

# Disability benefits and labor supply

Since becoming part of the Social Security package in 1954, Disability Insurance has generated many questions for policymakers and economists. The most pressing problem—how to contain the growth of the program—now appears to be partly solved. Although DI grew dramatically in both caseloads and costs from 1966 to 1975, subsequent legislation served to decrease applications, hold down average benefits, and reduce the replacement rates (the rates at which benefits replace income that would otherwise have been earned). The growth of SSDI has moderated since 1975, and the number of disabled workers receiving benefits has actually dropped in each year since 1978. Indeed, the number of persons receiving SSDI benefits—both workers and their dependents—fell by more than 400,000 from 1978 to 1981. In 1981, the number of new awards per 100,000 insured workers was 357, the lowest in the history of the SSDI program. This may have resulted from a controversial government crackdown on alleged abuse in the program which eliminated several thousand persons from the rolls. Stricter application of the rules for determining disability eligibility also retarded growth.

While the number of participants has shrunk, the cost of SSDI has continued to rise rapidly for the same two reasons that all Social Security costs have gone up: benefits are tied to the Consumer Price Index, and the earnings base on which benefits are calculated has been expanded. SSDI cash benefits more than doubled between 1975 and 1981, rising from \$8.4 billion to \$17.2 billion.<sup>1</sup>

In any attempt to accurately measure the costs of the program and assess how to reduce them, a further question must be posed: What is the effect of generous benefits on the labor supply? IRP affiliates Robert H. Haveman and Barbara L. Wolfe have studied this question (see box, p. 7) with results that differ markedly from some other studies of the labor supply effects of disability programs.

## Labor supply effects of transfer programs

From 1959 to 1980, the labor force participation rate of men aged 45–54 fell from 96 percent to 91.2 percent, and for men aged 55–64 it fell from 87.4 percent to 72.3 percent.<sup>2</sup> Some research results have suggested that the increased generosity of SSDI benefits bears primary responsibility for this decline in work effort.<sup>3</sup> Is SSDI being used by older workers as an early retirement program? In other words,

have high benefits brought persons for whom the program was not intended onto the SSDI rolls, thereby inflating total program costs?

Recent studies of the labor supply response to income transfer programs have attempted to measure the extent to which changes in the size of benefits and the benefit reduction rate influence work effort. A review based on these studies estimates that in 1981, the \$300 billion spent on the major U.S. government transfer programs, taken together, resulted in a reduced labor supply of about 5 percent.<sup>4</sup> Of this reduction, 1.2 percent was attributed to income transfers in the SSDI program. If one believes this estimate, it means that the \$20 billion in the program (6 percent of total income transfers) led to 25 percent of the total labor supply reduction. Indeed, this estimate implies that the work reduction effects of the disability portion of OASDI are equal in size to the effects of OASI, which is a program of \$117 billion. Does the Disability Insurance program have such a disproportionate effect? Whether it does or not depends on the studies used for the estimate.

## Labor supply effects of disability transfers

There have been few studies of the labor supply effects of disability-related transfers from the various programs that furnish them (SSDI, SSI, Veterans' Compensation, Workers' Compensation, Black Lung). Most of these studies have concentrated on the SSDI program alone. The four studies that directly analyze how the choice between work and disability benefit status is affected by the level of benefits are those of Donald Parsons, Jonathan Leonard, Frederic Slade, and Haveman and Wolfe. The results of these studies are summarized in Table 1.

### The Parsons study

The Parsons study<sup>5</sup> is an explicit work-status (labor force participation) choice model in which the individual rationally compares the expected values of being in and being out of the labor force. The value of being in the labor force clearly depends on one's expected wage. The expected value of disability benefits and other transfers determines the value of being a nonparticipant (i.e., not working). Because "true" health status determines the probability of receiving disability benefits, it too is a determinant of the labor force participation decision.

**Table 1**  
**Labor Supply Analyses of Disability Transfers**

Study	Parsons (1980a, 1980b)	Leonard (1979)	Slade (1982)	Haveman-Wolfe (1982)
Population analyzed	Men, 48-62(a) or 45-59(b)	Men, 45-54	Men, 58-63	Men, 45-62
Data used	NLS <sup>a</sup> , 1969(a) or 1966(b)	1972 Social Security Survey of Health and Work Characteristics merged with benefit and earnings records	1964 Retirement History Survey	1978 Michigan Panel Study of Income Dynamics, plus information from prior years
Dependent variable	Participation in work force	DI reciprocity	Participation in work force	Participation in work force
Program variables	Potential DI/wage	Expected DI benefits	Potential monthly DI benefits	Expected total income, if a disability transfer recipient
Results	Elasticity of participation with respect to replacement rate = $-.09$ (1966) or $-0.03$ (1969)	Elasticity of participation with respect to expected benefits = $-0.52$	Elasticity of participation with respect to expected benefits = $-.023$	Elasticity of participation with respect to expected income as a disability transfer recipient = $-.0003$ to $-.0005$

**Source:** Robert H. Haveman, Richard Burkhauser, and Victor Halberstadt, *Public Policy toward Disabled Workers: A Cross-National Analysis of Economic Impacts* (Ithaca: Cornell University Press, forthcoming), Chapter 5, Table 3.

**Note:** All are cross-section studies.

<sup>a</sup>NLS = National Longitudinal Survey.

Using data for the late 1960s from the National Longitudinal Survey of men aged 45-59, Parsons estimated the extent to which the choice of whether or not to work was affected by the magnitude of the replacement rate after controlling for health status, age, welfare benefits available in the individual's state, and the unemployment experience of the individual.

The results were consistent with the model: the SSDI replacement rate, the generosity of welfare benefits, and prior unemployment experience were statistically significant, as was the mortality variable. Hence poor health as well as the size of probable benefits served to discourage work effort.

#### The Leonard study

The issue addressed by Leonard<sup>6</sup> involved the reverse of the question asked by Parsons: Do increases in SSDI benefits increase the probability that any given worker will become an SSDI beneficiary (or, equivalently, will leave the labor force)? To answer the question, Leonard fit a statistical model to data on men aged 45-54 in which the probability of becoming an SSDI beneficiary was a function of expected SSDI benefits, expected labor income proxied by a set of individual characteristics, and a set of background characteristics representing differences in taste (personal preference).

In estimating the probability of *being eligible* for SSDI benefits conditional on being an applicant, Leonard found

that the health indicators, as well as race, were significant determinants. In estimating the probability of *being a recipient* if eligible, Leonard found that expected SSDI benefits were significantly and positively related to the probability of reciprocity and the expected wage was significantly and negatively related to it. According to Leonard, a \$180 increase in annual SSDI benefits would increase the proportion of beneficiaries in the entire age cohort by one percentage point.

Both Parsons and Leonard therefore found large significant labor market responses to SSDI benefits. The two other recent studies, completed since the review article mentioned earlier (Danziger, Haveman, and Plotnick, see box), find a much smaller response.

#### The Slade study

Frederic Slade used a sample of men aged 58-63 from the 1969 Retirement History Survey (RHS) to estimate a labor force participation choice equation.<sup>7</sup> The underlying model again viewed the individual as choosing between income earned in the workplace and income from the SSDI program. The expected income from labor force participation was measured by the individual's wage rate in 1968, while that associated with disability transfers was measured by potential monthly benefits from SSDI, imputed from the individual's earnings record.

Slade found a much smaller response to potential Disability Insurance benefits than did Parsons or Leonard. His estimated elasticity for all men of the responsiveness of labor force participation to increases in benefits, calculated at the mean, was  $-.023$ ; for married men alone, it was slightly higher,  $-.026$ . Moreover, neither estimate was statistically significant at the 5 percent level.

### The Haveman and Wolfe study

Haveman and Wolfe have also analyzed the work choice of older men, again using a qualitative choice model.<sup>8</sup> The income flow expected from the labor market and from disability benefits was estimated as a function of each individual's observable characteristics. The model assumes that the individual rationally compares these amounts and selects the option which maximizes expected income. As distinct from the other studies, the income flows were defined as the *total income flows* associated with each option, rather than transfers from only one program, such as SSDI.

A complex two-stage procedure was followed in estimating these two income flows for each individual. This step was required because individuals were observed in only one status, either working or collecting disability benefits, and the income flow in the other status had to be estimated from a group of similar individuals who had, to some extent, self-selected themselves into that category.

The model was estimated for men aged 45–62 in 1978, using data from the Michigan Panel Study of Income Dynamics. The panel character of the data allowed construction of variables related to past earnings, occupational mobility, and the duration of disability status. The disability measures were designed to capture both the duration and intensity of impairment.

The results from this estimation indicated a small, but statistically significant, response of older men to the incentives implicit in disability transfer programs. The elasticity of response was in the  $-.0003$  to  $-.0005$  range, and simulation of the response to the growth in disability benefits using these elasticities indicated that no more than about 20 percent of the observed decrease in labor force participation rates of older men from 1968 to 1978 could be attributed to the growth in the generosity of disability transfers.

### Comparing the studies

There is evidence of a statistically significant disincentive effect of disability benefits on the work-status choice—but the effect may be very small (Slade, Haveman and Wolfe) or rather large (Parsons, Leonard). Part of the difference between the Haveman-Wolfe estimate and all the others is that benefits included are not just primary benefits to an

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### Selected papers

Robert H. Haveman and Barbara L. Wolfe, "Disability Transfers and Early Retirement: A Causal Relationship?" Institute for Research on Poverty Discussion Paper no. 723–83.

Robert H. Haveman and Barbara L. Wolfe, "Disability Transfers and the Work Effort Response of Older Males: A Reconciliation." NBER Conference on Incentives of Government Spending, Cambridge, Mass., November 1982.

Robert H. Haveman and Barbara L. Wolfe, "The Decline in Male Labor Force Participation: A Comment." *Journal of Political Economy*, forthcoming.

Barbara L. Wolfe, "The Demand for Disability Transfers: Recent Research and Research Needs." Paper presented at the Expert Group Meeting in Disability Research, International Social Security Association, November 1982. (*Proceedings* forthcoming, JAI Press.)

### Related reading

Richard V. Burkhauser and Robert H. Haveman, *Disability and Work: The Economics of American Policy* (Baltimore: The Johns Hopkins University Press, 1982).

Sheldon Danziger, Robert H. Haveman, and Robert Plotnick, "How Income Transfer Programs Affect Work, Savings, and the Income Distribution: A Critical Review." *Journal of Economic Literature*, 19 (1981), 975–1028. (Institute for Research on Poverty Reprint no. 429.)

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individual, but rather the entire income of the household of the individual who is a disability transfer recipient. As argued in their paper, this appears to be the appropriate concept of expected income in the disability-work option. These results suggest that the elasticities of the other studies overestimate the effect of SSDI, because the use of this one program as the only benefit variable makes it a proxy for all disability-related programs.

### Disability and early retirement

Another way of looking at the relationship between disability programs and labor supply is to measure the impact of a change in disability benefits on early retirement. Haveman

## Factors affecting labor supply

It appears that the increasing relative generosity and/or leniency of disability income transfer programs does have a statistically significant (though quantitatively small) effect on the work-effort choices of older workers. However, this is but one of many factors affecting the labor supply. During the period in which older workers have been dropping out of the labor force, women have been entering the labor market in unprecedented numbers. The pressure on family heads to continue working has decreased as their spouses have increased their contributions to household income. Social security benefits have been made ever more generous and available at age 62, freeing savings for earlier retirement. Public attitudes have become far more accepting of retirement prior to age 65. Furthermore, though labor demand rose rapidly, unemployment remained high.

Haveman and Wolfe conclude that reducing disability benefits and further reducing access to them is unlikely to have marked success in increasing labor supply and total output, in part because other factors play a yet unmeasured role in reducing labor supply and in part because those who choose disability benefits over work tend to be older, disabled men who earn low wages if indeed they can find employment at all. It can be expected therefore that any retrenchment in the disability programs will generate hardship without a substantial gain in efficiency. ■

Table 2

### Simulated Effect of Changes in Social Security Disability Transfer Generosity on the Work Effort Choice

Percentage of Current Predicted Disability Benefits	Labor Force Participation Rate	Disability Reciprocity Rate
80%	92.41%	7.39%
100	91.37	8.63
120	90.73	9.27

Source: Haveman and Wolfe, "Disability Transfers and Early Retirement: A Causal Relationship?" Table 5.

and Wolfe simulated the effect of a 20 percent change (up or down) in expected SSDI benefits, including those for dependents, in the transfer option of each individual in their sample. The results, reported in Table 2, show that a 20 percent change in expected disability income would elicit a change in the labor force participation rate of .8 to .94 percentage points.

This response can be placed in historical perspective. From 1968 to 1978, while labor force participation rates of men aged 55-64 decreased by about 10.5 percentage points, the average real SSDI benefit per recipient increased 43 percent.<sup>9</sup> The simulation estimates imply that this increase in benefit generosity would induce a decrease in the labor force participation rate of, at most, 1.81 percentage points. Much of the observed decrease must therefore be attributed to factors other than the increased generosity of disability benefits.

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<sup>1</sup>Statistics are taken from M. E. Lando, A. V. Farley, and M. A. Brown, "Recent Trends in the Social Security Insurance Program," *Social Security Bulletin*, 45 (August 1982), 3-14.

<sup>2</sup>*Employment and Training Report of the President* (Washington, D.C.: U.S. Government Printing Office, 1981), p. 126, Table A-5.

<sup>3</sup>Donald Parsons, "The Decline in Male Labor Force Participation," *Journal of Political Economy*, 88 (1980), 117-135; "Racial Trends in Male Labor Force Participation," *American Economic Review*, 70 (1980), 911-920.

<sup>4</sup>S. Danziger, R. Haveman, and R. Plotnick, "How Income Transfer Programs Affect Work, Savings, and the Income Distribution: A Critical Review" (see box), Table 7.

<sup>5</sup>Parsons, "The Decline in Male Labor Force Participation."

<sup>6</sup>Jonathan Leonard, "The Social Security Disability Program and Labor Force Participation," National Bureau of Economic Research Working Paper no. 392, Cambridge, Mass., 1979.

<sup>7</sup>F. P. Slade, "Labor Supply under Disability Insurance," National Bureau of Economic Research Working Paper no. 860, Cambridge, Mass., 1982.

<sup>8</sup>R. H. Haveman and B. L. Wolfe, "Disability Transfers and Early Retirement: A Causal Relationship?" (see box).

<sup>9</sup>*Employment and Training Report of the President*, and *Statistical Abstract of the United States* (Washington, D.C.: Department of Commerce, Bureau of the Census, 1979).