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Rehabilitation Research and Training Center
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Policy for Persons with Disabilities

ECONOMICS OF DISABILITY
RESEARCH REPORT #6:

*Comparing the Robustness
of Economic Outcomes
Measured in the CPS and
NHIS Data*

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April 2001

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This paper is being distributed by the Rehabilitation Research and Training Center for Economic Research on Employment Policy for Persons with Disabilities at Cornell University.

This center is funded to Cornell University, in collaboration with The Lewin Group (Falls Church, VA), and The Urban Institute (Washington, D.C.) by the U.S. Department of Education, National Institute on Disability and Rehabilitation Research (*cooperative agreement No. H133B980038*).

This research and training effort is an across college effort at Cornell University between the Program on Employment and Disability in the Extension Division of the School of Industrial and Labor Relations and the Department of Policy Analysis and Management in the College of Human Ecology.

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This research is funded by the United States Department of Education, National Institute on Disability and Rehabilitation Research, cooperative agreement No. 13313980038. It does not necessarily reflect the view of the National Institute on Disability and Rehabilitation Research.

Introduction

Using data from the March Current Population Survey (CPS), Burkhauser, Daly and Houtenville (2001) show that the employment rates of working-age people with disabilities declined over the 1990s business cycle and that this population did not proportionally share in gains of 1990s economic growth. In this report we use the National Health Interview Survey (NHIS) to test the robustness of these controversial findings.

We first compare the concepts of disability, employment, and household income in the CPS and NHIS. We then develop hypotheses regarding the differences we find when using these concepts to estimate disability prevalence rates, employment rates, and mean household size-adjusted income with the CPS and NHIS. Finally, we carry out these estimates for working-age men and women with disabilities over the year 1983 through 1996 using these two data sets.

Data Source and Sample Restrictions

The CPS is a monthly survey of the non-institutionalized population of the United States. Information is collected on labor force characteristics (e.g., employment, earnings, hours of work).¹ In March of each year, the CPS basic monthly survey is supplemented with the Annual Demographic Survey. This supplement focuses on sources of income, government program participation, previous employment, insurance, and a variety of demographic characteristics. In 1981, the March Supplement was expanded to include several questions about disability and income derived from disability programs and insurance. The CPS and the Annual Demographic Survey are used extensively by government agencies, academic researchers, policy makers, journalists, and the general public to evaluate government programs, economic well-being and behavior of individuals, families and households.²

We utilize the NHIS, which is an annual cross-sectional survey of the non-institutionalized civilian population of the United States.³ The federal government uses data from the NHIS to monitor trends in illness and disability. Researchers use these data to analyze access to health care and health insurance and to evaluate federal health programs.

Following Burkhauser et al. (2001), we focus on men and women aged 25 to 61. Using this age range avoids confusing reductions in work or economic well-being associated with disabilities with reductions or declines associated with retirement at older ages and initial transitions into the labor force related to job shopping at younger ages. Men and women are evaluated separately, since they face different roles and expectations in the household and labor market.

Burkhauser et al. (2001) evaluate trends in prevalence, employment, and income over the period 1989-1998. We extend their analysis by exploring these trends over the period 1980-1999. The NHIS data are available from 1959 to 1999. Major revisions in the NHIS survey in 1983 and again in 1997 prevent easy comparisons with other years of data. Therefore we only use data from the years 1983 to 1996. We focus on health and sociodemographic questions contained in the basic NHIS health and demographic core questionnaire. Our data begin with the years of economic recovery from the recession of 1982, extend through the business cycle peak year of 1989, as well as the years leading to the business cycle trough of 1992 and the years of economic recovery that followed. Data on all years between consecutive business cycle trough years allow us to compare the employment and economic well-being of people with disabilities over a complete the business cycles.

Definition of Terms

We use the NHIS to test the robustness of the Burkhauser et al. (2001) CPS results. To do so we define a similar population with disabilities, their employment status and their household's income. Table 1 both outlines the differences in the way disability, employment and household income are measured in the NHIS and CPS and the differences we expect to find using these measures on the levels and trends in the prevalence of disability, employment rates, and mean household size-adjusted income.

Burkhauser et al. (2001) use a work limitation definition of disability derived from the CPS question, "Does anyone in this household have a health problem or disability which prevents them from working or which limits the kind or amount of work they can do? If yes ..., Who is that? (Anyone else?)" We use a similar question in the NHIS, "Does any impairment or health problem NOW keep [person] from working at a job or business? Is [person] limited in the kind OR amount of work [person] can do because of any impairment?" Both the CPS and NHIS questions approximate a Nagi (1991) conceptualization of a disability as a health-based functional limitation which prevents a socially expected activity.⁴

While these two work limitation questions are quite similar, we expect a higher prevalence of disability to be found in the NHIS than in the CPS. The NHIS is a health focused survey in which the work limitation question is used to screen for health conditions. The CPS is an economic outcomes focused survey in which the work limitation question is used to screen for disability income. Because the NHIS asks this question in the context of health issues we expect respondents to be more focused on these issues and more likely to report a health-based work limitation holding objective health constant.

In addition, the NHIS attempts to interview all adult members of the household. The most responsible adult is the proxy for those who are not present at the time of the survey, under age 17, or unable to respond. The CPS interviews only the head of the household who is the proxy for all other household members. We expect proxies to be less aware, on average, of the disabilities of other household members, and thus we expect higher prevalence rates in the NHIS.

Employment. The CPS obtains information about current employment and employment in the previous calendar year. In 1994 the CPS changed the time frame of its current employment question from a single major activities question to a set of employment specific questions. For this reason, Burkhauser et al. (2001) use information for the previous calendar year as their measure of employment over the period. They consider people to be employed if they work 52 hours or more and have positive earnings in the previous year.⁵ The NHIS does not ask about employment in the previous calendar year.

We use the following NHIS questions to define employment: "During [the past two calendar weeks], did [person] work at any time at a job or business not counting work around the house? (Include unpaid work in family [farm/business])." If people were not working they were asked, "Even though [person] did not work during those 2 weeks, did [person] have a job or business?" We consider those who have a job to be employed, regardless of whether they are on at job in the past two weeks.

The CPS measure of employment is more likely than the NHIS measure to capture part-year employment and thus we expect our CPS measured employment to be higher than those using the NHIS measure for the entire working age population we consider. However, because we believe, for the reason stated in our discussion of prevalence, that the NHIS-based population with disabilities will contain capture people with less severe disabilities, we expect measured

employment to be higher for those in the NHIS-based population than in the CPS-based population with disabilities.

Despite these differences in the levels of prevalence and employment in the two surveys, we expect no differences in employment trends. Using the CPS, Burkhauser et al. (2001) showed that the employment rate for those with and without disabilities declined between the business cycle peak year of 1989 and the business cycle trough year of 1992, but while employment of those without disabilities then rose, the employment of those with disabilities failed to recover during the years after the 1992 recession.

The purpose of this report is to test the robustness of this finding using NHIS data. As discussed above, the conceptual and operational differences in the CPS- and NHIS-based definitions of employment lead us to expect differences in the level of employment but not the trends in employment in these two data sets. Hence we expect our NHIS findings to mirror those of Burkhauser et al. (2001).

Household Income. The CPS measures up to 21 different sources of income (including income due to disability) for each household member. These income sources are reported in discrete dollar amounts. Household income is simply the sum of the incomes of all household members from all sources. Burkhauser et al. (2001) adjusts CPS household income for household size to better measure an individual's access to household resources. They follow the common practice of dividing household income by the square root of household size. This accounts for the fact that \$2,000 of household income per month provides a higher standard of living for a single-person household than it does for each of several individuals who belong to a larger member household.⁶ Burkhauser et al. (2001) also adjust for inflation by putting all income values into 1998 dollars using the Consumer Price Index-Urban.

Compared to the CPS, the NHIS devotes much less survey time collecting income information. The NHIS uses the following questions to determine family income: "Was the total FAMILY income during the past 12 months—that is, yours, [and other family members] more or less than \$20,000? Include money from jobs, social security, retirement income, unemployment payments, public assistance, and so forth. Also include income from interest, dividends, net income from businesses, farm, or rent and any other money income received." And then, "[of the income brackets provided] which [bracket] best represents the total combined FAMILY income during the past 12 months (that is, yours, [and other family members])? Include wages, salaries, and other items we just talked about." The respondents can choose from 26 income brackets.

These very limited NHIS gross income questions are far less comparable to the CPS questions than is the case for those used to measure the prevalence of disability or employment. We attempt to make these data more comparable by adjusting for the fact that the NHIS collects bracketed rather than continuous income amounts.⁷ We estimate a dollar value for family income by assigning each family the midpoint of their chosen bracket. For families in the top bracket (\$50,000 and above) we assign the mean annual family income for families above \$50,000 as estimated from the CPS. We then calculate household income as the sum of all family income within the household. Following Burkhauser et al. (2001), we adjust for household size and inflation.

Because the CPS is more focused on income, we expect CPS measured income to be greater than NHIS measured income. However, because we believe the NHIS will capture people with less severe disabilities in its population with disabilities, we expect the household income of people with disabilities to be higher in the NHIS than in the CPS. None-the-less, we expect the

trends in household income for those with disabilities in the sample to not be statistically different.

Methodology

To compare the disability prevalence rate, employment rate, and mean household size-adjusted income levels, we calculate their average annual values over the period 1983-1996 and test whether the difference between the CPS and NHIS average annual estimates are statistically different from zero.

Comparing time-trend estimates of these variables in the two data sets is more complex. We do so by using regression analysis to test whether our estimates are a function of time. Business cycle theory suggests that employment rate and mean household income time-trends are non-linear. Hence we allow the influence of time to be non-linear by including in our regressions time square, and when necessary, time cubed, and time to the fourth power. To capture the difference between the NHIS and CPS surveys, we include an NHIS indicator variable and interact it with the time variables. The coefficients on the NHIS indicator variable and the interaction terms capture the additional effect on outcome differences caused by the NHIS survey. Specifically, we estimate the following equation for each of our three dependent variables (prevalence rate, employment rate, and mean household size-adjusted income)

$$\begin{aligned}
 \text{Dependent Variable} = & a + a^{\text{NHIS}}(\text{NHIS}) + \beta_1(\text{time}) + \beta_1^{\text{NHIS}}(\text{time})(\text{NHIS}) \\
 & + \beta_2(\text{time})^2 + \beta_2^{\text{NHIS}}(\text{time})^2(\text{NHIS}) \\
 & + \dots \\
 & + \beta_T(\text{time})^T + \beta_T^{\text{NHIS}}(\text{time})^T(\text{NHIS}) + e,
 \end{aligned} \tag{1}$$

where the a and β are regression coefficients, T is the maximum order of the time-trend polynomial, and e is a white noise error term. We use an F-test to determine whether the effect

of being from the NHIS is equal to zero (i.e., no difference between the CPS and NHIS). In the context of equation 1, the null hypothesis is

$$H_0 : \beta_1^{\text{NHIS}} = \beta_2^{\text{NHIS}} = \dots = \beta_T^{\text{NHIS}} = 0. \quad (2)$$

This model allows us to test for differences in both the measured levels and trends in the NHIS and CPS.

We estimate equation 1 separately for disability prevalence rates, employment rates, and mean household size-adjusted incomes of those with disabilities. We use a visual inspection of the time-trends to determine their functional form. We used a quartic polynomial function to model the trends in prevalence rates; a cubic polynomial function to model the trends in the employment rates of those without disabilities; a quadratic function to model the employment rates of those with disabilities, and a cubic polynomial function to model the trends in mean household size-adjusted income. Visual inspection also lead us to lag NHIS disability prevalence rates by one year. We used weighted least squares to adjust for the fact that our dependent variables are estimates. Results of these regressions are presented in Appendix Table A1.

Results

Prevalence of Disability. Table 2 contains the estimated percentages of the non-institutionalized civilian working-age (aged 25 through 61) population with disabilities in the United States over the periods of 1981-99 (CPS) and 1983-1996 (NHIS), by gender. As we expected, the NHIS-based disability prevalence rates of men and women are higher than their CPS-based counterpart in every year. As can be seen in the last row of Table 2, the NHIS-based (CPS-based) average annual disability prevalence rate for men over the period 1983-1996 is 10.3 (8.1) percent. The 2.2 percentage points difference between the two estimates is statistically

different from zero at the 95 percent confidence level, as is the 3.0 percentage point difference for women.

Figure 1 (men) and Figure 2 (women) show the estimated prevalence of disability and its time-trends in the CPS and NHIS data. To test whether the levels and time-trends in disability prevalence between 1983 and 1996 are statistically the same in both data sets, we regressed the prevalence of disability from the CPS and NHIS on an NHIS indicator, a quartic time-trend, and interactions of the time-trend and the NHIS indicator variables. Table 3 contains the estimated regression coefficients, F-statistics, and p-statistics used in these tests. The regression coefficient of the NHIS indicator variable captures the differences in prevalence level. The 3.65 (3.49) percentage point difference regression coefficient of the NHIS indicator variable for men (women) is statistically different from zero at the 95 percent confidence level. Therefore we reject the null hypothesis that the levels of the prevalence of disability found in the NHIS and CPS data are the same ($H_0 : a^{NHIS} = 0$).

The regression coefficients on the interactions of the time-trend and the NHIS indicator variable capture the difference in the time-trends of the prevalence of disability in the CPS and NHIS data. We test the joint significance of these interaction terms using an F-test to determine whether the time-trends of disability prevalence are different in the CPS and NHIS data. The F-statistics of 2.04 (2.69) for men (women) is not statistically significant at a 95 percent confidence level. Therefore we fail to reject the null hypothesis that the time-trend in the prevalence of disability for men (women) found in the CPS and NHIS is the same

($H_0 : \beta_1^{NHIS} = \beta_2^{NHIS} = \beta_3^{NHIS} = \beta_4^{NHIS} = 0$). Hence while we find the measured level of the prevalence of disability in the two data sets to be significantly different over the period of our analysis, the time-trends are not.

Employment Rate. Table 4 provides CPS and NHIS estimates of employment rates the non-institutionalized working age (aged 25 through 61) population with disabilities by gender. As expected, the NHIS-based employment rates estimates of men and of women with disabilities are higher in every year than in the CPS-based estimates. In addition, the average employment rates for men and women over 1983-1996 are also statistically different between the two data sets. This is consistent with the higher prevalence rate we reported in the NHIS data which presumably includes those with less severe disabilities relative to the CPS data.

Despite the differences in levels, both data sets appear to pick-up the same business cycle movements. The employment rate of men with disabilities increased over 1983-89 in the CPS (NHIS) by 10.15 (6.48) percent, declined during over 1989-92 in the CPS (NHIS) by 5.50 (13.36) percent and then rose again over 1992-96 in the CPS (NHIS) by 8.46 (3.33) percent. The employment rate of women with disabilities in the two data sets follows similar patterns over the business cycle. We replicated the Burkhauser et al. (2001) findings that the employment rates of men and women with disabilities did not rise after 1992 using the CPS data and show the same is true using the NHIS data. Although not shown, we also find that the population without disabilities experienced the expected gain in their employment rate over the economic expansion of 1992-96.

Figure 3 (men) and Figure 4 (women) show the estimated employment rates and time-trend-trends in the CPS and NHIS data. To test whether the levels and time-trends between 1983 and 1996 are statistically are the same in both data sets, we repeat the tests used for the previous two figures. We regressed the estimated employment rates from the CPS and NHIS on an NHIS indicator, a time-trend, and interactions of the time-trend and the NHIS indicator variables. We used a quadratic time-trend because, as seen in Figures 3 and 4, the employment rates of men

and of women with disabilities did not recover from the 1992 recession, hence the need for a time-trend function with less curvature.

Table 5 contains the estimated regression coefficients, F-statistics, and p-statistics used in these tests. The regression coefficient of the NHIS indicator variable captures the differences in employment level. The regression coefficient of the NHIS indicator variable of men with disabilities is statistically different from zero. We reject the null hypothesis that the employment level of men with disabilities in the NHIS and the CPS data is the same ($H_0 : a^{\text{NHIS}} = 0$). In contrast the regression coefficient of the NHIS indicator variable of women with disabilities is not statistically different from zero.

The regression coefficients on the interactions of the time-trend and the NHIS indicator variable capture the difference in the time-trends of the employment rates in these two data set. We test the joint significance of these interaction terms using an F-test to determine whether the employment rate time-trends are different in the CPS and NHIS data. The F-statistics of 2.04 (2.69) for men (women) are not statistically significant at a 95 percent confidence level.

Therefore we fail to reject the null hypothesis that the time-trends in the employment rates of men (women) with disabilities found in the CPS and NHIS is the same

($H_0 : \beta_1^{\text{NHIS}} = \beta_2^{\text{NHIS}} = \beta_3^{\text{NHIS}} = \beta_4^{\text{NHIS}} = 0$). So despite differences in the level of disability prevalence and in the level of employment rates found in the two data sets, they yield the same employment rate trends for men (women) with disabilities.

Mean Household Size-Adjusted Income. Table 6 contains mean household size adjusted income of the non-institutionalized civilian working-age (aged 25 through 61) population with disabilities by gender. The estimates NHIS-based estimates are somewhat lower than the CPS-based estimates over 1983-85 (1983-84) for men (women) with disabilities and somewhat higher

thereafter. As was the case for employment the lower panel of Table 6 shows that the NHIS- and CPS-based estimates both track the expected direction of change in mean household size-adjusted income over the business cycle for men with disabilities and nearly do so for women with disabilities. These results suggest that changes in mean household size-adjusted income were procyclical for both men and women with disabilities – rising over the recovery during 1983-89, peaking in 1989, falling over the recession between 1989 and 1992 and rising again since 1992.

Figure 5 (men) and Figure 6 (women) show the estimated time-trend of mean household size-adjusted income of those with disabilities in the CPS and NHIS data. To test whether the levels and time-trends in mean household size-adjusted income between 1983 and 1996 are the same in both data sets, we repeat the test we used for the previous figures. We regressed the estimated mean household size-adjusted incomes from the CPS and NHIS on an NHIS indicator, a cubic time-trend, and interactions of the time-trend and the NHIS indicator variables.

Table 7 contains the estimated regression coefficients, F-statistics, and p-statistics used in these tests. The regression coefficient of the NHIS indicator variable captures the differences in mean household size-adjusted income levels. The regression coefficient of the NHIS indicator variable of men with disabilities is statistically different from zero. We reject the null hypothesis that the level of mean household size-adjusted income of men with disabilities in the NHIS and CPS data is the same ($H_0 : a^{\text{NHIS}} = 0$). In contrast, the regression coefficient of the NHIS indicator variable of women with disabilities is not statistically different from zero. This is the same pattern of statistical significance between the two data sets found for employment rates of men and of women with disabilities.

The regression coefficients on the interactions of the time-trend and the NHIS indicator variable capture the difference in the time-trends of mean household size-adjusted income in the two data. The F-statistics of 7.91 (5.57) for men (women) is statistically significant at a 95 percent confidence level. We reject the null hypothesis that the mean household size-adjusted income trends of men (women) with disabilities found in CPS and NHIS is the same

($H_0 : \beta_1^{\text{NHIS}} = \beta_2^{\text{NHIS}} = \beta_3^{\text{NHIS}} = \beta_4^{\text{NHIS}} = 0$). So unlike trends in prevalence and employment, we do find a difference in the time-trends of mean household size-adjusted income between the two data sets. This may reflect the much greater differences in the way the NHIS and CPS collect income information. Recall the CPS focuses on specific sources of income, including disability income, while the NHIS does not and the NHIS uses income brackets while the CPS provides continuous information.

Conclusion

The NHIS primarily focuses on health issues, while the CPS primarily focuses on economic outcomes. Nevertheless, both surveys contain a similar question that can be used to define the population with disabilities based on work limitations. Differences in the nature of the survey and the wording of the work limitation question lead to differences in the estimated size of the population with disabilities in the two data sets. However, we find that the trends in prevalence of disability obtained from the two data sets are not statistically different.

The NHIS and CPS also collect information on employment status differently. Burkhauser et al. (2001) use the CPS previous year information on employment as their reference period while we must use the NHIS previous two weeks reference period. Not surprisingly we find that the level of employment of those with disabilities estimated with NHIS-based and CPS-based differ. But more importantly we find no statistically significant difference

in the employment trends of men and of women with disabilities between the two data sets.

Finally, we focus on household income. The CPS captures continuous income information from multiple sources for its sample, while the NHIS uses income brackets from a global question on family income. Unlike the time trends of prevalence and employment rates, we find the time-trends in mean household size-adjusted income are different for those with disabilities in the two data sets. Thus on the critical issues of trends in the employment rates of people with disabilities -- despite differences in the focus of the two surveys and differences in the level of disability prevalence and in the level of employment -- our findings using the NHIS confirms the CPS finding of Burkhauser et al. (2001) that the employment of the working-age people with disabilities declined over the 1990s despite overall economic growth.

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What Current Data Can Tell Us

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Endnotes

1. The CPS, which is conducted by the Bureau of the Census on behalf of the Bureau of Labor Statistics, samples approximately 50,000 households (about 150,000 individuals).
2. For more a fuller discussion of the CPS, see U.S. Bureau of the Census (1998) or <http://www.bls.census.gov/cps/>.
3. The NHIS, which is conducted by the Center for Disease Control and Prevention, samples approximately 80,000 individuals. Those on active duty with the Armed Forces and US citizens living abroad are not surveyed. The dependents of those on active duty with the Armed Forces who live in the US are included. The NHIS also excludes those in long-term care facilities, which may disproportionately represent people with disabilities.
4. It is important to note that self-perception of a disability as captured by either of these two measures can be influenced by social context (accommodations and restrictions). For instance, reports of a work limitation may change over time even holding the underlying health condition constant because access to accommodation may change one's perception of a work limitation. See Kirchner (1996) and Burkhauser and Houtenville (forthcoming) for a fuller discussion of this issue and the uses of the CPS and other data sets to analyze "access-oriented" policies.
5. We find that employment of people with disabilities follows similar trends using current employment or Burkhauser et al. (2001) past year measure for the years 1980-1993. There is a large increase in the current measure of employment in 1994 and the years that follow which we believe is cause by the increase in the specificity of the employment questions.
6. See Burkhauser et al. (1996) for a fuller discussion.
7. The NHIS began asking respondents for a discrete amount of family income in 1997.

Table 1. Comparing the Measurement Consequences of Different Disability, Employment, and Income Constructs in the National Health Interview Survey (NHIS) and the Current Population Survey (CPS).

Variable	Constructs		Expected Differences and Trends in the Estimates of these Constructs
	NHIS	CPS	
Disability	<p>Based on a work limitation definition of disability: Does any impairment or health problem NOW keep [person] from working at a job or business? Is [person] limited in the kind OR amount of work [person] can do because of any impairment?</p> <p>Other health information is extensive, and the work limitation question is used to screen information regarding health conditions.</p> <p>When ever possible, individuals age 17 and over answer for themselves.</p>	<p>Based on a work limitation definition of disability: Does anyone in this household have a health problem or disability which prevents them from working or which limits the kind or amount of work they can do? If yes, who is that? (Anyone else?)</p> <p>Other health information is limited, and the work limitation question are asked in the context of income and work.</p> <p>One respondent per household responds for all others.</p>	<p>The prevalence of disability is expected to be higher in the NHIS since the question is asked in the context of health and the NHIS uses the term "impairment" which may be more inclusive than the CPS term "disability."</p> <p>In addition, prevalence rates in the NHIS may be higher due to fewer proxy responses.</p> <p>There are no <i>a priori</i> reasons to expect that trends in these two measuses will be different.</p>
Employment	<p>Respondents are considered employed if they (i) have worked in past two weeks; (ii) did not work, has job; NOT on lay-off and not looking for work; (iii) did not work, has job; looking for work; (iv) did not work, has job; on lay-off; (v) did not work, has job; on lay-off AND looking for work; (vi) did not work, has job; unknown if looking for work or on lay-off.</p>	<p>Respondents are considered employed if they work 52 hours or more and have positive earnings in the previous year.</p> <p>Other measures of employment are available , but not continuously from 1981 to the present.</p>	<p>The CPS measure of employment is more inclusive (allowing for employment over the entire previous year), thus the CPS estimates are expected to be greater for the entire population.</p> <p>However, the NHIS expected is to include those with less severe disabilities in its population with disabilities, so it employment rates should be higher for those with disabilities relative to the CPS.</p> <p>There is no <i>a priori</i> reason to expect different trends in these two measures.</p>

(Continued)

Table 1. Continued.

Variable	Constructs		Expected Differences and Trends in the Estimates of these Concepts
	NHIS	CPS	
Household Income	Information is obtained for each family in the household in one aggregated number. Respondents are prompted to recall money from jobs, retirement, social security, income, other forms of public payments, income from interest, dividends, businesses, farm, or rent. They are then asked which income bracket among 26 possible brackets best represents the total combined family income. To obtain a dollar value for family income, we give each family the midpoint of their chosen bracket. Respondents choosing the top bracket (\$50,000 and above) receive the mean annual family income among those families above \$50,000 as estimated from the CPS. Household income is the sum of family income within the household.	Information is obtained for each household member and for each potential sources of income(including income due to disability) in continuous dollar amounts. Household income is the sum of the incomes of all household members from all sources.	The CPS measure of mean household income is expected to be higher for the entire population because the CPS is more focused on income. However, the NHIS is expected to include those with less severe disabilities in its population with disabilities, to have relatively more employed people, and thus to have greater household income. There is no <i>a priori</i> reason to expect different trends in these two measures.

Source: Various code books of the National Health Interview Survey and Burkhauser et al. (2001).

Table 2. Prevalence of Disability of Non-Institutionalized Civilian Men and Women Aged 25 through 61 in the CPS (1981-2000) and the NHIS (1983-1996).

Survey Year	Men ^a		Women ^a	
	CPS	NHIS ^b	CPS	NHIS ^b
1981	8.2	--	7.6	--
1982	8.2	--	7.6	--
1983	7.8	10.9	7.2	10.7
1984	8.0	10.2	7.2	10.7
1985	8.2	10.2	7.5	10.4
1986	8.3	10.2	7.2	9.9
1987	8.2	9.1	7.2	9.7
1988	7.7	9.7	6.7	9.6
1989	7.6	9.9	6.9	10.1
1990	7.9	9.6	7.0	9.6
1991	7.7	9.8	7.2	10.0
1992	8.1	10.9	7.2	10.7
1993	8.4	11.4	7.2	11.4
1994	8.8	10.7	8.0	11.3
1995	8.5	10.9	8.2	10.9
1996	8.2	10.5	8.4	10.6
1997	8.3	--	8.4	--
1998	7.8	--	8.3	--
1999	8.0	--	7.9	--
2000	8.0	--	7.9	--
1983-96	8.1	10.3	7.4	10.4

Source: Authors' calculations using the National Health Interview Survey (1983-1996) and the Current Population Survey (1981-2000).

Notes:

^aPersons aged between 25 and 61 are included. Persons are considered to have a disability if they report having "work limitation" in the kind or amount of work they can do.

^bThe prevalence of disability before 1983 and after 1996 have not been estimated from NHIS data due to major revisions in the survey instruments undertaken in 1983 and 1997.

Table 3. Test for Differences Between Estimated Level and Time-Trend of the Prevalence of Disability among Non-Institutionalized Civilian Men and Women Aged 25 through 61 in the CPS and the NHIS Data (1983-1996). (Standard errors are in parentheses.)

Variable	Estimated Parameter ^a	
	Men	Women
Constant	7.49 (0.54)	6.91 (0.39)
Time	0.79 (0.46)	0.54 (0.33)
Time ²	-0.27 (0.12)	-0.21 (0.09)
Time ³	0.03 (0.01)	0.02 (0.01)
Time ⁴	-0.001 (0.0004)	-0.001 (0.0003)
NHIS	3.65 (0.96)	3.49 (0.71)
NHIS*Time	-1.02 (0.83)	0.05 (0.61)
NHIS*Time ²	0.17 (0.21)	-0.1 (0.16)
NHIS*Time ³	-0.01 (0.02)	0.02 (0.02)
NHIS*Time ⁴	0.0002 (0.0007)	-0.001 (0.0005)
<hr/>		
Statistic	F-Test on the Interaction Coefficients	
F-Statistic	2.04	2.69
p-Statistic	0.13	0.06

Source: Authors' calculations using the National Health Interview Survey (1983-1996) and the Current Population Survey (1983-1996).

Note:

^aBecause the dependent variables are estimates, all regressions are weighted by the reciprocal of their standard errors.

Table 4. Employment Rates of Non-Institutionalized Civilian Men and Women Aged 25 through 61 with Disabilities in the CPS (1980-1999) and the NHIS (1983-1996) Data.

Employment Year	Men ^a		Women ^a	
	CPS ^b	NHIS ^{c,d}	CPS ^b	NHIS ^{c,d}
1980	42.6	--	28.5	--
1981	44.8	--	28.1	--
1982	41.8	--	29.3	--
1983	39.7	48.9	28.9	31.3
1984	40.4	52.3	30.2	33.4
1985	42.8	50.5	32.5	33.6
1986	43.8	52.9	32.1	37.3
1987	43.0	49.8	33.9	36.5
1988	42.9	52.1	36.2	37.5
1989	44.0	52.1	37.5	40.5
1990	42.1	50.3	34.9	40.7
1991	41.5	48.7	35.0	39.2
1992	41.6	45.6	34.3	39.0
1993	37.2	47.7	33.4	39.2
1994	38.0	48.4	36.0	38.5
1995	34.9	44.9	33.9	40.1
1996	38.2	44.1	33.9	38.4
1997	35.5	--	31.9	--
1998	34.4	--	29.5	--
1999	34.0	--	33.4	--
1983-96	40.7	49.2	33.8	37.5
Percentage Change over the Business Cycle ^e				
1983-89	10.15	6.48	25.73	25.47
1989-92	-5.50	-13.36	-8.92	-3.77
1992-96	-8.46	-3.33	-1.01	-1.47

Source: Authors' calculations using the National Health Interview Survey (1983-1996) and the Current Population Survey (1981-2000).

Notes:

^aPersons aged between 25 and 61 are included. Persons are considered to have a disability if they report having "work limitation" in the kind or amount of work they can do.

^bInclude only those who work 52 hours or more.

^cThe employment rates before 1983 and after 1996 have not been estimated from NHIS data due to major revisions in the survey instruments undertaken in 1983 and 1997.

^dInclude those who report (i) to have worked in past two weeks; (ii) did not work, has job; NOT on lay-off and not looking for work; (iii) did not work, has job; looking for work; (iv) did not work, has job; on lay-off; (v) did not work, has job; on lay-off AND looking for work; (vi) did not work, has job; unknown if looking for work or on lay-off.

^eWhen calculating percentage change, we use the average of the two years as the base.

Table 5. Test for Differences Between Estimated Level and Time-Trend of the Employment Rates of Non-Institutionalized Civilian Men and Women Aged 25 through 61 with Disabilities in the CPS and the NHIS Data (1983-1996). (Standard errors are in parentheses.)

Variable	Estimated Parameter ^a	
	Men	Women
Constant	39.2 (1.16)	27.4 (1.01)
Time	1.34 (0.36)	1.82 (0.30)
Time ²	-0.12 (0.02)	-0.1 (0.02)
NHIS	10.7 (2.29)	1.91 (1.72)
NHIS*Time	-0.68 (0.68)	0.28 (0.51)
NHIS*Time ²	0.04 (0.04)	-0.004 (0.03)
Statistic	F-Test on the Interaction Coefficients	
F-Statistic	0.6	1.64
p-Statistic	0.56	0.22

Source: Authors' calculations using the National Health Interview Survey (1983-1996) and the Current Population Survey (1984-1997).

Notes:

^aBecause the dependent variables are estimates, all regressions are weighted by the reciprocal of the their standard errors.

Table 6. Mean Household Size -Adjusted Income of Non-Institutionalized Civilian Men and Women Aged 25 through 61 with Disabilities in the CPS (1980-1999) and the NHIS (1983-1996) Data. (1998 Dollars)

Income Year	Men ^a		Women ^a	
	CPS	NHIS ^b	CPS	NHIS ^b
1980	20,360	--	19,096	--
1981	20,318	--	19,048	--
1982	19,572	--	18,865	--
1983	20,035	19,015	18,645	18,123
1984	20,469	20,071	19,680	19,396
1985	20,877	20,530	19,721	19,940
1986	21,080	21,756	19,916	20,422
1987	21,729	21,860	19,653	20,694
1988	21,070	21,852	19,760	21,112
1989	21,695	21,701	20,149	21,592
1990	20,292	21,228	20,495	21,361
1991	20,760	21,150	19,143	20,823
1992	20,277	20,515	18,993	20,935
1993	19,485	20,958	18,408	20,074
1994	20,078	20,715	19,673	20,163
1995	20,275	21,155	19,772	21,633
1996	20,439	22,002	19,446	20,847
1997	20,671	--	20,243	--
1998	21,539	--	20,083	--
1999	22,377	--	22,021	--
1983-96	20,611	21,036	19,532	20508
Percentage Change over the Business Cycle^c				
1983-89	7.96	13.19	7.75	17.47
1989-92	-6.76	-5.62	-5.90	-3.09
1992-96	0.80	6.99	2.36	-0.42

Source: Authors' calculations using the National Health Interview Survey (1983-1996) and the Current Population Survey (1981-2000).

Notes:

^aPersons aged between 25 and 61 are included. Persons are considered to have a disability if they report having "work limitation" in the kind or amount of work they can do.

^bThe mean income before 1983 and after 1996 have not been estimated from NHIS data due to major revisions in the survey instruments undertaken in 1983 and 1997.

^cWhen calculating percentage change, we use the average of the two years as the base.

Table 7. Test for Differences Between Estimated Level and Time-Trend of the Mean Household Size -Adjusted Income of Non-Institutionalized Civilian Men and Women Aged 25 through 61 with Disabilities in the CPS and the NHIS Data (1983-1996). (Standard errors are in parentheses.)

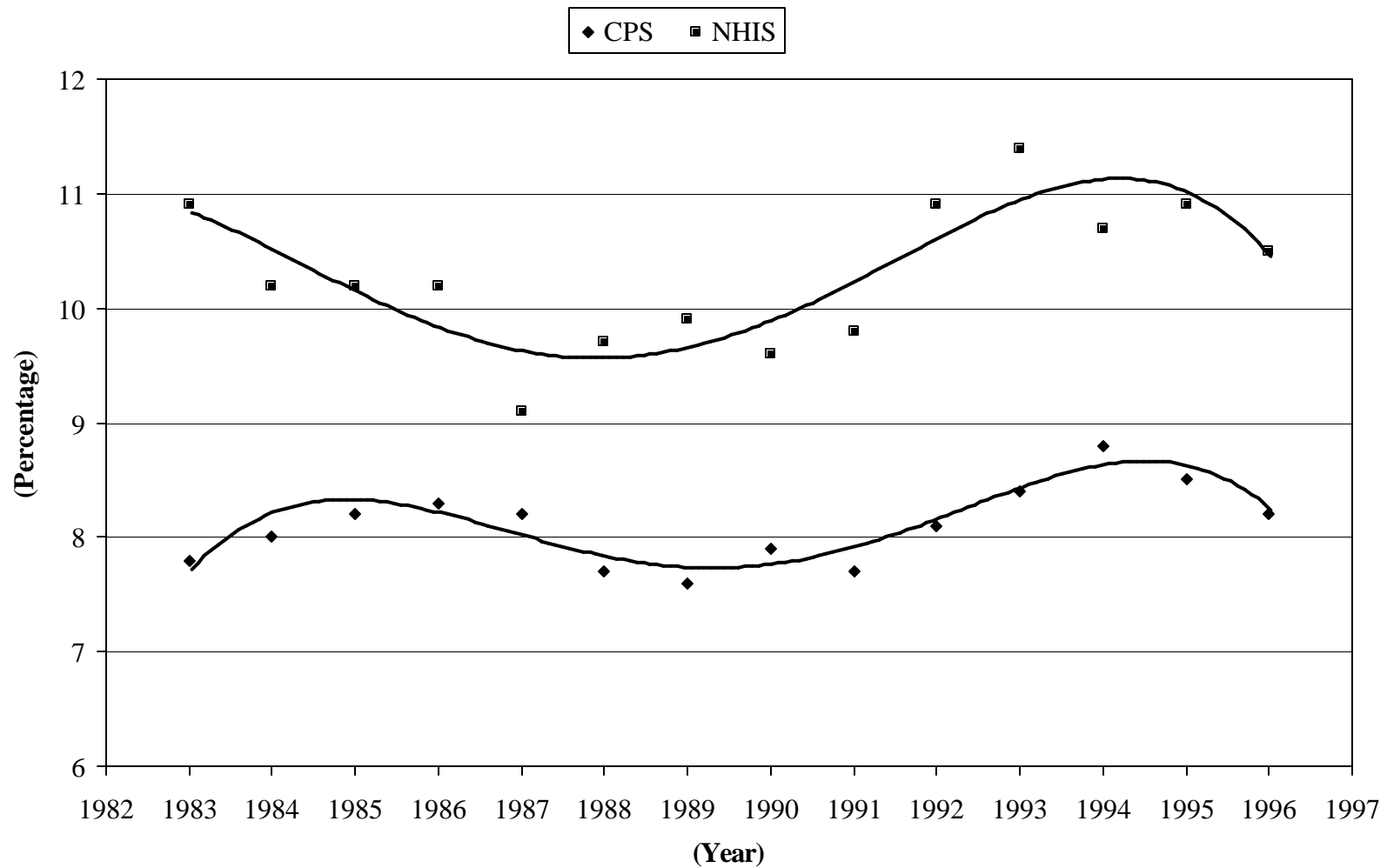
Variable	Estimated Parameter ^a	
	Men	Women
Constant	18,748 (400)	17,839 (563)
Time	1,279 (232)	1,056 (329)
Time ²	-190 (36.1)	-155 (51.4)
Time ³	7.63 (1.61)	6.36 (2.30)
NHIS	-1,704 (606)	-1,308 (848)
NHIS*Time	806 (358)	702 (503)
NHIS*Time ²	-97.2 (56.2)	-56.9 (79.3)
NHIS*Time ³	3.97 (2.53)	1.46 (3.58)
Statistic	F-Test on the Interaction Coefficients	
F-Statistic	7.91	5.57
p-Statistic	0.001	0.01

Source: Authors' calculations using the National Health Interview Survey (1983-1996) and the Current Population Survey (1984-1997).

Notes:

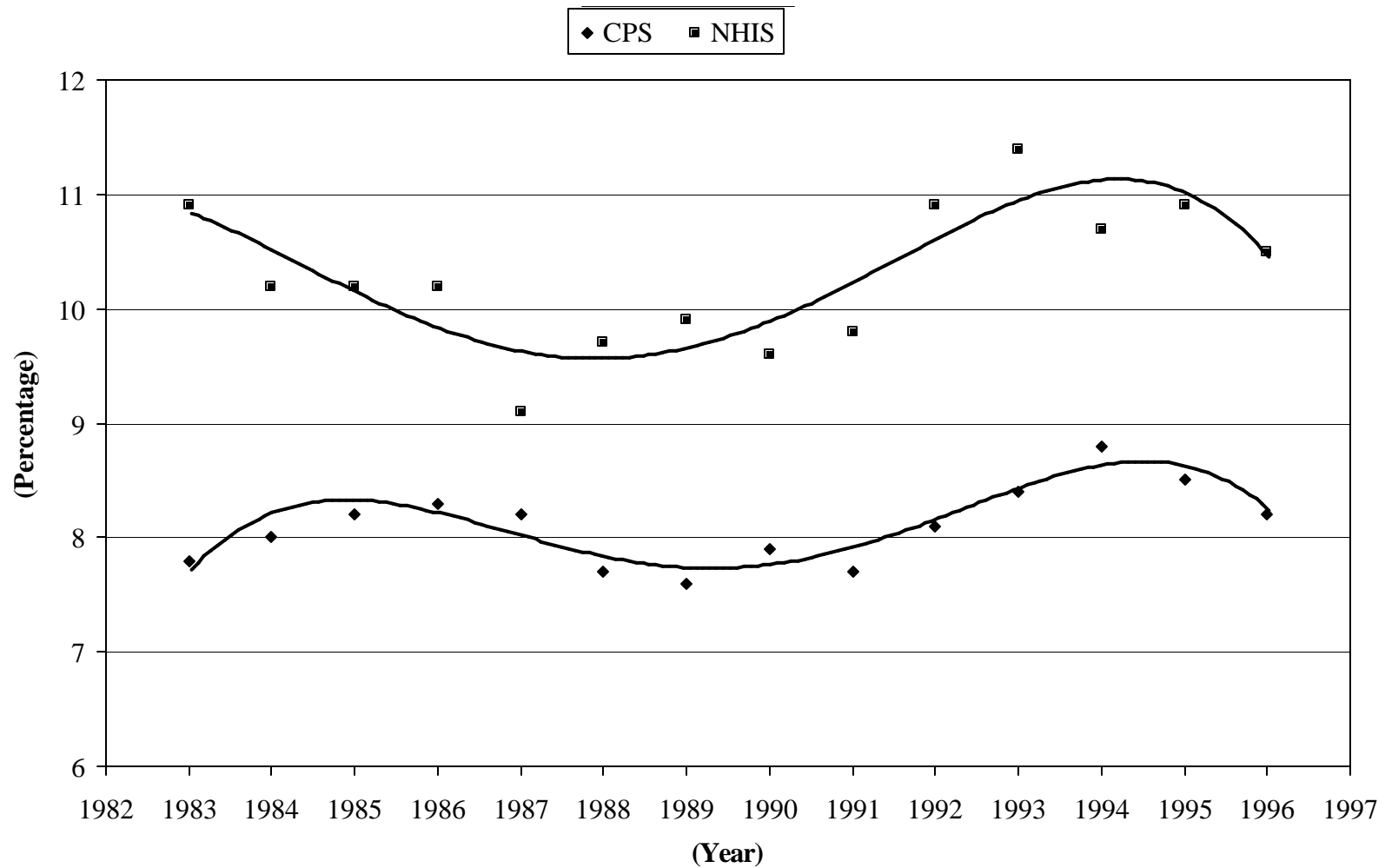
^aBecause the dependent variables are estimates, all regressions are weighted by the reciprocal of the their standard errors.

Figure 1. Percentage of Men Aged 25 through 61 with Disabilities in the CPS and the NHIS Data (1983-1996).



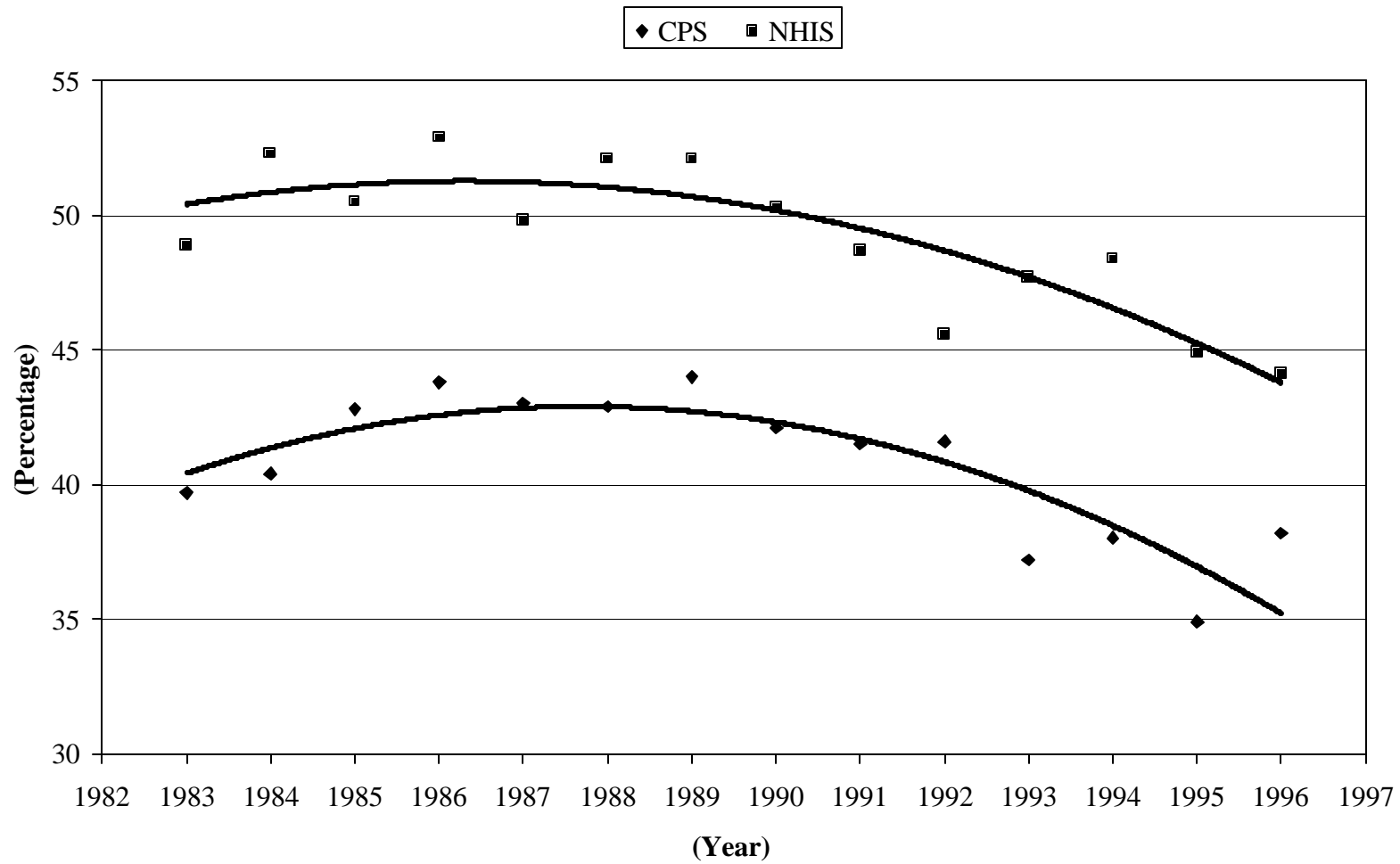
Source: Authors' calculations using the National Health Interview Survey (1983-1996) and the Current Population Survey (1983-1996).

Figure 2. Percentage of Women Aged 25 through 61 with Disabilities in the CPS and the NHIS Data (1983-1996).



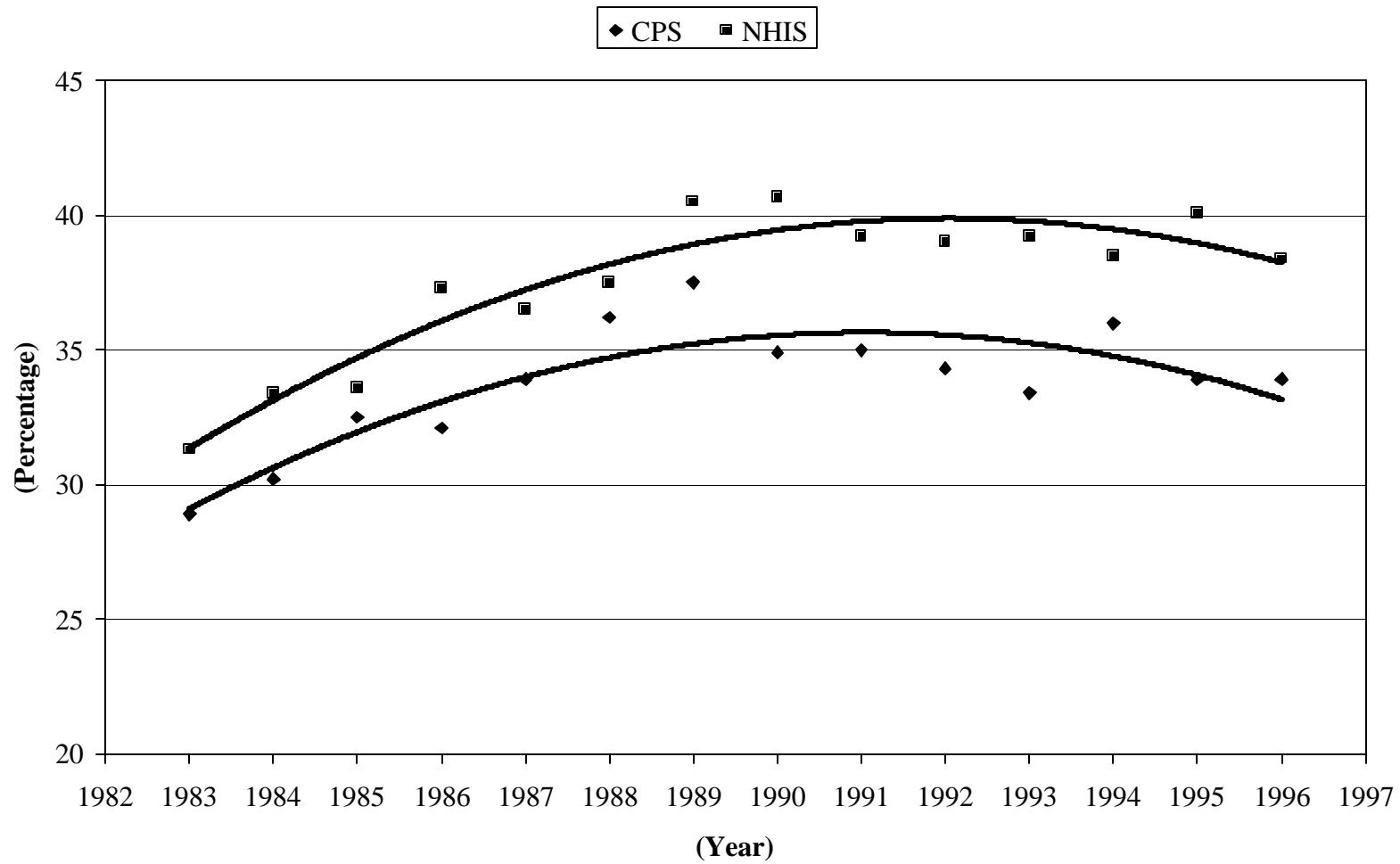
Source: Authors' calculations using the National Health Interview Survey (1983-1996) and the Current Population Survey (1983-1996)..

Figure 3. Employment Rates Men Aged 25 through 61 with Disabilities in the CPS and the NHIS Data (1983-1996).



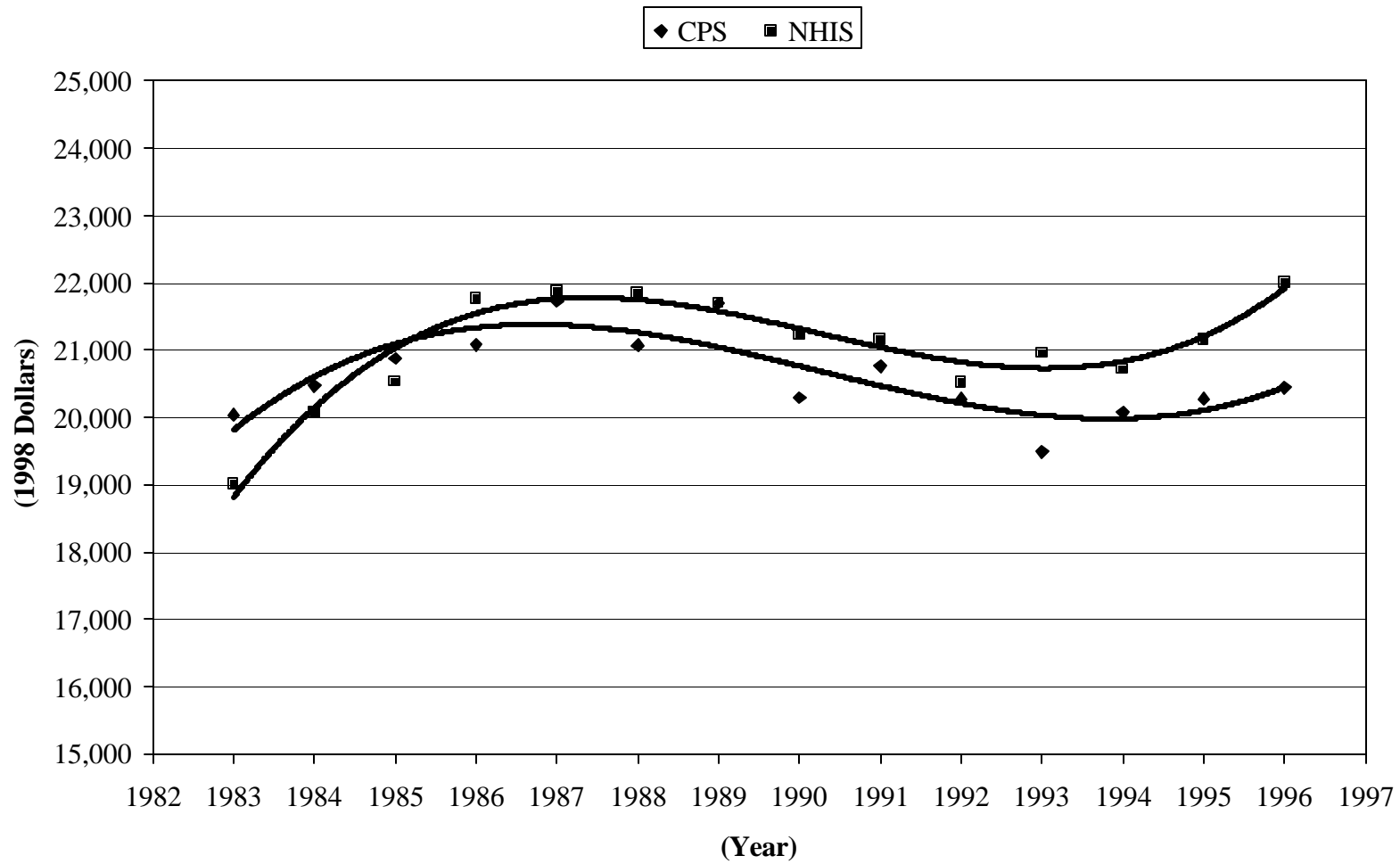
Source: Authors' calculations using the National Health Interview Survey (1983-1996) and the Current Population Survey (1984-1997).

Figure 4. Employment Rates Women Aged 25 through 61 with Disabilities in the CPS and the NHIS Data (1983-1996).



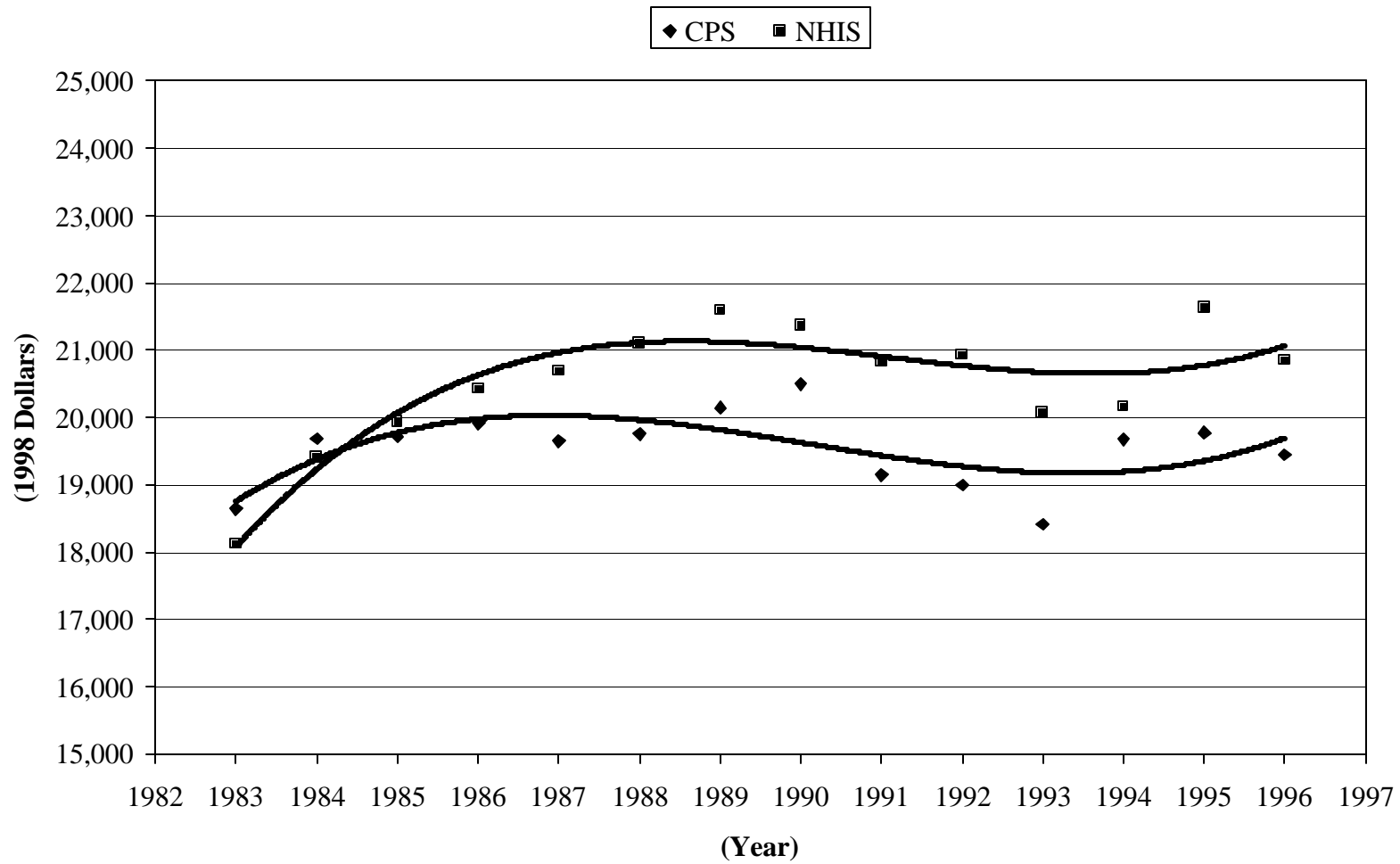
Source: Authors' calculations using the National Health Interview Survey (1983-1996) and the Current Population Survey (1984-1997).

Figure 5. Mean Household Size-Adjusted Income of Aged 25 through 61 with Disabilities in the CPS and the NHIS Data (1983-1996).



Source: Authors' calculations using the National Health Interview Survey (1983-1996) and the Current Population Survey (1984-1997).

Figure 6. Mean Household Size-Adjusted Income of Aged 25 through 61 with Disabilities in the CPS and the NHIS Data (1983-1996).



Source: Authors' calculations using the National Health Interview Survey (1983-1996) and the Current Population Survey (1984-1997).



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