Growing Part-Time Employment among Workers with Disabilities: Marginalization or Opportunity?

JULIE L. HOTCHKISS

The author is a research economist and policy adviser in the regional group of the Atlanta Fed's research department and an associate professor of economics in the Andrew Young School of Policy Studies at Georgia State University. *She gratefully acknowledges Barry Hirsch for providing the O*NET link to CPS occupational classifications and for comments on an earlier draft. She also thanks John Robertson for useful suggestions and Ludmila Rovba and Olga Pavlova for research assistance. This research was made possible through a grant from the W.E. Upjohn Institute for Employment Research.*

Part-time employment is often associated with jobs that have lower pay, fewer benefits, and less stability.[1] But for some workers, part-time jobs, or jobs with flexible hours, are the difference between being out of the labor market and being gainfully employed. Workers with disabilities, for example, may view the prospect of part-time employment more enthusiastically than nondisabled workers do. In addition, the accommodation requirements of the Americans with Disabilities Act (ADA) may have made meaningful part-time employment more accessible to disabled workers as employers seek ways to accommodate the special needs of the disabled.

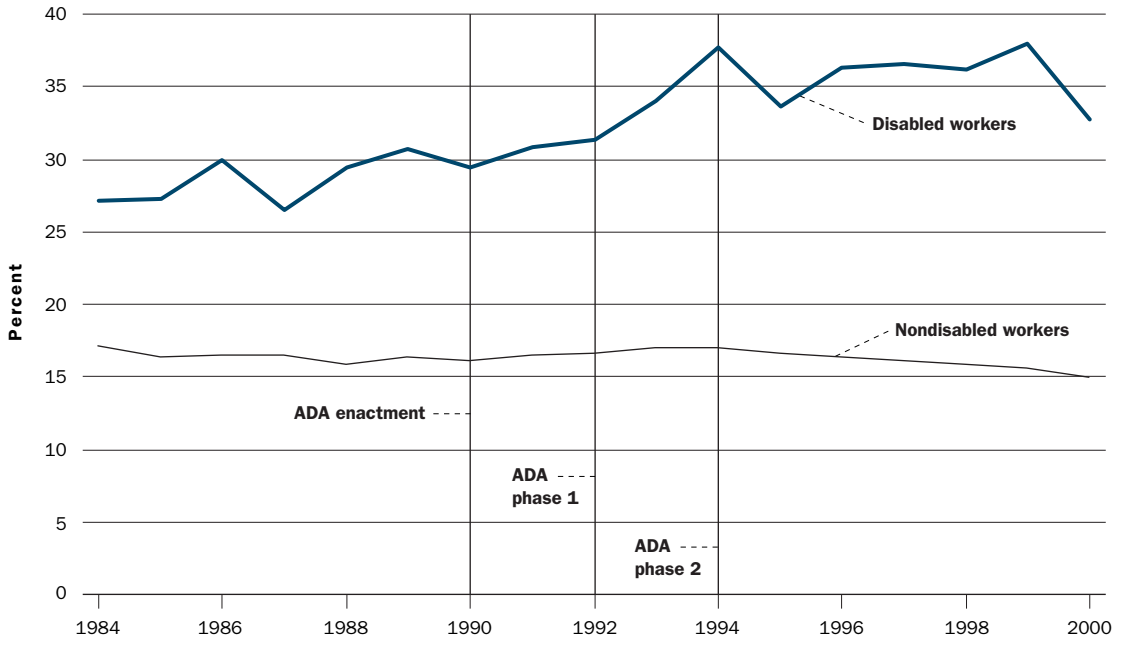
From 1984 to 2000 the percentage of nondisabled workers aged eighteen to sixty-four who were employed part-time decreased slightly, but the percentage of disabled workers (aged eighteen to sixty-four) employed part-time increased (see Figure 1). Most of this gain occurred between the passage of the ADA in 1990 and its full implementation in 1994.

A couple of changes in the 1990s may have led to the increase in the incidence of part-time employment among the disabled. From the demand side, employers may feel that part-time employment is a relatively low-cost way to accommodate a worker's disability (Magill 1997). The ability of part-time work to accommodate a worker's disability, of course, depends on the nature of the disability. From the supply side, the Employment Opportunities for Disabled Americans and the Omnibus Budget Reconciliation Act of 1990 amended Title XVI of the Social Security Act to allow Supplemental Security Income (SSI) recipients to continue participating in Medicaid (under specific circumstances) even if their earnings exceeded the SSI qualifying level (59 FR 41403, 12 August 1994). This allowance lowered the cost to disabled workers of taking a part-time job that might not offer health benefits because such workers were now able to retain Medicaid benefits once employed. In addition, both the SSI and the Social Security Disability Insurance (SSDI) programs have become more generous over time (see Bound and Waidmann 2002). Eligibility requirements became less strict in 1988 and 1991, and other policies implemented during the 1990s provide additional incentives for disabled workers to work without losing benefits (see Hotchkiss 2003, 144–45). Most notably, the amount of earnings an SSI or SSDI recipient can earn without losing benefits continues to increase each year, making part-time employment a more feasible supplement to disability benefits.

An alternative to the explanations discussed above, which lead one to conclude that part-time employment has become more attractive to disabled workers, is that disabled workers are for some reason being forced to the fringe and are becoming more marginalized through part-time

FIGURE 1

Percent of Disabled and Nondisabled Workers Aged 18–64 Who Are Part-Time Employed



Source: Author's calculations using the Current Population Survey

employment. For example, passage of the ADA may have made employers more sensitive to employing disabled individuals, but employers may be unwilling to make the accommodations necessary to employ disabled workers on a full-time basis. In addition, hiring disabled individuals into full-time employment typically means including them in the health benefits offered to all workers, possibly increasing the employer's (and other workers') cost of health coverage.

This article explores the part-time employment experience of workers with disabilities. The analysis first examines how the incidence of part-time employment has changed over time and whether the nature of part-time employment (voluntary versus involuntary) among workers with disabilities has changed over time. This experience will be compared with that of workers without disabilities. If the growth in part-time employment among disabled workers is identified as being primarily involuntary, this finding is evidence that disabled workers are being marginalized, an outcome that is the antithesis of the ADA's goals.

The second part of the analysis looks more closely at the characteristics of the part-time jobs held by disabled workers to see whether the qualitative nature of these jobs has changed over time. If the quality of part-time jobs held by disabled workers is increasing over time relative to the quality of jobs held by other categories of workers, this trend is evidence that employers are accommodating disabled workers in jobs not available to nondisabled workers on a part-time basis. This conclusion would likely be considered a positive outcome of the ADA. If the quality of part-time jobs held by disabled workers is not changing over time, this pattern is evidence that the major impetus for the growth in part-time employment is demand driven, likely resulting from changes in disability benefit policies. This conclusion would lend support for these policies, which were designed to entice disabled individuals into the labor market.

Data Used for Analyses

The combined Current Population Survey (CPS) annual earnings files for the months of March, April, May, and June for 1984 through 2000 provide demographic information, employment status, earnings, details related to the respondent's job, and location information to control for local labor market conditions for the analyses in this article. These CPS annual earnings files are matched with the March CPS survey for each year to obtain information on disability status, other sources of income, and labor market information available for the previous year.[2] This matching strategy results in a sam-

TABLE 1

Sample Means by Disability and Employment Status, Current Population Survey, 1984–2000

	Disabled individuals		Nondisabled individuals	
	All	Employed	All	Employed
Age	46.58	41.46	37.75	37.55
	(12.69)	(12.10)	(12.55)	(11.65)
Female = 1	0.52	0.47	0.54	0.48
Nonwhite = 1	0.19	0.14	0.15	0.14
High school graduate = 1	0.36	0.38	0.36	0.36
Some college = 1	0.18	0.26	0.26	0.27
College graduate = 1	0.07	0.12	0.18	0.21
Advanced degree = 1	0.02	0.05	0.06	0.08
Central city = 1	0.09	0.07	0.08	0.08
Midwest = 1	0.23	0.27	0.25	0.25
South = 1	0.34	0.28	0.30	0.30
West = 1	0.21	0.23	0.22	0.22
Single household = 1	0.50	0.47	0.39	0.39
Nonlabor income	$6,307	$3,747	$2,008	$1,543
	(9,340)	(7,984)	(6,375)	(5,347)
Weeks worked last year	12.45	39.55	38.12	46.85
	(20.01)	(17.53)	(20.46)	(11.95)
Employed = 1	0.24	1.00	0.75	1.00
Part-time employed = 1	0.08	0.32	0.12	0.16
Number of observations	78,432	18,462	938,601	707,431

Note: Sample is restricted to individuals aged 18–64. Standard deviations of continuous variables are in parentheses.

ple four times larger than any single month of current labor market statistics, yielding greater confidence in the reliability of the results.[3] The sample used for the analyses here was limited to individuals aged eighteen through sixty-four.

The earliest year available in the CPS for analysis of outcomes among disabled people is 1981; prior to 1981 identification of a disability in the CPS was made only in the context of why a respondent was not working. Table 1 presents means for the CPS sample used for the analyses. Data only from 1984 and later are used because variations in the availability of variables and some measurement problems exist for the years prior to 1984.

1. For example, see Blank (1990) and Averett and Hotchkiss (1995, 1996).
2. While some (for example, Parsons 1980; Haveman and Wolfe 1984) have questioned whether self-reported disability status (as in the CPS) suffers from endogeneity, Stern finds that "any bias due to potential endogeneity is small" (1989, 363). Of course, endogeneity may be more of a concern since the passage of the ADA. And endogeneity among the population as a whole may be more of a problem than among only labor force participants. Additional practical matters related to using the disability indicator in the CPS March income supplement are detailed by Hale (2001).

   These issues are further complicated by the matching undertaken to expand the number of observations. For these reasons, confirmatory evidence of the CPS results is found in an additional data source (results available upon request). Further considerations of a disability identifier are proffered by Kruse and Schur (2003). They find different labor market outcomes depending on the definition of disability used. While Kruse and Schur argue that the definition that includes "work limitation" (as used in this article) may not be the definition most appropriate regarding ADA coverage, this group is likely to feel the greatest impact of the legislation on the labor market.
3. Details of the matching procedure are available from the author upon request. Because matching data across one to four months of the CPS is complicated, all analyses are performed unweighted. According to Wooldridge, "stratification based on exogenous variables does not cause any problems: estimators that ignore the stratification are consistent and asymptotically normal, and the usual variance matrix estimators are consistent" (1999, 1386). Since stratification in the CPS sampling design is based on exogenous variables (geographic and demographic) and the attrition that results from the matching procedure is likely unsystematic, the use of weights would produce inefficient parameter estimates. (For further evidence on this point, see also DuMouchel and Duncan 1983 and Manski and McFadden 1981.) In addition, any effect of stratification on the estimation can be accounted for by including indicator variables that correspond to the strata (Ginther and Hayes 2003), so the inclusion of demographic variables (including disability status) should control for any observable effect that sampling based on those characteristics might have (either initially or through attrition of matching). It should also be noted that any systematic attrition or sample loss due to unobservables will not be accounted for, but using weighted data cannot correct this problem.

Over the entire sample period, 78,432 people (7.7 percent of the CPS sample) are disabled (24 percent of whom are employed), and 938,601 are nondisabled individuals (75 percent of whom are employed). Disabled individuals in the sample tend to be older, single, and less educated, tend to have more nonlabor income and less labor market experience, and are less likely to be employed.

Hours of Work

Part-time employment among disabled workers may not necessarily be a sign of marginalization or discrimination. Disabled workers (or employers on behalf of their disabled workers) may seek part-time employment as a way to accommodate unique health limitations. In addition, part-time employment may provide a means of additional income that does not jeopardize disability benefits that are based on income levels.

The accommodation requirements of the Americans with Disabilities Act may have made meaningful part-time employment more accessible to disabled workers as employers seek ways to accommodate the special needs of the disabled.

Incidence of part-time employment. Figure 1 shows that part-time employment grew from 27 percent in 1984 to 33 percent in 2000 among disabled workers and declined somewhat among nondisabled workers.[4] By itself, this observation is consistent with the contention that disabled workers are being pushed to the fringe and becoming more marginalized. However, these raw numbers do not control for other job or individual characteristics, nor do they take into account the reasons for part-time employment.

To appropriately model the impact of having a work-limiting disability on the incidence of part-time employment among workers, this analysis uses a bivariate probit model. This model estimates the probability of being employed part-time while controlling for unobservable determinants of being employed and being employed part-time. The bivariate specification allows for two outcomes (employment and part-time employment) to be affected by the same unobservable factors. However, one does not observe the part-time employment outcome unless the person is employed to begin with, and those observed as employed may have systematically different part-time options or make different hours choices than those not employed. Therefore, the model also incorporates a correction that allows one to make inferences for anyone from the population, not just those observed as employed.

The following equations define the relationship assumed between person i's propensity to be employed (EMP_i^*), person i's propensity to be employed part-time (PT_i^*), and the individual characteristics of person i that are believed to affect employment status (X_{1i}) and the part-time employment outcome (X_{2i}):

$$(1)\quad EMP_i^* = \alpha_1 + \gamma_1' X_{1i} + \beta_1 DISABLE_i + \varepsilon_{1i}.$$

$$(2)\quad PT_i^* = \alpha_2 + \gamma_2' X_{2i} + \beta_2 DISABLE_i + \varepsilon_{2i}.$$

$DISABLE_i$ is equal to 1 if person i is disabled and 0 otherwise. Since (EMP_i^*) and (PT_i^*) are not observed, the following dichotomous variables are defined:

$$(3)\quad EMP_i = \begin{cases} 1 \text{ if } EMP_i^* > 0 \\ 0 \text{ otherwise} \end{cases}.$$

$$(4)\quad PT_i = \begin{cases} 1 \text{ if } PT_i^* > 0 \text{ and } EMP_i^* > 0 \\ 0 \text{ if } PT_i^* \le 0 \text{ and } EMP_i^* > 0. \\ \text{otherwise undefined} \end{cases}$$

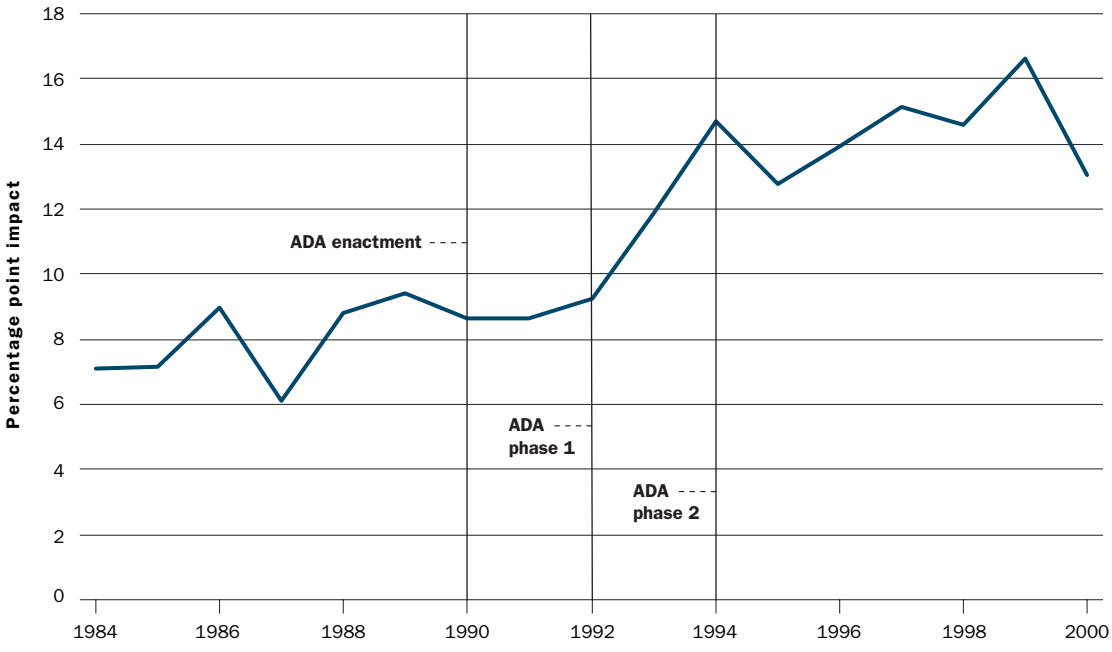
To account for the fact that PT_i^* is not defined unless $EMP_i^* > 0$ (or $EMP_i = 1$), the relationship between these two outcomes is specified as a bivariate probit with selection (see Greene 2000, 857); ε_{1i} and ε_{2i} are distributed as a bivariate normal with means equal to zero, variances equal to one, and correlation equal to ρ.

To identify the parameters of this model, the state unemployment rate and the number of weeks worked during the previous year are chosen as regressors unique to X_1. X_1 and X_2 both include age, education, region, race, gender, marital status, a central city residence indicator, and disability status. In addition, X_2 includes occupation and industry dummy variables, nonlabor income, and a government employer indicator.

The impact of having a work-limiting disability on part-time employment, then, is determined by calculating the unconditional probability of being employed part-time for each individual, varying the disability index between 0 and 1 and then averaging the difference across the sample.[5] For each year,

FIGURE 2

The Impact of Having a Disability on Being Part-Time Employed for Workers Aged 18–64



Source: Author's calculations using the Current Population Survey

separate specifications are estimated, and the marginal impact of having a work-limiting disability is calculated separately (see Figure 2).

Figure 2 illustrates an increase in the impact of being disabled on the unconditional probability of being employed part-time. Having a work-limiting disability increased the probability that a worker would be employed part-time by 13 percent in 2000, nearly double the estimated effect in 1984. The figure also shows that the impact of disability on the probability of being employed part-time has experienced a consistent upward trend during the entire period, with a minor acceleration during the ADA phase-in period.

To quantify the apparent growth in selectivity-corrected part-time employment among disabled workers relative to nondisabled workers, a pooled, cross-sectional analysis is performed. The analysis estimates a cross-section, time-series bivariate probit model with dummy variables representing whether the observation shows up in the data before the ADA or after the ADA and whether the observation is a disabled or nondisabled person. These dummy variables are also interacted to determine whether being disabled had any greater impact on employment after the ADA than before the ADA relative to the experience of a nondisabled person.[6]

The pooled, cross-sectional analysis looks just like the bivariate probit model with selection estimated in one year except that it has the following

4. Although there is some disagreement about the appropriate definition of part-time employment (see Hotchkiss 1991), the CPS definition of "less than 35 hours per week" is retained here. The use of respondent-supplied reasons for working less than thirty-five hours per week (discussed later in the article) makes this definition the practical choice.
5. This method of calculating the marginal effect of a change in a dummy variable is referred to as a measure of discrete change and is described in greater detail by Long (1997, 135–38). Specifically, the average marginal impact of having a disability on the unconditional probability of part-time employment is calculated as $(1/N)\Sigma_{i=1}^{N}\{P_i[PT = 1|X_i, DISABLE = 1] - P_i[PT = 1|X_i, DISABLE = 0]\}$. This probability is calculated using the parameter estimates obtained from estimating the bivariate probit model with selection.
6. This type of pooled, cross-sectional analysis has been applied by many researchers (for example, Card 1992; Gruber 1994, 2000; Zveglich and Rodgers 2003; and Hamermesh and Trejo 2000). The technique, however, also has its critics (for example, Heckman 1996). The primary criticism of this approach is that it is impossible to control for unobserved changes in the environment that occurred at the same time as the event of interest.

TABLE 2

Employment and Part-Time Employment Bivariate Probit with Selection Results, Current Population Survey, Combined Years 1984–2000

Regressor	Employment equation	Part-time employment equation
Intercept	0.7394* (0.0295)	0.4678* (0.0233)
Age/100	–1.8000* (0.1528)	–13.0798* (0.1294)
Age squared/10,000	2.4449* (0.1938)	15.1266* (0.1362)
Female = 1	0.2029* (0.0053)	0.6595* (0.0044)
Nonwhite = 1	–0.1702* (0.0068)	–0.1424* (0.0059)
High school graduate = 1	0.1143* (0.0072)	0.2182* (0.0060)
Some college = 1	0.2278* (0.0078)	–0.0152+ (0.0063)
College graduate = 1	0.3750* (0.0094)	–0.1658* (0.0073)
Advanced degree = 1	0.3665* (0.0147)	–0.1736* (0.0098)
Central city = 1	0.1895 (0.0093)	–0.0856* (0.0075)
Midwest = 1	0.0216* (0.0076)	0.0226* (0.0054)
South = 1	0.0719* (0.0073)	–0.1716* (0.0054)
West = 1	0.0250* (0.0078)	–0.0224* (0.0057)
Single household = 1	–0.1841* (0.0058)	–0.1469* (0.0043)
Number of weeks worked last year/100	3.3738* –0.0141	— —
State unemployment rate/10	–0.6578* –0.0142	— —
Industry indicators (manufacturing excluded)		
Agriculture, farming, and fishing = 1	—	0.6110* (0.0236)
Mining and construction = 1	—	0.5226* (0.0120)
Transportation, communication, and utilities = 1	—	0.4612* (0.0106)
Wholesale and retail trade = 1	—	0.9021* (0.0082)
Finance, insurance, and real estate = 1	—	0.3477* (0.1105)
Service = 1	—	0.8480* (0.0082)
Public administration = 1	—	0.1039* (0.0143)

TABLE 2 (continued)

Regressor	Employment equation	Part-time employment equation
Occupation indicators (managerial and professional excluded)		
Technical = 1	—	0.2514* (0.0059)
Service = 1	—	0.5743* (0.0069)
Farming, fishing, and forestry = 1	—	0.3971* (0.0226)
Craft = 1	—	–0.0794* (0.0105)
Laborer = 1	—	0.3297* (0.0083)
Government employer = 1	—	0.0317* (0.0060)
Nonlabor income/100,000	—	13.0021* (0.3348)
DISABLE = 1	–0.0965* (0.0178)	0.3856* (0.0154)
POST (year ≥ 1992) = 1	–0.0069 (0.0056)	–0.0052 (0.0040)
*DISABLE*POST* = 1	–0.0376 (0.0255)	0.1574* (0.0213)
Rho	0.7748* (0.0049)	
Log-likelihood	–393,775	
Number of observations	771,227	

Notes: Standard errors are in parentheses. * indicates significance at the 99 percent confidence level; + indicates significance at the 95 percent confidence level; ^ indicates significance at the 90 percent confidence level. Sample contains individuals aged 18–64.

additional time-period dummy variables and interaction terms:

$$(5)\quad EMP_i^* = \alpha_1 + \gamma_1' X_{1i} + \beta_1 DISABLE_i + \phi_1 POST_i + \theta_1 DISABLE_i * POST_i + \varepsilon_{1i}.$$

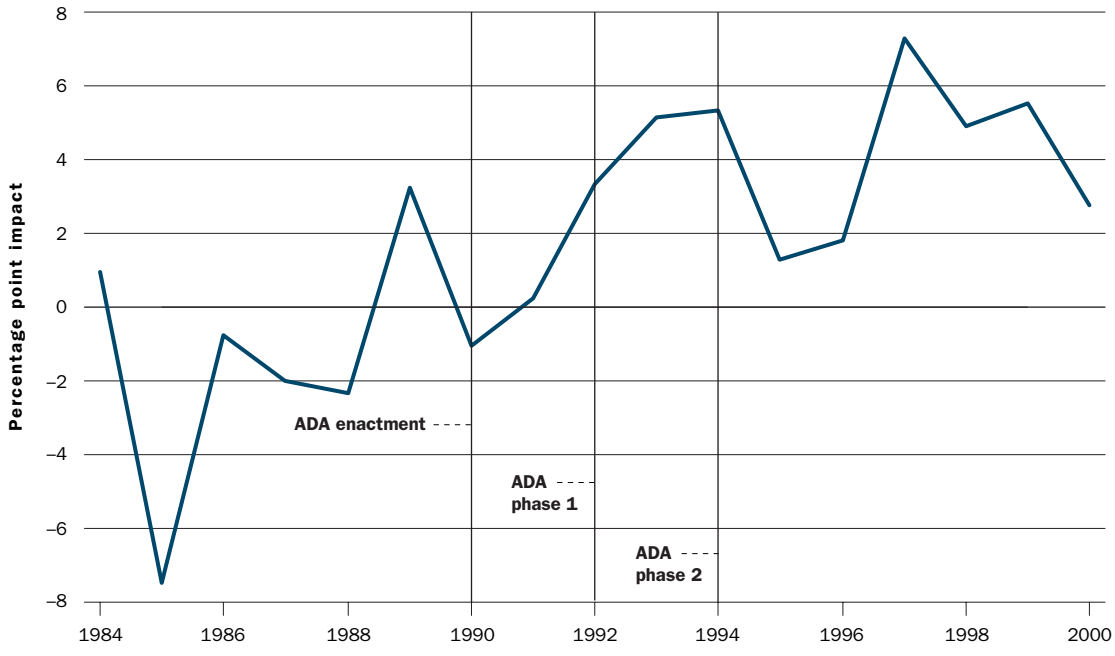
$$(6)\quad PT_i^* = \alpha_2 + \gamma_2' X_{2i} + \beta_2 DISABLE_i + \phi_2 POST_i + \theta_2 DISABLE_i * POST_i + \varepsilon_{2i}.$$

Again, dichotomous variables are defined as in equations (3) and (4), and the model is estimated as a bivariate probit with selection. In these equations, $POST_i$ is equal to 1 if person i is observed in 1992 or later. The year 1992 was chosen as the delineator since this was the first year of implementation of the ADA.

In this framework, the affected group (the disabled) is controlled for by a dummy variable indicating whether the individual has a work-limiting disability, and the time period is controlled for by a dummy variable indicating whether the ADA had been implemented yet or not. Because the model is not linear, a single parameter coefficient does not reveal the additional impact the ADA had on the difference in employment probabilities between the disabled and the nondisabled. The difference in the impact of having a work-limiting disability on employment across the two time periods can be calculated by evaluating the probabilities of interest for each person, varying the *DISABLE* and *POST* dummy variables, taking the difference between these probabilities, and averaging those differences across the sample. Table 2 details the regression results.

FIGURE 3

The Impact of Having a Disability on the Probability of Being Voluntarily Part-Time Employed for Workers Aged 18–64



Source: Author's calculations using the Current Population Survey

The estimated coefficient on *DISABLE*POST* from the part-time employment equation translates into a 4 percentage point greater probability of disabled workers being employed part-time than nondisabled workers, post-ADA relative to pre-ADA. In addition, the probability of nondisabled workers being employed part-time changed by less than 0.01 percentage point post- versus pre-ADA. Other coefficients are typically of the expected sign. Whites, females, high school graduates, and those with more nonlabor income are more likely to be employed part-time. Workers in all industries are more likely to be employed part-time than workers in manufacturing. And only those in craft occupations are less likely to be employed part-time than are managers and professionals.

Type of part-time employment. An important consideration of the conclusion that disabled workers are more likely to be employed part-time and that the disparity is growing is what those part-time jobs look like. Are disabled workers more likely to be employed part-time by choice? To answer this question, a univariate probit analysis is performed. The purpose of the probit analysis is to determine, among part-time workers, whether the probability of being voluntarily (versus involuntarily) employed part-time has increased or decreased for disabled workers relative to nondisabled part-time workers, holding constant other factors that may determine the classification. Voluntary part-time workers are defined as working less than thirty-five hours per week and not wanting to work full time (1994–2000) and working less than thirty-five hours per week for reasons coded as 07-15 (1984–93) (see Stratton 1994 for justification). Reason codes 07-15 are holiday, labor dispute, bad weather, own illness, on vacation, too busy with school or house, did not want to work full-time, full-time work week is less than thirty-five hours, or other.

The results of this probit estimation can be found in Figure 3, which depicts the marginal effect of being disabled on the probability that a part-time worker's status is voluntary. Because no model of employment is estimated, the results are generalizable to part-time workers only. The observation of interest in Figure 3 is that, for most years prior to 1991, being disabled decreased a part-time worker's probability of being voluntarily (versus involuntarily) part-time employed; however, after 1991 disabled part-time workers were more likely each year to be voluntarily employed part-time than nondisabled part-time workers were. The implication is that the growth in part-time employment has been primarily voluntary (for a given set of individual characteris-

tics) and may actually be in response to the better accommodation of a worker's disability.[7]

To quantify the extent to which the disabled are more likely than the nondisabled to be voluntarily employed part-time post-ADA versus pre-ADA, a univariate probit model that describes the probability that a part-time worker is voluntarily (versus involuntarily) employed part-time (VPT_i^*) is specified as

$$(7)\quad VPT_i^* = \alpha_3 + \gamma_3' X_{3i} + \beta_3 DISABLE_i + \phi_3 POST_i + \theta_3 DISABLE_i * POST_i + \varepsilon_{3i},$$

where X_i is a set of covariates for each person (individual demographic characteristics), $DISABLE_i$ is equal to 1 if person i has a work-limiting disability, and $POST_i$ is equal to 1 if person i is observed in 1992 or later. Since VPT_i^* is unobserved, a dichotomous variable, VPT_i, is defined as equal to 1 if person i is voluntarily employed part-time and 0 if the person is involuntarily employed part-time. In this framework, the affected group (the disabled) is controlled for by a dummy variable indicating whether the individual has a work-limiting disability, and the time period is controlled for by a dummy variable indicating whether the ADA had been implemented yet or not. The coefficient of interest (θ_3) therefore measures the change in employment probability of disabled workers relative to nondisabled workers after implementation of the ADA relative to before implementation. X_{3i} includes individual demographic characteristics; Table 3 details the regressors included in the estimation and the regression results.

The coefficient on *DISABLE*POST* confirms that the probability of being voluntarily (versus involuntarily) employed part-time increased more post-ADA for disabled part-time workers than for nondisabled part-time workers. The coefficient translates into a 5 percentage point increase in the probability that a disabled part-time worker is voluntarily employed part-time relative to that of a nondisabled part-time worker. This result, taken with the overall growth in part-time employment, suggests that part-time employment and flexible hours may be a mechanism by which employers are able and willing to accommodate workers' disabilities (see Magill 1997).

Characterizing Part-Time Employment

The evidence from the previous section leads to two conclusions: (1) Part-time employment is increasing among the disabled at a much faster rate than among the nondisabled. (2) The increase in part-time employment among disabled workers is primarily voluntary. Clearly, part-time employment has become more attractive to disabled workers. The next question is, Why? Are the characteristics of part-time jobs available to disabled workers changing in a way that makes them more attractive? For example, in a desire to accommodate or attract disabled workers, are employers making certain jobs available to disabled part-time workers that are unavailable to nondisabled workers on a part-time basis? Or are part-time jobs more attractive because of changes in Medicaid availability or other disability policies? This section will evaluate changes in the qualitative characteristics of part-time jobs across disability status to help identify the source of the growth in voluntary part-time employment among disabled workers.

The increase in part-time employment among disabled workers is primarily voluntary. Clearly, part-time employment has become more attractive to disabled workers.

The Occupational Information Network (O*NET) Database. The U.S. Department of Labor Employment and Training Administration has constructed a detailed database that contains 259 job descriptors for 1,122 occupations. These descriptors are grouped into five broad categories: worker characteristics (such as abilities required of a worker to perform the job), worker requirements (skills and knowledge required to perform the job), experience requirements (experience, licensing, and skills required to perform the job), occupational requirements (generalized activities and context of the job), and occupation-specific information (tasks of the job). Each ability, task, or knowledge requirement is rated on the level at which it is represented in the particular occupation and on the importance of that component to performing the job. The ratings range from 0 to 5. The O*NET occupation codes correspond to the 1990 Census occupation codes, so they are available starting in 1992 for the CPS data (1992 is the first year the CPS started using 1990 Census occupation codes).

7. These results are consistent with the findings of Schur (2003), who finds that part-time and contingent work grows among the disabled during tight labor markets, which would be expected if these arrangements are voluntary.

TABLE 3

Probit Estimation of Voluntary Part-Time Employment among Part-Time Workers Only, Current Population Survey, Combined Years 1984–2000

Regressor	Probability of voluntary part-time employment
Intercept	2.5216* (0.0480)
Age/100	–10.1595* (0.2104)
Age squared/10,000	12.1444* (0.2626)
Female = 1	0.2073* (0.0099)
Nonwhite = 1	–0.2295* (0.0117)
High school graduate = 1	–0.1356* (0.0113)
Some college = 1	0.1612* (0.0115)
College graduate = 1	0.0572* (0.0145)
Advanced degree = 1	–0.0774* (0.0210)
Central city = 1	–0.0316 (0.0150)
Midwest = 1	–0.1134* (0.0106)
South = 1	–0.1436* (0.0110)
West = 1	–0.1633* (0.0113)
Single household = 1	–0.3505* (0.0096)
Number of weeks worked last year/100	0.1757* (0.0226)
State unemployment rate/10	–0.3019* (0.0226)
Industry indicators (manufacturing excluded)	
Agriculture, farming, and fishing = 1	0.0791^ (0.0464)
Mining and construction = 1	–0.1851* (0.0308)
Transportation, communication, and utilities = 1	–0.1391* (0.0255)
Wholesale and retail trade = 1	0.02085 (0.0193)
Finance, insurance, and real estate = 1	0.1423* (0.0261)
Service = 1	0.1330* (0.0193)
Public administration = 1	0.0965* (0.0346)

TABLE 3 (continued)

Regressor		Probability of voluntary part-time employment
Occupation indicators (managerial and professional excluded)		
Technical = 1		0.0545* (0.0126)
Service = 1		–0.1067* (0.0133)
Farming, fishing, and forestry = 1		–0.2773* (0.0429)
Craft = 1		–0.3239* (0.0270)
Laborer = 1		–0.1936* (0.0171)
Government employer = 1		–0.0239 (0.0118)
Nonlabor income/100,000		7.8349* (0.6863)
DISABLE = 1		–0.0166 (0.0260)
POST (year ≥ 1992) = 1		–0.2033* (0.0081)
DISABLE POST* = 1		0.1276* (0.0233)
Log-likelihood	–74,792.9	
Number of observations	121,028	

Notes: Standard errors are in parentheses. * indicates significance at the 99 percent confidence level; + indicates significance at the 95 percent confidence level; ^ indicates significance at the 90 percent confidence level. Sample contains individuals aged 18–64.

For the purposes of classifying whether part-time disabled workers have different types of jobs than part-time nondisabled workers have and whether these jobs are changing over time, the worker characteristics category of descriptors is chosen to classify jobs across disability and full-time/part-time status. These descriptors were chosen because they all clearly reflect positive attributes of a particular job and summarize the overall experience one has on that job; the comparison here is not designed to quantify the specific tasks in these jobs but rather to quantify how "attractive" they are to a worker with particular characteristics. Table 4 details these descriptors and provides their mean values by work and disability status.

In all but the relationships category, the descriptions of these elements in Table 4 are more reflective of full-time jobs than of part-time jobs, regardless of disability status. In addition, part-time and full-time jobs held by nondisabled workers score higher in each category than jobs held by disabled workers. There seems to be less of a difference across disability status among part-time workers, however. All of the comparisons between full-time and part-time workers (within disability status) are significantly different at the 95 percent confidence level. Only the comparison across the support category (and relationships for full-time workers) is not significant across disability status.

Distributions of workers across job characteristic values. Workers, of course, are distributed across the range from 0 to 5 on each of these data elements, and the average score does not fully

TABLE 4

O*NET Worker Characteristics, Description and Means, Current Population Survey, 2000

O*NET data element	Description	Nondisabled workers		Disabled workers	
		Part-time (n=7,093)	Full-time (n=34,220)	Part-time (n=337)	Full-time (n=661)
Achievement	Occupations that satisfy this work value are results oriented and allow employees to use their strongest abilities, giving them a feeling of accomplishment.	2.83 (0.79)	3.18 (0.72)	2.69+ (0.75)	2.96+ (0.71)
Working conditions	Occupations that satisfy this work value offer job security and good working conditions.	3.05 (0.29)	3.21 (0.29)	3.02+ (0.25)	3.13+ (0.28)
Recognition	Occupations that satisfy this work value offer advancement, potential for leadership, and are often considered prestigious.	2.47 (0.59)	2.80 (0.61)	2.36+ (0.54)	2.62+ (0.59)
Relationships	Occupations that satisfy this work value allow employees to provide service to others and work with coworkers in a friendly, non-competitive environment.	3.31 (0.38)	3.19 (0.37)	3.24+ (0.40)	3.17 (0.36)
Support	Occupations that satisfy this work value offer supportive management that stands behind employees.	3.10 (0.40)	3.15 (0.32)	3.08 (0.38)	3.17 (0.34)
Independence	Occupations that satisfy this work value allow employees to work on their own and make decisions.	2.60 (0.75)	2.98 (0.80)	2.46+ (0.69)	2.75+ (0.78)

Notes: Standard errors in parentheses. All elements range from 0 to 5. + indicates significant difference (at the 95 percent level) between the disabled and nondisabled worker means within full-time or part-time status. All comparisons between full-time and part-time workers within disability status are significantly different at the 95 percent confidence level. These comparisons are basic Z-tests, based on a chi-square distribution (Research and Education Association 1978).

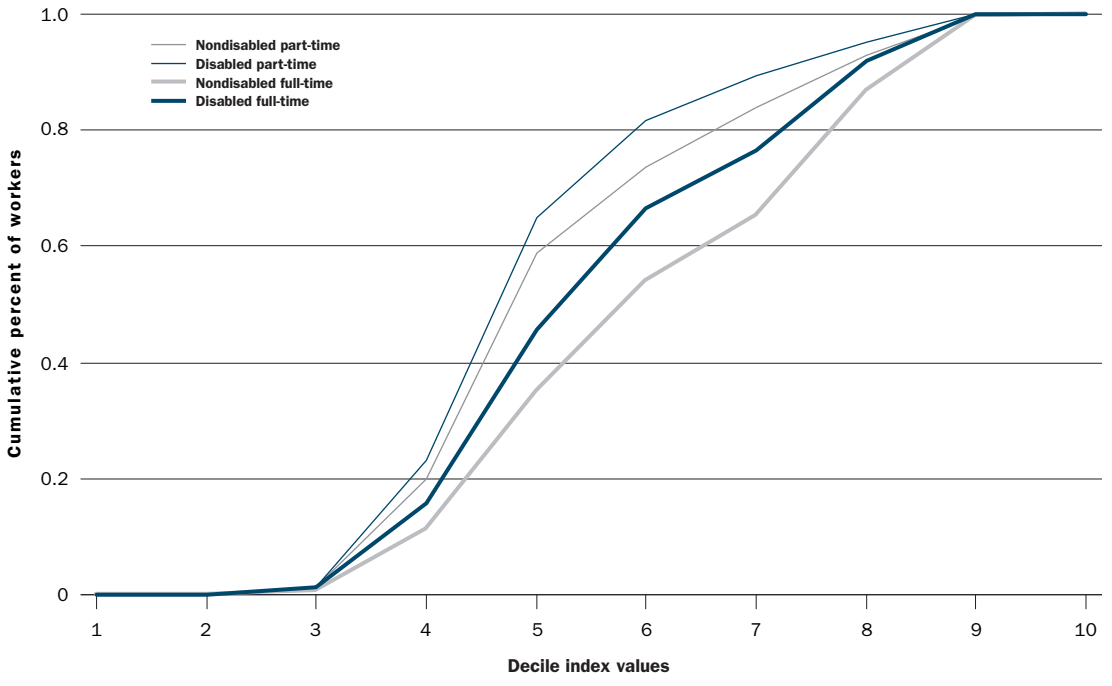
capture that distribution.[8] For example, Figure 4 plots the distribution of workers across the values of the independence category in O*NET (broken into deciles to smooth the graph) by disability and employment status. The comparison of distributions across other data elements looks very similar to the pattern presented in Figure 4. In particular, part-time workers are more similarly distributed than full-time workers across disability status, and the distributions are more similar within disability status across full-time/part-time status.

While both part-time and full-time disabled workers are more likely to be found in jobs that are less "attractive" than jobs held by nondisabled workers (the distribution of both part-time and full-time disabled workers lies more to the left of their nondisabled counterparts), this cross-sectional picture may be hiding gains made over time in the types of jobs disabled workers have been able to secure relative to nondisabled workers. If the characteristics of the jobs held by disabled workers are becoming more similar to those held by nondisabled workers, this trend could help explain the dramatic increase in (voluntary) part-time employment among disabled workers since 1984. If the characteristics are not becoming more similar, then one is left to conclude that policy changes (rather than changes in job characteristics) have provided the impetus for the increase in voluntary part-time employment among disabled workers.

Changes in worker distributions over time. To measure the similarity in job characteristics across disabled and nondisabled workers, this analysis uses a standard index of dissimilarity. The Duncan Index (Duncan and Duncan 1955) ranges between 0 and 1, with numbers closer to 0 indicating more similar distributions. Specifically, the Duncan Index in this application is calculated as follows:

FIGURE 4

Distributions of Workers Aged 18–64 across Decile Values of the O*NET Independence Data Category, 2000



Source: Author's calculations using the O*NET Database (U.S. Department of Labor Employment and Training Administration) and the Current Population Survey

$$(8) \quad I_j = \frac{1}{2}\sum_{i=1}^{10}\left|ND_{ij}^{FT} - D_{ij}^{FT}\right|,$$

where j corresponds to one of the six specific job characteristics described in Table 4; ND_{ij}^{FT} is the proportion of nondisabled full-time workers that find themselves in the ith decile value of job characteristic j; and D_{ij}^{FT} is the proportion of disabled full-time workers that find themselves in the ith decile value of job characteristic j. The Duncan Index allows comparisons of how equally distributed two groups of workers are across the job characteristic deciles. It reduces the comparison of distributions to a single statistic that can be easily tracked over time.

This index will be calculated for all six job characteristics, comparing nondisabled full-time workers with the other three groups (disabled full-time, nondisabled part-time, and disabled part-time). Essentially, this comparison amounts to treating the distribution of nondisabled full-time workers across the characteristic values as the baseline against which to compare the distribution of the other three groups of workers. If the distribution of any worker group is becoming more similar to that of nondisabled full-time workers, the Duncan Index value will decline over time. Figure 5 presents the Duncan Index values over time, comparing each group with nondisabled full-time workers for each job characteristic.

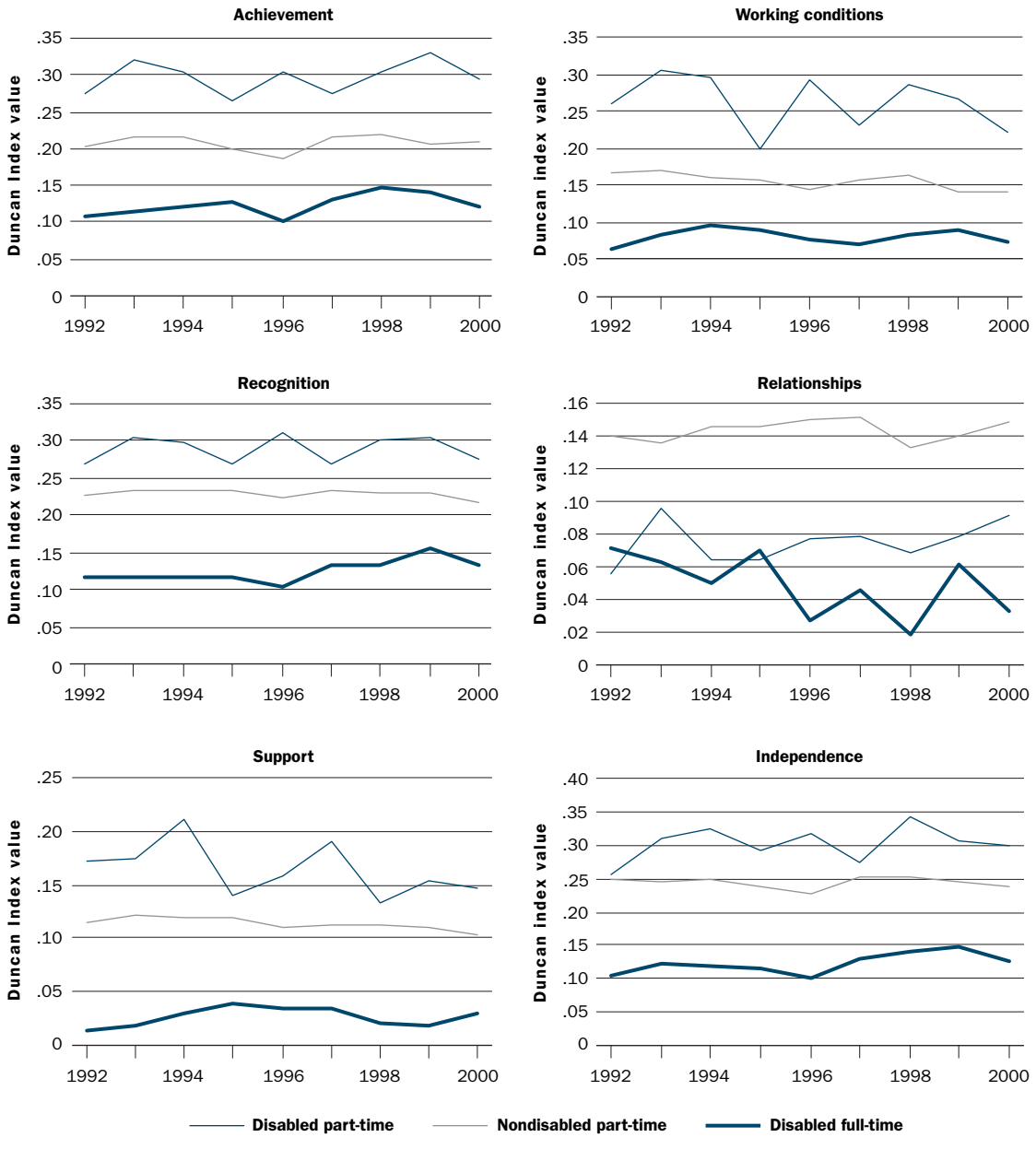
First, the graphs in Figure 5 show over time what Figure 4 illustrated for 2000: Disabled part-time workers are most dissimilarly distributed (with the exception of the relationships category) across each of the job characteristics compared with nondisabled full-time workers (that is, the Duncan Index value is greatest for the disabled part-time worker comparison). Workers with the most similar distribution are disabled full-time workers; the greatest dissimilarity comes across the full-time/part-time dimension rather than the disabled/nondisabled dimension.

None of the trends in comparing the distribution of disabled part-time workers with nondisabled full-time workers is significantly different from 0. The only groups that made any movement toward the distribution of nondisabled full-time workers across job characteristic values were

8. See Blau and Kahn (1996) for an application of distribution comparisons to changing wage differentials.

FIGURE 5

Duncan Index Value Comparing Distributions of Workers across Job Characteristics



Note: Comparisons are relative to the distribution of nondisabled full-time workers.

Source: Author's calculations using the O*Net Database (U.S. Department of Labor Employment and Training Administration) and the Current Population Survey

nondisabled part-time workers in the working conditions and support categories and disabled full-time workers in the relationships category. However, the distribution of disabled full-time workers moved further away from the distribution of nondisabled full-time workers in the categories of recognition and independence. Note that each of these movements, while statistically significant, is very slight in numerical terms. All in all, it would be difficult to discern any real progress or deterioration of the relative distribution of any of these groups of workers across each of the job characteristics relative to the distribution of nondisabled full-time workers.[9]

Conclusions

This article documents a fairly dramatic increase in the past twenty years in voluntary part-time employment among disabled workers relative to nondisabled workers. The probability that a disabled person is employed part-time is 4 percentage points higher than the probability that a nondisabled person is employed part-time after 1992 (the first year of ADA implementation) relative to before 1992. In addition, among part-time workers, the disabled are 5 percentage points more likely to be voluntarily employed part-time than a nondisabled part-time worker after 1992 relative to before 1992. The implication is that part-time employment has become more attractive to disabled workers rather than that disabled workers have become more marginalized through part-time employment.

Two explanations are offered for the apparent increase in the attractiveness of part-time work among the disabled. First, part-time jobs may have become more attractive through accommodations employers have made in allowing disabled workers to work part-time in jobs that would be available only on a full-time basis for nondisabled workers. Such accommodations would make the characteristics of available part-time jobs more attractive to disabled workers. Second, policy changes over time may make part-time jobs more financially, rather than more qualitatively, attractive. The extension of Medicaid benefits beyond SSI eligibility and increased earnings allowance for SSI and SSDI recipients makes part-time employment financially more attractive to workers who depend on health insurance coverage (which is typically not available to part-time workers) and the continuation of disability income. The analysis found that part-time jobs held by disabled workers are not becoming relatively more attractive in a qualitative sense, leaving one to conclude that the financial incentives of the disability policy changes during the 1990s are the most likely source of the increase in voluntary part-time employment among disabled workers.

9. The trend coefficients (and associated *t*-statistics) referred to here for the different worker groups are as follows: (1) nondisabled part-time workers, working conditions (–0.0028, 2.91), support (–0.0016, 3.50); (2) disabled full-time workers, relationships (–0.0042, 1.95), recognition (+0.0039, 2.67), independence (+0.0037, 2.32).

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