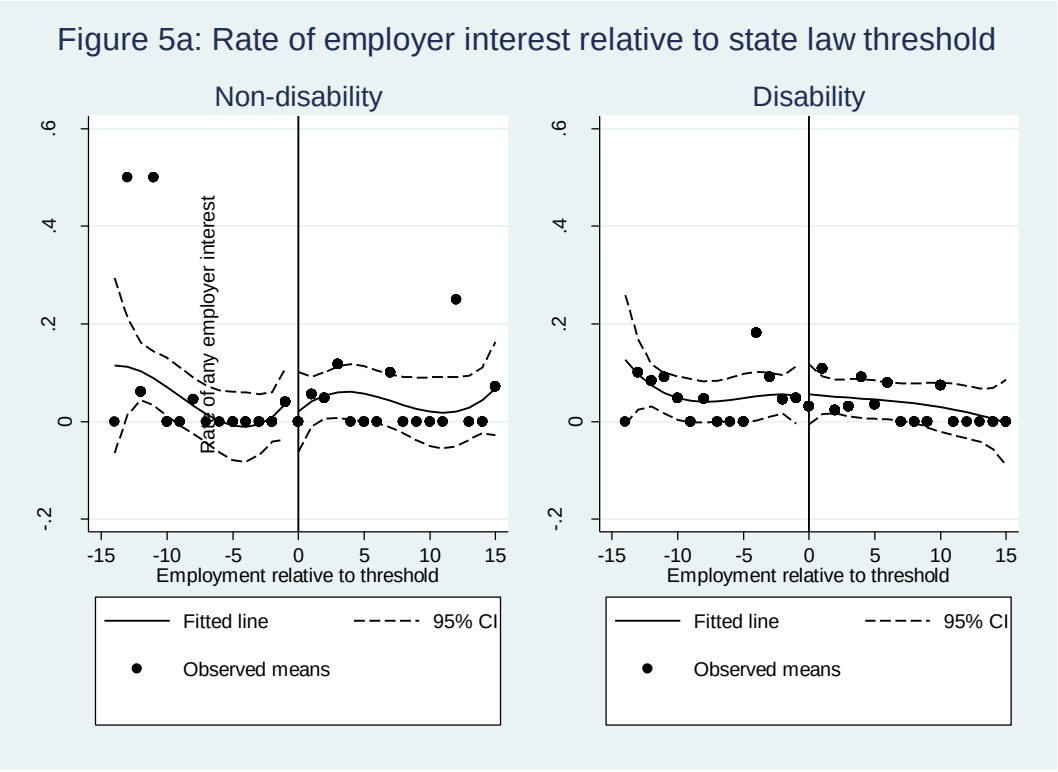
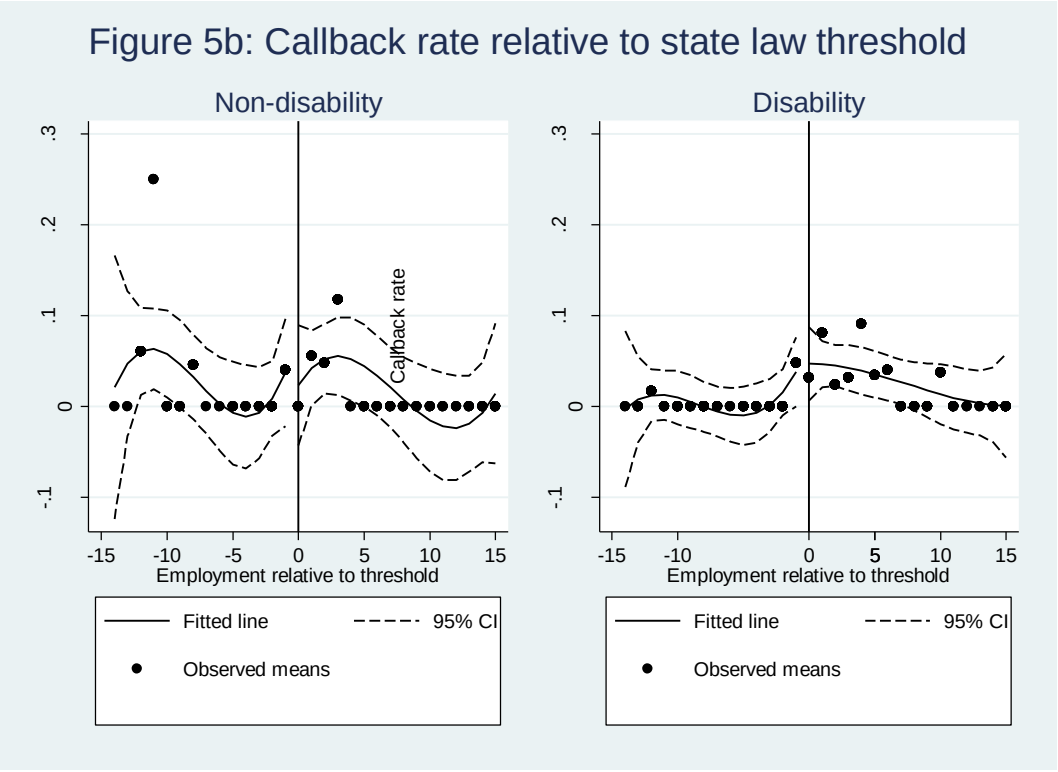


Figure 4b: Callback rate relative to ADA threshold--Experienced applicants



Based on polynomial models reported in Table 10, columns 1 and 5.





Based on polynomial models reported in Table 10, columns 1 and 5.

Figure 6a: Rate of employer interest relative to state threshold--Experienced applicants

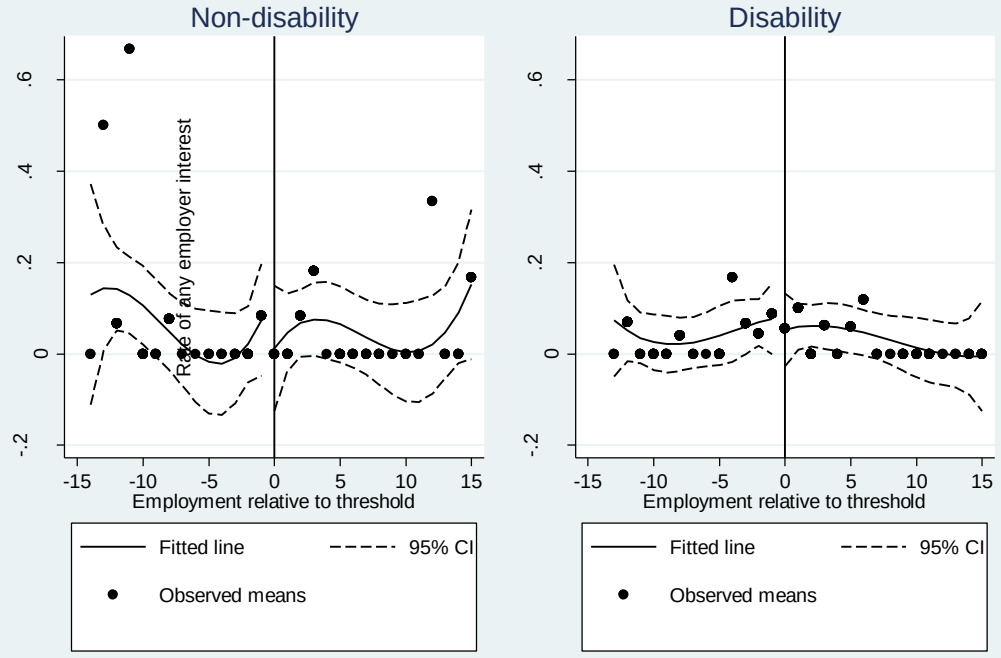
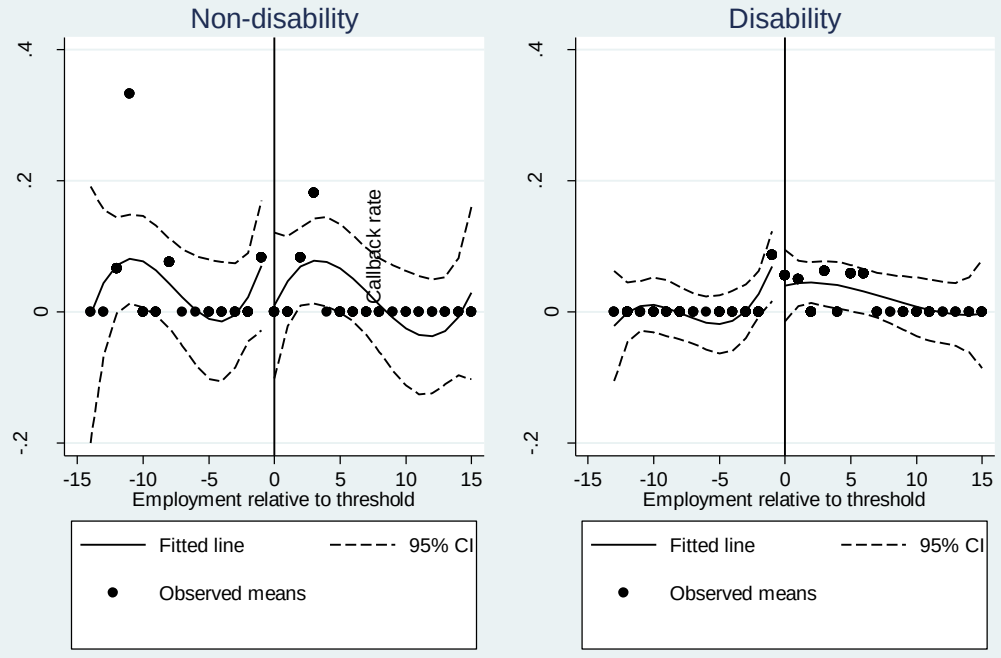


Figure 6b: Callback rate relative to state threshold--Experienced applicants



Callback rate

Based on polynomial models reported in Table 10, columns 1 and 5.

Table 1: Employer Responses to Resumes by Disability Status

		Any employer interest					Callback for interview					Sample size	
		No disability	Disability	Gap	(p-value)		No disability	Disability	Gap	(p-value)		No disability	Disability
		(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)		(9)	(10)
Any disability vs. no disability													
	Overall	6.58%	4.87%	-1.71	(0.006)	***	2.53%	2.25%	-0.28	(0.483)		2052	3964
	Novice resumes	5.56%	4.70%	-0.86	(0.310)		1.56%	1.97%	0.41	(0.423)		1026	1977
	Experienced resumes	7.60%	5.03%	-2.57	(0.005)	***	3.51%	2.52%	-0.99	(0.121)		1026	1987
SCI vs. no disability													
	Overall	6.58%	4.80%	-1.78	(0.015)	**	2.53%	2.13%	-0.40	(0.393)		2052	2019
	Novice resumes	5.56%	4.97%	-0.59	(0.555)		1.56%	1.99%	0.43	(0.464)		1026	1006
	Experienced resumes	7.60%	4.64%	-2.96	(0.005)	***	3.51%	2.27%	-1.24	(0.095)	*	1026	1013
Asperger's vs. no disability													
	Overall	6.58%	4.94%	-1.64	(0.026)	**	2.53%	2.37%	-0.16	(0.730)		2052	1945
	Novice resumes	5.56%	4.43%	-1.13	(0.248)		1.56%	1.96%	0.40	(0.499)		1026	971
	Experienced resumes	7.60%	5.44%	-2.16	(0.051)	*	3.51%	2.77%	-0.74	(0.346)		1026	974

* p<.10 ** p<.05 *** p<.01

Table 2: Employer Responses by Employer Characteristics

	Any employer interest					Callback for interview					Sample size	
	No disability	Disability	Gap	(p-value)		No disability	Disability	Gap	(p-value)		No disability	Disability
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)		(9)	(10)
Employment size, private sector												
Employment<15	8.5%	5.0%	-0.035	(0.013)	**	5.2%	1.8%	-0.034	(0.001)	***	426	906
Employment 15-99	6.7%	5.2%	-0.015	(0.231)		1.6%	3.0%	0.013	(0.107)		553	979
Employment 100-499	6.5%	5.0%	-0.015	(0.254)		2.8%	2.6%	-0.003	(0.782)		461	935
Employment 500+	5.3%	4.1%	-0.012	(0.307)		1.4%	1.6%	0.002	(0.749)		510	945
Ownership												
Closely held	7.1%	4.8%	-0.023	(0.001)	***	2.9%	2.3%	-0.006	(0.186)		1,649	3,194
Publicly held	4.0%	4.9%	0.009	(0.529)		1.1%	1.8%	0.007	(0.409)		350	657
Government	7.5%	6.3%	-0.013	(0.755)		0.0%	3.6%	0.036	(0.164)		53	112
Federal Contractor												
No	7.1%	4.4%	-0.027	(0.000)	***	2.7%	2.3%	-0.003	(0.525)		1,355	2,578
Yes	5.6%	5.7%	0.001	(0.928)		2.3%	2.1%	-0.002	(0.760)		696	1,386
Industry												
Ag, mining, construction	7.9%	5.0%	-0.029	(0.276)		4.8%	1.8%	-0.029	(0.118)		126	219
Manufacturing	5.4%	3.9%	-0.015	(0.409)		2.5%	1.7%	-0.008	(0.521)		204	359
Trade	6.4%	4.6%	-0.018	(0.259)		1.3%	2.7%	0.014	(0.190)		298	547
Finance/insurance	6.1%	5.6%	-0.006	(0.802)		1.8%	2.5%	0.006	(0.656)		163	323
Prof. services	7.5%	5.2%	-0.023	(0.122)		3.3%	2.7%	-0.007	(0.510)		389	754
Health care	5.3%	4.4%	-0.009	(0.596)		1.6%	1.5%	-0.002	(0.869)		245	475
Other	6.8%	4.9%	-0.019	(0.111)		3.0%	2.1%	-0.008	(0.285)		574	1,175

* p<.10 * p<.05 *** p<.01

Table 3: Regressions Predicting Employer Response

Based on probit regressions. Figures represent changes in probability.

Dep. Var.:	Any employer interest						
	All firms	Closely held	Publicly held	Not federal contractor	Federal contractor	Closely-held, not Federal contractor	Closely-held Federal contractor
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Disability interactions with:							
Private sector, employment<15	-0.029***	-0.030***	-0.007	-0.025**	-0.012	-0.029**	-0.006
	(0.010)	(0.011)	(0.049)	(0.011)	(0.021)	(0.012)	(0.026)
Private sector, employment 15-99	-0.019*	-0.022**	0.062	-0.010	-0.011	-0.012	-0.020
	(0.011)	(0.011)	(0.058)	(0.013)	(0.019)	(0.013)	(0.019)
Private sector, employment 100-499	-0.023*	-0.027**	0.021	-0.024*	0.020	-0.031**	0.023
	(0.012)	(0.012)	(0.032)	(0.013)	(0.024)	(0.013)	(0.029)
Private sector, employment 500+	-0.028**	-0.021	-0.010	-0.032**	0.023	-0.036**	0.027
	(0.013)	(0.015)	(0.023)	(0.014)	(0.021)	(0.016)	(0.026)
Publicly held company	0.035*						
	(0.021)						
Government	-0.021						
	(0.029)						
Federal Contractor	0.027*	0.030*	0.011				
	(0.014)	(0.016)	(0.027)				
P-value for test of disability interactions:							
Joint test of all employment size categories	0.007	0.008	0.709	0.008	0.630	0.002	0.564
Employment<15 size category	0.005	0.007	0.882	0.028	0.569	0.013	0.813
Joint test of all except smallest size category	0.035	0.037	0.549	0.026	0.524	0.010	0.408
Observations	6,016	4,842	1,005	3,933	2,082	3,351	1,491

* p<.10 * p<.05 *** p<.01 (Std. errors in parentheses)

All regressions include controls for applicant names (11 dummies), employment size (4 dummies, including one for unknown size plus disability interaction), publicly held, government, multiestablishment, and industry (7 dummies). Descriptive statistics are in Table A1.

Table 3 (continued)

Based on probit regressions. Figures represent changes in probability.

Dep. Var.:	Callback for interview						
	All firms	Closely held	Publicly held	Not federal contractor	Federal contractor	Closely-held, not Federal contractor	Closely-held Federal contractor
	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Disability interactions with:							
Private sector, employment<15	-0.016***	-0.016***	^	-0.013**	-0.018*	-0.016**	-0.016*
	(0.005)	(0.006)		(0.006)	(0.009)	(0.007)	(0.009)
Private sector, employment 15-99	0.017*	0.015	^	0.026**	0.002	0.025*	-0.003
	(0.010)	(0.010)		(0.013)	(0.012)	(0.014)	(0.010)
Private sector, employment 100-499	-0.002	-0.001	0.001	-0.006	0.008	-0.009	0.026
	(0.007)	(0.009)	(0.011)	(0.008)	(0.013)	(0.008)	(0.022)
Private sector, employment 500+	0.002	0.004	0.005	0.007	0.000	0.009	-0.003
	(0.010)	(0.012)	(0.012)	(0.014)	(0.011)	(0.019)	(0.010)
Publicly held company	0.013						
	(0.014)						
Federal Contractor	-0.002	-0.005	-0.001				
	(0.007)	(0.009)	(0.009)				
P-value for test of disability interactions:							
Joint test of all employment size categories	0.009	0.026	0.919	0.039	0.392	0.027	0.322
Employment<15 size category	0.002	0.005	^	0.027	0.054	0.012	0.078
Joint test of all except smallest size category	0.351	0.507	0.919	0.167	0.942	0.205	0.668
Observations	6,016	4,842	1,005	3,933	2,082	3,351	1,491

* p<.10 * p<.05 *** p<.01 (Std. errors in parentheses)

^ Insufficient positive responses in these categories for probit estimation.

All regressions include controls for applicant names (11 dummies), employment size (4 dummies, including one for unknown size plus disability interaction), publicly held, government, multiestablishment, and industry (7 dummies). Descriptive statistics are in Table A1.

Table 4: Employer Responses by Employer Characteristics and Applicant Experience

	Any employer interest					Callback for interview					Sample size	
	No disability	Disability	Gap	(p-value)		No disability	Disability	Gap	(p-value)		No disability	Disability
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)		(9)	(10)
Novice applicants												
Employment size, private sector												
Employment<15	4.1%	4.9%	0.008	(0.653)		2.0%	1.4%	-0.006	(0.553)		197	431
Employment 15-99	6.5%	4.8%	-0.017	(0.320)		1.1%	2.4%	0.012	(0.247)		261	461
Employment 100-499	6.9%	4.9%	-0.020	(0.282)		2.6%	2.1%	-0.005	(0.708)		231	466
Employment 500+	5.1%	4.1%	-0.010	(0.517)		0.7%	1.8%	0.010	(0.241)		275	513
Ownership												
Closely held	6.0%	4.6%	-0.015	(0.125)		1.7%	1.8%	0.001	(0.834)		813	1,574
Publicly held	4.0%	4.8%	0.008	(0.693)		1.1%	2.1%	0.009	(0.443)		174	334
Government	2.6%	7.4%	0.048	(0.300)		0.0%	4.4%	0.044	(0.183)		39	68
Federal Contractor												
No	6.4%	4.3%	-0.020	(0.052)	*	1.6%	2.0%	0.004	(0.564)		675	1,248
Yes	4.0%	5.4%	0.014	(0.337)		1.4%	1.9%	0.005	(0.565)		350	729
Experienced applicants												
Employment size, private sector												
Employment<15	12.2%	5.1%	-0.072	(0.001)	***	7.9%	2.1%	-0.058	(0.000)	***	229	475
Employment 15-99	6.8%	5.6%	-0.013	(0.473)		2.1%	3.5%	0.014	(0.252)		292	518
Employment 100-499	6.1%	5.1%	-0.010	(0.595)		3.0%	3.0%	-0.001	(0.966)		230	469
Employment 500+	5.5%	4.2%	-0.014	(0.424)		2.1%	1.4%	-0.007	(0.474)		235	432
Ownership												
Closely held	8.1%	5.1%	-0.031	(0.003)	***	4.1%	2.7%	-0.014	(0.070)	*	836	1,620
Publicly held	4.0%	5.0%	0.010	(0.619)		1.1%	1.5%	0.004	(0.709)		176	323
Government	21.4%	4.5%	-0.169	(0.050)	**	0.0%	2.3%	0.023	(0.569)		14	44
Federal Contractor												
No	7.8%	4.5%	-0.033	(0.003)	***	3.7%	2.6%	-0.011	(0.193)		680	1330
Yes	7.2%	6.1%	-0.011	(0.487)		3.2%	2.3%	-0.009	(0.396)		346	657

* p<.10 * p<.05 *** p<.01

Table 5: Employer Responses by Employer Characteristics and Disability Type

	Any employer interest					Callback for interview					Sample size	
	No disability (1)	Disability (2)	Gap (3)	(p-value) (4)		No disability (5)	Disability (6)	Gap (7)	(p-value) (8)		No disability (9)	Disability (10)
Disability=SCI												
Employment size, private sector												
Employment<15	8.5%	3.2%	-0.052	(0.001)	***	5.2%	1.3%	-0.039	(0.001)	***	426	466
Employment 15-99	6.7%	5.3%	-0.014	(0.328)		1.6%	2.8%	0.012	(0.185)		553	495
Employment 100-499	6.5%	4.3%	-0.022	(0.142)		2.8%	2.3%	-0.005	(0.597)		461	483
Employment 500+	5.3%	6.4%	0.012	(0.441)		1.4%	2.3%	0.009	(0.281)		510	481
Ownership												
Closely held	7.1%	4.7%	-0.024	(0.004)	***	2.9%	2.1%	-0.008	(0.156)		1,649	1,639
Publicly held	4.0%	5.2%	0.012	(0.472)		1.1%	2.1%	0.010	(0.312)		350	330
Government	7.5%	6.0%	-0.015	(0.755)		0.0%	2.0%	0.020	(0.301)		53	50
Federal Contractor												
No	7.1%	4.1%	-0.030	(0.000)	***	2.7%	2.2%	-0.005	(0.029)	**	1355	1334
Yes	5.6%	6.3%	0.007	(0.688)		2.3%	2.0%	-0.003	(0.535)		696	685
Disability=Asperger's												
Employment size, private sector												
Employment<15	8.5%	6.8%	-0.016	(0.365)		5.2%	2.3%	-0.029	(0.024)	**	426	440
Employment 15-99	6.7%	5.2%	-0.015	(0.301)		1.6%	3.1%	0.015	(0.116)		553	484
Employment 100-499	6.5%	5.8%	-0.008	(0.634)		2.8%	2.9%	0.001	(0.959)		461	452
Employment 500+	5.3%	1.7%	-0.036	(0.003)	***	1.4%	0.9%	-0.005	(0.451)		510	464
Ownership												
Closely held	7.1%	5.0%	-0.021	(0.011)	**	2.9%	2.4%	-0.005	(0.414)		1,649	1,555
Publicly held	4.0%	4.6%	0.006	(0.706)		1.1%	1.5%	0.004	(0.661)		350	327
Government	7.5%	6.5%	-0.011	(0.818)		0.0%	4.8%	0.048	(0.105)		53	62
Federal Contractor												
No	7.1%	4.8%	-0.023	(0.016)	**	2.7%	2.5%	-0.002	(0.793)		1355	1244
Yes	5.6%	5.1%	-0.005	(0.698)		2.3%	2.1%	-0.002	(0.840)		696	701

* p<.10 * p<.05 *** p<.01

SCI = spinal cord injury

Table 6: Predicting Employer Response by Disability Type and Experience Level

Based on probit regressions with "any employer interest" or "callback for interview" as dependent variable. Figures represent changes in probability.

Dep. Var.:	Any employer interest				Callback for interview			
	Experience level		Disability type^		Experience level		Disability type^	
	Novice	Experienced	SCI	Asperger's	Novice	Experienced	SCI	Asperger's
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Disability interactions with:								
Private sector, employment<15	0.005	-0.043***	-0.042***	-0.016	-0.004	-0.023***	-0.017***	-0.011*
	(0.020)	(0.012)	(0.012)	(0.013)	(0.009)	-0.005	(0.005)	(0.006)
Private sector, employment 15-99	-0.019	-0.017	-0.018	-0.020	0.020	0.018	0.017	0.020*
	(0.015)	(0.015)	(0.013)	(0.013)	(0.014)	(0.016)	(0.011)	(0.011)
Private sector, employment 100-499	-0.024*	-0.018	-0.028**	-0.019	-0.001	-0.001	-0.004	0.002
	(0.015)	(0.017)	(0.013)	(0.014)	(0.009)	(0.012)	(0.008)	(0.009)
Private sector, employment 500+	-0.026	-0.028	-0.009	-0.051***	0.020	-0.008	0.010	-0.006
	(0.016)	(0.018)	(0.016)	(0.014)	(0.018)	(0.013)	(0.012)	(0.011)
Publicly held company	0.027	0.042	0.024	0.060**	0.006	0.020	0.013	0.015
	(0.028)	(0.031)	(0.024)	(0.029)	(0.016)	(0.025)	(0.015)	(0.017)
Government	0.045	-0.049**	-0.024	-0.020	^^	^^	^^	^^
	(0.064)	(0.024)	(0.034)	(0.033)				
Federal contractor	0.038*	0.020	0.033*	0.023	-0.004	-0.005	-0.005	-0.005
	(0.021)	(0.019)	(0.017)	(0.017)	(0.010)	(0.011)	(0.008)	(0.008)
P-value for test of disability interactions:								
Joint test of all employment size categories	0.246	0.005	0.007	0.009	0.507	0.016	0.006	0.111
Employment<15 size category	0.783	0.000	0.001	0.337	0.668	0.002	0.002	0.075
Joint test of all except smallest size category	0.164	0.280	0.352	0.005	0.396	0.496	0.305	0.273
Observations	3003	3,013	4071	3997	2,895	2,955	3968	3882

* p<.10 * p<.05 *** p<.01 (Std. errors in parentheses)

^ Regressions by disability type include applicants without disabilities as control group.

^^ Too few callbacks by government employers to estimate probit effects.

All regressions include controls for applicant names (11 dummies), employment size (4 dummies, including one for unknown size plus disability interaction), publicly held, government, multiestablishment, and industry (7 dummies). Descriptive statistics are in Table A1.

	Table 7: State Disability Discrimination Laws		
		Accommodations not required	Accommodations required
DDL covers only public employers		AL, MS	
DDL covers private employers with			
	1+ employees	SD	AK, CO, DC, HI, IL, ME, MI, MN, MT, ND, NJ, VA, VT, WI
	2 or more employees		WY
	3 or more employees		CT
	4 or more employees		IA, KS, NM, NY, OH, PA, RI
	5 or more employees		CA, ID
	6 or more employees		MA, MO, NH, OR
	8 or more employees	TN	WA
	9 or more employees	AR	
	12 or more employees		WV
	15 or more employees	GA, NV	AZ, DE, FL, IN, KY, MD, NC, NE, OK, SC, TX, UT
	20 or more employees		LA
Number of job applications to employers:		All employers	Small employers (not covered by ADA)
	Not covered by state DDL	723	670
	Covered by state DDL not requiring accoms.	266	6
	Covered by state DDL requiring accoms.	4891	657
DDL = disability discrimination law			

Table 8: Employer Responses and Disability Discrimination Laws

Based on probit regressions with "any employer interest" or "callback for interview" as dependent variable. Figures represent changes in probability.

Dep. Var.:	Any employer interest				Callback for interview				Means (s.d.)	
	All firms	All firms	All firms	Small firms (not covered by ADA)	All firms	All firms	All firms	Small firms (not covered by ADA)	All firms	Small firms
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Disability	-0.015**	-0.011	-0.011	-0.021	-0.001	-0.036***	-0.036***	-0.037***	0.659	0.680
	(0.006)	(0.018)	(0.018)	(0.020)	(0.004)	(0.018)	(0.018)	(0.018)	(0.474)	(0.466)
Disability interactions with:										
ADA coverage		0.032*	0.032*			0.026***	0.027***		0.505	0.000
		(0.018)	(0.018)			(0.010)	(0.010)		(0.500)	0.000
State DDL coverage		-0.034		-0.020		0.009		0.010	0.578	0.347
		(0.024)		(0.021)		(0.013)		(0.015)	(0.494)	(0.476)
State DDL coverage not requiring accoms.			-0.022	^			-0.003	^	0.032	0.003
			(0.026)				(0.020)		(0.176)	(0.055)
State DDL coverage requiring accoms.			-0.033	^			0.010	^	0.546	0.344
			(0.025)				(0.013)		(0.498)	(0.475)
State DDL coverage		0.026*		0.025		0.009		0.010	0.878	0.497
		(0.015)		(0.018)		(0.008)		(0.009)	(0.328)	(0.500)
State DDL coverage not requiring accoms.			0.024				0.025		0.045	0.005
			-0.042				(0.033)		(0.207)	(0.067)
State DDL coverage requiring accoms.			0.026*				0.009		0.833	0.493
			-0.013				(0.007)		(0.373)	(0.500)
Observations	6,016	5,880	5,880	1,333	6,016	5,880	5,880	1,333	6,016	1,333

* p<.10 * p<.05 *** p<.01 (Std. errors in parentheses)

SCI = spinal cord injury; DDL = disability discrimination law

All regressions include controls for applicant names (11 dummies), employment size (4 dummies), publicly held, government, Federal contractor, multi-establishment, and industry (7 dummies)

^ State DDLs could not be broken out by accommodation requirements for small firms due to insufficient observations (n=6).

Table 9: Within-state Difference-in-Difference Comparisons on Disability Discrimination Law Thresholds

	All applicants				Experienced applicants				Means (s.d.)			
Dep. Var.:	Any employer interest		Callback for interview		Any employer interest		Callback for interview		All		Experienced	
Employer size:	<100 employees	<30 employees	<100 employees	<30 employees	<100 employees	<30 employees	<100 employees	<30 employees	<100 ees	<30 ees	<100 ees	<30 ees
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Disability interaction with:												
Employer covered by ADA	0.0037	0.0100	0.0423***	0.0511**	0.0346	0.0537	0.0556**	0.0646**	0.341	0.180	0.342	0.171
	(0.0211)	(0.0299)	(0.0149)	(0.0200)	(0.0406)	(0.0510)	(0.0258)	(0.0289)	(0.471)	(0.384)	(0.475)	(0.377)
Employer covered by state law, not by ADA	-0.0391	-0.0386	-0.0150	-0.0021	-0.0332	-0.0243	-0.0312	-0.0018	0.161	0.250	0.160	0.248
	(0.0268)	(0.0325)	(0.0251)	(0.0292)	(0.0436)	(0.0492)	(0.0439)	(0.0488)	(0.368)	(0.433)	(0.367)	(0.432)
Main effect^												
Employer covered by state law, not by ADA	0.0347	0.0429	0.0225	0.0333	0.0158	0.0189	0.0251	0.0253	0.232	0.358	0.231	0.357
	(0.0292)	(0.0353)	(0.0213)	(0.0257)	(0.0404)	(0.0482)	(0.0360)	(0.0445)	(0.422)	(0.480)	(0.421)	(0.479)
N	2,864	1,850	2,864	1,850	1,514	977	1,514	977	2,864	1,850	1,514	977
R-squared	0.0921	0.0972	0.0877	0.0836	0.1443	0.1548	0.1638	0.1462				

*** p<0.01, ** p<0.05, * p<0.1 Robust standard errors in parentheses, accounting for clustering at state level.

Restricted to private companies. All regressions include state dummies with disability interactions, dummies for each employment size, and controls for applicant names (11 dummies), publicly held, Federal Contractor, and industry (7 dummies).

^ The main effect of the ADA is subsumed in the employment size dummies, since the 15-employee threshold applies to all employers.

Table 10: Regression Discontinuity Designs for Testing Effects of ADA and State Laws

Figures represents estimated changes in employer interest at the ADA or state law thresholds for group at left. Each figure is from separate model for group at left, limited to employers with no more than 15 employees above the threshold. State threshold estimates are limited to states with at least 5 disability and 5 non-disability observations above and below the threshold.

Dep. var.	Any employer interest					Callback				n
	Polynomial models^	Local linear models^^				Polynomial models^	Local linear models^^			
		Optimal bandwidth	Half bandwidth	Double bandwidth			Optimal bandwidth	Half bandwidth	Double bandwidth	
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)
Change at ADA threshold										
All applicants										
No disability	0.065	0.000	0.000	0.121	**	0.011	0.000	0.000	0.080	644
	(0.116)			(0.051)		(0.039)			(0.081)	
Disability	0.005	0.000	0.000	0.139	**	0.030	0.000	0.000	0.023	1304
	(0.058)			(0.056)		(0.037)			(0.016)	
Experienced applicants										
No disability	0.080	0.013	0.000	0.123		0.038	-0.001	0.000	0.066	353
	(0.198)	(0.015)		(0.063)		(0.153)	(0.001)		(0.049)	
Disability	0.098	0.000	0.000	0.060		0.051	0.000	0.000	0.084	679
	(0.078)			(0.060)		(0.053)			(0.065)	
Change at state law threshold										
All applicants										
No disability	-0.056	0.006	0.000	0.021		-0.059	0.006	0.000	0.021	320
	(0.085)	(0.013)		(0.021)		(0.069)	(0.013)		(0.021)	
Disability	0.008	0.000	0.000	0.047		-0.022	0.000	0.000	0.041	638
	(0.065)			(0.074)		(0.043)			(0.025)	
Experienced applicants										
No disability	-0.140	-0.013	0.000	0.010		-0.135	-0.013	0.000	0.010	180
	(0.138)	(0.009)		(0.016)		(0.112)	(0.009)		(0.016)	
Disability	-0.030	0.062	0.000	0.048		-0.088	0.000	0.000	0.045	337
	(0.088)	(0.181)		(0.091)		(0.060)			(0.038)	

** p<.05 Standard errors in parentheses.

^ Polynomial models control for employment, employment squared, and employment cubed, estimated separately on each side of the threshold. Results are illustrated in Figures 3a to 6b.

^^ Tests using local linear models are done with Stata's "rd" command.

Table A1: Descriptive Statistics for Regressions in Tables 3 and 6

Figures represent means, with std. deviations in parentheses

	Full sample		Closely-held		Publicly-held		Not Federal contractor		Federal contractor		Novice applicant		Experienced applicant		SCI disability		Asperger's disability	
Any employer response	0.055	(0.227)	0.056	(0.230)	0.046	(0.209)	0.053	(0.225)	0.057	(0.231)	0.050	(0.218)	0.059	(0.236)	0.048	(0.214)	0.049	(0.217)
Callback for interview	0.023	(0.151)	0.025	(0.156)	0.016	(0.125)	0.024	(0.154)	0.022	(0.145)	0.018	(0.134)	0.029	(0.167)	0.021	(0.144)	0.024	(0.152)
Private, employment<15	0.222	(0.415)	0.261	(0.439)	0.068	(0.251)	0.262	(0.440)	0.145	(0.352)	0.209	(0.407)	0.234	(0.423)	0.231	(0.422)	0.226	(0.418)
* disability	0.151	(0.358)	0.177	(0.382)	0.050	(0.217)	0.179	(0.383)	0.098	(0.297)	0.144	(0.351)	0.158	(0.364)	0.231	(0.422)	0.226	(0.418)
Private, employment 15-99	0.254	(0.436)	0.288	(0.453)	0.134	(0.341)	0.269	(0.443)	0.228	(0.419)	0.240	(0.427)	0.269	(0.443)	0.245	(0.430)	0.249	(0.432)
* disability	0.163	(0.369)	0.185	(0.388)	0.082	(0.275)	0.172	(0.377)	0.145	(0.352)	0.153	(0.360)	0.172	(0.377)	0.245	(0.430)	0.249	(0.432)
Private, employment 100-499	0.232	(0.422)	0.237	(0.425)	0.247	(0.432)	0.229	(0.420)	0.239	(0.426)	0.232	(0.422)	0.232	(0.422)	0.239	(0.427)	0.232	(0.422)
* disability	0.155	(0.362)	0.160	(0.366)	0.161	(0.368)	0.151	(0.358)	0.163	(0.370)	0.155	(0.362)	0.156	(0.363)	0.239	(0.427)	0.232	(0.422)
Private, employment 500+	0.242	(0.428)	0.186	(0.389)	0.549	(0.498)	0.195	(0.396)	0.331	(0.471)	0.262	(0.440)	0.221	(0.415)	0.238	(0.426)	0.239	(0.426)
* disability	0.157	(0.364)	0.121	(0.326)	0.357	(0.480)	0.124	(0.329)	0.220	(0.414)	0.171	(0.376)	0.143	(0.351)	0.238	(0.426)	0.239	(0.426)
Private, employment N/A	0.023	(0.149)	0.027	(0.163)	0.002	(0.045)	0.029	(0.168)	0.010	(0.100)	0.020	(0.141)	0.025	(0.156)	0.022	(0.146)	0.022	(0.147)
* disability	0.014	(0.119)	0.017	(0.131)	0.002	(0.045)	0.019	(0.136)	0.006	(0.079)	0.013	(0.112)	0.016	(0.127)	0.022	(0.146)	0.022	(0.147)
Publicly-held	0.167	(0.373)	0.000		1.000		0.131	(0.338)	0.236	(0.425)	0.169	(0.375)	0.166	(0.372)	0.163	(0.370)	0.168	(0.374)
* disability	0.109	(0.312)	0.000		0.652	(0.476)	0.084	(0.277)	0.158	(0.364)	0.111	(0.314)	0.107	(0.309)	0.163	(0.370)	0.168	(0.374)
Government	0.027	(0.163)	0.000		0.000		0.017	(0.128)	0.048	(0.214)	0.036	(0.185)	0.019	(0.137)	0.025	(0.155)	0.032	(0.176)
* disability	0.019	(0.135)	0.000		0.000		0.011	(0.103)	0.034	(0.180)	0.023	(0.149)	0.015	(0.120)	0.025	(0.155)	0.032	(0.176)
Federal contractor	0.346	(0.476)	0.308	(0.462)	0.488	(0.500)	0.000		1.000		0.359	(0.480)	0.333	(0.471)	0.339	(0.474)	0.360	(0.480)
* disability	0.230	(0.421)	0.204	(0.403)	0.326	(0.469)	0.000		0.666	(0.472)	0.243	(0.429)	0.218	(0.413)	0.339	(0.474)	0.360	(0.480)
Multi-establishment	0.623	(0.485)	0.601	(0.490)	0.833	(0.373)	0.583	(0.493)	0.701	(0.458)	0.639	(0.480)	0.607	(0.488)	0.608	(0.488)	0.628	(0.483)
Multi-establishment status N/A	0.027	(0.163)	0.000	0.000	0.000		0.017	(0.128)	0.048	(0.214)	0.036	(0.185)	0.019	(0.137)	0.025	(0.155)	0.032	(0.176)
(continued)																		

Table A1 (continued)

Figures represent means, with std. deviations in parentheses

	Full sample		Closely-held		Publicly-held		Not Federal contractor		Federal contractor		Novice applicant		Experienced applicant		SCI disability		Asperger's disability	
Ag, mining, construction	0.057	(0.233)	0.053	(0.224)	0.088	(0.284)	0.051	(0.220)	0.069	(0.254)	0.057	(0.231)	0.058	(0.234)	0.054	(0.226)	0.057	(0.231)
Manufacturing	0.094	(0.291)	0.075	(0.263)	0.200	(0.400)	0.072	(0.259)	0.134	(0.340)	0.086	(0.280)	0.102	(0.302)	0.093	(0.290)	0.088	(0.284)
Trade	0.140	(0.347)	0.136	(0.343)	0.183	(0.387)	0.136	(0.343)	0.148	(0.356)	0.147	(0.354)	0.134	(0.341)	0.134	(0.340)	0.142	(0.350)
Finance/insurance	0.081	(0.273)	0.074	(0.261)	0.129	(0.335)	0.091	(0.288)	0.061	(0.240)	0.085	(0.279)	0.077	(0.266)	0.081	(0.273)	0.082	(0.274)
Prof. services	0.190	(0.392)	0.216	(0.411)	0.097	(0.297)	0.200	(0.400)	0.171	(0.377)	0.178	(0.383)	0.201	(0.401)	0.199	(0.399)	0.181	(0.386)
Health care	0.120	(0.325)	0.138	(0.345)	0.051	(0.219)	0.131	(0.338)	0.098	(0.297)	0.130	(0.336)	0.110	(0.312)	0.124	(0.329)	0.116	(0.320)
Other industry	0.291	(0.454)	0.308	(0.462)	0.252	(0.435)	0.301	(0.459)	0.271	(0.445)	0.282	(0.450)	0.299	(0.458)	0.291	(0.454)	0.302	(0.459)
Applicant 1	0.083	(0.276)	0.084	(0.277)	0.078	(0.269)	0.080	(0.272)	0.089	(0.285)	0.167	(0.373)	0.000	--	0.046	(0.209)	0.057	(0.231)
Applicant 2	0.083	(0.275)	0.085	(0.279)	0.071	(0.256)	0.081	(0.273)	0.086	(0.280)	0.000	--	0.165	(0.371)	0.074	(0.262)	0.098	(0.298)
Applicant 3	0.085	(0.278)	0.085	(0.280)	0.087	(0.283)	0.090	(0.286)	0.074	(0.263)	0.000	--	0.169	(0.375)	0.069	(0.254)	0.074	(0.262)
Applicant 4	0.083	(0.277)	0.085	(0.279)	0.078	(0.269)	0.088	(0.283)	0.075	(0.263)	0.000	--	0.167	(0.373)	0.100	(0.299)	0.078	(0.268)
Applicant 5	0.084	(0.278)	0.082	(0.275)	0.094	(0.292)	0.087	(0.281)	0.079	(0.270)	0.000	--	0.168	(0.374)	0.110	(0.314)	0.073	(0.260)
Applicant 6	0.083	(0.276)	0.082	(0.275)	0.079	(0.271)	0.081	(0.273)	0.088	(0.283)	0.167	(0.373)	0.000	--	0.131	(0.337)	0.064	(0.244)
Applicant 7	0.083	(0.276)	0.085	(0.279)	0.080	(0.272)	0.084	(0.278)	0.081	(0.272)	0.000	--	0.166	(0.372)	0.074	(0.262)	0.075	(0.263)
Applicant 8	0.083	(0.276)	0.084	(0.277)	0.084	(0.278)	0.081	(0.273)	0.086	(0.281)	0.000	--	0.166	(0.372)	0.074	(0.262)	0.103	(0.304)
Applicant 9	0.084	(0.277)	0.082	(0.275)	0.091	(0.288)	0.083	(0.275)	0.086	(0.280)	0.168	(0.374)	0.000	--	0.133	(0.340)	0.056	(0.230)
Applicant 10	0.084	(0.277)	0.080	(0.272)	0.101	(0.302)	0.080	(0.271)	0.091	(0.287)	0.168	(0.374)	0.000	--	0.053	(0.225)	0.141	(0.348)
Applicant 11	0.082	(0.274)	0.083	(0.276)	0.076	(0.266)	0.082	(0.274)	0.082	(0.275)	0.164	(0.370)	0.000	--	0.068	(0.252)	0.058	(0.233)
Applicant 12	0.083	(0.276)	0.081	(0.273)	0.077	(0.267)	0.083	(0.277)	0.083	(0.275)	0.167	(0.373)	0.000	--	0.067	(0.251)	0.124	(0.330)
Sample size	6016		4843		1007		3933		2082		3003		3013		2019		1945	