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Essays on the Effects of Disability Insurance

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I study the effects of disability insurance receipt on the long-term outcomes of children and their families. I use data from the Social Security Administration on children enrolled in the Supplemental Security Income (SSI) program and their family members.

In Chapter 1, I estimate the long-term effects of removing low-income youth with disabilities from SSI on the level and variance of their earnings and income in adulthood. Using a regression discontinuity design based on a change in the likelihood of removal at age 18, I find that SSI youth who are removed earn on average $4,000 per year in adulthood and recover only one-third of their lost SSI payments. They experience a present discounted income loss of $73,000 over the 16 years following removal. In addition, the within-person variance of income quadruples as a result of removal. Under various assumptions, I find that up to one-quarter of the recipient’s welfare loss from SSI removal is attributable to the increase in income volatility rather than the fall in income levels. This result suggests that ignoring the income-stabilization effects of disability programs could underestimate their value to recipients.

Chapter 2 examines the effects of removing children from SSI before age 18, prior to the completion of education decisions, on their earnings in adulthood. Using variation in child medical reviews, I find no evidence of a difference in earnings between SSI children who are removed at a young age versus those who stay on, though the estimates are imprecise. I provide suggestive evidence on the channels through which early-life removal affects adult outcomes by studying effects on younger siblings. Using the empirical strategy from Chapter 1, I find that removing an 18-year-old decreases the adult earnings of younger siblings by $3,100 per year.

In Chapter 3, I estimate the effects of removing young children with disabilities from SSI on parental earnings and household income, using the child medical review empirical strategy from Chapter 2. I find that parents fully offset the SSI loss with increased earnings. The child’s removal also discourages parents and siblings from applying for disability insurance themselves.

Chapter 1

Does Welfare Inhibit Success? The Long-Term Effects of Removing Low-Income Youth from Disability Insurance

The perennial debate surrounding welfare programs reflects the trade-off between consumption smoothing and moral hazard in social insurance. Supporters defend welfare programs as a vital lifeline for those who face barriers to work, while critics charge that these programs create perverse incentives to qualify and perpetuate dependency. In his influential work Losing Ground, Charles Murray (1984) argues that the short-term benefits provided by welfare programs lead to long-term losses for recipients by eroding human capital and sapping work ethic. Arguments like Murray’s formed the intellectual basis for the 1996 U.S. welfare reform law that placed limits on welfare benefits and instituted work requirements for recipients.

Encapsulating this debate is the controversy over the U.S. Supplemental Security Income (SSI) program, a rapidly expanding disability insurance program that provides cash payments and Medicaid eligibility to low-income children and adults with disabilities. SSI is now the largest cash welfare program in the United States, paying about $50 billion each year to 8 million recipients, including over one million children, or 10 percent of children living in poverty (Congressional Budget Office 2013). The SSI children’s program has been singled out by policymakers and the media for potential perverse incentives. Critics argue that the SSI children’s program encourages households to present their children as disabled, possibly at the expense of the child’s health and educational achievement (see, e.g., Wen [2010] and Kristof [2012]). Supporters argue that SSI payments help families care for children with disabilities and may improve the outcomes of children (see Ruffing and Pavetti [2012] and Vallas and Alfano [2012]).

In this chapter, I address two long-standing questions about SSI that reflect the broader debate over means-tested programs. First, how much does SSI inhibit labor market success and self-sufficiency among youth? There has been little work on the long-term effects of disability programs on children and youth, even though their formative stage of development might make them most vulnerable to any perverse incentives or discouragement of achievement.1 Second, how much insurance does SSI provide to recipients? Empirical work on social insurance programs has thus far considered their effects on the level of earnings and income, but their effects on the stability of income are also relevant if recipients are risk averse. In the presence of risk aversion, a monthly stream of welfare payments is more valuable than earnings of the same average monthly amount if welfare payments are more stable. Earnings volatility is especially relevant for low-income populations whose employment opportunities are limited to jobs with high turnover and unpredictable hours.2

To answer these questions, I study the long-term effects of removing low-income youth with disabilities from SSI on the level and variance of their earnings and income in adulthood. I take advantage of a policy change in the Personal Responsibility and Work Opportunity Act (PRWORA) of 1996—more commonly known as welfare reform—that increased the
number and strictness of medical reviews for 18-year-olds. The law applied only to children with an 18th birthday after August 22, 1996—the date of PRWORA enactment—creating a discontinuity in the likelihood of removal via age 18 medical review at that date. I implement a regression discontinuity design based on this change using administrative data from the Social Security Administration (SSA). To the best of my knowledge, this is the first research to estimate the causal impacts of program removal on the large and critical population of youth with disabilities and to follow them over multiple decades. It is also the first to consider the effect of disability insurance on income stability in addition to income levels.

I find that SSI youth who are removed from the program increase their earnings minimally and, as a result, experience a large drop in income levels. Removed SSI youth earn on average $4,000 per year in adulthood, an increase of just $2,600 relative to those who remain on SSI. This increase in earnings covers only one-third of the $7,700 they lose in annual SSI income, and they lose an additional 10 percent each year in Social Security Disability Insurance (DI) income because they are less likely to apply for DI. As a result, removed SSI youth lose on average $73,000 in present discounted observed income over the following 16 years, which is 80 percent of the original SSI cash income loss. Even those in the top decile of the earnings response barely recover the full amount of the lost SSI income.

Despite the large average losses, removal does spur some SSI youth to earn at full-time, full-year levels. The likelihood of maintaining annual earnings above $15,000—approximately the full-time minimum wage annual earnings level—increases by an average of 11 percentage points over the postperiod, off of a near-zero baseline for those who remain on SSI. This effect also increases over time, which suggests that SSI removal may have long-term effects on earnings behavior, perhaps through skill accumulation or greater taste for work. However, using survey and administrative data on the broader disadvantaged youth population, I find that removed SSI youth have substantially lower earnings levels and lower earnings growth than their disadvantaged but non-disabled counterparts.

In addition to the fall in income levels, income volatility increases considerably as a result of SSI removal. The within-person coefficient of variation of income quadruples, putting income variance for removed SSI youth at the 95th percentile of the control group distribution. If recipients are risk averse and unable to smooth consumption intertemporally, then both the fall in income levels and the rise in income volatility from SSI removal have welfare consequences. Under various assumptions about the relationship between income and consumption for this very poor population, I do back-of-the-envelope calculations of the welfare loss experienced by SSI youth from removal. I find that up to one-quarter of the recipient’s welfare loss from SSI removal is attributable to the increase in income volatility rather than to the fall in income levels.

The SSI context is a useful setting for studying the effects of welfare programs for several reasons. First, SSI is the largest cash welfare program in the United States, with annual expenditures more than double those of the Temporary Assistance to Needy Families (TANF) program (Congressional Budget Office 2013). Second, the effects of SSI may be particularly consequential for SSI youth because they are at risk for poor life outcomes. SSI children grow up in households with incomes near or below the poverty line, generally with fewer than two parents. Mental conditions other than intellectual disability—including ADHD, speech delay, and autism spectrum disorder—have accounted for nearly all of the expansion in the SSI children’s program in the past two decades and now constitute the primary diagnosis for the majority of SSI children. SSI youth with mental conditions other than intellectual disability have school dropout rates of 45 percent, school suspension rates of 52 percent, and arrest rates of 28 percent (Hemmeter, Kauff, and Wittenburg 2009). Their outcomes do not improve substantially in adulthood: former SSI children have employment rates of just 20–50 percent as adults, depending on the cohort (Davies, Rupp, and, Wittenburg 2009). Third, SSI is a relevant context for studying the income stabilization effects of welfare and disability programs because the SSI population is a low-income, low-education population whose employment opportunities are restricted to jobs with high turnover and unpredictable hours. The bottom quintile of the earnings distribution in the United States has a within-person earnings variance (normalized by the mean) more than double that of the middle quintile. Therefore, the primary alternative source of income for the SSI population is highly volatile earnings.

The findings in this chapter inform long-standing issues in the debate over welfare programs. With respect to whether SSI inhibits labor market success and self-sufficiency, I find that most SSI youth would earn well below subsistence levels if removed from the program. I find no evidence for the hypothesis that SSI holds recipients back from self-sufficiency or that removing even relatively healthy SSI recipients would make them better off in the long run. Instead, removing SSI youth leads to a large reduction in lifetime income and a large increase in the volatility of that income. With respect to the level of insurance provided by SSI, I find that SSI affords a greater amount of insurance than suggested by previous analyses because it has substantial income stabilization benefits. Ignoring the income stabilization benefits of disability programs, and possibly other social insurance programs, could substantially underestimate their value to recipients.
Chapter 2
The Effects and Channels of Early-Life Removal from Disability Insurance: Evidence from SSI Children

The long-term effects of welfare programs on recipients, particularly children, have been fiercely debated but have proven difficult to measure. Cross-sectional estimates are confounded by the selection of individuals into welfare programs, and estimating long-term effects requires costly tracking of individuals over years or decades. The theoretical direction of the effect on children is ambiguous, reflecting the inherent trade-off in social insurance between consumption smoothing and moral hazard. Welfare payments may give families income to make critical investments in child health and education, but the stigma or label of welfare may discourage achievement.

Since its rapid expansion beginning in 1990, the SSI children’s program has been at the center of the debate over how welfare programs affect children. The program makes cash payments to the families of over one million low-income children with qualifying disabilities, or about 10 percent of children living in poverty (Congressional Budget Office 2013). In most states, it also provides categorical Medicaid eligibility to recipients. The common criticisms of welfare programs are amplified in the SSI context because payments are conditioned on the child’s disability. Critics argue that the SSI children’s program encourages households to present their children as disabled, possibly at the expense of the child’s health and educational achievement (see Kristof 2012, U.S. Congress 2011, and Wen 2010). Supporters argue that SSI payments help families care for children with disabilities and may improve the outcomes of children (see, e.g., Ruffing and Pavetti 2012).

In this chapter, I address how removal from SSI during childhood affects earnings in adulthood and present evidence on the channels through which removal affects children. There has been little work on the long-term effects of disability programs on children and youth, even though their formative stage of development might make them most vulnerable to any perverse incentives or discouragement of achievement.¹ Using a regression discontinuity design in birthdate, Deshpande (2015) finds that 18-year-olds who were removed unexpectedly from SSI as a result of the 1996 welfare reform law experienced poor labor market outcomes, earning on average just $4,000 per year in adulthood with minimal earnings growth over time. But the effect of removal on young children could be different from the effect of removal on 18-year-olds for several reasons, and the direction of the differential effect is ambiguous. On the one hand, removing children at a young age may encourage educational achievement and health improvements if the program induces moral hazard along these dimensions. On the other hand, by terminating cash payments and categorical Medicaid eligibility, early-life removal may inhibit a family’s ability to make critical investments in children during a formative period of life.

To estimate the long-term effects of early-life SSI removal, I use quasi-random variation in child medical reviews, since they increase a child’s likelihood of being removed from the program. In response to budgetary pressures, the Social Security Administration reduced the number of child medical reviews between fiscal year (FY) 2004 and FY2005. Nearly 100 percent of children who were eligible for a medical review at the end of FY2004 received one, while only 40 percent of children who were eligible for a medical review at the beginning of FY2005 received one. The discontinuity at the FY cutoff in the probability of review creates a discontinuity in the amount of time children spend on SSI before age 18, which allows me to identify the causal effect of removing children from SSI at a young age. To the best of my knowledge, this is the first research to estimate the long-term causal impact of removal from disability insurance on young children.

I find no difference between the adult earnings of children who are removed from SSI at a young age relative to those who stay on SSI. However, the estimates are imprecise because only one-fifth of the sample has reached adulthood by 2013, the latest available year of earnings data. I plan to use future years of data, as more of the children reach adulthood, to improve the precision of the estimates.

The reduced form effect of SSI removal on earnings in adulthood encompasses several distinct channels. First, if leisure is a normal good, then the loss of a stream of SSI benefits into adulthood is expected to increase earnings in adulthood through an income effect. Second, removal is expected to increase earnings in adulthood by reversing any moral hazard or stigma effects of the SSI children’s program that discourage human capital formation, such as educational achievement and health improvement. Third, by terminating cash payments and categorical Medicaid eligibility, SSI removal may have adverse human capital effects that decrease earnings in adulthood. The loss of SSI payments either reduces family income or, if parents replace the SSI income with income from work, may reduce parental care and attention. If cash payments allow for either monetary or time investments in children, or if categorical Medicaid eligibility promotes child health, then the reversal of these human capital benefits is expected to reduce a child’s earnings in adulthood.

Separate identification of these channels is key to understanding the channels by which welfare programs affect children. However, welfare programs in the developed world, which are rarely unconditional, offer few opportunities for disentangling the various channels. To shed light on this question, I present suggestive evidence from the younger siblings of the removed 18-year-olds in Deshpande (2015).
Younger siblings are likely to experience human capital effects associated with the family’s loss of SSI income. They are less likely to experience income effects because they are unlikely to receive their older sibling’s SSI income in adulthood, and also less likely to experience moral hazard effects because the older sibling’s disability benefits are not conditioned on the younger sibling’s health or behavior. I find that removing 18-year-olds from SSI causes a $3,100 annual reduction in the earnings of their younger siblings in adulthood. The effects are particularly strong for younger sisters. The 18-year-old’s removal does not affect the younger sibling’s own SSI receipt, meaning that the earnings loss is not the result of income or incentive effects from the younger sibling’s own SSI status. A more likely channel is the reduction in the family’s unearned income, which could either reduce total household income or reduce parental time at home. The large adverse effect of the 18-year-old’s removal on sibling outcomes suggests that the human capital effects of early-life removal could be substantial.

The SSI context is a useful setting for studying the effects of welfare programs for several reasons. First, SSI is the largest cash welfare program in the United States, with annual expenditures more than double those of the Temporary Assistance to Needy Families (TANF) program (Congressional Budget Office 2013). Second, the effects of SSI may be particularly consequential for SSI youth because they are at risk for poor life outcomes. SSI children grow up in households with incomes near or below the poverty line, generally with fewer than two parents. Mental conditions other than intellectual disability—including ADHD, speech delay, and autism spectrum disorder—have accounted for nearly all of the expansion in the SSI children’s program in the past two decades and now constitute the primary diagnosis for the majority of SSI children. SSI youth with mental conditions other than intellectual disability have school dropout rates of 45 percent, school suspension rates of 52 percent, and arrest rates of 28 percent (Hemmeter, Kauff, and Wittenburg 2009). Their outcomes do not improve substantially in adulthood: former SSI children have employment rates of just 20–50 percent as adults, depending on the cohort (Davies, Rupp, and Wittenburg 2009).  

The findings in this chapter offer evidence on both the extent to which and the channels through which early-life removal affects children’s outcomes. I find no evidence of a difference in adult earnings among children who are removed from SSI early in life versus those who stay on SSI, though future years of data will be critical for obtaining more precise estimates. However, I find large adverse effects of the removal of 18-year-olds on the long-term outcomes of their younger siblings. If these effects operate primarily through an adverse human capital channel, then it is possible that early-life removal has substantial and detrimental effects on children by reducing either family income or parental time and attention. Of course, this evidence does not speak to the magnitude of the income or incentive effects of removal, which are also important parameters.

Chapter 3
The Effect of Disability Payments on Household Earnings and Income: Evidence from the SSI Children’s Program

In 2011, the SSI program paid $49 billion to 7.8 million low-income, disabled Americans, more than double the $18 billion spent by the Temporary Assistance to Needy Families (TANF) program (Congressional Budget Office 2013). Some 25 percent of Americans receive SSI benefits, and in some low-income communities household SSI receipt exceeds 15 percent. The SSI program has tripled in enrollment since 1980, while traditional welfare benefits have declined.

Despite rapidly rising enrollment in this means-tested disability program, there is limited evidence on the implications of making welfare conditional on disability in addition to low income. As hypothesized by Akerlof (1978) and Nichols and Zeckhauser (1982), using disability as a “tag” may improve the targeting of welfare to the most deserving households and thus increase the cost effectiveness of public spending. On the other hand, a manipulable tag can create perverse incentives for households to qualify, which could have adverse consequences in the case of a tag like disability. The SSI children’s program has been singled out by policymakers and the media for potential perverse incentives.

Critics charge that the SSI children’s program encourages households to present their children as disabled, possibly at the expense of the child’s health and educational achievement (Kristof 2012; U.S. Congress 2011; Wen 2010).

In this chapter, I estimate the effect of the SSI children’s program on parental earnings and household income, which are important outcomes for several reasons. First, there is little evidence on how families use SSI payments. The stated purpose of the SSI children’s program is to increase the resources available to children with disabilities, which could take the form of either greater financial resources or more parental time and attention. Understanding how families use SSI income can improve understanding of the preferences of low-income families and lead to better policy. Second, this analysis estimates an elasticity of earnings to unearned income for a highly policy-relevant population, which is informative for tax policy and for the design of welfare programs. Recent decades have seen a renewed focus across the political spectrum on increasing work activity among welfare participants and persons with disabilities. The earnings response of parents of SSI children provides evidence on the labor supply effects of welfare programs that, unlike the Earned Income Tax Credit and TANF, do not include explicit work incentives. Moreover, the unique institutional...
context of the SSI children’s program, explained in detail later, allows me to measure the earnings elasticity in a setting where income effects are likely to dominate substitution effects. These results could shed light on why households reduce their labor supply in response to welfare and disability payments. Third, the effect of the SSI children’s program on household income is important for the interpretation of the program’s effects on the long-term outcomes of SSI children. If, for example, future work finds that the program improves a child’s health or educational outcomes, then the findings on parental earnings and household income shed light on whether the primary channel for these improvements is increased financial resources or greater parental attention.

Evaluating the effects of the SSI children’s program poses identification and power challenges. Since SSI is a federal program with standardized payments, there is no meaningful state-level or other cross-sectional variation in benefit amounts, and causal studies thus far have been restricted to survey data with limited sample sizes. Kubik (1999) uses the Current Population Survey and the National Health Interview Survey to find that the 1990 liberalization of medical eligibility criteria for SSI children increased the number of children with a diagnosed disability. Duggan and Kearney (2007) estimate the effects of SSI child payments on household income using an event-study design from the Survey of Income and Program Participation. They find that enrolling a child in SSI increases household income by $400 per month without significant offsets from other transfer programs or earnings.

To identify the effect of SSI on parental earnings and household income, I use a regression discontinuity (RD) design based on a change in the probability of removal from the program, paired with administrative data from the Social Security Administration. The RD takes advantage of a cut in the Social Security Administration’s budget for childhood medical reviews at the beginning of FY2005. Medical reviews are used to verify that children are still medically eligible for SSI, and they substantially increase the likelihood that a child will be removed from SSI. Nearly all children who were eligible for review at the end of FY2004 received a medical review, while the probability of review dropped to 40 percent for those eligible at the beginning of FY2005. To complement the RD analysis, I use a difference-in-differences design based on similar variation in the timing of the child’s eligibility for medical reviews.

I find that removing a child from SSI triggers a large response in parental earnings: a loss of $1,000 in the child’s SSI payment increases parental earnings—exclusively on the intensive margin—by $700 to $1,400, meaning that parents fully offset the loss in SSI payment. In addition to the increase in the level of parental earnings, I find some evidence that the volatility of parental earnings decreases in response to the child’s removal from SSI. In contrast to the substitution toward earned income, I find no substitution—nor attempts to substitute—to alternative sources of disability income. In fact, the loss of a child’s SSI payment leads to a large decrease in SSDI and SSI applications by the parents and siblings of the removed child. One explanation for this result is that households update their beliefs about disability insurance as a reliable income stream in response to the termination of benefits and are discouraged from applying. I also find evidence of the importance of household-level shocks in the decision to apply for disability.

There are several possible explanations for the magnitude of the earnings response, which is much larger than the few existing estimates of the elasticity of earnings to unearned income. First, SSI income has a high annuity value since it is a guaranteed income stream until the child turns 18 provided that the family can demonstrate a lack of medical improvement. Especially for households with low education levels and marginal labor force attachment, the high volatility of earnings—the main alternative source of income—means that SSI income may have a much greater value than its dollar equivalent in earned income. Second, this large elasticity estimate could be specific to this low-income population with children with disabilities. Low-income populations are more likely to face liquidity constraints that prevent them from smoothing, and they may also have a higher cost of work effort because of the low quality of available jobs. Single mothers with disabled children have a high opportunity cost of working if it means leaving a disabled child at home unsupervised. Third, this earnings elasticity estimate is an estimate of the effect of losing SSI benefits and thus could reflect changes in household preferences induced by the SSI program itself. For example, households receiving SSI payments for several years may adapt to having a reliable income stream and, once they lose the SSI benefit, may attempt to continue that stream by substituting to earned income. I consider each explanation in turn.

Finally, I take advantage of the unique institutional context of the SSI children’s program to estimate the earnings response in a setting where income effects are likely to dominate substitution effects. The SSI children’s program has generous parental income limits relative to other welfare programs and to the potential earnings of its target population, with no benefit phase-out until a relatively high level of parental earnings. Considered in this context, the large parental earnings response suggests that much of the labor supply discouragement effect from the program comes from an income effect rather than an incentive effect. In other words, households may reduce their labor supply in response to the income transfer itself, as opposed to marginal tax rates on earned income.

Aside from the distinction between income and substitution effects, the parental earnings response and income substitution patterns do not have clear normative implications. Work may be costly in the sense that it decreases the amount of time parents can spend caring for disabled children. Even
if households fully replace lost disability income with earned income, disability income may still have large benefits if it improves household and child well-being. To provide a clearer normative picture, future work should evaluate the effect of the SSI children’s program on health, consumption, and the long-term outcomes of children.

Notes

1. Several studies have examined the effects of adult disability programs on labor supply and human capital, including Bound (1989); Chen and van der Klaauw (2008); French and Song (2014); Hemmeter and Stegman (2013); Maestas, Mullen, and Strand (2013); and von Wachter, Song, and Manchester (2011). Coe and Rutledge (2013) and Kubik (1999) study children with disabilities.

2. For example, Edin and Lein (1997) write that poor single mothers in their study “had to weigh the utility of work against the real possibility that a subsequent layoff or reduction in hours could lead to serious material hardship. The jobs these mothers could get were among the least reliable in the U.S. economy” (p. 67).

3. Cognizant of these poor life outcomes, the Social Security Administration recently launched two programs intended to address the self-sufficiency of SSI children in adulthood: the Youth Transition Demonstration and the Promoting the Readiness of Minors in Supplemental Security Income Program.

4. Author’s calculations from the Continuous Work History Sample.

5. See Note 1.

6. Cognizant of these poor life outcomes, the Social Security Administration recently launched two programs intended to address the self-sufficiency of SSI children in adulthood: the Youth Transition Demonstration and the Promoting the Readiness of Minors in Supplemental Security Income Program.

7. For example, Edin and Nelson (2013) report SSI rates of 15 percent in Camden, New Jersey, compared to 12 percent of families receiving TANF benefits.

References


