

The employment rate of people with disabilities

Critical issues in evaluating employment policies for the disabled are the measurement of employment status, the measurement of disability status, and the question of which subpopulations of the disabled should be included; no clear consensus has emerged regarding the outcome of these issues, except that surveys must provide more comprehensive coverage

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Promoting employment for people with disabilities has long been an important policy objective in the United States. Some examples of Federal policies whose goal is to increase employment for people with disabilities are the vocational rehabilitation system, funded by grants from the U.S. Rehabilitation Services Administration to the States; the Ticket to Work program; the Work Opportunity Tax Credit; and the Americans with Disabilities Act (ADA). Many of these policies are relatively new; yet analysts have noted a decline in the employment rate of people with disabilities in recent years,¹ and some evaluations of the ADA indicate that, rather than increasing employment, the Act may have reduced employment for those with disabilities. These surprising findings have led some observers to take a closer look at employment statistics for such individuals. Perhaps, they argue, it is not that the programs and policies have failed to aid disabled individuals in finding employment; rather, the statistics themselves are misleading and inappropriate.

This article examines three issues that are critical in assessing the success of employment policies for the disabled: the measure-

ment of employment status, the measurement of disability status, and the decision regarding whom to include in the analyses. Because the empirical studies reviewed herein made use of three specific surveys—the 2000 Decennial Census, the Current Population Survey (CPS), and the Survey of Income and Program Participation (SIPP)—the focus of the article is the definitions and measurement of employment and disability status in those three surveys. The measurement of employment status has not been an issue of dispute in the literature, so it is discussed first. Next, the definitions of disability status are examined, followed by a review of the definitions used and analyses undertaken in evaluations of the ADA. The article concludes with suggestions about future research on measuring disability status.

Employment status

Employment status is the least controversial of the aforementioned three issues. Definitions of employment and other labor force statuses generally follow those used for the CPS, a monthly survey of approximately 60,000 households that is used to develop

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the Nation's official employment statistics. The CPS defines employment (actually, employed persons, but the two terms may be taken to be identical for the purposes of this article) as follows:

Persons 16 years and over in the civilian noninstitutional population who, during the reference week, (a) did any work at all (at least 1 hour) as paid employees; worked in their own business, profession, or on their own farm, or worked 15 hours or more as unpaid workers in an enterprise operated by a member of the family; and (b) all those who were not working but who had jobs or businesses from which they were temporarily absent because of vacation, illness, bad weather, childcare problems, maternity or paternity leave, labor-management dispute, job training, or other family or personal reasons, whether or not they were paid for the time off or were seeking other jobs.²

People who are not employed are classified as being either unemployed or not in the labor force. To be considered unemployed, a person must not have worked during the reference week, must have been available for work except for a temporary illness, and must have actively searched for work during the 4-week period ending in the reference week. Individuals who do not meet the criteria for being employed or unemployed are categorized as "not in the labor force."

The 2000 census uses the same concept of employment as the CPS, but because the purpose of the census is broader than that of the CPS, the census is structured differently and does not do as good a job of capturing labor force status as does the CPS:

Census 2000 was designed to collect general information about the labor force for very small geographic areas on a one-time basis. It was primarily a mail-out/mail-back data collection that asked fewer and less precise questions than the CPS on employment and unemployment.³

The Census Bureau notes, "at the national level, Census 2000 estimates of employment were considerably below, and estimates of unemployment above, the corresponding CPS estimates."⁴

The SIPP is a federally sponsored longitudinal data collection effort whose purpose is

To collect source and amount of income, labor force information, program participation and eligibility data, and general demographic characteristics to measure the effectiveness of existing Federal, State, and local programs; to estimate future costs and

coverage for government programs, such as food stamps; and to provide improved statistics on the distribution of income and measures of economic well-being in the country.⁵

The SIPP operates by having national panels that include between 14,000 and 36,700 members who are followed for a period that varies from 2½ to 4 years. Labor force questions are included in the "core" module of the questionnaire, along with other key income and program participation questions. Topics covered in the topical modules (though not during each interview) include personal history, childcare, wealth, program eligibility, child support, utilization and cost of health care, disability, school enrollment, taxes, and annual income.⁶

The SIPP questions on employment are somewhat different from the ones asked in the CPS or the 2000 census. To illustrate, first, the SIPP asks about employment during a particular *month*, rather than during a particular *week*, as the CPS and 2000 census do. Second, although the SIPP asks questions dealing with unpaid work in a family business, they are not as specific as the questions used in the CPS. Third, the SIPP questions about temporary absence from work are not the same as the questions in the CPS and the 2000 census. Because of these significant differences, one would not expect to find consistent responses across the surveys.

Although the three surveys produce somewhat different results, the literature does not appear to have major criticisms of the standard measures of employment. However, one author has written several articles on how simply knowing the employment status of people with disabilities does not tell us the complete story. Lisa Schur's 2002 and 2003 studies⁷ used the CPS and SIPP to analyze the extent to which people with disabilities are more likely to participate in what she refers to as "nonstandard jobs": part-time, temporary, and independent contractor positions. It has long been established that such positions pay lower wages and offer less generous fringe benefits than full-time positions, so accepting a position of that nature can be deleterious to workers with disabilities if they do not voluntarily choose such work. Schur found that more than 40 percent of workers with disabilities are in some form of nonstandard work, nearly twice the rate for their nondisabled counterparts. Schur also found that these arrangements are likely to be voluntary and that the primary explanation appears to be health problems. Thus, on the one hand, increasing nonstandard work opportunities may be an appropriate way to draw more people with disabilities into employment. On the other hand, noted Schur, employers may be reluctant to pay for the cost of

accommodations for workers who are on the job for a limited time or for limited hours, and health insurance is a higher proportion of pay for part-time workers. Schur concluded that nonstandard work is an important option for people with disabilities, but further research is needed to determine whether such jobs provide the benefits and support that those people require and whether appropriate accommodations and benefits are in fact provided.

One particular aspect of CPS labor force statistics deserves mention here, in that it may prove useful in the discussion which follows on the appropriate population to consider in determining the employment rate of people with disabilities. In the CPS, individuals who are neither employed nor unemployed are categorized as “not in the labor force,” and the survey includes questions aimed at identifying these workers’ interests and actions in seeking employment. Individuals who are not in the labor force are asked if they would like to work. If so, they are asked questions to determine whether they are *marginally attached* to the labor force, which means that they want work, are able to work, are available for work, and have looked for work during the past 12 months, but not in the past 4 weeks; or whether they are *discouraged workers*, which means that they satisfy the aforementioned conditions, but, in addition, they are not currently looking for work because they believe that there are no jobs available or there are none for which they would qualify.

Defining disability status

Disability is a more complex concept than employment, and there are a number of definitions thereof. According to Andrew J. Houtenville and Richard B. Burkhauser, “Disability is a controversial concept to define and measure.”⁸ Michele Adler showed that Federal programs use a wide range of definitions of disability, and Burt S. Barnow showed how one Federal program, the Job Training Partnership Act, defined disabilities differently for eligibility and reporting purposes.⁹ Burkhauser, Houtenville, and David C. Wittenburg noted that the most common conceptualizations of disability are based on the models of Saad Nagi and the World Health Organization.¹⁰ Burkhauser, Houtenville, and Wittenburg observed that a population may be characterized as consisting of a set of four concentric circles, with the outermost circle consisting of all working-age people, the next circle including those with impairments, the third circle comprising those with activity limitations, and the innermost circle consisting of people with longer term activity limitations. Note, importantly, that *disability* is not usually defined as being

synonymous with activity limitations. Rather, most analysts define a disability as a combination of an impairment and some type of activity limitation.

The March CPS Supplement includes a question on characteristics that limit work activities, namely, “(Do you/Does anyone in this household) have a health problem or disability which prevents (you/them) from working or which limits the kind or amount of work (you/they) can do?” the responses to which many economists and other social scientists have used to analyze disabilities.¹¹ In addition, the Census Bureau has developed an algorithm that classifies a person as being disabled or having a “work disability” in response to a series of questions in the basic CPS monthly instrument, as well as the March Supplement; these other responses used to classify someone as having a disability include “retired or left a job for health reasons,” “not in the labor force because of a health reason,” “currently not in the labor force because of a disability,” “did not work in the previous year because of illness or a disability,” “under age 65 and received Medicare or Supplemental Security Income in the previous year,” and “received Veterans’ Administration disability income in the previous year.”¹² The Census Bureau warns that the CPS questions are not designed to capture any particular concept of disability and that the questions on disability may or may not be appropriate for any particular research issue.¹³

The long form of the 2000 census included six questions on disability that were developed by a Federal inter-agency workgroup.¹⁴ The first two questions asked about impairments in vision or hearing and limitations in basic activities such as walking, climbing stairs, reaching, lifting, and carrying. The next four questions asked whether the person had a physical, mental, or emotional condition lasting 6 months or longer that resulted in difficulty in doing any of the following: learning, remembering, or concentrating; dressing, bathing, or getting around the house; going outside the home alone to shop or visit a doctor’s office; and working at a job or business.¹⁵ The Census Bureau notes that the 2000 census captures only a few dimensions of disability. Concern has been raised by some Census Bureau staff that there was a problem in the length and complexity of some of the disability questions, likely leading to undercounts of the population with employment disabilities and the population with stay-at-home disabilities (which may overlap).¹⁶

Of the three surveys discussed in this article, the SIPP has the most complete set of questions on disability. The SIPP questions capture limits in functional activities (for example, seeing, hearing, and speaking); activities of daily

living (such as getting around the home, getting in and out of bed, and eating); instrumental activities of daily living (for instance, going outside of the home, keeping track of money, and preparing meals); the use of assistive devices; the presence of conditions related to mental functioning; and the presence of a work disability.¹⁷ In addition to collecting comprehensive information on disabilities, the SIPP asks some of the questions more than once over the period that panel members are interviewed (generally, 2½ years), thereby offering the opportunity to look for changes in disability status and consistency of responses over time.

The ADA and employment trends

In recent years, two series of studies have focused respectively on employment trends of people with disabilities and evaluations of the ADA. In both cases, the studies concluded that a downward trend in employment for people with disabilities began in the 1990s and has continued on to the present, with some researchers attributing at least part of the trend to the ADA. Critics of these studies generally have argued that the findings are spurious and are due to the researchers using the wrong definition of disability or the wrong subset of the disabled population in their analysis.

Although the ADA was intended to increase employment opportunities for people with disabilities by prohibiting discrimination in the workplace and by requiring employers to accommodate the needs of workers with disabilities, economic theory is more ambiguous. The major argument economists have made is that if employers perceive the costs of accommodation to be high, they will refrain from hiring workers with disabilities. A more general point is one that has been made in studying age discrimination: workers who lose their jobs are more likely to bring a discrimination suit than an applicant is, because the worker who is laid off knows the relevant pool of labor, whereas the applicant often has no idea whom the employer hires or what the qualifications of those who are hired are. Thus, employers must weigh the costs of possibly violating the discrimination law against the costs of providing accommodations to workers with disabilities. In the latter regard, note that because the ADA uses the vague term “reasonable accommodation,” employers face uncertainty as to what level of accommodation would be considered reasonable. Of course, as case law develops, it may be that the term “reasonable accommodation” will be fleshed out, thereby alleviating or even eliminating employers’ concerns.

The most often cited study of the ADA was conducted by Daren Acemoglu and Joshua D. Angrist.¹⁸ Using March CPS data, they estimated employment trends from 1988 through 1996 for workers with disabilities. Acemoglu and Angrist used regression analysis to statistically control for other factors that might have influenced employment rates for workers with disabilities, such as receipt of income transfer payments through Social Security Disability Insurance and Supplemental Security Income. After controlling for other relevant factors, the authors concluded that the ADA led to declines in employment for workers aged 21 to 39 years with disabilities, but they did not find evidence of any employment impact for similar workers between the ages of 40 and 58 years. Acemoglu and Angrist tested a variety of specifications for their empirical work, and they consistently found a decline in the number of weeks of employment for younger workers with disabilities after the ADA became effective.

In a series of articles, Thomas DeLeire used the SIPP to estimate the employment effects of the ADA.¹⁹ With data from 1986 through 1995, DeLeire performed a probit analysis to estimate how the enactment of the ADA affected the probability of employment and wage rates for men aged 18 to 64 years with disabilities. In his simplest model, in which he controlled only for the presence of the ADA, DeLeire found that the Act reduced employment by a statistically significant 7.2 percentage points. When demographic characteristics, industry, and occupation were held constant, the impact declined to 4.1 percentage points, again statistically significant. Next, DeLeire allowed the impact of the ADA to vary by year, and he found that employment effects began in 1990, when the ADA was passed, and increased in magnitude every year thereafter. He then found that the effects were greater for workers in manufacturing, blue-collar, and managerial occupations; workers with physical and mental disabilities; and workers whose disabilities were not due to work-related injuries. He found no evidence that the ADA affected the wage rates of disabled workers.

Kathleen Beegle and Wendy A. Stock analyzed the impact of State disability discrimination laws on the employment and wage rates of people with disabilities.²⁰ They noted that, prior to the enactment of the ADA, most States already had laws prohibiting employment discrimination against people with disabilities. Using decennial census data from 1970, 1980, and 1990, they performed a series of ordinary least squares regressions to determine the impacts of discrimination laws on the earnings, labor force participation rates, and employment of disabled individuals. In contrast to DeLeire (who considered the effects of

the ADA rather than State laws), Beegle and Stock found that the discrimination laws were associated with lower relative earnings for the disabled and slightly lower labor force participation rates, but that they had no effect on employment rates.

A number of articles have been critical of the literature on the impact of the ADA; the major arguments relating to the definition of disability and the relevant population to analyze are discussed next. Because the ADA was not implemented as a classical experiment with random assignment of employers and disabled people to treatment status, the evaluations are subject to the usual challenges to nonexperimental evaluations; these issues are not covered in detail here, because the main purpose of this article is to explore definitions of employment and disability status and not to discuss the impact of the ADA.²¹

An important issue raised by all the critics is the definition of people with disabilities. The critics argue that the article by Acemoglu and Angrist and the articles by DeLeire suffer from two problems in their definitions of the disabled population of interest. First, they argue that, because the questions in the CPS and SIPP which are used to identify people with disabilities do not correspond well to the population covered by the ADA, those authors' analyses cannot be used to determine the impact of the ADA on the covered population.²² Second, the critics argue that, by using a definition of disability based on the ability to work, the ADA can be a victim of its own success: to the extent that employers make appropriate accommodations, some people with impairments will no longer consider themselves as having a disability, and those people, who were helped by the ADA, will no longer be counted as disabled.

The first argument—that evaluations should examine the impact of the ADA only on the population covered by the Act—appears to be misguided. As all researchers on people with disabilities stress, the population with disabilities is not homogeneous. It is possible that the ADA might help one subgroup while hurting another. For example, much of the research on raising the minimum wage looks beyond the impact on those making less than the new minimum wage: there could be ripple effects that lead to wage increases for workers earning more than the new minimum, and if there is a sector that is not covered by the Act, workers in that sector may suffer a decrease in their wages while those in the covered sector gain.²³ If one believes that the only problem with the article by Acemoglu and Angrist and the articles by DeLeire is that they look at the “wrong” population of people with disabilities, one should still be very concerned with the findings, which imply that some individuals with disabilities

are made worse off because of the ADA. Alternatively, the findings that some groups are helped and some are hurt might be due to specification errors in the analyses: measurement error and omitted variables can lead to biased estimates of the impact of the Act.

The second argument is more problematic. On the one hand, studies that use work limitations to define the population of interest are likely to develop biased estimates to the extent that employers implement accommodations which remove workers from the ranks of the disabled. On the other hand, to the extent that researchers use a more general activity limitation measure, individuals who have employers accommodate their work limitations are still likely to have limitations on other activities.

Research by Kruse and Schur and by Houtenville and Burkhauser show how important the definition of the pool of those with disabilities is in estimating the impact of the ADA.²⁴ Kruse and Schur developed 14 disability measures based on activity limitation, receipt of disability income, and ability to work. They found that the employment of people with disabilities after the ADA was passed differed by disability measure: employment declined for those reporting work disabilities, but improved among those reporting any or severe functional limitations or limitations associated with activities of daily living who do not report a work disability.²⁵ Houtenville and Burkhauser found that, by considering only individuals with a disability lasting for 2 consecutive years instead of a single year, the employment decline estimated by Acemoglu and Angrist to have resulted from the passage of the ADA did not in fact exist. What are we to make of the findings by these two studies? Either (1) the ADA has affected different subpopulations of people with disabilities differently or (2) the results vary because of specification errors—for example, omitted explanatory variables or measurement error. The sensitivity of the findings with regard to the population analyzed should give pause to the notion of declaring the ADA ineffective, at least until these matters are resolved.

Similar issues arise in research on recent employment trends of people with disabilities. A series of articles by Burkhauser and his colleagues points to a steady decline in the employment rate for people with disabilities, beginning prior to the enactment of the ADA.²⁶ Some observers, such as Thomas W. Hale, argue that the data on the population is so poor in capturing the magnitude of the disabled population that we should refrain from asking even simple trend questions until we obtain improved data.²⁷ Stapleton, Burkhauser, and Houtenville concur that there are problems with the data sources now available on the

employment of people with disabilities, but they argue that the major data sources (from the CPS, the SIPP, and the National Health Insurance Survey) all produce highly correlated employment series, so we can in fact identify trends in the overall employment level of people with disabilities.²⁸ Although their reasoning is quite convincing, sometimes specific numbers, rather than trends, are needed, and sometimes also specific subgroups of the disabled population need to be identified.

Implications for research and policy

All the studies reviewed in this article expressed some concern with the data that are available to analyze employment status for people with disabilities. The primary issue is measuring disability status appropriately, rather than measuring employment status. However, additional insights might be gained by paying more attention to what Schur refers to as “nonstandard jobs” (part-time jobs, temporary situations, and independent-contractor work), as well as by focusing more on the situation of people who are not in the labor force (for example, whether such people want to work, whether they are available to work, whether they have searched for work in the past 12 months, and the reasons they have not searched for work).

The data that are available appear to be adequate for identifying trends in employment patterns for people with disabilities, but they are clearly inadequate for assessing the impact of acts such as the ADA. Because the consensus definitions of disability go beyond impairments and include activity limitations, such as work limitations, research is needed to better show how various impair-

ments limit major activities and how the trends have changed over time. Because the ADA is intended to affect the target population’s work limitations through employer accommodations, it is inappropriate to assess the impact of that Act by analyzing only the work-disabled population; the fact that studies using alternative definitions of disability in assessing the impact of the ADA reach quite different conclusions means that further work is needed to discover the impact of the ADA on various subpopulations. Research that explores the use of the impaired population and various definitions of activity limitations, including the ability to work at all, also must be pursued. In addition, studies indicate that the length and degree of impairment can affect estimates of the impact of the Act, so further exploration of how and why that occurs would be valuable.

Clearly, to truly understand the relationships that exist among impairments, disability, and work, major surveys must provide more comprehensive coverage of these issues. Unfortunately, space on the periodic surveys is expensive and scarce, so it would be naïve simply to call for more and better data. What may be more feasible is to periodically expand the samples of disabled individuals in some of these surveys and to ask more detailed questions about impairment, activity limitations, and disability.

Finally, we should not be surprised that researchers cannot yet agree on the impact of the ADA or even how to measure the impact. The United States has had minimum-wage legislation since 1938, and economists still disagree on whether such legislation helps or hurts workers. It would truly be surprising if a consensus on the impact of the ADA could be reached in less than 20 years. □

Notes

¹ See Richard V. Burkhauser, Andrew J. Houtenville, and David C. Wittemberg, “A User’s Guide to Current Statistics on the Employment of People with Disabilities,” in David C. Stapleton and Richard V. Burkhauser (eds.), *The Decline in Employment of People with Disabilities: A Policy Puzzle* (Kalamazoo, MI, Upjohn Institute for Employment Research, 2003), pp. 23–86.

² Definition cited from the glossary at the BLS Internet site www.bls.gov/bls/glossary.htm (visited June 5, 2008). The reference week is the week for which respondents are asked to report their activities.

³ “Employment Status: 2000” (U.S. Census Bureau, August 2003), on the Internet at www.census.gov/prod/2003pubs/c2kbr-18.pdf (visited June 3, 2008).

⁴ *Ibid.*

⁵ “Survey of Income and Program Participation” (U.S. Census Bureau, Feb. 14, 2002; last updated Jan. 2, 2008), on the Internet at www.census.gov/sipp/overview.html (visited June 3, 2008).

⁶ *Ibid.*

⁷ Lisa A. Schur, “Dead End Jobs or a Path to Economic Well Being? The Consequences of Non-Standard Work Among People with Disabilities,” *Behavioral Sciences and the Law*, November–December 2002, pp. 601–20; and “Barriers or Opportunities? The Causes of Contingent and Part-Time Work Among People with Disabilities,” *Industrial Relations*, October 2003, pp. 589–622.

⁸ Andrew J. Houtenville and Richard B. Burkhauser, *Did the Employment of People with Disabilities Decline in the 1990s, and Was the ADA Responsible? A Replication and Robustness Check of Acemoglu and Angrist (2001)*, Research Brief (Ithaca, NY, Cornell University Employment and Disability Institute, 2004).

⁹ See Michele Adler, *Programmatic Definitions of Disability: Policy Implications* (U.S. Department of Health and Human Services, Office of Disability, Aging, and Long-Term Care Policy, 1991), on the Internet at aspe.hhs.gov/daltcp/reports/prodefes.htm (visited June 5, 2008); and Burt S. Barnow, “Policies for People with Disabilities in U.S. Employment and Training Programs,” in Jerry L. Mashaw, Virginia Reno, Richard Burkhauser, and Monroe Berkowitz (eds.), *Disabilities, Cash Benefits, and Work* (Kalamazoo, MI, Upjohn Institute for Employment Research, 1996).

¹⁰ See Saad Nagi, “Disability Concepts Revisited: Implications for Preven-

tion,” in A. M. Pope and A. R. Tarlove (eds.), *Disability in America: Toward a National Agenda for Prevention* (Washington, DC, National Academy Press, 1991), pp. 309–27; and Saad Nagi, *Towards a Common Language for Functioning, Disability, and Health* (Geneva, World Health Organization, 2002).

¹¹ Richard V. Burkhauser and Andrew J. Houtenville, *A Guide to Disability Statistics from the Current Population Survey—Annual Social and Economic Supplement (March CPS)* (Ithaca, NY, Cornell University, Rehabilitation Research and Training Center on Disability Demographics and Statistics, 2006).

¹² “Uses and limitations of CPS data on work disability” (U.S. Census Bureau, undated), on the Internet at www.census.gov/hhes/www/disability/cps/cpstablexplanation.pdf (visited June 5, 2008).

¹³ *Ibid.*

¹⁴ Questions on earlier decennial censuses are not comparable to the ones in the 2000 census.

¹⁵ The last two questions were asked only of persons 16 years or older.

¹⁶ An employment disability is an impairment that prevents the person from working; a stay-at-home disability is an impairment that prevents the person from leaving the home. Both types of disability are self-reported on the census form. (See William A. Erickson and Andrew J. Houtenville, *A Guide to Disability Statistics from the 2000 Decennial Census* (Ithaca, NY, Cornell University, Rehabilitation Research and Training Center on Disability Demographics and Statistics, 2005). The original Census Bureau analyses can be found in Sharon M. Stern, “Counting People with Disabilities: How Survey Methodology Influences Estimates in Census 2000 and the Census 2000 Supplementary Survey,” Census Bureau Staff Research Report (U.S. Census Bureau, Poverty and Health Statistics Branch, 2003), on the Internet at www.census.gov/acs/www/Downloads/ACS/finalstern.pdf (visited Apr. 19, 2005). See also Sharon Stern and Matthew Brault, “Disability Data From the American Community Survey: A Brief Examination of the Effects of a Question Redesign in 2003,” Census Bureau Staff Research Report (U.S. Census Bureau, Housing and Household Economic Statistics Division, 2005), on the Internet at www.census.gov/hhes/www/disability/ACS_disability.pdf (visited June 5, 2008).)

¹⁷ The questions are on the Internet at www.census.gov/hhes/www/disability/sipp.html (visited June 5, 2008).

¹⁸ Daron Acemoglu and Joshua D. Angrist, “Consequences of Employment Protection? The Case of the Americans with Disabilities Act,” *Journal of Political Economy*, October 2001, pp. 915–57.

¹⁹ Thomas DeLeire, “The Wage and Employment Effects of the Americans with Disabilities Act,” *Journal of Human Resources*, fall 2000, pp. 693–713; “Changes in Wage Discrimination Against People with Disabilities: 1984–1993,” *Journal of Human Resources*, winter 2001, pp. 145–58; and “The Americans with Disabilities Act and the Employment of People with Disabilities,” in Stapleton and Burkhauser (eds.), *The Decline in Employment of People with Disabilities*, pp. 259–77.

²⁰ Kathleen Beegle and Wendy A. Stock, “The Labor Market Effects of Disability Discrimination Laws,” *Journal of Human Resources*, fall 2003, pp. 807–59.

²¹ The articles in question all used ordinary least squares regression analysis for continuous dependent variables and regression analysis, logit analysis, or probit analysis for discrete dependent variables. Estimates of regression coef-

ficients are often biased if relevant variables are omitted from the analysis or if one or more of the explanatory variables are measured in error. (See, for example, Jeffrey M. Wooldridge, *Introductory Econometrics: A Modern Approach*, 4th ed. (Mason, Ohio, South Western, Cengage Learning, 2009).) Both Acemoglu and Angrist, “Consequences of Employment Protection?” and DeLeire, “Changes in Wage Discrimination,” used a variety of specifications to test for the impact of the ADA, but they may not have had all of the relevant explanatory variables available to them. In addition, the ADA may have had an impact prior to the effective date of the Act or even prior to its enactment, and the impact may have changed over time as the rules on reasonable accommodation were interpreted by the courts. Articles that note alleged econometric problems in the analyses of Acemoglu and Angrist and of DeLeire include Tom Tolin and Martin Patwell, “A Critique of Economic Analysis of the ADA,” *Disability Studies Quarterly*, winter 2003, pp. 130–42; Douglas Kruse and Lisa Schur, “Employment of People with Disabilities Following the ADA,” *Industrial Relations*, January 2003, pp. 31–66; and Robert Silverstein, George Julnes, and Renee Nolan, “What Policymakers Need and Must Demand from Research Regarding the Employment Rate of Persons with Disabilities,” *Behavioral Sciences and the Law*, May–June 2005, pp. 399–448.)

²² See Tolin and Patwell, “A Critique”; Kruse and Schur, “Employment of People with Disabilities”; Peter Blanck, Lisa Schur, Douglas Kruse, Susan Schwochau, and Chen Song, “Calibrating the Impact of the ADA’s Employment Provisions,” *Stanford Law and Policy Review*, vol. 14, no. 2, 2003, pp. 267–90; and Silverstein, Julnes, and Nolan, “What Policymakers Need.” Thomas W. Hale, “The Lack of a Disability Measure in Today’s Current Population Survey,” *Monthly Labor Review*, June 2001, pp. 38–40, also makes this point, though only implicitly.

²³ See, for example, Ronald G. Ehrenberg and Robert S. Smith, *Modern Labor Economics: Theory and Public Policy*, 9th ed. (Boston, Pearson, 2005).

²⁴ See Kruse and Schur, “Employment of People with Disabilities”; and Houtenville and Burkhauser, “Did the Employment of People with Disabilities Decline?”

²⁵ Activities of daily living are defined as “the tasks of everyday life, such as eating, bathing, dressing, toileting, and transferring.” (See Joshua M. Wiener, Raymond J. Hanley, Robert Clark, and Joan F. Van Nostrand, “Measuring the Activities of Daily Living: Comparisons Across National Surveys,” *Journal of Gerontology: Social Sciences*, November 1990, pp. s229–37.)

²⁶ See, for example, Burkhauser, Houtenville, and Wittenberg, “A User’s Guide to Current Statistics”; Andrew J. Houtenville and Mary C. Daly, “Employment Declines among People with Disabilities,” in Stapleton and Burkhauser (eds.), *The Decline in Employment of People with Disabilities*, pp. 87–124; Richard V. Burkhauser and David C. Stapleton, “Review of the Evidence and Its Implications for Policy Change,” in Stapleton and Burkhauser (eds.), *The Decline in Employment of People with Disabilities*, pp. 369–405; David C. Stapleton, Richard V. Burkhauser, and Andrew J. Houtenville, *Has the Employment Rate of People with Disabilities Declined?* Research Brief (Ithaca, NY, Cornell University, Employment and Disability Institute, 2004); and Elaine M. Maag and David C. Wittenberg, *Real Trends or Measurement Problems? Disability and Employment Trends from the Survey of Income and Program Participation* (Washington, DC, The Urban Institute, 2003).

²⁷ Hale, “The Lack of a Disability Measure.”

²⁸ Stapleton, Burkhauser, and Houtenville, *Has the Employment Rate of People with Disabilities Declined?*