The Medicaid buy-in and Social Security Disability Insurance (DI) beneficiaries: Lessons for the 2014 Medicaid expansion and proposals to reform DI

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THE MEDICAID BUY-IN AND SOCIAL SECURITY DISABILITY INSURANCE (DI) BENEFICIARIES: LESSONS FOR THE 2014 MEDICAID EXPANSION AND PROPOSALS TO REFORM DI

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Abstract

Evidence from the Medicaid buy-in program, a series of large Medicaid expansions targeted to workers with disabilities, can inform the expected effects of the 2014 Medicaid expansions and current proposals to reform Social Security Disability Insurance (DI). In states with low income thresholds for Aged, Blind, Disabled Medicaid, expanding Medicaid through the buy-in program resulted in large increases in Medicaid eligibility for DI recipients. Using those states with little to no increase in Medicaid eligibility as comparison states, I find expanding access to Medicaid yields large take up rates among DI recipients. However, these large responses are only expected to occur in a few states following the 2014 expansion because of the interaction between existing buy-in programs, Aged, Blind, Disabled Medicaid, and the set of states enacting the 2014 expansion. Evidence from the buy-in program also informs proposals to increase work among DI recipients. Rewarding work is shown to increase the employment of DI recipients, but there is no evidence of increased earnings.

Introduction

Between 1997 and 2009, 43 states adopted a Medicaid buy-in program. These programs are large Medicaid expansions with the goal of increasing work effort among individuals with disabilities. Examining the impact of the Medicaid buy-in programs on the take up of Medicaid among a group of adults with disabilities, Social Security Disability Insurance (DI) recipients can inform the expected effects of the 2014 Medicaid expansions. In January 2014, many low-income adults will gain access to health insurance through the Affordable Care Act (ACA). In states that choose to expand Medicaid, adults with incomes up to 133 percent of the federal poverty level will be eligible for Medicaid. As with the expansion of any public program, there are questions of how sizable take up will be. Since individuals with disabilities (or who are aged or blind) comprise the bulk of Medicaid costs, it is especially important to understand program participation among individuals with disabilities. In this paper, I provide estimates of the expected impact of the 2014 Medicaid expansions on Medicaid receipt among DI recipients.

Evidence on the effect of the Medicaid buy-in on the employment and earnings of DI recipients also inform recent proposals to reform DI. Under current program rules, DI recipients lose cash benefits after demonstrating sustained earnings above the Social Security Administration (SSA) threshold, called "Substantial Gainful Activity" (SGA), and this results in strong work disincentives. Efforts within SSA and other reform proposals attempt to address these programmatic concerns about work disincentives by supporting and rewarding work among those with substantial work capacity (Autor and Duggan, 2010; Burkhauser and Daly, 2011; Mann and Stapleton, 2011).[1] One central question is whether providing financial rewards

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[1] Each of these three proposals also addresses the struggling finances of the program, which is slated to be bankrupt in 2016 (Board of Trustees, 2012).

(in conjunction with work supports, such as retraining and accommodation) will effectively increase employment.

In nearly half of the states that adopt the Medicaid buy-in, Medicaid receipt is contingent upon work.[2] Medicaid health insurance provides real financial rewards for dual eligible (Medicare/Medicaid) recipients, Medicaid subsidizes Medicare cost sharing expenses in addition to covering services that are not Medicare benefits. Therefore, in states in which Medicaid benefits do not continue during periods of non-work, access to Medicaid explicitly acts as a financial reward to work, and evidence on the impact of increased access to Medicaid in these states can inform how rewarding work impacts employment and earnings of DI recipients.

A greater understanding of the impact of rewarding work on the employment and earnings of DI recipients is especially important because although there is recent evidence that many DI recipients have substantial work capacity (Maestas et al., 2013; von Wachter, et al., 2011), prior demonstrations to increase work among DI recipients has been met with low participation rates. For example, the Ticket to Work program which provides work supports to job seekers and incorporated temporary incentives to work yielded participation rates of only 1.8 percent (Stapleton et al., 2008). There are important differences between the Ticket to Work program and the work supports described in the DI proposals, however. Ticket to Work programs provide enhanced work incentives by allowing recipients to earn more than SGA and preserve their full cash benefit for nine months before losing cash benefits entirely. For example, these benefits only temporarily increase incentives to work as the individual works his or her way off of the program.[3] Some proposals for work supports in DI reform provide

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[2] In the other states, buy-in participants can continue to receive Medicaid during periods of non-work.
[3] In addition, these work incentives are only available after the individual has demonstrated an inability to work through the DI application process. Proposals to reform DI offer supports and rewards for work at the time of application.

permanent work supports and they all increase the return to working.[4] Therefore, by rewarding

work for longer than nine months, the reward for work in the Medicaid buy-in is closer to the

work rewards being proposed than the Ticket to Work program. Receipt of Medicaid benefits

through the buy-in are not time limited, so they reward work as long as the recipient continues to

be employed.[5]

Using Medicare Current Beneficiary Survey (MCBS) Cost and Use data for the years

1999 through 2009, I examine the impact of buy-in programs on Medicaid take up and the

employment and earnings of DI beneficiaries. Because DI recipients lose access to cash benefits

after demonstrating sustained earnings above the SGA threshold, increases in Medicaid

eligibility for DI recipients are most salient if they increase eligibility below SGA.[6] Since in

some states, Medicaid eligibility was approximately equal to SGA prior to the buy-in

expansions, in these states the buy-in did not effectively increase access to Medicaid for DI

recipients. In states with lower Medicaid income thresholds, however, the buy-in resulted in

meaningful increases in eligibility as the income threshold reached (and exceeded) SGA. Using

those states with higher income thresholds before the buy-in as comparison states, I compare the

change in Medicaid receipt, employment, and earnings among DI recipients in states with and

without increases in Medicaid generosity for DI beneficiaries. I am also able to examine the

importance of different features of the program by testing for heterogeneous effects by separately

examining the impact of the buy-in in states that explicitly reward work (i.e., Medicaid receipt is

contingent upon work) versus those states that do not.

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[4] Autor and Duggan (2010) propose work rewards that continue for 24 months, nearly three times as long as the current work supports (9 months).
[5] Kostol and Mogstad (2013) provide evidence that rewarding work increased employment among DI recipients in Norway.
[6] This assumes the DI recipient wishes to retain access to cash benefits. Liu and Stapleton (2010) show that only 3.7 percent of DI recipient leave the rolls for work.

I find Medicaid receipt increases in states that had sizable increases in the generosity of Medicaid for DI recipients. These estimates are a lower bound of the impact of the Medicaid expansion because the sample of DI beneficiaries in the MCBS data is restricted to those beneficiaries who have already have Medicare health insurance. DI recipients begin to receive Medicare health insurance two years after they become eligible for DI benefits. For the dual eligible, Medicaid assists with Medicare premiums and cost sharing, and Medicaid also provides coverage for services that Medicare does not, such as personal assistance services (and, prior to 2006, prescription drug coverage). However, for those individuals who have not yet become eligible for Medicare, access to Medicaid would be even more valuable. Therefore, DI recipients who are not yet eligible for Medicare but have income below 133 percent of the federal poverty level will take up Medicaid in even greater numbers than the DI beneficiaries with Medicare coverage who comprise my analysis sample.

Although the program was intended for workers with disabilities, I find that employment only rises in states that explicitly reward work. That is, employment only increases in states that discontinue benefits during periods of non-work. I find no evidence that the buy-in results in earnings gains large enough to generate self-sufficiency. If anything, mean wages of DI recipients fall as a result of new workers with disabilities entering the labor force. Together, these results suggest that reforms of DI that reward work are likely to effectively increase employment but that the continued income supports that are part of the proposals (or the Benefit Offset National Demonstration) are crucial because the increased employment does not result in earnings gains large enough to generate self-sufficiency.

Medicaid Buy-In Programs and DI Recipients

Medicaid provided through buy-in programs supports work because Medicaid covers many services such as personal assistance services or prescription drugs that may make it possible for an individual with disabilities to be able to work. States increase access to Medicaid through the buy-in by raising the income threshold under which workers with disabilities are eligible for Medicaid. Studying buy-in programs also sheds light on proposals to reward work because in some states access to Medicaid explicitly rewards work (i.e., there is a work requirement for these Medicaid benefits). Between 1997 and 2009, 43 states implemented a Medicaid buy-in program. Figure 1 illustrates those states that adopted a buy-in program prior to 2009.

This optional state plan eligibility category was authorized in the 1997 Balanced Budget Act and again in the 1999 Ticket to Work and Work Incentives Improvement Act.[7] A second program that provides support to individuals with disabilities was also authorized under the Ticket to Work and Work Incentives Improvement Act of 1999, the Medicaid Infrastructure Grants (MIG). MIG funding is intended to support state efforts to improve the infrastructure that helps individuals with disabilities become better integrated in the workforce. States are eligible to receive full or partial MIG awards. Full funding is contingent upon providing both skilled and unskilled personal assistance services, including help using the bathroom and dressing, as well as assistance with housekeeping and meal preparation, supports that make it possible for individuals with disabilities to live in the community.[8] When estimating the impact of the buy-in on

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[7] Two states (Massachusetts and Maryland) also began buy-in programs under 1115 waivers.
[8] From CMS website describing Medicaid Employment Initiatives http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Delivery-Systems/Grant-Programs/Employment-Initiatives.html, viewed 1/13/12.

employment and earnings, it will be important to disentangle the effect of the buy-in program

from the effect of the MIG program.[9]

DI recipients are an important population for Medicaid buy-in program administrators;

approximately 70 percent of buy-in recipients also receive DI. Medicaid complements Medicare

health insurance because although DI recipients in the MCBS receive Medicare Part A insurance,

Medicaid covers cost sharing and there are some services that Medicaid covers (but Medicare

does not) that are attractive to DI recipients, such as personal assistance services and (prior to

2006) prescription drug coverage.

DI recipients face program rules that discourage work because recipients who earn more

than SGA income threshold, eventually lose cash benefits.[10] SGA is also used by the SSA to

determine eligibility for DI benefits, and this income threshold is also important to DI recipients

considering employment because once an individual has lost DI cash benefits, they remain

eligible for their full cash benefit in any month their earnings fall below SGA. This extended

period of eligibility lasts for 36 months. As shown in Figure 2, between 1999 and 2009, the

years in the present analysis, SGA was approximately 100 percent of the federal poverty level for

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[9] States adopting the buy-in program under the Balanced Budget Act typically implemented the buy-in first and pursued MIG funding second. This is likely because most of these buy-in programs were developed prior to or directly after the passage of the Ticket Act. States that adopted the buy-in program under the Ticket Act, however, initially used the MIG funding to establish Medicaid buy-in programs (Kehn et al., 2010).

[10] The level of earnings that triggers the process of working the way off of DI is actually lower, approximately 75% of the federal poverty level for single householders, as shown in Appendix Figure 1. DI recipients who earn more than this amount in a month begin the "Trial Work Period," and if their earnings exceed this amount for any 9 out of the next 60 months, SSA considers that the individual's disability has ended and the recipient loses access to cash benefits (though for the 36-month "Extended Period of Eligibility" former DI recipients receive their full cash benefit in months that their earnings dip below SGA).

single householders.[11] Therefore, if earnings remain below SGA, DI beneficiaries retain their cash benefits.[12]

Related Literature

Evidence on Take-Up of the Medicaid Buy-In. The existing literature characterizes how participant characteristics are correlated with buy-in participation. For example, Liu and Ireys (2006) show that mental illness (or other mental disorder) is the most common diagnosis among buy-in participants. However, the size of the Medicaid buy-in program varies across states, from programs as small as Rhode Island and Nevada which both enrolled fewer than 30 participants in 2009, to programs as large as Massachusetts, Wisconsin, and Pennsylvania which each enrolled over 18,000 participants in 2009 (Kehn et al., 2010).[13] Although some of this variation is likely driven by underlying participant characteristics, program features may also play a role, and the existing evidence on the buy-in does not examine which program features increase take up of benefits. In this paper, I provide the first evidence describing which buy-in program features increase program participation among DI recipients. Specifically, I examine the impact of increased eligibility for Medicaid and explicit work requirements on the likelihood of Medicaid receipt.

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[11] Annualized SGA ranges from 95.5% FPL in 2000 to 107.3% FPL in 2009. Fir the purposes of this analysis, what matters is whether the higher income threshold increases eligibility for those earnings less than SGA. Therefore, in years where SGA exceeds the income threshold for Aged, Blind, Disabled Medicaid, the effects of the buy-in will be understated.

[12] Beneficiaries may have earnings below SGA for one of two reasons: they may be earning as much as they can (which happens to fall below SGA) or they may be "parking" their earnings below SGA, that is, purposefully restricting their earnings below that threshold so that they do not lose DI benefits. Schimmel et al. (2011) find some evidence of DI beneficiaries parking below SGA, though the effect is small; only between 0.2 and 0.4 percent of all DI beneficiaries were parked below SGA level.

[13] Although these three states have large state populations, this enrollment is also a large percentage of the state population, ranging from 0.2 to 0.33 percent of the state population. Iowa enrolled over 15,000 participants in 2009, 0.52 percent of the state population.

Evidence of the Impact of the Medicaid Buy-In on Employment and Earnings. The bulk

of the existing literature examines the impact of the buy-in program on employment and

earnings. Coe and Rupp (2013) examine the impact of the presence of the buy-in program on

employment, exits from DI, and earnings of all DI recipients, and they find small increases in

employment in states that adopt buy-in programs. The authors also examine whether the effects

are stronger among DI recipients most likely to benefit from supplemental insurance/participate

in the buy-in program, such as those with nonzero medical expenditures (who might benefit from

supplemental insurance) or those without supplemental insurance. They find that the presence of

a state buy-in program on employment is largest for those with positive medical expenditures

and those without supplemental insurance, which is consistent with the buy-in impacting those

who would benefit the most from it. However, they find no evidence that the buy-in increases

the probability a recipient earns more than SGA or earns enough to generate economic

independence from the cash benefits.

Descriptive evidence is consistent with these findings: that the buy-in program increases

employment but does not increase earnings by a large enough amount to generate economic self-

sufficiency (see, e.g., Henry et al., 2006; Liu and Ireys, 2006). Henry et al. (2006) find that

individuals with developmental disabilities or mental illness were the most likely to work but had

lower earnings levels, and they find a low incidence of earnings high enough to lead to self-

sufficiency among all buy-in participants. There is also suggestive descriptive evidence that

program features matter. Liu and Ireys (2006) document that the share of buy-in participants

with increased earnings varies across states and note that programmatic features of buy-in

programs might be responsible for some of these differences in outcomes. For example,

Medicaid is suspended during periods of non-work in three of the states in which an especially

large share of participants increase their earnings. Liu and Ireys (2006) suggest that this requirement signals that work is required for participation in buy-in programs. In this paper, I examine the impact of these program features on outcomes among DI recipients. A greater understanding of how programmatic features of state buy-in programs impact the likelihood of employment will inform potential DI policy reform efforts to increase work and earnings among adults with disabilities.

Empirical Approach and Data

Empirical Approach. Prior to the buy-in, states differed in how generous the Medicaid eligibility income thresholds were for adults with disabilities. In some states, a large share of single DI recipients were likely eligible for Medicaid even in the absence of the buy-in because for single householders, the limit for Medicaid under the Aged, Blind, Disabled category was at or near the SGA threshold.[14, 15] In these states, the implementation of the Medicaid buy-in is unlikely to increase access to Medicaid for most DI recipients,[16] and these states serve as the comparison group in this analysis. Figure 3 depicts the income thresholds for Aged, Blind, Disabled in buy-in states as a percent of the federal poverty level.[17] Recall that from 1999 to 2009, SGA is approximately 100 percent of the federal poverty level. In states with income thresholds for Aged, Blind, Disabled Medicaid at or above 100 percent of the federal poverty level, such as Alaska, Arizona, and California, the buy-in did not change Medicaid eligibility for individuals earning less than SGA.

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[14] Eligibility for Medicaid considers household income so if spousal earnings are too high, an adult with disabilities could still get DI but not get Medicaid. In this analysis, I focus on single DI beneficiaries.

[15] In general, the income that is counted toward the income threshold for both Medicaid eligibility and SGA for DI is income minus impairment related expenses.

[16] Medicaid also has asset limits; many state buy-in programs also raise these limits for workers with disabilities.

[17] Four buy-in states are excluded. For Delaware and Georgia it is unclear whether benefits continue during periods of non-work, and for Delaware, the start date is unknown. Missouri is also excluded because the state implemented the buy-in only to revoke it and then later reinstate the program.

In other states, however, the buy-in represents a sizable increase in eligibility for

Medicaid for DI recipients. For example, the income threshold for Medicaid under the Aged,

Blind, Disabled eligibility category was 75 percent of the federal poverty level in Arkansas.

Raising the income eligibility through the buy-in allowed workers with disabilities to receive

Medicaid *and DI cash benefits* while earning nearly $3,000 more per year (or over $225 more

per month) in 2009. In Connecticut and Ohio this increase in eligibility is even larger with prior

Medicaid income threshold of 68 percent and 65 percent of the federal poverty level,

respectively. Using those states with little to no increase in Medicaid eligibility as a comparison

group, I examine the impact of large increases in Medicaid eligibility on take-up of Medicaid,

and the employment and earnings of DI beneficiaries. I estimate the following equation:

$$Medicaid_{i,s,t} = \alpha_0 + \beta_1 PostBuyIn_{s,t} + \beta_2 PostBuyIn_{s,t} * IncMcaidEligToFPL_{s,t} + \Gamma X_i + \delta Unemrate_{s,t} + \theta_s + \lambda_t + \varepsilon_{i,s,t}$$

where *Medicaid* equals one of the individual receives Medicaid and *PostBuyIn* equals one in the

years the state has adopted the buy-in program. The variable *IncMcaidEligToFPL* equals one in

states in which the buy-in program resulted in increases in Medicaid eligibility for income levels

below 100 percent of the federal poverty level for a single householder.[18] The vector *X* captures

characteristics of the DI recipient and their disability, such as age, marital status, race, gender,

educational attainment, veteran status, primary diagnosis, and an indicator for the presence of a

second diagnosis. I also include the state unemployment rate because Medicaid is a cyclical

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[18] The variable *IncMcaidEligToFPL* is not included by itself because it is perfectly correlated with the state fixed effects.

program.[19] The vector θ_s captures permanent differences across states and the vector λ_t captures nationwide trends impacting Medicaid receipt (or employment or earnings) among DI recipients.

The estimates for β_1 and β_2 capture the impact of the buy-in program on Medicaid receipt. If the coefficient estimate β_1 is positive, then the adoption of the buy-in program leads to an increase in Medicaid receipt in all buy-in states. If the coefficient estimate on β_2 is positive, then the increase in Medicaid receipt is larger in buy-in states that experienced a larger increase in Medicaid eligibility.

The identifying assumption that will lead me to draw a correct causal interpretation of the results is that any trend impacting Medicaid receipt has the same effect on DI recipients in states with large gains in Medicaid eligibility from the buy-in as well as in those states that do not experience large increases in eligibility. I address this concern in two ways. First, measuring changes in Medicaid eligibility based on generosity below 100 percent of the federal poverty level does not control for differential generosity beyond 100 percent of the federal poverty level. Most buy-in states increase Medicaid eligibility for workers with disabilities to 250 percent of the federal poverty level.[20] Therefore, I also present estimates that control for the effect of adopting a buy-in with increases in Medicaid eligibility beyond 250 percent of the federal poverty level, as shown below:

$$Medicaid_{i,s,t} = \alpha_0 + \beta_1 PostBuyIn_{s,t} + \beta_2 PostBuyIn_{s,t} * IncMcaidEligToFPL_s +$$
$$\beta_3 PostBuyIn_{s,t} * IncMcaidEligPast250FPL_s + \Gamma X_i + \delta Unemrate_{s,t} + \theta_s + \lambda_t + \varepsilon_{i,s,t}$$

A nonzero coefficient on β_3 would reflect further increase in Medicaid generosity having an additional impact on Medicaid receipt (or employment or earnings).

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[19] Furthermore, in estimates of employment and earnings, the state unemployment rate is likely to be negatively correlated with employment and earnings.

[20] All states that implemented the buy-in with the Balanced Budget Act of 1997 as the authorizing legislation increase the income threshold to 250% of the federal poverty level. Virginia did not increase the income threshold with the buy-in program.

Second, many states enacted Medicaid Infrastructure Grants (MIG) preceding buy-in

implementation or around the same time as buy-in implementation. Since these grants are

intended to help states invest in infrastructure to support workers with disabilities, the presence

of MIG funding may be correlated with Medicaid receipt (or employment or earnings). To

ensure that estimated effects are not driven by MIG funding, I also include a control for MIG

funding, as shown below:

$$Medicaid_{i,s,t} = \alpha_0 + \beta_1 PostBuyIn_{s,t} + \beta_2 PostBuyIn_{s,t} * IncMcaidEligToFPL_s +$$
$$\beta_3 PostBuyIn_{s,t} * IncMcaidEligPast250FPL_s + \beta_4 MIG_{s,t,} + \Gamma X_i + \delta Unemrate_{s,t} + \theta_s + \lambda_t + \varepsilon_{i,s,t}$$

To test whether the effects vary depending upon whether states explicitly reward work, I

separately examine the impact of the buy-in in states that do and do not allow recipients to

maintain their Medicaid benefits during periods of non-work. In states that tie Medicaid receipt

to employment, benefits through the buy-in program reward work. Table 1 contains several

provisions of state Medicaid buy-in programs and identifies those states that do not allow

recipients to maintain Medicaid benefits during periods of non-work. Nearly half of the buy-in

states do not allow buy-in recipients to continue to receive benefits during periods of non-work

(17 out of the 39 states used in the analysis).

Data. To address these questions, I use data from the Medicare Current Beneficiary

Survey (MCBS) Cost and Use files.[21] The MCBS is a large, nationally representative survey of

Medicare recipients. Importantly for this work, the MCBS identifies those Medicare recipients

who gain Medicare eligibility from DI receipt. Beginning in 1999, the MCBS captures

information on respondent's employment at the time of the survey, so I use MCBS data for the

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[21] The Health and Retirement Study (HRS) also captures receipt of DI, Medicaid, and Medicare as well as employment and earnings information. However, sample sizes of DI recipients are too small and DI recipients in the HRS are older. Recent research has shown older DI recipients are less likely to work (see, e.g., von Wachter, et al., 2011) or respond to work incentives.

years 1999 through 2009. Eligibility for DI is determined based on the relationship between the beneficiary's earnings and SGA, with no regard to spousal income. However, in many states Medicaid eligibility is based on a couple's income. Therefore, I further restrict the sample to single respondents; this restriction ensures that the relevant income thresholds for DI receipt (SGA) and Medicaid eligibility are uniform for each individual and results in a sample of just over 10,000 DI recipients. When I restrict attention to those 41 states that implemented a buy-in prior to 2009, the sample falls to just over 7,000 DI recipients.

As shown in Table 2, approximately 70 percent of the DI recipients in the MCBS also receive Medicaid. Employment rates are rather low; 14 percent of respondents in the sample were employed at the time of interview. This figure is slightly lower than the share of cash disability recipients who are working reported in Coe and Rupp (2013), though this is not surprising because the MCBS asks respondents whether they were employed at the time of the interview whereas Coe and Rupp (2013) are able to identify DI recipients who were employed at some point during the year. About 8 percent of DI recipients report monthly income that exceeds the level for SGA. Among workers, average monthly income is higher than SGA, approximately $1,088 per month (in 2009 $; in 2009, SGA was $980 per month for non-blind individuals),[22] this is because the MCBS captures earned and unearned income, such as DI benefits.

Among states in which the buy-in represented a sizable increase in Medicaid eligibility for DI recipients (columns (1) and (2)), the buy-in increased Medicaid receipt by 11 percentage points and employment by 4 percentage points. In contrast, in states in which the buy-in did not

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[22] Among workers, 58 percent report income higher than SGA. The variable describing income in the MCBS is income_c, "Actual income of SP" (RIC 1), which does not distinguish between earned and unearned income. Respondents are directed to report income from jobs as well as DI benefits in their response, which likely explains why such a high share of working respondents report annual income greater than SGA.

appreciably increase Medicaid eligibility (columns (3) and (4)), both Medicaid receipt and employment increased by only 4 and 2 percentage points post buy-in, respectively. Gains in income were much smaller.

Panels B and C examine whether there appear to be heterogeneous effects of the buy-in depending upon how explicitly Medicaid receipt rewards work. In some states, buy-in recipients continue to receive Medicaid even during periods of non-work. Panel B shows that in these states, increasing eligibility for Medicaid resulted in even larger gains in Medicaid receipt than in the sample of all buy-in states. The buy-in resulted in an 18 percentage point increase in Medicaid receipt. In contrast, there are no gains in employment in these states; if anything, employment declined after the buy-in. Panel C shows that among states that very strictly enforce the work requirement, increasing eligibility for Medicaid resulted in smaller gains in Medicaid receipt (7 percentage points), but much larger gains in employment (10 percentage points). There are also gains in the likelihood that an individual earns more than SGA, but only modest gains in monthly income, conditional on working.

Results

Impact of Buy-In on Medicaid Receipt. Table 3 presents the estimates of the impact of expanding Medicaid eligibility on Medicaid receipt. Column (1) contains results for all buy-in states and shows that in states in which the buy-in resulted in an increase in Medicaid eligibility for DI recipients, there was a 7.6 percentage point increase in Medicaid receipt post buy-in. In Panel B, I add a control for buy-in program generosity beyond SGA with an interaction term for those states with especially generous post buy-in income thresholds (i.e., extend Medicaid beyond 250 percent of the federal poverty level) and find that especially large increases in

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Medicaid eligibility beyond SGA have no impact on Medicaid receipt among DI recipients. In Panel C, I also add an indicator for the presence of MIG funding because in many states the timing of MIG funding is correlated with buy-in program implementation. If anything, receipt of MIG funding is correlated with lower levels of Medicaid receipt. Nevertheless, in both Panel B and C, I continue to find a positive and statistically significant effect of a higher income threshold on Medicaid receipt among DI recipients.

In columns (2) and (3) I test for heterogeneous effects by the presence of protections for continued Medicaid receipt during periods of non-work. In column (2), I restrict the sample to the set of states with protections for periods of non-work. In every case, the impact of a higher income threshold on Medicaid receipt is nearly twice as large in these states as it is in all states. Then it follows that the results in column (3) show that there is little impact of an increased income threshold on Medicaid receipt in states without protections for periods of non-work.

The increased access to Medicaid as a result of the ACA is likely to result in increased Medicaid receipt, even among DI recipients who are currently receiving Medicare. Estimates from the set of states with protections for periods of non-work are most relevant because the ACA does not link Medicaid eligibility to employment. These estimates suggest the 2014 expansions may result in an increase in Medicaid receipt of approximately 15 percentage points. From a base of 56 percent of the sample receiving Medicaid prior to the buy-in, this corresponds to a 74 percent take up rate.

Impact of Buy-In on Employment and Earnings. Evidence from the Medicaid buy-in can also inform the expected effects of DI reforms on the employment and earnings of DI recipients. Table 4 contains estimates of the impact of higher income thresholds on employment. I find that

it is only the states that explicitly reward work with Medicaid (i.e., those states with the *strictest* work requirements) that experience a positive and statistically significant increase in employment following buy-in implementation. There is no effect in the pooled sample of all buy-in states or in the subset of states with weaker work requirements. However, as shown in column (3), raising the income threshold for Medicaid through the buy-in increases employment among DI recipients by between 4.6 and 7.6 percentage points in those states that explicitly reward work. From a mean of 8 percent of DI recipients working in these states prior to the buy-in, this is between a 57.5 and 95 percent increase in the rate of employment. This suggests that the employment of DI recipients responds to increased rewards for work.

In Table 5, I present results examining the impact of the increased eligibility for Medicaid on income. Panel A presents the results for all states. In columns (1) and (2), the dependent variable is an indicator variable that equals one if the recipient reports income above SGA.[23] Column (1) includes all survey respondents and I find no effect of the buy-in on income. Any increase in employment may impact the distribution of earnings, so in column (2) I restrict the sample to those who are working at the time of the survey and find no evidence that increased Medicaid eligibility results in a statistically significant effect on the likelihood that income exceeds the SGA threshold. However, there may be important gains in earnings that are not reflected by this binary measure that quantifies changes around the SGA threshold. For example, someone's earnings might increase from $400 per month to $600 per month, both of which are below SGA and would not be reflected in the prior estimates.[24] Therefore, in column

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[23] In the MCBS, respondents report annual income. Therefore, this variable equals 1 for employed respondents whose annual income is greater than 12 times the monthly SGA amount.
[24] Alternatively, earnings might increase from $1,500 per month to $1,700 per month, both of which are above SGA and this change would also not be reflected in a measure of whether income increased beyond SGA.

(3), I examine whether the buy-in impacted ln(annual income) among the subset of workers. Again, I find no effect of the buy-in on income.

These findings of a null effect on income could arise for one of two reasons. Increased eligibility for Medicaid may have no impact on earnings. Alternatively, it could reflect the mean of two offsetting effects: if earnings increase among those already employed but new workers have lower average earnings. To try to tease out these effects, I separately examine the impact of increased Medicaid eligibility on earnings in states where there were no observed gains in employment and those states where the increased eligibility resulted in employment gains. In Panel B, I restrict the sample to those states that allow recipients to continue to receive Medicaid during periods of non-work. Table 3 showed no buy-in induced employment gains in these states, and I document no gains in income in this subset of states. In Panel C, I restrict the sample to those states with strict work requirements, the set of states with observed employment gains as a result of the increased Medicaid eligibility. As expected, the coefficient estimates in Panel C show that income actually *declines* as a result of increased Medicaid eligibility in these states. If individuals are entering the labor force to acquire Medicaid insurance coverage, but have lower average earnings, this increased employment will lower mean income. These findings suggest that income supports will help workers with disabilities make ends meet.

Discussion

Using MCBS data, I examine whether increasing access to Medicaid for DI recipients through buy-in programs impacts Medicaid receipt, employment, and earnings. I find sizable increases in Medicaid receipt in those states which enacted large increases in eligibility, and find the largest increases are in states that allow buy-in participants to preserve access to Medicaid

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during periods of non-work. However, I find that the only increases in employment are in those states that explicitly reward work (i.e., do not allow buy-in participants to continue to receive Medicaid during periods of non-work). This suggests that DI recipients respond to work incentives. Further, I find no evidence of increases in income. If anything, the buy-in induces individuals to enter the labor force with lower earning potential and these individuals bring down average annual income.

The experience of DI recipients and the Medicaid buy-in program offers lessons regarding expected take up of Medicaid by DI recipients following the 2014 Medicaid expansions as well as lessons for DI reforms about how to effectively increase work incentives. The estimates in this paper show the potential for substantial take up among DI beneficiaries in one subset of states: those buy-in states with income thresholds for Aged, Blind, Disabled Medicaid below SGA that discontinue Medicaid during periods of non-work. That is, Maryland, New Mexico, and New York are likely to experience substantial increases in Medicaid among DI recipients.[25] I find that after providing access to Medicaid to DI recipients, Medicaid receipt will increase by 15 percentage points, to 74 percent. This number is likely to be a lower bound because these estimates are from the MCBS, which is (by definition) restricted to individuals who are also receiving Medicare. Among those DI beneficiaries who are still in the 24 month waiting period for Medicare, it is likely that take up of Medicaid will be even larger. In addition,

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[25] I do not expect the 2014 Medicaid expansion will have as large of an effect in other states. I only observe an effect on take up in buy-in states that previously had income thresholds for Aged, Blind, Disabled Medicaid below SGA. As of September 16, 2013, the only non buy-in states choosing to adopt the 2014 Medicaid expansion have Medicaid income thresholds that are at or above SGA (Kaiser Family Foundation, "Status of State Action on the Medicaid Expansion Decision, as of September 16, 2013." http://kff.org/health-reform/state-indicator/state-activity-around-expanding-medicaid-under-the-affordable-care-act/ Viewed September, 2013.) That is, other states expanding Medicaid in 2014 either already adopted a buy-in and continue benefits during periods of non-work, such as Arkansas or California, or have income thresholds for Aged, Blind, Disabled Medicaid at or above SGA/100% federal poverty level. For example, the District of Columbia and Hawaii do not have a buy-in but have an Aged, Blind, Disabled income threshold of 100% of the federal poverty level. Similarly, states such as Arkansas have a buy-in program and although benefits are discontinued during periods of non-work, the income threshold for Aged, Blind, Disabled Medicaid is at or above 100% of the federal poverty level.

even though I draw the estimates from the set of states which continue benefits during periods of non-work, there are likely some DI recipients with low work capacity who will also take up Medicaid in 2014 who did not seek Medicaid under the buy-in (which was targeted to workers with disabilities). Further, the buy-in programs were likely not as widely publicized as the 2014 Medicaid expansions will be.

Evidence from the buy-in also informs efforts to reform DI. Consistent with recent research (Maestas et al., 2013; von Wachter et al., 2011), these findings suggest that many non-working DI recipients may actually be able to work. Current proposals and the Benefit Offset National Demonstration project will reward work by allowing recipients to continue to receive benefits while working (Autor and Duggan, 2010; Burkhauser and Daly, 2011; Mann and Stapleton, 2011). The evidence from this paper suggests that efforts to reward work will lead to higher employment rates. The only states in which employment increased along with Medicaid eligibility were the states that rewarded work with Medicaid receipt (by explicitly tying benefit to employment).

This increase in work, however, is not generating earnings greater than SGA. Therefore, income supports, which are a part of the proposals, are crucial.

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Figure 1: States that Adopt a Medicaid Buy-In Program Prior to 2009

Source: Kehn et al., (2010); Kehn (2013); State Medicaid websites for Delaware "Medicaid for Workers with Disabilities" program (http://dhss.delaware.gov/dhss/dmma/), Georgia Medicaid for Workers with Disabilities (https://www.gmwd.org/WebForms/StaticContent1.aspx), and Kentucky Medicaid Works (http://manuals.chfs.ky.gov/dcbs_manuals/DFS/VOLIVA/OMVOLIVA.pdf) Viewed September, 2013.

Figure 2: Substantial Gainful Activity (SGA) as a Percent of the Federal Poverty Level (for Single Householders), 1999-2009

Source: Substantial Gainful Activity acquired from http://www.ssa.gov/oact/cola/sga.html. Federal poverty levels acquired from http://www.census.gov/hhes/www/poverty/data/threshld/index.html. Viewed September, 2013.
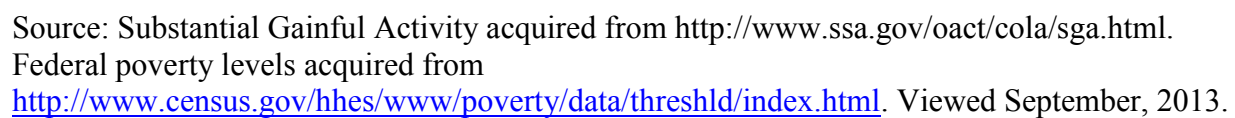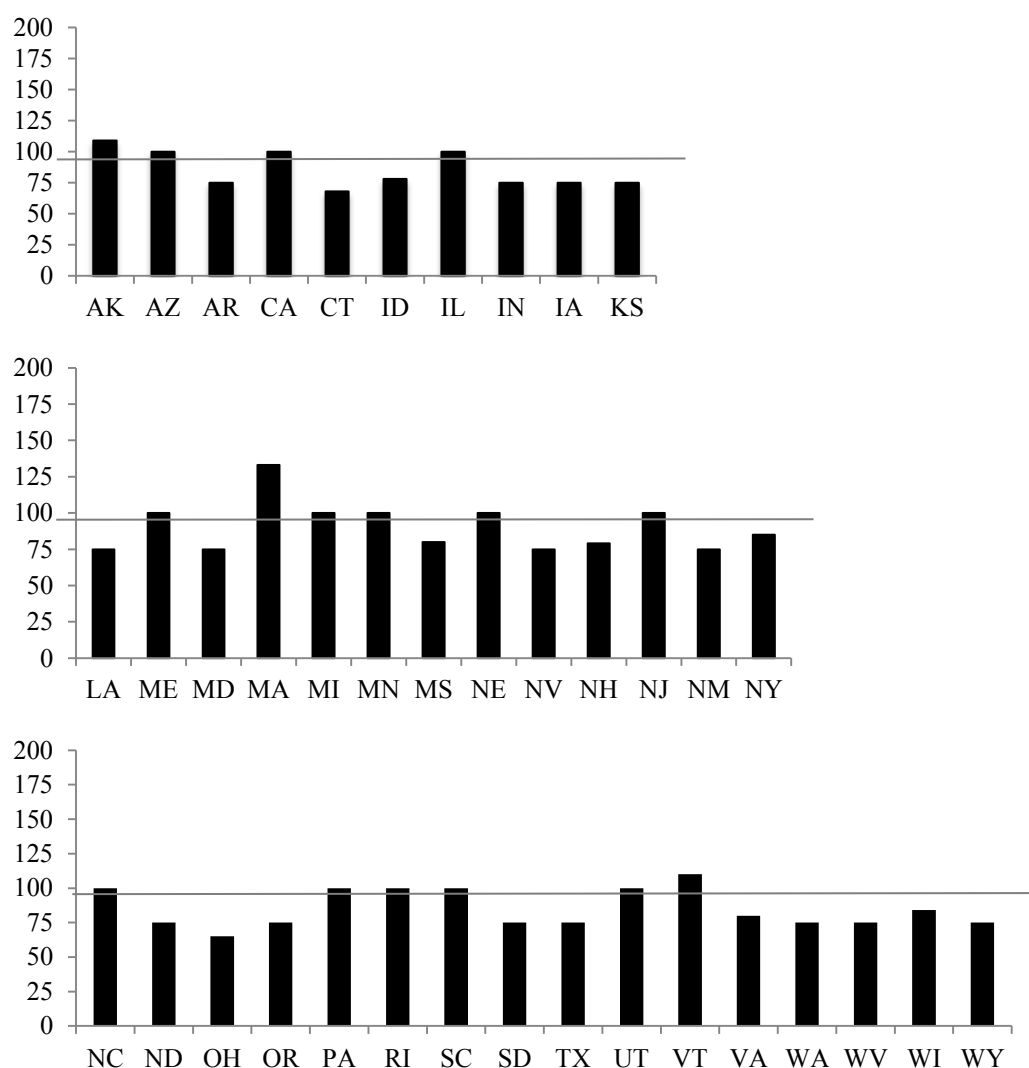
Figure 3: Income Threshold for Aged, Blind, Disabled Medicaid as percent Federal Poverty Level, Buy-In States

Source: Kaiser Family Foundation (2010). Note that four buy-in states are excluded from the analysis: Delaware, Georgia, Kentucky, and Missouri.

Table 1: Characteristics of State Buy-In Programs

State	Year Adopt Buy-In	Year Adopt MIG	Income Limit (as % FPL) (single)	Medicaid continues during periods of non-work
Alaska	1999	2001	250	No
Arizona	2003	2007	250	No
Arkansas	2001	2005	250	Yes
California	2000	2002	250	Yes
Connecticut	2000	2001	500	Yes
Idaho	2007	2001	500	No
Illinois	2002	2001	200	Yes
Indiana	2002	2003	350	Yes
Iowa	2000	2001	250	Yes
Kansas	2002	2001	300	Yes
Louisiana	2004	2002	250	Yes
Maine	1999	2001	250	No
Maryland	2006	2003	300	No
Massachusetts	1997	2001	500	Yes
Michigan	2004	2005	500	Yes
Minnesota	1999	2001	500	Yes
Mississippi	1999	2003	250	No
Nebraska	1999	2001	250	No
Nevada	2004	2001	250	Yes
New Hampshire	2002	2001	450	Yes
New Jersey	2000	2001	250	Yes
New Mexico	2001	2001	250	No
New York	2003	2002	250	No
North Carolina	20008	2003	450	No
North Dakota	2004	2002	225	Yes
Ohio	2008	2002	250	No
Oregon	1999	2001	250	Yes
Pennsylvania	2002	2002	250	Yes
Rhode Island	2006	2001	250	Yes
South Carolina	1998	2003	250	No
South Dakota	2006	2002	250	Yes
Texas	2008	2002	250	No
Utah	2001	2001	250	No
Vermont	2000	2001	250	No
Virginia	20007	2002	80	Yes
Washington	2002	2001	220	Yes
West Virginia	2004	2001	250	Yes
Wisconsin	2000	2001	250	No
Wyoming	2002	2005	225	No

Source: Kehn et al., (2010), Kehn (2013).

Table 2: Descriptive Statistics

	States with Sizable Change in Medicaid Eligibility for DI Recipients		States with No Change in Medicaid Eligibility for DI Recipients	
	Before Buy-In	After Buy-In	Before Buy-In	After Buy-In
	(1)	(2)	(3)	(4)
Panel A: All buy in states				
Medicaid Receipt	.61	.72	.69	.73
Employed	.15	.19	.13	.15
Monthly income exceeds SGA limit	.08	.11	.09	.09
Monthly Income (if work, 2009 $)	1,089 (893)	1,100 (800)	1,087 (914)	1,128 (855)
N	1,697	2,361	1,077	2,443
Panel B: Medicaid benefits not contingent upon work				
Medicaid Receipt	.56	.74	.66	.72
Employed	.17	.15	.16	.16
Monthly income exceeds SGA limit	.09	.09	.12	.10
Monthly Income (if work, 2009 $)	1,073 (865)	1,056 (746)	1,152 (1,002)	1,186 (899)
N	468	1,170	674	1,851
Panel C: Medicaid benefits linked to work				
Medicaid Receipt	.63	.70	.74	.75
Employed	.14	.23	.08	.11
Monthly income exceeds SGA limit	.08	.14	.04	.05
Monthly Income (if work, 2009 $)	1,094 (904)	1,142 (849)	979 (731)	948 (669)
N	1,229	1,191	403	592

See Table 1 for details on which states are included in each panel.

Table 3: Impact of Increased Access to Medicaid through Buy-In Program on Medicaid Receipt/Take-Up

	All Buy-In States	Medicaid Benefits Continue During Periods of Non-work	Medicaid Benefits Suspended During Periods of Non-work
	(1)	(2)	(3)
Panel A			
POST	-.044	-.040	.034
	(.027)	(.033)	(.043)
POST x Buy-In Raises Medicaid Eligibility for DI Recipients	.074**	.161***	-.055
	(.036)	(.041)	(.046)
Panel B			
POST	-.059*	-.028	-.058
	(.033)	(.035)	(.124)
POST x Buy-In Raises Medicaid Eligibility for DI Recipients	.084**	.155***	.026
	(.038)	(.039)	(.128)
POST x Buy-In Raises Medicaid Eligibility Beyond 250% FPL	.031	-.031	.126
	(.041)	(.040)	(.116)
Panel C			
POST	-.054*	-.019	-.066
	(.032)	(.031)	(.120)
POST x Buy-In Raises Medicaid Eligibility for DI Recipients	.078**	.144***	.033
	(.038)	(.041)	(.124)
POST x Buy-In Raises Medicaid Eligibility Beyond 250% FPL	.033	-.028	.132
	(.041)	(.038)	(.113)
MIG grant	-.057**	-.048	-.035
	(.021)	(.029)	(.028)
Mean Medicaid receipt	.692	.697	.686
N	7,578	4,163	3,415

See notes to Table 2. Additional covariates include the state unemployment rate, respondent age, gender, indicators for race and ethnicity (white, black, Hispanic, the left out category is non-white, non-black, non-Hispanic), indicators for level of education received (no high school, some high school, some college, and college or more, the left out category is high school degree), veteran status, indicators for primary diagnosis (back/spine/disc disorder, severe eyesight loss, severe hearing loss, kidney/renal failure, seizure disorder, car/bike/train accident, multiple sclerosis, muscular dystrophy, broken bone, cerebral palsy, hardening of the arteries, high blood pressure, myocardial infarction, angina pectoris, other heart condition, stroke, new occurrence of skin cancer, cancer or other tumor, diabetes, rheumatoid arthritis, other arthritis, mental retardation, Alzheimer's disease, mental disorder, osteoporosis, broken hip, Parkinson's disease, emphysema or asthma, partial paralysis, loss of limb, congenital heart failure, problems with heart valve, heartbeat rhythm, and depression (beginning in 2009), the left out category is other) an indicator for the presence of a second diagnosis, and state and year fixed effects.

Table 4: The Impact of Increased Access to Medicaid through Buy-In Program on Employment

	All Buy-In States	Medicaid Benefits Continue During Periods of Non-work	Medicaid Benefits Suspended During Periods of Non-work
	(1)	(2)	(3)
Panel A			
POST	-.024	-.014	-.061**
	(.020)	(.029)	(.024)
POST x Buy-In Raises Medicaid Eligibility for DI Recipients	.022	-.023	.076***
	(.026)	(.034)	(.022)
Panel B			
POST	.003	.019	-.040
	(.021)	(.025)	(.026)
POST x Buy-In Raises Medicaid Eligibility for DI Recipients	.004	-.040	.058**
	(.026)	(.030)	(.025)
POST x Buy-In Raises Medicaid Eligibility Beyond 250% FPL	-.057**	-.087**	-.029
	(.027)	(.040)	(.032)
Panel C			
POST	.0001	.017	-.027
	(.021)	(.025)	(.021)
POST x Buy-In Raises Medicaid Eligibility for DI Recipients	.008	-.039	.046*
	(.025)	(.030)	(.023)
POST x Buy-In Raises Medicaid Eligibility Beyond 250% FPL	-.057**	-.087**	-.038
	(.026)	(.040)	(.030)
MIG grant	.029	.008	.058**
	(.019)	(.017)	(.022)
Mean Employment	.159	.159	.160
N	7,578	4,163	3,415

See notes to Table 3.

Table 5: The Impact of Increased Access to Medicaid through the Buy-In Program on the Likelihood Income Exceeds Substantial Gainful Activity and Earnings

	Income exceeds SGA *(all DI recipients)*	=1 if income exceeds SGA *(workers only)*	Ln(income) *(workers only)*
	(1)	(2)	(3)
Panel A: All Buy-In States			
POST	.016	.086	.226**
	(.016)	(.072)	(.093)
POST x Buy-In Raises Medicaid Eligibility for DI Recipients	.001	-.012	-.041
	(.013)	(.074)	(.083)
POST x Buy-In Raises Medicaid Eligibility Beyond 250% FPL	-.063***	-.134*	-.348***
	(.021)	(.074)	(.112)
MIG grant	.014	-.057	-.153*
	(.012)	(.066)	(.086)
Mean of Dependent Variable	.094	.592	9.39 (.93)
N	7578	1207	1207
Panel B: Medicaid benefits not contingent upon work			
POST	.010	.021	.182
	(.022)	(.073)	(.120)
POST x Buy-In Raises Medicaid Eligibility for DI Recipients	-.009	.090	-.048
	(.017)	(.093)	(.103)
POST x Buy-In Raises Medicaid Eligibility Beyond 250% FPL	-.077***	-.079	-.320**
	(.025)	(.054)	(.135)
MIG grant	.001	-.077	-.267**
	(.016)	(.085)	(.107)
Mean of Dependent Variable	.098	.614	9.44 (.84)
N	4,163	661	661
Panel C: Medicaid benefits linked to work			
POST	.053*	.273***	.710***
	(.029)	(.062)	(.252)
POST x Buy-In Raises Medicaid Eligibility for DI Recipients	-.036	-.291***	-.481***
	(.028)	(.044)	(.107)
POST x Buy-In Raises Medicaid Eligibility Beyond 250% FPL	-.082**	-.188**	-.581***
	(.029)	(.074)	(.112)
MIG grant	.038**	.021	.059
	(.012)	(.089)	(.113)
Mean of Dependent Variable	.090	.564	9.32 (1.02)
N	3,415	546	546

See notes to Table 3. In the MCBS, only annual income is reported, so consider income to exceed SGA if annual income is greater than 12*SGA for the given year. Note that in the MCBS, unearned income, such as Social Security Disability Benefits, is included in the income measure.

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