How Much Work Would a 50% Disability Insurance Benefit Offset Encourage?: An Analysis Using SSI and SSDI Incentives

Philip Armour
RAND Corporation

2nd Annual Meeting of the Disability Research Consortium

October 30-31, 2014
Washington, D.C.

Introduction

A central question of the disability literature is the extent to which the benefit structures of the two federal disability programs, Social Security Disability Insurance and Supplemental Security Income, affect labor supply among beneficiaries. This question is not purely academic: the rapid rise in these programs' rolls in the past two decades, coupled with negligible exit into the labor force, has led to policymaker interest in proposals to encourage labor force participation among recipients.

One of the foremost policy changes is to alter the benefit structure for SSDI recipients: currently, SSDI recipients keep their benefit until they earn above the Substantial Gainful Activity level (currently at $1,070 per month), but if they consistently earn above that level, their benefit is entirely withheld. One proposed change would be to instead reduce benefits by $1 for every $2 of earnings above the SGA level. Implementation of this change may encourage work among SSDI beneficiaries, but it may also induce entry of workers onto the more generous SSDI program. To weigh these forces, labor supply elasticities with respect to program parameters must be estimated.

Unfortunately, analysis of the incentive effects of SSDI's structure has been constrained by a lack of *de jure* regional variation in SSDI. To test this proposal directly, there is a large, nationally representative randomized control trial in the field: the Benefit Offset National Demonstration. BOND randomly assigned SSDI beneficiaries at demonstration sites to face a $1 for $2 benefit offset above the SGA. Although ongoing, preliminary results are consistent with this paper's findings: SSDI beneficiaries are not substantially more likely to work when offered this offset (Gubits et al. 2013).

The results in this analysis are also generally consistent with other low participation estimates found in the field (Gruber 2000, French and Song *forthcoming*, Moore 2014). However, these papers identify elasticities from comparisons between SSDI participants versus non-participants. Although the variation exploited provides strong internal validity to these studies, the applicability of their estimates to changes in benefit reduction rates (BRR) is less straightforward. Additionally, these studies often ignore other programs which may affect labor supply decisions of this population.

For example, Supplemental Security Income (SSI), the other federal disability program, differs from SSDI in three ways. First, there is a maximum benefit instead of a

benefit based on one's previous earnings. Second, it is means tested and is thus primarily targeted toward the disabled poor. Third, benefits are reduced as earnings increase by 50 cents for every dollar of earnings, i.e. it has a 50% benefit reduction rate, or BRR.

However, its disability determination process is the same as SSDI. Therefore, the existence of SSI creates program interaction incentives that may affect the decision-making of current SSDI beneficiaries or potential SSDI applicants. However, most analyses of these programs have treated them separately, despite substantial overlap between these two programs for a given disabled individual or a household containing a disabled individual: in 2011, about 30% of SSI recipients also received SSDI benefits, and about 17% of SSDI recipients also received SSI benefits. Additionally, in the absence of SSDI, many beneficiaries would instead collect SSI benefits.

This paper utilizes the variation in program incentives stemming from the interaction between SSDI and SSI and resulting in otherwise similar SSDI beneficiaries facing a 50% BRR or a zero BRR. The main findings are that there is little effect of the BRR on the decision of whether to work, but conditional on work, a higher BRR has a sizable negative effect on earnings.

Analysis

SSDI benefits vary from individual to individual based on prior earnings, but the program itself is national in scope. However, there have been a few large changes in program parameters, most notably large increases in the Substantial Gainful Activity level over the window of this study (1988-2002). SSI has a federal maximum benefit, but states can supplement this benefit if they choose. Additionally, SSDI benefits offset SSI benefits dollar-for-dollar. The result is that individuals receiving relatively similar disability benefits can face drastically different BRRs, be it the zero BRR from SSDI or the 50% BRR from SSI. Figure 1 illustrates how overall income responds to an individual receiving just SSDI benefits, just SSI benefits, or both. Depending on the relative size of SSI state supplements, personal SSDI benefits, and the SGA, the regimes under which an SSDI/SSI beneficiary faces a 50% benefit reduction rate can vary dramatically. Figure 1 also includes the fraction of individuals in my sample who would face a 50% BRR at different earnings levels, demonstrating substantial variation.

This difference in implicit marginal tax rates creates different incentives to work for otherwise similar SSDI beneficiaries. To evaluate how likely SSDI beneficiary are to face a 50% BRR if they worked, I calculate their expected earnings given employment, depending on gender, marital status, and having children. This earnings expectation is based on pooled samples of individuals with work-limiting health conditions from the 1988-2002 March CPS surveys. Given individuals' expected earnings in a given year, I then assign a binary variable indicating whether they face a 50% BRR.

The results of the effect of facing this 50% BRR are shown in Table 1. Since the differences in whether an individual will face a 50% BRR are geographic, temporal, and personal, my analysis controls for demographics, as well as state, year, and age fixed effects. Additionally, I can control for the range of income an individual would receive when not working, including from disability programs, SNAP, AFDC/TANF, and spousal earnings. The first three columns show the marginal effects of this 50% BRR on the likelihood of labor force participation in a given year using a probit model. Although initially it appears to have a large impact, even controlling for a range of demographics and fixed effects, this effect completely disappears once one controls for no-earnings income, suggesting that correlation between facing this rate and other program participation is driving the participation result.

Columns 4-6 show the effect of facing this 50% BRR on the natural log of earnings, thereby limiting the sample to those already working. Again, the initially large effect is considerably reduced when controlling for benefits from other programs. However, the effect stays negative and statistically significant at -0.625. Given the change in implicit marginal tax that this 50% BRR represents, this estimate corresponds to an elasticity of earnings among labor force participants with regard to the implicit marginal tax rate of -0.978. This earnings estimate is large relative to the literature, but it is robust across various specifications and suggests a strong role of BRRs in the earnings decision of workers. Thus high BRRs may discourage work, leading beneficiaries to reduce their earnings to the SGA level.

This paper is thus the first to provide labor supply estimates for US disability insurance beneficiaries based on changes in the disability benefit reduction rate, as opposed to shifts in other program parameters. Additionally, although the Benefit Offset

National Demonstration is currently in the process of implementing a randomized control trial to experimentally arrive at the effect of instituting a 50% BRR regime on labor supply of SSDI beneficiaries, the analysis in this paper has the advantage of occurring in an existing, naturalistic setting, as opposed to BOND's combination of a program shift with a large information intervention about benefits. Nevertheless, the results herein are consistent with the findings in BOND, but it reveals the underlying mechanism: facing a 50% disability benefit reduction rate does not change the likelihood of work, but among those already working, there will be a reduction in their earnings, yielding no net increase in earnings among SSDI beneficiaries.

References

French, Eric and Jae Song, *forthcoming*. "The Effect of Disability Insurance Receipt on Labor Supply," *American Economic Journal: Policy*.

Gruber, Jonathan, 2000. "Disability Insurance Benefits and Labor Supply," *Journal of Political* Economy, 108(6): 1162–1183

Gubits, Daniel, David Stapleton, David Wittenburg, Rachel Cook, Stephen Bell, Michelle Derr, Jillian Berk, Ann Person, and Denise Hoffman, 2013. "BOND Implementation and Evaluation Stage 2 Early Assessment Report," Abt Associates Inc. and Mathematica Policy Research, Inc.

Moore, Timothy J., 2014. "The Employment Effect of Terminating Disability Benefits," *NBER Working Paper*, 19793

Figures and Tables

Table 1: Estimates of Facing 50% Benefit Reduction Rate on Labor Supply

	Participation: Marginal Probit			Ln(Earnings): OLS		
	(1)	(2)	(3)	(4)	(5)	(6)
Facing 50% BRR in Expectation	-0.444***	-0.567***	0.026	-1.055***	-1.178***	-0.652**
	(0.027)	(0.031)	(0.049)	(0.040)	(0.044)	(0.183)
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes
Age, State, and Year Fixed Effects	No	Yes	Yes	No	Yes	Yes
Substantial Gainful Activity Level	No	No	Yes	No	No	Yes
No-Work Income Controls	No	No	Yes	No	No	Yes
Implied Elasticity			0.057			-0.978
			[-0.16 , 0.27]			[-1.52, -0.43]
(Pseudo-)R-squared	0.046	0.065	0.080	0.062	0.090	0.131
N	17719	17719	17719	12049	12049	12049

Notes: Results from SIPP-SSA matched files. Dependent variable is any annual SSA administrative earnings (participation) or log(annual SSA administrative earnings). Unit of observation is person-year. 1988-2002 sample window. Limited to those who received SSDI benefits at least one calendar year ago and who ever received SSI benefits. Demographics include education, occupation, industry, gender, and marital status. "Facing 50% BRR in expectation" defined as facing a 50% BRR if earning at the expected income of the joint wage-hours distribution of a work-limited individual with similar characteristics from the March CPS. Standard errors two-way clustered at person and year levels.

***, p<0.01; **, p<0.05; *, p<0.10

Figure 1: Earnings, SSDI and SSI Benefits, and Resulting Benefit Reduction Rates