

Three Essays on the U.S. Social Security Disability Insurance System

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Dissertation Abstract

The Social Security Disability Insurance (DI) program is the primary public long-term disability program for disabled workers in the United States. It provides cash benefits and health insurance to workers with substantial losses in earnings capacity due to severe health limitations. The fast growth of the DI rolls in the last few years and the increasing financial pressure on the Social Security system make improving work incentives among the disabled one of the most important policy goals for the Social Security Administration. In my dissertation, I empirically estimate residual work capacity of individuals with different disability levels, then explore the possibility of implementing a partial disability system in the U.S., and also analyze the impact of the other important component of the program, like health insurance, on application behavior.

Essay 1: Labor Supply Effects of Different Disability Levels

The DI program is an all-or-nothing system and awards benefits only to full disability, not to those partially disabled. That is, eligibility for DI benefits depends on demonstration of inability to work above a low earnings threshold defined as Substantial Gainful Activity (SGA) level. However, in the Health and Retirement Study (HRS) data, we notice that a significant proportion of DI applicants report being partially disabled (having work limitations that do not prevent him/her from working completely) or not disabled (having no work limitations), and more than half of them have been awarded DI benefits.

In order to foster work among the disabled, it is crucial to understand the residual work capacities among workers with different levels of disability. Previous literature studying labor force participation of DI applicants has rarely differentiated between applicants with different disability levels. The few that have recognized the existence of different disability levels, have assumed all DI beneficiaries are fully disabled (having work limitations that prevent him/her from working completely). In this study, I compare labor force participation decisions and DI application decisions among the fully disabled, the partially disabled, and the non-disabled, to understand the residual work capacity of different disability levels.

I use DI non-applicants as a comparison group to evaluate the work capacity of DI applicants in the year before DI application. Since DI applicants are required by the program rule to stay out of labor force for five months before applications, I look at the labor force participation in the year before the DI applicant drop out of labor force and apply for DI. I use the difference-in-difference (DD) approach to compare labor force participation and wage earnings of DI applicants to DI non-applicants. The DD estimation is applied to the fully disabled, the partially disabled, and the non-disabled, respectively. That is, I evaluate the work capacity of fully disabled applicants versus fully disabled non-applicants, partially disabled applicants versus partially disabled non-applicants, non-disabled applicants versus non-disabled non-applicants. I find significant differences in labor supply and wage earnings between applicants and non-applicants, regardless of disability levels. DI applicants, before they apply, have much lower wage earnings and labor force participation (and work hours for those working) than non-applicants.

While I apply the DD approach to compare the work capacity between the fully disabled applicants, the partially disabled applicants, and the non-disabled applicants, I find that the differences in their

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employment and labor earnings are statistically significant. Before they apply for DI benefits, applicants with lower disability levels are more likely to have higher wage earnings and participate in labor force more than non-applicants.

The results imply that some individuals who are not fully disabled and still have residual work capacities may drop out of labor force and apply for DI benefits due to the incentives set up by the DI program that require applicants to demonstrate inability to work above the SGA to be eligible for the benefits. They are induced to focus on their “disability” instead of their “ability”, which cause welfare losses and also add budgetary pressure on the program. In the second essay summarized below, I explore the possibility of implementing a partial disability insurance system in the United States that allows individual to self-select themselves into different disability levels and maintains those with residual work capacities in the labor force and supplement their work earnings with reduced disability benefits.

Essay 2: Partial Benefits in the Social Security Disability Insurance Program: A Policy Alternative to Foster Work among the Disabled (*Job Market Paper*)

This paper solves and simulates a life-cycle model that characterizes detailed Social Security rules on DI and Old Age programs. The model is then used to predict the behavioral responses to a Partial Disability Benefit system that allows individuals to combine wage earnings with disability benefits. The appeal of this policy hinges on the possibility of inducing applicants to self-select themselves into a given disability level, while maintaining those with some residual work capacity in the labor force, and therefore keep them contributing through their labor taxes to the Social Security system, easing the budgetary pressures of the overall Social Security system. The current dichotomous definition of disability can result in relatively productive individuals dropping from the labor force to receive benefits in order to have access to a total income high enough to make ends meet. Instead, the new system will establish a culture of continuous attachment to the labor force in the wake of health limitations. The simulation results show that there will be significant increases in both DI applications and DI rolls under the Partial DI system, therefore the induced entry effect is expected to be large; however, most of the increases are due to increased applications for *partial* benefits and awards to *partial* benefits. In fact, applications for *full* DI benefits will decrease by 36.8 percent in the simulations, and *full* DI benefit rolls will drop by 24.2 percent. The mean duration spent on DI program will decrease dramatically from 14.4 years to 7.6 years. The budgetary and welfare calculation shows that the Partial DI system, under some conditions, can result in financial savings for the DI program as well as significant improvements in individuals’ welfare.

Essay 3: Disability Insurance Application Decisions between the Early and Normal Retirement Ages

For individuals aged between the Early Retirement Age (ERA) and the Normal Retirement Age (NRA), the DI benefits are higher than the early retirement benefits they could get. It is puzzling for policy makers and researchers that very few individuals at those ages, even if eligible based on their work histories and health limitations, apply for DI benefits, while the number of early retirement claimers has increased substantially in the past decades. This study is the first to model this policy puzzle, which solves and simulates a dynamic model that characterizes the complexity of individuals’ incentives to apply for DI and Old Age programs. The model is calibrated to the longitudinal Health and Retirement Study and aggregate statistics provided by the Social Security Administration. Simulated life-time trajectories of wealth, labor earnings, health, employment, and Social Security applications, are used to explain what drives the low take-up rate of DI benefits for eligible individuals aged ERA to NRA.

This study is original also in that it is a “natural experiment” to separate cash benefits incentives from health insurance incentives for a sub-group of DI applicants, aged between the ERA and the NRA. Before getting Medicare benefits, accepted DI applicants have to stay on the rolls for two years, plus the average one year of waiting for the determination decision before getting onto the rolls, a DI applicant between ERA and NRA will essentially get Medicare no earlier than an average American. This study recognizes the non-existence of health insurance incentives to apply for DI among those aged between ERA and NRA, and therefore is able to more accurately model the DI application decisions when only cash incentives exist. The results shed some light on identifying the effect of cash benefits on the DI application behaviors using a sub-group of DI applicants.