

**Employment, Earnings, and
Primary Impairments Among
Beneficiaries of Social Security
Disability Programs**

Final Report

November 7, 2013

David R. Mann

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Policy Research

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I. INTRODUCTION

The two major disability support programs administered by the Social Security Administration (SSA)—Disability Insurance (DI) and Supplemental Security Income (SSI)—have experienced substantial growth in recent decades. The number of DI disabled worker beneficiaries has grown from 2.9 million in 1980 to 8.8 million in December 2012, and the number of working-age SSI recipients has increased from 1.5 million at the start of the program in January 1974 to about 4.9 million in December 2012 (Stapleton and Wittenburg 2011; SSA 2013a). This rapid growth in program beneficiaries has generated strong policy interest in understanding beneficiary employment patterns and, ultimately, decreasing program growth by helping some beneficiaries to return to work and earn enough to decrease or eliminate their benefit payment.

At the same time as these programs have grown, the distribution of disabling conditions of SSA disability program beneficiaries¹ has also changed. Legislative actions during the 1980s and 1990s greatly expanded the set of impairments that can qualify individuals for benefits.² For instance, the 1984 Disability Benefits Reform Act altered eligibility requirements for federal disability benefits by incorporating vocational considerations into the disability determination process and for the first time permitted consideration of pain when making disability determinations. From 1993 through 2008, 13.5 percent of DI-only applicants and 23.7 percent of concurrent DI/SSI applicants were listed with a mental disorder as their primary impairment (Rupp 2012). In addition to altering eligibility criteria, significant changes over time in the nature of work have likely impacted what specific impairments prohibit individuals from engaging in substantial gainful activity (SGA)—a key factor in the disability benefit determination process.³

Despite these trends, little is known about the relationship between employment, earnings, and specific primary impairment status among SSA disability benefit recipients. We address this gap in the literature by using linked 2011 data from two SSA administrative data sources—the Disability Analysis File and Master Earnings File—to create detailed primary impairment status measures and examine the employment and earnings distribution of recent DI beneficiaries and working-age SSI disability benefit recipients. We separate primary impairment at the time of benefit award into 25 categories, which provides sufficient detail to examine how employment and earnings vary across a wide range of impairment-related health conditions. Our analysis has

¹ Individuals eligible to receive SSI disability payments are officially referred to as “SSI disability recipients,” and individuals entitled to receive DI benefits are officially referred to as “DI beneficiaries.” However, to facilitate easier communication, in this article we apply the word “beneficiaries” as well as phrases such as “SSI and DI beneficiaries” and “Social Security disability program beneficiaries” loosely to indicate both SSI disability recipients and DI beneficiaries.

² Primary and secondary impairment codes reflect the evidence used by SSA to determine whether a person is disabled. However, SSA staff generally record only sufficient impairment information to justify disability benefits, so if a primary impairment is sufficient to qualify a beneficiary for benefits, any secondary impairment may not be recorded.

³ In 2012, engaging in SGA meant earning more than \$1,010 per month for a nonblind individual and \$1,690 for a blind individual (SSA 2013b). The SGA amount for the nonblind has been adjusted annually based on the national average wage index since July 1999. The SGA amount for the blind has been adjusted annually based on the national average wage index since 1978.

several components. First, we provide population-level tabulations of selected characteristics by primary impairment status. Next, we estimate a series of regression models to examine how primary impairment statuses are associated with employment and earnings. Finally, we use the parameter estimates from our regression models to predict employment and earnings both overall and for specific beneficiary profiles. All results are presented separately by program.

The findings reveal that much heterogeneity exists in employment and earnings across primary impairment groups. After controlling for other observed factors, across programs, beneficiaries with intellectual disabilities, visual impairments, hearing impairments, neoplasms, and HIV/AIDS were the most likely to be employed. Conversely, beneficiaries with schizoaffective disorders, anxiety disorders, back disorders, and endocrine/nutritional disorders were least likely to work. Our analysis of earnings data shows that beneficiaries matching certain demographic and impairment profiles, such as beneficiaries with HIV/AIDS who were age 40 to 49, can be much more likely to work or have higher earnings than the average employment rate and earnings among beneficiaries. Interestingly, we also find that some impairment categories strongly associated with employment are not as strongly associated with higher earnings, after conditioning on employment status, or with earnings above the SGA level.

This study provides policy makers with additional information about the variation that exists in employment and new data regarding the variation that exists in earnings among SSA disability beneficiaries. This information can inform new initiatives designed to help beneficiaries return to work or successfully transition into the adult workforce. For instance, it may assist future return-to-work initiatives to better target or tailor interventions for beneficiaries based on their probability of returning to work, given their primary impairment status. Nevertheless, the generally low employment rates and earnings of SSI and DI beneficiaries documented in this study highlight the daunting challenge of reducing SSA disability program growth by helping current beneficiaries work at substantive levels.

II. BACKGROUND

A. Program Descriptions

DI and SSI, both administered by SSA, are the primary disability income support programs in the United States. Both programs require those eligible for benefits to be unable to “engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment(s) which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months.” Despite using similar disability definitions, the programs differ in several ways in terms of additional eligibility criteria, benefit levels, funding sources, and associated benefits such as public health insurance coverage.

DI is a social insurance, income replacement program that provides disabled workers with a sufficient work history (and their dependents) with income if an impairment prohibits work at or above the SGA level. DI payments are made from the DI Trust Fund, which workers pay into via payroll taxes. Upon reaching full retirement age, DI beneficiaries stop receiving payments from the DI Trust Fund and are moved into the Old Age and Survivor’s Insurance program. After 24 months from the first DI entitlement month, disabled worker beneficiaries qualify for Medicare benefits, although some DI beneficiaries with specific impairments qualify for Medicare benefits immediately.⁴ About 8.6 million disabled workers received DI benefits in 2011, with an average monthly disabled worker benefit payment of \$1,111 (SSA 2012a).

Unlike DI, SSI is a means-tested program in which beneficiaries qualify for cash assistance based on financial need as well as other criteria. People with disabilities and seniors with limited incomes and resources are eligible for SSI. In our analysis, we focus exclusively on working-age SSI disability beneficiaries, which comprised 85 percent of all SSI disability recipients in 2011. SSI payments are made from general revenues. Children with disabilities who live in households with limited income and resources can be eligible for SSI. Some states supplement SSI payments to their residents, and SSI recipients generally are categorically eligible for Medicaid benefits.⁵ SSI recipients often also qualify for other need-based supports, such as housing assistance and food assistance via the Supplemental Nutrition Assistance Program. SSA disability beneficiaries can receive DI and SSI payments concurrently, provided that they satisfy eligibility criteria for both programs. About 6.9 million individuals received SSI disability benefits in December 2011, with an average monthly payment of \$519 (SSA 2012b).

Given the large and growing size of these two programs, policy interest has increased in decreasing SSA disability program growth by helping some beneficiaries leave the benefit rolls by returning to substantive work, or in the case of many SSI recipients, entering the labor force for the first time. Consequently, SSA has built work supports into the DI and SSI programs and has championed a series of initiatives that test or enact employment interventions for SSA disability beneficiaries. SSI beneficiaries who work experience a \$1 reduction in their benefit amount for every \$2 in earnings, after an initial \$65 earnings disregard (or \$85 if there is no unearned income). DI earnings rules and work incentives are quite complex but essentially

⁴ DI beneficiaries who have amyotrophic lateral sclerosis or end stage renal disease qualify for Medicare benefits immediately. Also, in cases where the first entitlement month is at least 24 months prior to the DI award, the new beneficiary is entitled to Medicare in the award month.

⁵ Thirty-nine states and the District of Columbia use SSI criteria, and 11 states use eligibility criteria that are more restrictive than those of the SSI program for determining Medicaid eligibility.

provide DI beneficiaries with an opportunity to test their ability to engage in SGA without fear of losing benefits.

Several past, ongoing, and planned SSA programs and demonstrations are designed to assist SSI and DI beneficiaries to become employed and maintain their earnings. Enacted in 1999 and implemented since 2002, the Ticket to Work program encourages disability beneficiaries to seek employment services from state vocational rehabilitation agencies and other providers (termed *employment networks*), and offers payments to service providers that are successful in helping beneficiaries achieve specific employment milestones (Thornton et al. 2004; Livermore et al. 2013). The ongoing Benefit Offset National Demonstration is testing an intervention that reduces DI payments by \$1 for every \$2 of earnings above SGA, instead of suspending or terminating all benefits (Wittenburg et al. 2012; Stapleton et al. 2010). Some demonstrations focus on providing subgroups of disability beneficiaries with return-to-work supports. The recently completed Mental Health Treatment Study used a supported employment model to provide medical and return-to-work assistance to DI beneficiaries with psychiatric disorders (Frey et al. 2011). Some more-recent demonstrations target child SSI recipients; assisting them with successfully transitioning into adult employment. For example, the ongoing Youth Transition Demonstration is testing intensive and comprehensive transition supports for child SSI recipients at six locations across the nation, and the planned Promoting Readiness of Minors in Supplemental Security Income project is among the first interagency efforts to test interventions that assist child SSI recipients make successful transitions to adult employment (Fraker 2013; and Fraker and Honeycutt 2012).

B. Recent Analyses of Employment by Impairment Type

Our analysis builds on that of Mamun et al. (2011), who also used SSA administrative data to examine the earnings of SSA disability beneficiaries. Specifically, they examined how the employment rate among SSA disability beneficiaries varies over time and across states. Our study builds on their analysis in multiple ways. In addition to examining beneficiary employment status, we consider their earnings. Examining earnings along with employment status provides a more complete picture of beneficiaries' level of engagement in work. Moreover, we use finer measures of primary impairment status (25 categories compared with 7 categories used in Mamun et al. 2011). As our analysis shows, the more-disaggregated impairment categories capture the heterogeneity in employment and earnings that exists even among beneficiaries with similar impairment classifications. We also estimate models that examine employment at an annualized SGA level of earnings, which is of key interest to policy makers seeking to reduce the DI program growth.

Relatively few other studies have used administrative data to examine the employment or earnings of SSA disability beneficiaries by impairment type. Von Wachter et al. (2011) investigated the employment and earnings of both allowed and rejected DI applicants, examining employment among applicants by impairment group. However, similar to Mamun et al. (2011), they aggregated impairments into a small number of categories (eight) in their analysis. Ben-Shalom and Mamun (2013) also used aggregated impairment groups in their analysis of the return-to-work behavior of DI beneficiaries. Jung and Bellini (2011) used RSA-911 data to explore what factors, such as SSI and DI receipt status, are correlated with employment among people with HIV/AIDS who have closed vocational rehabilitation cases. Our analysis is an important addition to the relatively limited research on employment and earnings among SSA disability program beneficiaries.

III. DATA AND METHODS

A. Data

The data for this study come from two linked SSA administrative data sources: the 2011 Disability Analysis File (DAF11) and Master Earnings File (MEF). The DAF is an annually updated data set that contains selected information extracted from a variety of SSA source files on all SSI and DI beneficiaries from 1996 to the recent past. DAF11 contains beneficiary data from January 1996 through December 2011 (Hildebrand, Kosar, Fischer, and Phelps 2013; Hildebrand, Kosar, Fischer, and Page 2013). The data contained in the DAF include details of benefit award, benefit receipt, and impairment status as well as demographic and other information. The MEF is an SSA data file that contains annual earnings data for SSA beneficiaries compiled from the Internal Revenue Service (IRS) data from W-2, 1040, self-employment tax schedule, and quarterly earnings records. We use data in the MEF to construct our employment status indicators and earnings measures. Annual earnings are defined as the maximum of Social Security–taxable wages and self-employment earnings (that is, wages and earnings covered by the Federal Insurance Contributions Act [FICA]), or Medicare-taxable wages and self-employment earnings, minus payments from known third-party payers, such as from insurance companies, where payments involve the above earnings and tax records.⁶ Thus, the employment and earnings statistics presented in this report do not reflect the employment and earnings of those whose earnings are not reported to the IRS. Both DAF and MEF data files are stored on the mainframe computer at SSA’s data center and require authorization to access. The MEF earnings records can be accessed only by authorized SSA staff.

The analysis sample includes beneficiaries who received a DI and/or SSI cash benefit in every month of the 2011 calendar year. Thus, our sample includes 2011 beneficiaries who were in current pay status during every month of 2011—that is, their benefits were never suspended or terminated anytime in 2011. Although this restriction impacts the top end of the earnings distribution we analyze, we nevertheless restrict the study population to individuals receiving disability benefits throughout the 2011 calendar year and avoid counting earnings that predate the disability benefit award. Using December 2011 pay status, we separate beneficiaries into three payment title groups: DI-only (Title II), SSI disability only (Title XVI), and concurrent (DI and SSI disability) beneficiaries. The analysis sample covers 63.3 percent of all beneficiaries in 2011 across these three program groups.

Except for annual earnings, all variables are constructed using data from the December 2011 records in the DAF. We construct 25 primary impairment categories by mapping primary impairment codes available in the DAF for each payment title group (see Appendix Table A.1 for the primary impairment categorization scheme we use).

Our analysis also controls for county-level population density and unemployment because local employment opportunities are likely to be correlated with these factors. We use the county-level annual unemployment rates for 2011 from the Bureau of Labor Statistics (BLS 2013). County population densities are computed by taking the ratio of each county’s population to its land area. We use 1990 county land area data and 2010 county population data from the U.S.

⁶ Individuals with FICA-covered earnings that are not also Medicare taxable have their earnings capped at the FICA maximum (\$106,800 in 2011). Earnings not taxable by either the IRS or Medicare are not included in the underlying data and are thus not included in the analysis.

Census Bureau to calculate the ratio (U.S. Census Bureau 2000, 2013). For both county density and county annual unemployment rate we use the mean-centered values in our analysis.

B. Methods

We use two analytical models to investigate employment and earnings of SSA disability program beneficiaries. We estimate a logistic regression model of the following form to analyze the probability of employment, given the primary impairment and other characteristics:

$$\Pr(EMP_i = 1) = \frac{1}{1 + e^{-g_i}},$$

$$g_i = \beta_0 + \beta_1 x_i + \beta_2 imp_i + v_i$$

where EMP_i is an employment indicator variable for individual i , x is a vector of individual characteristics, and imp is a vector of primary impairment indicator variables. Note that no more than one of the elements in imp can have a nonzero value. We use two definitions of beneficiary employment status. First, we define beneficiaries with annual earnings exceeding \$1,000 as employed; second, we define beneficiaries with annual earnings exceeding the annual equivalent of the nonblind SGA level (\$12,120 in 2011). The first definition is aimed at distinguishing significant work effort from small ad hoc earnings over the course of a year; this is also the definition used in other recent analysis of employment and earnings among SSA disability beneficiaries (for example, Ben-Shalom and Stapleton 2013; Maestas et al. 2013; Autor et al. 2011; Liu and Stapleton 2011; Mamun et al. 2011). The second definition captures a key earnings level of much policy interest as earnings at the SGA level are the precursor to benefit suspension or termination for most beneficiaries; similar definitions of employment were also used in other recent research (for example, Maestas et al. 2013; Autor et al. 2011).

We also construct a multinomial categorical measure of earnings with categories of increasing earnings levels, and then model it as an ordinal logistic regression of the following form:

$$C_{i,j} = \Pr(EARN_i \leq j) = \sum_{k=1}^j \Pr(EARN_i = k)$$

$$\ln\left(\frac{C_{i,j}}{1 - C_{i,j}}\right) = \alpha_j + \gamma_1 x_i + \gamma_2 imp_i + \varepsilon_i$$

where j denotes an earnings category and $EARN_i$ is the earnings for individual i . The five earnings categories are as follows: less than \$1,000, \$1,000 to less than \$5,000, \$5,000 to less than \$10,000, \$10,000 to less than \$20,000, and \$20,000 or more.

C. Descriptive Statistics

The distribution of primary impairment categories varies across payment titles (Table III.1). Of the 25 impairment categories we defined, affective disorders (15.3 percent), back disorders (13.1 percent), and intellectual disabilities (11.7 percent) are the most prevalent primary impairments overall. In total, psychiatric disabilities, intellectual disabilities, and development disabilities account for 43.4 percent of primary impairments among SSA disability beneficiaries, and back and other musculoskeletal disorders account for about one-fifth (22.6 percent). Apart from these impairments, no primary impairment category represents more than 6.5 percent of

Table III.1. Primary Impairment Status Distribution, by Payment Title

	Total		DI-Only		SSI-Only		Concurrent	
	N	%	N	%	N	%	N	%
Affective Disorders	1,409,968	15.3	686,060	13.8	516,621	17.0	207,287	17.4
Schizoaffective Disorders	598,077	6.5	207,392	4.2	270,822	8.9	119,863	10.1
Anxiety Disorders	332,864	3.6	158,723	3.2	128,198	4.2	45,943	3.9
Other Mental Disorders	571,749	6.2	201,657	4.1	292,968	9.7	77,124	6.5
Intellectual Disability	1,076,322	11.7	214,871	4.3	613,141	20.2	248,310	20.9
Back	1,205,188	13.1	937,616	18.8	178,938	5.9	88,634	7.5
Diseases of the Musculoskeletal System	874,850	9.5	635,762	12.8	167,860	5.5	71,228	6.0
Infectious and Parasitic Diseases	30,175	0.3	19,460	0.4	7,611	0.3	3,104	0.3
HIV/AIDS	92,136	1.0	43,745	0.9	34,795	1.2	13,596	1.1
Neoplasms	183,264	2.0	140,267	2.8	30,797	1.0	12,200	1.0
Endocrine, Nutritional, and Metabolic Diseases	278,229	3.0	158,144	3.2	85,334	2.8	34,751	2.9
Blood and Blood-Forming Organs	27,205	0.3	10,431	0.2	12,366	0.4	4,408	0.4
Visual Impairments	178,334	1.9	98,521	2.0	54,881	1.8	24,932	2.1
Hearing Impairments	68,736	0.8	31,515	0.6	26,379	0.9	10,842	0.9
Speech Impairments	8,583	0.1	3,029	0.1	4,527	0.2	1,027	0.1
Diseases of the Nervous System	593,378	6.5	381,897	7.7	153,975	5.1	57,506	4.8
Diseases of the Circulatory System	570,253	6.2	396,360	8.0	129,315	4.3	44,578	3.8
Diseases of the Respiratory System	209,869	2.3	126,561	2.5	61,735	2.0	21,573	1.8
Diseases of the Digestive System	119,540	1.3	78,665	1.6	29,756	1.0	11,119	0.9
Diseases of the Genitourinary System	116,741	1.3	76,567	1.5	28,251	0.9	11,923	1.0
Diseases of the Skin and Subcutaneous Tissue	18,762	0.2	11,741	0.2	4,897	0.2	2,124	0.2
Congenital Anomalies	42,742	0.5	9,983	0.2	25,777	0.9	6,982	0.6
Injuries	334,287	3.6	223,146	4.5	78,920	2.6	32,221	2.7
Other	247,344	2.7	114,956	2.3	96,959	3.2	35,429	3.0
Missing	13,658	0.2	9,163	0.2	2,006	0.1	2,489	0.2
Total	9,202,254	100	4,976,232	100	3,036,829	100	1,189,193	100

DI = Disability Insurance; SSI = Supplemental Security Income.

SSA disability beneficiaries, with the majority of the remaining impairment categories each representing less than 2 percent of all beneficiaries.

The distributions of primary impairments for each payment title differ somewhat from the aggregate distribution. DI-only beneficiaries are more likely than those who receive SSI benefits to have a back (18.8 percent) or other musculoskeletal disorder (12.8 percent) as a primary impairment. DI-only beneficiaries also report a higher prevalence of other primary impairments often associated with aging, such as circulatory system disorders (8 percent) and nervous system disorders (7.7 percent), which is expected because DI-only beneficiaries are typically older than those who receive SSI benefits (see Table III.2). SSI-only and concurrent beneficiaries are much more likely than DI-only beneficiaries to have an intellectual disability (20.2 percent and 20.9 percent compared to 4.3 percent, respectively). In addition, relative to DI beneficiaries, more SSI beneficiaries have affective, schizoaffective, other psychiatric disorders as their primary impairment.

In Table III.2, we tabulate the prevalence of selected characteristics by payment title and primary impairment status. These characteristics are included as covariates in our analytic models. There are noteworthy differences in the gender distribution across several primary impairment categories. Those with a schizoaffective disorder, an “other” mental disorder, HIV/AIDS, a circulatory system disorder, or an injury as their primary impairment are at least 20 percentage points more likely to be male than female. On the other hand, beneficiaries with affective disorders, musculoskeletal disorders, or endocrine/nutritional disorders as their primary impairment are at least 20 percentage points more likely to be female. The impairment distribution across current age groups is largely in line with expectations. Impairments often associated with aging (see, for instance, NIH 2007), such as back disorders and neoplasm, increase with age and spike in the oldest two age categories. A similar pattern is true when examining age of disability onset—impairments often associated with aging have the highest onset ages.⁷ Younger beneficiaries most often report having intellectual disabilities, other mental disorders, speech impairments, and congenital disorders. The racial distribution varies noticeably across impairment categories. Those with anxiety disorders, back disorders, and digestive system disorders are disproportionately white and people with HIV/AIDS and blood disorders are disproportionately black. A few impairment categories—such as congenital disorders and speech impairments—have at least 10 percent with missing race data or a race/ethnicity other than white, black, or Hispanic.

Income support and health care program eligibility follow patterns across impairment groups that are either similar or unsurprising, given program eligibility rules. The years since most recent SSA disability program award categories show that across most primary impairment categories, most beneficiaries we include have been receiving SSA disability benefits for at least six years.⁸ Only the neoplasm impairment category has the majority of its beneficiaries receiving benefits for less than six years. The Medicare and Medicaid eligibility statuses shown in Table III.2 are based on categorical eligibility for DI and SSI, though SSA disability beneficiaries can

⁷ For SSA disability program eligibility, “disability onset” is the initial point at which the applicant’s impairment prohibited him or her from engaging in SGA.

⁸ Because we restrict the analysis to those who received benefits in every month of 2011, we exclude new SSA disability awardees, which affects the distribution of time since most recent award in our data.

obtain Medicaid coverage through other programs.⁹ Not surprisingly, Medicare and Medicaid eligibility at SSA disability benefit award across impairment categories follows a pattern similar to the impairment category distribution across payment titles observed in Table III.1. Most SSI beneficiaries qualify for Medicaid when or soon after they establish SSI eligibility. Most DI beneficiaries, however, must wait 24 months after being awarded benefits to become eligible for Medicare benefits. Thus, we observe that across impairments the fraction of beneficiaries who are Medicaid eligible mirror the fraction of SSI-only beneficiaries eligible for Medicaid; symmetrically, across impairments the fraction of beneficiaries who are Medicare eligible for at least two years mirror the fraction of DI-only beneficiaries eligible for Medicare.

Data on the level of educational attainment are not available consistently for all beneficiaries, and there are many missing values. The high rate of missing data on educational attainment is driven by the fact that educational attainment is considered not essential for award decisions and is often not recorded in the administrative data file. Among beneficiaries with valid education data, college completion, which we define as having completed the 16th grade level, is rare, with all but one impairment category (neoplasm) having a college completion rate at or below 8.5 percent. High school noncompletion, which we define as having completed less than the 12th grade, is mostly consistent across impairment categories, with other mental disorders, HIV/AIDS, circulatory system disorders, and respiratory system disorders being the categories with the most noncompleters.

⁹ Medicaid eligibility decisions in 39 states and the District of Columbia are based on the same income, resource, and disability criteria that Social Security uses for the SSI program; in 32 of the 39 states and in the District of Columbia, SSI recipients are categorically eligible for Medicaid. The remaining 11 states use eligibility criteria for Medicaid that are more restrictive than the SSI criteria. To be eligible for Medicare, DI beneficiaries must wait 24 months after their first month of entitlement to benefits, except for the very small number who have amyotrophic lateral sclerosis or end stage renal disease.

Table III.2. Descriptive Characteristics of SSA Disability Program Beneficiaries by Primary Impairment Status

	Female	Current Age				Race/Ethnicity				Age of Disability Onset	
		18 to 39	40 to 49	50 to 59	60 to 64	Non-Hispanic White	Non-Hispanic Black	Hispanic	Other/ Missing	Mean	Missing
All Beneficiaries	50.64	19.32	18.78	37.74	24.16	62.70	21.52	8.79	6.99	36.72	0.00
DI-only	46.89	6.03	16.76	43.51	33.70	73.36	14.59	6.80	5.24	44.21	0.00
SSI-only	54.56	37.17	19.58	30.35	12.90	47.82	30.66	11.35	10.16	28.00	0.00
Concurrent	56.29	29.33	25.17	32.50	13.00	56.10	27.15	10.54	6.21	27.63	0.00
Impairment Type											
Affective	65.53	19.03	24.44	38.45	18.07	65.10	17.45	11.13	6.33	36.81	0.00
Schizoaffective	37.11	23.28	24.66	38.14	13.93	49.34	33.96	9.10	7.61	29.30	0.00
Anxiety	53.40	24.05	23.52	30.93	21.49	73.46	12.99	7.20	6.35	35.31	0.00
Other mental	38.62	43.58	16.20	26.43	13.79	57.04	22.62	8.23	12.11	27.85	0.00
Intellectual	48.24	49.76	22.27	21.26	6.71	51.75	30.83	8.26	9.16	18.53	0.01
Back	46.55	3.41	15.53	47.99	33.07	72.31	14.68	8.40	4.61	45.92	0.00
Musculoskeletal	60.21	4.60	12.21	44.16	39.03	65.48	19.80	8.95	5.77	46.71	0.00
Infectious disease	52.36	6.16	14.96	42.57	36.32	50.72	28.20	10.32	10.76	40.77	.
HIV/AIDS	28.43	9.12	34.16	44.73	11.99	40.87	41.38	13.91	3.84	37.00	0.00
Neoplasm	54.92	8.31	15.12	41.78	34.79	69.38	15.72	7.35	7.55	48.01	0.00
Endocrine, nutritional	60.22	7.19	15.50	43.41	33.89	60.38	25.88	8.88	4.86	42.68	0.00
Blood	57.12	45.27	18.13	23.96	12.65	29.22	57.37	5.43	7.98	25.87	0.00
Visual impairment	46.35	21.92	19.57	35.33	23.17	56.16	23.90	10.62	9.31	33.67	0.00
Hearing impairment	53.96	35.02	23.59	26.97	14.42	57.95	18.09	12.13	11.83	24.67	0.00
Speech impairment	45.72	52.16	12.09	21.68	14.06	48.79	21.13	12.78	17.29	24.02	0.01
Nervous system	55.04	22.53	19.51	35.88	22.08	70.35	14.64	7.52	7.49	35.81	0.00
Circulatory system	37.92	3.56	10.46	42.95	43.03	62.72	24.40	6.94	5.94	47.72	0.00
Respiratory system	56.69	4.96	11.50	44.55	38.99	71.03	19.23	5.56	4.18	46.60	0.00
Digestive system	49.91	9.07	18.57	46.84	25.52	73.39	13.16	8.22	5.23	43.67	.
Genitourinary system	43.41	15.87	23.45	38.45	22.23	41.15	37.16	12.09	9.61	41.41	0.00
Skin	59.93	15.07	21.20	41.19	22.53	60.52	25.42	8.02	6.04	39.47	.
Congenital	49.45	71.78	12.19	10.93	5.11	59.17	12.08	12.88	15.86	14.05	0.01
Injury	34.65	14.25	20.60	40.58	24.57	65.30	18.79	8.96	6.96	38.82	0.00
Other	53.28	9.05	15.60	44.34	31.02	65.15	22.37	6.55	5.93	30.82	0.01
Missing	48.15	8.65	11.96	29.54	49.84	64.83	21.86	7.37	5.94	34.12	0.01

TABLE III.2 (CONTINUED)

	Years Since Most Recent Award			Medicaid Eligibility at Award		Medicare Eligibility at Award		Educational Attainment at Award (Years)				
	Less than 2 Years	3 to 5 Years	6 or More Years	Eligible	Missing	Eligible	Missing	0 to 11	12	13 to 15	16	Missing
All Beneficiaries	8.35	21.30	70.36	78.13	0.00	90.81	4.12	17.71	24.68	9.01	4.58	44.02
DI-only	10.10	23.16	66.74			89.86	4.55	11.01	29.33	12.86	7.41	39.39
SSI-only	7.85	20.78	71.36	78.12	0.00			27.75	19.66	4.47	1.30	46.82
Concurrent	2.28	14.80	82.92	78.14	.	94.78	2.30	20.14	18.09	4.45	1.07	56.25
Impairment Type												
Affective	6.26	19.60	74.15	77.16	0.00	93.46	3.01	16.95	21.96	9.01	5.18	46.90
Schizoaffective	4.28	12.32	83.39	79.02	0.00	95.96	2.62	16.19	15.95	5.05	2.47	60.34
Anxiety	6.58	19.58	73.85	74.73	0.00	93.00	2.96	14.90	21.95	8.99	4.23	49.93
Other mental	7.29	20.22	72.49	76.57	0.00	91.41	4.01	20.46	19.60	5.47	3.88	50.58
Intellectual	2.40	7.69	89.91	76.57	0.00	94.24	4.15	19.53	9.93	0.27	0.07	70.20
Back	10.12	28.02	61.86	80.84	0.00	90.42	3.87	18.37	33.38	12.32	4.66	31.27
Musculoskeletal	12.80	29.97	57.24	79.94	0.00	87.34	5.16	18.50	34.58	13.70	5.83	27.39
Infectious disease	8.13	18.98	72.89	82.25	.	91.11	4.03	13.03	24.71	11.16	7.50	43.60
HIV/AIDS	5.61	16.08	78.31	87.31	.	95.82	1.70	23.98	30.62	12.20	6.64	26.55
Neoplasm	24.88	36.04	39.08	79.79	0.00	75.63	10.70	14.80	33.30	15.62	11.70	24.58
Endocrine, nutritional	8.37	22.78	68.85	77.90	0.00	90.58	4.30	19.29	27.82	10.14	4.16	38.59
Blood	7.64	18.60	73.77	81.64	.	89.86	4.16	12.05	19.55	8.74	4.12	55.54
Visual impairment	7.76	18.26	73.98	80.14	.	91.64	4.06	16.61	23.49	8.76	5.74	45.40
Hearing impairment	5.84	13.63	80.53	80.59	.	93.08	3.57	12.60	22.10	6.40	3.48	55.43
Speech impairment	8.11	18.99	72.90	78.97	.	89.77	4.24	17.73	16.88	5.27	4.33	55.78
Nervous system	8.27	21.15	70.58	77.27	0.00	90.81	4.16	11.87	25.64	11.81	8.47	42.21
Circulatory system	13.90	30.24	55.86	80.55	0.00	86.48	5.47	21.40	34.65	12.76	6.21	24.98
Respiratory system	15.54	32.20	52.25	77.38	0.00	84.01	6.34	25.85	35.21	11.02	3.89	24.02
Digestive system	12.17	29.06	58.77	79.99	0.00	88.69	4.76	16.08	29.65	13.13	6.32	34.81
Genitourinary system	14.38	29.17	56.45	80.66	.	96.09	1.80	16.37	29.51	13.58	7.61	32.92
Skin	8.92	23.41	67.67	79.35	0.01	91.01	4.13	13.70	27.08	10.99	4.88	43.35
Congenital	6.20	16.25	77.55	76.30	.	90.32	5.22	20.40	13.52	3.17	1.44	61.47
Injury	8.26	23.12	68.62	79.72	0.00	91.92	3.60	15.76	26.17	9.30	4.65	44.11
Other	2.69	9.23	88.08	80.87	0.00	96.12	2.21	13.53	15.23	4.78	2.33	64.12
Missing	20.91	14.14	64.95	81.80	.	95.17	3.18	12.67	15.55	5.86	3.33	62.59

TABLE III.2 (CONTINUED)

	Number of Dependents at Award				DWB	DAC	Benefit Award Adjudication Level				County Density (Mean Centered)		County Unemp Rate (Mean Centered)	
	None	One	Two or More	Missing			DDS	DHU	ALJ or Higher	Missing	Mean	Missing	Mean	Missing
All Beneficiaries	78.43	7.89	4.72	8.95	0.95	7.51	93.65	0.80	1.68	3.87	1,856.50	1.93	0.82	0.01
DI-only	79.85	9.26	5.56	5.33	0.65	4.50	93.89	0.69	2.27	3.15	1,294.59	3.57	0.77	.
SSI-only							94.10	0.96	0.63	4.31	2,739.33	0.02	0.91	0.02
Concurrent	72.50	2.16	1.23	24.12	2.19	20.14	91.51	0.86	1.90	5.73	1,953.39	0.00	0.85	.
Impairment Type														
Affective	81.51	8.92	5.94	3.63	1.06	2.14	95.91	0.97	1.89	1.24	2,108.46	4.35	1.02	0.00
Schizoaffective	81.23	4.84	2.57	11.36	0.61	10.30	91.95	0.68	1.24	6.13	2,824.73	1.51	0.87	0.01
Anxiety	77.43	9.57	7.64	5.36	0.83	3.95	95.69	1.20	1.49	1.63	1,659.05	0.78	0.51	0.00
Other mental	74.04	7.30	4.79	13.87	0.66	10.71	91.75	1.48	1.20	5.57	1,617.70	0.41	0.71	0.01
Intellectual	43.26	2.34	1.40	53.00	0.84	49.87	88.11	0.79	0.88	10.23	1,632.38	1.03	0.80	0.01
Back	83.59	9.71	5.78	0.92	0.83	0.08	96.32	0.65	2.60	0.43	1,490.83	3.12	0.89	0.00
Musculoskeletal	86.49	7.74	4.00	1.78	1.27	0.45	96.95	0.56	1.96	0.53	1,665.44	1.48	0.82	0.00
Infectious disease	83.53	7.68	4.11	4.67	1.18	3.38	95.13	0.49	1.59	2.79	2,049.78	0.92	0.83	0.00
HIV/AIDS	91.10	4.72	2.26	1.91	0.49	1.30	95.64	0.28	3.00	1.08	6,447.89	1.11	0.90	.
Neoplasm	83.44	9.15	5.84	1.57	0.70	0.72	96.49	0.97	1.15	1.40	1,830.31	1.09	0.63	0.00
Endocrine, nutritional	86.14	7.30	3.36	3.20	2.14	0.94	96.43	0.65	2.03	0.89	1,597.89	0.80	0.80	0.00
Blood	73.09	9.42	6.71	10.78	0.71	8.80	93.84	1.80	1.22	3.13	2,927.49	0.56	0.83	0.01
Visual impairment	77.02	8.73	5.62	8.63	0.76	7.44	95.82	0.39	1.21	2.59	1,927.76	1.62	0.78	0.00
Hearing impairment	69.30	8.29	7.17	15.24	0.60	13.61	94.26	0.42	0.85	4.47	2,045.89	1.37	0.79	0.02
Speech impairment	68.81	6.31	4.36	20.51	0.62	17.33	91.94	0.97	0.94	6.15	1,781.69	1.47	0.80	0.06
Nervous system	76.95	8.82	5.61	8.62	0.60	7.53	95.07	0.64	1.74	2.55	1,493.56	1.59	0.62	0.01
Circulatory system	86.24	8.40	3.74	1.62	1.04	0.54	96.93	0.52	1.77	0.77	1,848.37	1.36	0.82	0.00
Respiratory system	88.23	6.60	2.94	2.23	1.70	0.47	96.76	0.71	1.50	1.04	1,793.85	1.19	0.79	0.00
Digestive system	83.97	9.23	5.48	1.33	0.73	0.47	96.12	1.32	1.52	1.04	1,541.86	0.73	0.70	0.01
Genitourinary system	80.35	10.92	6.62	2.12	0.55	1.40	96.90	1.10	0.85	1.15	2,159.98	1.13	0.84	0.02
Skin	82.76	9.02	5.72	2.50	0.77	1.57	94.81	1.30	2.28	1.61	1,509.95	2.10	0.87	0.02
Congenital	46.36	3.80	2.49	47.35	0.44	42.46	93.76	0.73	0.61	4.90	1,547.27	0.70	0.62	0.02
Injury	80.60	9.61	6.42	3.36	0.58	2.63	95.74	0.97	1.49	1.81	1,534.90	1.66	0.81	0.01
Other	51.34	4.74	2.49	41.44	1.45	39.84	60.71	0.71	1.83	36.76	2,125.14	1.28	0.83	0.01
Missing	58.02	3.65	1.46	36.88	1.54	34.93	60.95	1.32	2.15	35.58	2,352.29	1.54	0.84	.

ALJ = administrative law judge; DAC = disabled adult children; DDS = Disability Determination Services; DHU = Disability Hearing Unit; DI = Disability Insurance; DWB = disabled widow(er) beneficiaries; SSI = Supplemental Security Income. n.a. = not applicable. . = no observations in cell.

Various other beneficiary characteristics at benefit award reported in Table III.2 provide additional insight into beneficiaries with different primary impairments. The number of dependent children for whom the beneficiary receives benefits is available for DI beneficiaries only. Across impairment groups, most DI beneficiaries reported having no dependent children for whom they would receive benefits at award. The distribution of disabled widow(er) beneficiaries (DWB) and disabled adult children (DAC) beneficiaries display different patterns. DWB comprise a small minority of each primary impairment category for DI beneficiaries, with only one category exceeding 2 percent. DAC, however, comprise a substantial proportion of DI beneficiaries (including concurrents) in a few categories, including intellectual disabilities (49.9 percent), congenital disorders (42.5 percent), other disabilities (39.8 percent), and missing (34.9 percent). SSA disability applications are initially processed by a network of local SSA field offices and state Disability Determination Services (DDS). Applications that are denied at the DDS adjudication level can be appealed to various higher adjudicative levels. Across almost all categories in our data, the benefit award decision was adjudicated by the DDS. No more than 3.4 percent of any impairment category's award decisions were adjudicated by the Disability Hearing Unit (DHU), or an Administrative Law Judge (ALJ), or higher adjudicative levels.

County-level data reveal variation in the community characteristics of beneficiaries with different primary impairments. For example, the HIV/AIDS category has an average county population density that is double the next highest county density (blood disorders). Beneficiaries with schizoaffective disorders also tend to live in high-density counties relative to the other impairment groupings. Back disorders and injuries, on average, are more prevalent in low-density counties. County unemployment also varies widely across primary impairment categories. The affective disorder, HIV/AIDS, and skin impairment categories have the highest county unemployment rates. Beneficiaries with anxiety disorders, congenital disorders, and digestive system disorders tend to live in counties with relatively low unemployment.

D. Employment and Earnings

To better understand employment-related outcomes of SSA disability beneficiaries by primary impairment status, we present beneficiary employment and earnings across various earnings categories by primary impairment status in Table III.3. The earnings categories we report are meant to provide an overall impression of how earnings are distributed. We describe in the text employment and earnings statistics by primary impairment status for each program group, and these statistics are tabulated in Appendix Tables A.2, A.3, and A.4. A relatively low percentage of SSA disability beneficiaries in current pay status in December 2011 worked in 2011: 11.4 percent of DI-only beneficiaries, 4.9 percent of SSI-only beneficiaries, and 5 percent of concurrent beneficiaries were employed (that is, earned \$1,000 or more) during the 2011 calendar year. The substantially lower employment rate among SSI-only disability recipients compared to DI-only beneficiaries is not surprising given that the recipients have worked little or not at all before entering the SSI disability program, whereas to qualify for DI, beneficiaries must have a work history. These estimates are also consistent with findings in previous studies, such as Mamun et al. (2011). Considering beneficiaries who were employed, we see moderate variation in the employment status of DI-only beneficiaries by primary impairment category. Among DI-only beneficiaries, employment rates range from about 9 percent to 22 percent. A few primary impairment categories, including schizoaffective disorders, anxiety disorders, back disorders, endocrine/nutritional disorders, respiratory system disorders, and other disabilities, have employment rates under 10 percent. Most categories, however, have an employment rate between 10 and 20 percent. Conversely, for SSI-only beneficiaries, no primary

Table III.3. Earnings Distribution Categories, by Primary Impairment Status

	N	Employed	Mean Earnings	Conditional Mean Earnings	\$1,000 to \$4,999	\$5,000 to \$9,999	\$10,000 to \$19,999	≥ \$20,000	Earnings Above Annualized SGA
DI-only	4,976,232	11.4	\$1,131	\$9,412	4.8	3.5	2.1	1.0	2.12
SSI-only	3,036,829	4.9	\$406	\$6,004	2.8	1.2	0.8	0.1	0.58
Concurrent	1,189,193	5.0	\$264	\$4,327	3.6	1.0	0.4	0.0	0.25
Impairment Type									
Affective disorders	1,409,968	7.3	\$643	\$7,987	3.3	2.3	1.3	0.4	1.13
Schizoaffective disorders	598,077	5.6	\$441	\$6,291	2.9	1.8	0.8	0.1	0.53
Anxiety disorder	332,864	6.6	\$687	\$9,162	3.0	1.9	1.1	0.6	1.27
Other mental disorders	571,749	9.8	\$916	\$7,208	5.4	2.6	1.4	0.5	1.25
Intellectual disability	1,076,322	9.5	\$720	\$4,850	6.2	2.3	1.0	0.1	0.61
Back	1,205,188	7.4	\$700	\$9,117	3.2	2.3	1.3	0.6	1.37
Diseases of the musculoskeletal system	874,850	8.6	\$794	\$8,700	3.7	2.7	1.5	0.6	1.48
Infectious and parasitic diseases	30,175	9.8	\$1,054	\$9,240	3.9	3.0	2.1	0.8	1.93
HIV/AIDS	92,136	11.1	\$1,186	\$10,118	4.1	3.6	2.4	1.0	2.39
Neoplasms	183,264	15.2	\$2,119	\$13,457	5.6	4.1	3.0	2.5	4.36
Endocrine, nutritional, and metabolic diseases	278,229	6.1	\$528	\$7,893	2.7	2.0	1.1	0.3	0.91
Blood and blood-forming organs	27,205	12.4	\$1,231	\$8,364	5.5	4.0	2.3	0.7	2.1
Visual impairments	178,334	12.2	\$1,584	\$10,821	4.2	3.0	3.9	1.1	4.12
Hearing impairments	68,736	15.5	\$1,404	\$7,329	6.9	5.2	2.9	0.5	1.83
Speech impairments	8,583	9.7	\$1,209	\$8,120	5.0	2.7	1.4	0.6	1.43
Diseases of the nervous system	593,378	9.7	\$1,139	\$9,850	4.2	2.8	1.8	0.9	1.89
Diseases of the circulatory system	570,253	8.2	\$869	\$9,962	3.6	2.5	1.5	0.7	1.59
Diseases of the respiratory system	209,869	7.1	\$627	\$8,234	3.2	2.3	1.2	0.4	1.17
Diseases of the digestive system	119,540	8.9	\$914	\$9,746	3.7	2.7	1.7	0.9	1.93
Diseases of the genitourinary system	116,741	12.3	\$1,268	\$9,724	4.9	3.8	2.5	1.2	2.56
Diseases of the skin and subcutaneous tissue	18,762	8.0	\$740	\$8,473	3.3	2.6	1.5	0.5	1.36
Congenital anomalies	42,742	10.3	\$823	\$4,419	7.6	1.8	0.7	0.2	0.53
Injuries	334,287	8.7	\$1,036	\$10,762	3.5	2.6	1.6	0.9	1.81
Other	247,344	5.7	\$599	\$7,241	3.0	1.5	0.9	0.3	0.77
Missing	13,658	16.1	\$2,102	\$10,056	5.2	4.1	5.5	1.3	5.15

^a Estimates for the impairment group have been suppressed because of small sample size.

SGA = substantial gainful activity.

impairment category has an employment rate exceeding 11 percent and most categories have an employment rate lower than 5 percent. For this group, employment rates are highest among those with blood disorders, hearing impairments, and congenital disorders. The employment pattern among impairment categories for concurrent beneficiaries more closely resembles the employment pattern for SSI-only beneficiaries than that for DI-only beneficiaries. All categories have an employment rate under 11 percent, and the majority have an employment rate under 5 percent.

Across primary impairment categories, most beneficiaries who were employed earned at least \$2,000 below the annualized nonblind SGA amount of \$12,000. The percentage of DI-only beneficiaries who earned between \$1,000 and \$4,999 range across primary impairment categories from 4.1 percent (schizoaffective disorders) to 9.7 percent (intellectual disabilities). DI-only beneficiaries with intellectual disabilities or congenital disorders are also disproportionately likely, relative to those in the other impairment groups, to have earned \$1,000 or more but less than \$5,000. Across impairment categories, about 1 to 2 percent of SSI-only beneficiaries had earnings in the \$1,000 to \$4,999 range; at 6.5 percent, 6.8 percent, and 5.2 percent, respectively, SSI-only beneficiaries with a primary impairment of hearing impairment, congenital disorder, or other mental disability are mostly likely to have earnings at this level. A small-but-substantive number of DI-only beneficiaries earned between \$5,000 and \$9,999 in 2011; among DI-only beneficiaries, the fraction with earnings at this level ranged from 2.7 percent (back disorders) to 8.4 percent (hearing impairments). DI-only beneficiaries with hearing related primary impairment are actually more likely to have earned between \$5,000 and \$9,999 than between \$1,000 and \$4,999. The opposite is true for all other impairment groups across all payment titles.

Across payment titles, very few beneficiaries in any impairment category earned \$10,000 or more in 2011. This is unsurprising, however, for two reasons. First, to receive SSA disability benefits, all beneficiaries have demonstrated that they cannot earn above the SGA level. Second, beneficiaries who earn above the SGA level are potentially at risk of benefit suspension or termination and thus would not be included in our population of beneficiaries who received payments in every month of the year. The fraction of DI-only beneficiaries earning between \$10,000 and \$19,999 ranged from 1.4 percent (schizoaffective disorders, other disabilities) to 8.0 percent (missing), across impairments. Relative to the other impairment groups, DI-only beneficiaries with visual or hearing impairments were more likely to have earned between \$10,000 and \$19,999; at the same time, only 1.6 percent of beneficiaries with intellectual disabilities, back disorders, and endocrine/nutritional disorders earned in that range. Very few SSI-only or concurrent beneficiaries earned between \$10,000 and \$19,999 in 2011. At 1.7 percent, SSI beneficiaries reporting blood disorders or hearing disorders were most likely to earn between \$10,000 and \$19,999. For most other SSI impairment categories, less than 1 percent of beneficiaries earned in the \$10,000 to \$19,999 range. Although a very small fraction of beneficiaries in any primary impairment category earned above \$20,000, SSI beneficiaries are extremely unlikely to do so, probably in large part because beneficiaries who were suspended or terminated due to work in 2011 are excluded from the analysis sample. Conversely, 1 percent or more of DI-only beneficiaries in 14 impairment categories earned above \$20,000. Two percent of DI-only beneficiaries with HIV/AIDS as primary impairment and just over 3 percent of DI-only beneficiaries with neoplasm as primary impairment earned more than \$20,000 in 2011.

A similar picture appears when we look at the fraction of SSA disability beneficiaries who earned more than the annualized SGA level of \$12,000 in 2011. Only 2.1 percent of the DI-only beneficiaries had earnings at that level in 2011; the share is 0.6 percent for SSI-only recipients and 0.3 percent for concurrent beneficiaries. The distribution of beneficiaries earning at

annualized SGA level by impairment are also similar to what we found for average annual earnings level between \$10,000 and \$19,999. We use a multivariate approach to assess whether differences observed in the descriptive analysis change when controlling for multiple factors. Results from the descriptive analysis provide a snapshot of the employment rates and earnings among beneficiaries with different impairments. However, the observed variation in employment and earnings across different primary impairment groups might be confounded by other individual characteristics and local socioeconomic factors. For instance, the pattern of employment and earnings for a particular impairment group could be influenced by the age distribution or educational attainment of beneficiaries in that group, or by the strength of the local economy these beneficiaries reside in. We conducted multivariate regression analysis of employment and earnings to account for such possibilities, the results from which are presented in the next chapter.

IV. RESULTS

A. Employment and Earnings Regression Results

Employment and earnings regression models were estimated separately for DI-only, SSI-only, and concurrent beneficiaries. The odds ratios and marginal effects estimates for these regressions are reported in Tables IV.1, IV.2, and IV.3, respectively. The estimated coefficients from these regressions are presented in Appendix Tables A.5, A.6, and A.7. The estimated odds ratios reveal, all else equal, how likely an individual is to be employed (that is, earn at least \$1,000 in 2011) relative to others if the individual has a certain characteristic. The marginal effects estimates reveal, all else equal, how possessing a certain characteristic is correlated with the probability of employment. The estimated coefficients from these models are reported in the appendix. We use respiratory system disorders as the reference primary impairment category in all regressions. Because each regression is calculated using at least one million observations, the estimates are very precise. However, because the regressions are estimated using the entire population, the parameters' standard errors are of limited relevance because our estimation provides the population parameter values.

In the remainder of this section, we first discuss the regression estimates showing how the beneficiaries' primary impairments are associated with employment and earnings conditional on being employed. We discuss the estimates for employment at annualized SGA level and primary impairments next. Finally, we discuss the relationship of the employment-related outcomes and other individual characteristics and local economic conditions.

1. Employment and Conditional Earnings by Primary Impairment

DI-only beneficiaries with several different, seemingly dissimilar primary impairment types were relatively more likely to be employed. After controlling for other observed factors, DI-only beneficiaries with intellectual disability, visual impairment, hearing impairment, neoplasm, or HIV/AIDS had greater likelihood of being employed during 2011 relative to those with respiratory system disorders (the reference category). Conversely, DI-only beneficiaries with schizoaffective disorders, anxiety disorders, back disorders, and endocrine/nutritional disorders were less likely to work relative to those with respiratory system disorders. The marginal effects estimates help quantify how these differences impact the absolute probability of employment. For instance, having a primary impairment that is positively correlated with employment, such as those mentioned just above, is associated with a 5.7 (neoplasm) to 9.8 (hearing impairment) percentage-point increase in employment probability. The impairments with lower odds of employment are associated with no more than a 1.9 percentage-point (anxiety disorder) decline in employment probability.

Examining estimation results from the earnings category model for employed DI-only beneficiaries, we observe that, conditional on being employed in 2011, the primary impairment categories positively correlated with higher earnings were not necessarily the primary impairment categories more strongly associated with employment. For example, although DI-only beneficiaries with intellectual and congenital disabilities were relatively highly likely to work, those with intellectual and congenital disabilities who did work were likely to earn less than their counterparts in the reference group, all else equal. However, for most primary impairment categories, employment rates and higher earnings conditional on employment were positively related. Beneficiaries with endocrine/nutritional disorders, for instance, were relatively less likely to work or be in a higher earnings category if they did work.

Table IV.1. Regression Analysis of Employment and Earnings Among DI-Only Beneficiaries: Estimated Odds Ratios and Marginal Effects

	Employment Status: Logit Model		Conditional Earnings: Ordered Logit Model	Earnings at Annualized SGA Level: Logit Model	
	Odds Ratio	Marginal Effect	Odds Ratio	Odds Ratio	Marginal Effect
Primary Impairment Categories (reference: respiratory system disorders)					
Affective disorders	0.973*** (0.010)	-0.002*** (0.001)	-0.005 (0.018)	0.919*** (0.022)	-0.001*** 0.000
Schizoaffective disorders	0.847*** (0.011)	-0.014*** (0.001)	-0.234*** (0.022)	0.435*** (0.015)	-0.009*** 0.000
Anxiety disorders	0.799*** (0.010)	-0.019*** (0.001)	0.166*** (0.023)	1.048* (0.030)	0.001 (0.001)
Other mental disorders	1.250*** (0.015)	0.022*** (0.001)	0.082*** (0.020)	1.285*** (0.034)	0.005*** (0.001)
Intellectual disability	2.247*** (0.027)	0.088*** (0.002)	-0.332*** (0.021)	0.816*** (0.028)	-0.002*** 0.000
Back	0.907*** (0.009)	-0.008*** (0.001)	0.063*** (0.018)	1.007 (0.023)	0 0.000
Diseases of the musculoskeletal system	1.057*** (0.011)	0.005*** (0.001)	0.045** (0.018)	1.069*** (0.025)	0.001*** 0.000
Infectious and parasitic diseases	1.338*** (0.031)	0.029*** (0.003)	0.191*** (0.040)	1.472*** (0.074)	0.008*** (0.001)
HIV/AIDS	1.852*** (0.030)	0.069*** (0.002)	0.235*** (0.027)	1.930*** (0.064)	0.016*** (0.001)
Neoplasms	1.638*** (0.019)	0.057*** (0.002)	0.421*** (0.020)	2.248*** (0.056)	0.025*** (0.001)
Endocrine, nutritional, and metabolic diseases	0.856*** (0.011)	-0.013*** (0.001)	-0.019 (0.023)	0.809*** (0.025)	-0.003*** 0.000
Blood and blood-forming organs	1.420*** (0.041)	0.036*** (0.003)	0.224*** (0.048)	1.644*** (0.096)	0.011*** (0.002)
Visual impairments	1.883*** (0.024)	0.072*** (0.002)	0.702*** (0.022)	3.969*** (0.102)	0.047*** (0.001)
Hearing impairments	2.261*** (0.039)	0.098*** (0.003)	0.221*** (0.028)	1.475*** (0.062)	0.008*** (0.001)
Speech impairments	1.436*** (0.077)	0.036*** (0.006)	0.180** (0.090)	1.463*** (0.167)	0.008*** (0.003)
Diseases of the nervous system	1.159*** (0.012)	0.015*** (0.001)	0.146*** (0.019)	1.353*** (0.033)	0.007*** (0.001)
Diseases of the circulatory system	1.120*** (0.012)	0.010*** (0.001)	0.059*** (0.019)	1.172*** (0.029)	0.003*** 0.000
Diseases of the digestive system	1.111*** (0.016)	0.010*** (0.001)	0.167*** (0.025)	1.362*** (0.042)	0.006*** (0.001)
Diseases of the genitourinary system	1.507*** (0.021)	0.044*** (0.002)	0.104*** (0.024)	1.534*** (0.046)	0.010*** (0.001)
Diseases of the skin and subcutaneous tissue	0.964 (0.031)	-0.003 (0.003)	0.107* (0.055)	1.017 (0.073)	0 (0.001)
Congenital anomalies	1.560*** (0.047)	0.046*** (0.004)	-0.224*** (0.052)	0.983 (0.085)	0 (0.001)
Injuries	1.114*** (0.013)	0.010*** (0.001)	0.193*** (0.020)	1.366*** (0.035)	0.006*** (0.001)
Other	1.071*** (0.016)	0.006*** (0.001)	0.022 (0.026)	1.108*** (0.038)	0.002*** (0.001)
Missing	2.801*** (0.078)	0.131*** (0.005)	0.764*** (0.044)	5.330*** (0.252)	0.064*** (0.003)

TABLE IV.1 (CONTINUED)

	Employment Status: Logit Model		Conditional Earnings: Ordered Logit Model	Earnings at Annualized SGA Level: Logit Model	
	Odds Ratio	Marginal Effect	Odds Ratio	Odds Ratio	Marginal Effect
Sex (reference: male)					
Female	1.120*** (0.003)	0.011*** 0.000	-0.177*** (0.005)	0.814*** (0.005)	-0.004*** 0.000
Age Group (reference: 50-59)					
18 to 39	1.308*** (0.006)	0.028*** (0.001)	0.080*** (0.008)	1.335*** (0.014)	0.006*** 0.000
40 to 49	0.871*** (0.003)	-0.012*** 0.000	-0.096*** (0.007)	0.791*** (0.007)	-0.004*** 0.000
60 to 64	1.166*** (0.005)	0.016*** 0.000	-0.020*** (0.007)	1.048*** (0.010)	0.001*** 0.000
Race/Ethnicity (reference: non-Hispanic white)					
Non-Hispanic black	0.900*** (0.006)	-0.010*** (0.001)	-0.062*** (0.013)	0.835*** (0.013)	-0.003*** 0.000
Hispanic	0.972*** (0.007)	-0.003*** (0.001)	0.025** (0.012)	1.024* (0.014)	0.000* 0.000
Missing or other	1.111*** (0.016)	0.010*** (0.001)	0.167*** (0.025)	1.362*** (0.042)	0.006*** (0.001)
Education Level (reference: less than 12 years)					
12 years	1.445*** (0.009)	0.030*** (0.001)	0.128*** (0.010)	1.707*** (0.025)	0.008*** 0.000
13–15 years	1.777*** (0.012)	0.051*** (0.001)	0.360*** (0.011)	2.684*** (0.041)	0.018*** 0.000
16 or more years	2.449*** (0.017)	0.090*** (0.001)	0.850*** (0.012)	5.396*** (0.083)	0.046*** (0.001)
Missing	1.547*** (0.010)	0.034*** (0.001)	0.234*** (0.011)	1.851*** (0.029)	0.007*** 0.000
Number of Dependents (reference: zero)					
One	1.007 (0.005)	0.001 0.000	-0.080*** (0.009)	0.99 (0.010)	0 0.000
Two or more	0.981*** (0.006)	-0.002*** (0.001)	0.008 (0.011)	1.105*** (0.013)	0.002*** 0.000
Missing	0.373*** (0.013)	-0.069*** (0.002)	-1.040*** (0.066)	0.155*** (0.021)	-0.018*** (0.001)
County Density (centered)	1.000*** 0.000	-0.000*** 0.000	0.000*** 0.000	1.000*** 0.000	0.000*** 0.000
Missing County Density	1.01 (0.115)	0.001 (0.011)	0.309 (0.192)	1.236 (0.255)	0.005 (0.005)
County Unemployment (centered)	0.945*** (0.001)	-0.006*** 0.000	-0.023*** (0.001)	0.932*** (0.002)	-0.001*** 0.000
Age of Disability Onset	0.997*** 0.000	-0.000*** 0.000	0.002*** 0.000	1.003*** (0.001)	0.000*** 0.000
Missing Onset Age	0.41 (0.249)	-0.062** (0.029)	-13.506 (596.567)		
Adjudication Level					
DHU	0.918*** (0.017)	-0.008*** (0.002)	-0.016 (0.031)	0.836*** (0.040)	-0.003*** (0.001)
ALJ or higher	0.977** (0.010)	-0.002** (0.001)	0.059*** (0.018)	1.038 (0.024)	0.001 0.000
Missing	0.702*** (0.007)	-0.031*** (0.001)	-0.308*** (0.019)	0.731*** (0.024)	-0.006*** (0.001)
Years Since Award (reference: 0 to 2 years)					
3 to 5 years	1.953*** (0.017)	0.077*** (0.001)	0.257*** (0.015)	2.584*** (0.044)	0.024*** (0.001)

TABLE IV.1 (CONTINUED)

	Employment Status: Logit Model		Conditional Earnings: Ordered Logit Model	Earnings at Annualized SGA Level: Logit Model	
	Odds Ratio	Marginal Effect	Odds Ratio	Odds Ratio	Marginal Effect
6 or more years	1.090*** (0.005)	0.008*** 0.000	-0.030*** (0.007)	1.210*** (0.011)	0.003*** 0.000
Medicare Eligibility at Award (reference: eligible)					
Not eligible	0.872*** (0.008)	-0.012*** (0.001)	-0.179*** (0.017)	0.821*** (0.015)	-0.004*** 0.000
Missing	1.298*** (0.011)	0.027*** (0.001)	-0.198*** (0.015)	1.178*** (0.021)	0.003*** 0.000
DAC Status (reference: not a DAC)	0.615*** (0.021)	-0.047*** (0.003)	-0.325*** (0.066)	0.423*** (0.058)	-0.017*** (0.003)
DWB Status (reference: not a DWB)	0.912** (0.042)	-0.009** (0.004)	-1.115*** (0.085)	0.364*** (0.056)	-0.020*** (0.003)
Includes State Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	4,976,232		564,926	4,976,179	

Note: Standard error of the estimated parameter shown in parentheses.

*/**/*** Estimate is significantly different from zero at the .10/.05/.01 level, respectively, using a two-tailed t-test.

ALJ = administrative law judge; DAC = disabled adult children; DHU = Disability Hearing Unit; DWB = disabled widow(er) beneficiaries; SGA = substantial gainful activity.

Table IV.2. Regression Analysis of Employment and Earnings Among SSI-Only Beneficiaries: Estimated Odds Ratios and Marginal Effects

	Employment Status: Logit Model		Conditional Earnings: Ordered Logit Model	Earnings at Annualized SGA Level: Logit Model	
	Odds Ratio	Marginal Effect	Odds Ratio	Odds Ratio	Marginal Effect
Primary Impairment Categories (reference: respiratory system disorders)					
Affective disorders	1.050* (0.027)	0.002* (0.001)	1.014 (0.047)	1.196*** (0.081)	0.001** (0.000)
Schizoaffective disorders	0.822*** (0.022)	-0.007*** (0.001)	0.857*** (0.042)	0.838** (0.059)	-0.001*** (0.000)
Anxiety disorders	0.916*** (0.026)	-0.003*** (0.001)	1.019 (0.054)	1.073 (0.082)	0.000 (0.000)
Other mental disorders	1.271*** (0.033)	0.014*** (0.002)	0.775*** (0.037)	0.957 (0.067)	-0.000 (0.000)
Intellectual disability	1.169*** (0.030)	0.009*** (0.002)	0.728*** (0.034)	0.902 (0.062)	-0.001 (0.000)
Back	0.833*** (0.025)	-0.004*** (0.001)	1.007 (0.056)	0.947 (0.075)	-0.000 (0.000)
Diseases of the musculoskeletal system	0.960 (0.028)	-0.001 (0.001)	1.056 (0.056)	1.050 (0.080)	0.000 (0.000)
Infectious and parasitic diseases	1.022 (0.070)	0.001 (0.002)	1.430*** (0.179)	1.494*** (0.229)	0.002** (0.001)
HIV/AIDS	1.340*** (0.047)	0.010*** (0.001)	0.865** (0.055)	1.280*** (0.112)	0.001** (0.001)
Neoplasms	1.223*** (0.046)	0.006*** (0.001)	1.026 (0.072)	1.249** (0.126)	0.001** (0.001)
Endocrine, nutritional, and metabolic diseases	0.808*** (0.027)	-0.005*** (0.001)	1.050 (0.064)	0.826** (0.072)	-0.001** (0.000)
Blood and blood-forming organs	1.396*** (0.054)	0.013*** (0.002)	1.026 (0.072)	1.266** (0.129)	0.001** (0.001)
Visual impairments	0.998 (0.032)	-0.000 (0.001)	1.273*** (0.075)	1.512*** (0.121)	0.003*** (0.001)
Hearing impairments	1.866*** (0.060)	0.030*** (0.002)	1.008 (0.060)	1.841*** (0.158)	0.004*** (0.001)
Speech impairments	1.002 (0.063)	0.000 (0.002)	0.927 (0.114)	1.051 (0.188)	0.000 (0.001)
Diseases of the nervous system	0.639*** (0.018)	-0.017*** (0.001)	0.833*** (0.044)	0.613*** (0.048)	-0.002*** (0.000)
Diseases of the circulatory system	0.788*** (0.025)	-0.005*** (0.001)	0.969 (0.056)	0.861* (0.071)	-0.001* (0.000)
Diseases of the digestive system	0.862*** (0.038)	-0.004*** (0.001)	1.143* (0.093)	1.069 (0.120)	0.000 (0.000)
Diseases of the genitourinary system	0.891*** (0.035)	-0.003*** (0.001)	1.121 (0.080)	0.945 (0.093)	-0.000 (0.000)
Diseases of the skin and subcutaneous tissue	0.926 (0.072)	-0.002 (0.002)	1.119 (0.158)	0.943 (0.187)	-0.000 (0.001)
Congenital anomalies	1.107*** (0.038)	0.004*** (0.001)	0.368*** (0.027)	0.368*** (0.051)	-0.003*** (0.000)
Injuries	0.718*** (0.023)	-0.009*** (0.001)	1.196*** (0.072)	0.934 (0.078)	-0.000 (0.000)
Other	0.863***	-0.004***	0.878**	0.992	-0.000

TABLE IV.2 (CONTINUED)

	Employment Status: Logit Model		Conditional Earnings: Ordered Logit Model	Earnings at Annualized SGA Level: Logit Model	
	Odds Ratio	Marginal Effect	Odds Ratio	Odds Ratio	Marginal Effect
	(0.027)	(0.001)	(0.051)	(0.083)	(0.000)
Missing	0.966	-0.001	1.264	0.877	-0.000
	(0.125)	(0.003)	(0.301)	(0.300)	(0.001)
Sex (reference: male)					
Female	1.070***	0.003***	1.350***	1.481***	0.002***
	(0.006)	(0.000)	(0.015)	(0.024)	(0.000)
Age Group (reference: 50–59)					
18 to 39	3.515***	0.056***	1.425***	5.020***	0.009***
	(0.040)	(0.001)	(0.032)	(0.161)	(0.000)
40 to 49	1.668***	0.014***	1.437***	2.493***	0.004***
	(0.018)	(0.000)	(0.029)	(0.068)	(0.000)
60 to 64	0.685***	-0.006***	0.750***	0.455***	-0.002***
	(0.011)	(0.000)	(0.023)	(0.022)	(0.000)
Race/Ethnicity (reference: non-Hispanic white)					
Non-Hispanic black	1.780***	0.026***	2.017***	3.487***	0.007***
	(0.012)	(0.000)	(0.027)	(0.072)	(0.000)
Hispanic	1.320***	0.011***	2.032***	3.184***	0.006***
	(0.013)	(0.000)	(0.038)	(0.081)	(0.000)
Missing or other	1.187***	0.007***	0.977	1.074**	0.000*
	(0.011)	(0.000)	(0.019)	(0.039)	(0.000)
Education Level (reference: less than 12 years)					
12 years	1.178***	0.007***	0.917***	0.952**	-0.000**
	(0.010)	(0.000)	(0.015)	(0.022)	(0.000)
13–15 years	1.347***	0.013***	0.874***	1.068	0.000
	(0.020)	(0.001)	(0.025)	(0.043)	(0.000)
16 or more years	1.848***	0.031***	0.884**	1.571***	0.003***
	(0.046)	(0.002)	(0.042)	(0.108)	(0.001)
Missing	0.917***	-0.004***	0.872***	0.844***	-0.001***
	(0.007)	(0.000)	(0.013)	(0.018)	(0.000)
County Density (centered)	1.000***	-0.000***	1.000***	1.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Missing County Density	0.821	-0.008	0.411	-	-
	(0.279)	(0.013)	(0.297)	-	-
County Unemployment (centered)	0.939***	-0.003***	1.046***	1.006	0.000
	(0.002)	(0.000)	(0.003)	(0.004)	(0.000)
Age of Disability Onset	0.993***	-0.000***	1.022***	1.011***	0.000***
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)
Missing Onset Age	0.717	-0.013	0.928	1.362	0.002
	(0.372)	(0.017)	(0.880)	(1.379)	(0.008)
Adjudication Level					
DHU	1.417***	0.018***	1.247***	1.564***	0.003***
	(0.030)	(0.001)	(0.049)	(0.086)	(0.000)
ALJ or higher	1.018	0.001	1.189***	1.277***	0.002**
	(0.036)	(0.002)	(0.080)	(0.112)	(0.001)
Missing	1.441***	0.019***	0.869***	1.040	0.000
	(0.017)	(0.001)	(0.020)	(0.040)	(0.000)

TABLE IV.2 (CONTINUED)

	Employment Status: Logit Model		Conditional Earnings: Ordered Logit Model	Earnings at Annualized SGA Level: Logit Model	
	Odds Ratio	Marginal Effect	Odds Ratio	Odds Ratio	Marginal Effect
Years Since Award (reference: 0 to 2 years)					
3 to 5 years	0.954*** (0.011)	-0.002*** (0.000)	0.643*** (0.014)	0.659*** (0.022)	-0.002*** (0.000)
6 or more years	0.982** (0.008)	-0.001** (0.000)	0.769*** (0.012)	0.725*** (0.016)	-0.002*** (0.000)
Medicaid Eligibility at Award (reference: eligible)					
Not eligible	1.424*** (0.039)	0.017*** (0.001)	1.190*** (0.061)	1.669*** (0.124)	0.004*** (0.001)
Missing	1.022 (1.039)	0.001 (0.045)	2.002 (3.018)	- -	- -
Includes State Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	3,036,829		147,264	3,036,159	

Notes: Standard error of the estimated parameter shown in parentheses. Total sample size shown for column 3 does not match that of column 1 because some combinations of characteristics predicted earnings above SGA perfectly. The few individuals with these characteristics were removed from the estimated regression models for earnings above annualized SGA. These included individuals with missing county density, county unemployment, and Medicaid status.

*/**/*** Estimate is significantly different from zero at the .10/.05/.01 level, respectively, using a two-tailed t-test.

- Coefficient not estimated due to multicollinearity.

ALJ = administrative law judge; DHU = Disability Hearing Unit; SGA = substantial gainful activity.

Table IV.3. Regression Analysis of Employment and Earnings Among Concurrent Beneficiaries: Estimated Odds Ratios and Marginal Effects

	Employment Status: Logit Model		Conditional Earnings: Ordered Logit Model	Earnings at Annualized SGA Level: Logit Model	
	Odds Ratio	Marginal Effect	Odds Ratio	Odds Ratio	Marginal Effect
Primary Impairment Categories (reference: respiratory system disorders)					
Affective disorders	1.143*** (0.052)	0.005*** (0.002)	0.863* (0.075)	1.314* (0.211)	0.001 (0.001)
Schizoaffective disorders	0.898** (0.042)	-0.004** (0.002)	0.589*** (0.054)	0.711** (0.121)	-0.001** 0.000
Anxiety disorders	1.06 (0.053)	0.002 (0.002)	0.909 (0.089)	1.491** (0.264)	0.001* (0.001)
Other mental disorders	1.721*** (0.080)	0.026*** (0.003)	0.630*** (0.057)	1.137 (0.194)	0 0.000
Intellectual disability	2.389*** (0.109)	0.046*** (0.003)	0.411*** (0.036)	0.891 (0.146)	0 0.000
Back	0.972 (0.048)	-0.001 (0.001)	0.934 (0.089)	1.112 (0.194)	0 0.000
Diseases of the musculoskeletal system	1.082 (0.054)	0.002 (0.001)	0.854* (0.081)	1.093 (0.190)	0 0.000
Infectious and parasitic diseases	1.142 (0.127)	0.003 (0.003)	1.024 (0.223)	1.055 (0.409)	0 (0.001)
HIV/AIDS	1.491*** (0.089)	0.013*** (0.002)	0.815* (0.093)	1.652** (0.326)	0.002** (0.001)
Neoplasms	1.399*** (0.089)	0.010*** (0.002)	0.887 (0.109)	1.095 (0.256)	0 (0.001)
Endocrine, nutritional, and metabolic diseases	0.962 (0.054)	-0.001 (0.001)	0.915 (0.097)	0.934 (0.183)	0 0.000
Blood and blood-forming organs	1.306*** (0.094)	0.009*** (0.003)	0.852 (0.113)	1.148 (0.272)	0 (0.001)
Visual impairments	1.275*** (0.069)	0.008*** (0.002)	0.808** (0.085)	1.355 (0.255)	0.001 (0.001)
Hearing impairments	1.885*** (0.107)	0.027*** (0.003)	0.855 (0.094)	1.822*** (0.373)	0.002** (0.001)
Speech impairments	1.550*** (0.204)	0.013*** (0.005)	0.482** (0.142)	0.557 (0.405)	-0.001 (0.001)
Diseases of the nervous system	1.023 (0.051)	0.001 (0.002)	0.588*** (0.057)	0.660** (0.124)	-0.001*** 0.000
Diseases of the circulatory system	0.987 (0.053)	0 (0.001)	0.848 (0.088)	0.907 (0.173)	0 0.000
Diseases of the digestive system	0.971 (0.070)	-0.001 (0.002)	0.891 (0.127)	1.136 (0.285)	0 (0.001)
Diseases of the genitourinary system	1.160** (0.074)	0.004** (0.002)	0.758** (0.093)	0.943 (0.209)	0 (0.001)
Diseases of the skin and subcutaneous tissue	0.871 (0.115)	-0.003 (0.003)	0.560** (0.148)	0.864 (0.379)	0 (0.001)
Congenital anomalies	2.265*** (0.136)	0.035*** (0.004)	0.239*** (0.037)	0.295*** (0.130)	-0.002*** 0.000
Injuries	0.897** (0.049)	-0.003** (0.001)	0.822* (0.088)	0.997 (0.193)	0 0.000
Other	1.686*** (0.091)	0.015*** (0.002)	0.500*** (0.057)	0.885 (0.199)	0 0.000

TABLE IV.3 (CONTINUED)

	Employment Status: Logit Model		Conditional Earnings: Ordered Logit Model	Earnings at Annualized SGA Level: Logit Model	
	Odds Ratio	Marginal Effect	Odds Ratio	Odds Ratio	Marginal Effect
Missing	1.750*** (0.196)	0.017*** (0.004)	0.378*** (0.106)	0.487 (0.353)	-0.001 (0.001)
Sex (reference: male)					
Female	1.072*** (0.010)	0.003*** 0.000	1.336*** (0.027)	1.598*** (0.064)	0.001*** 0.000
Age Group (reference: 50–59)					
18 to 39	2.312*** (0.036)	0.041*** (0.001)	1.708*** (0.062)	4.568*** (0.325)	0.004*** 0.000
40 to 49	1.263*** (0.018)	0.007*** 0.000	1.320*** (0.044)	2.099*** (0.134)	0.001*** 0.000
60 to 64	0.876*** (0.020)	-0.003*** 0.000	0.893** (0.044)	0.566*** (0.061)	-0.001*** 0.000
Race/Ethnicity (reference: non-Hispanic white)					
Non-Hispanic black	1.517*** (0.016)	0.020*** (0.001)	2.438*** (0.056)	4.154*** (0.193)	0.004*** 0.000
Hispanic	1.033* (0.018)	0.001* (0.001)	1.804*** (0.064)	2.402*** (0.159)	0.002*** 0.000
Missing or other	1.110*** (0.020)	0.005*** (0.001)	1.178*** (0.050)	1.143 (0.118)	0 0.000
Education Level (reference: less than 12 years)					
12 years	1.001 (0.014)	0 (0.001)	0.832*** (0.024)	0.799*** (0.044)	-0.001*** 0.000
13–15 years	1.138*** (0.026)	0.006*** (0.001)	0.823*** (0.038)	0.998 (0.081)	0 0.000
16 or more years	1.457*** (0.061)	0.019*** (0.002)	0.97 (0.082)	1.437** (0.214)	0.001** (0.001)
Missing	0.897*** (0.011)	-0.005*** (0.001)	0.822*** (0.022)	0.764*** (0.038)	-0.001*** 0.000
Number of Dependents (reference: zero)					
One	0.792*** (0.027)	-0.010*** (0.001)	1.596*** (0.108)	1.430*** (0.157)	0.001*** 0.000
Two or more	0.901*** (0.034)	-0.005*** (0.002)	2.349*** (0.166)	2.370*** (0.229)	0.003*** (0.001)
Missing	0.314*** (0.009)	-0.046*** (0.001)	1.075 (0.066)	0.515*** (0.067)	-0.001*** 0.000
County Density (centered)	1.000*** 0.000	-0.000*** 0.000	1.000*** 0.000	1.000*** 0.000	0.000*** 0.000
Missing County Density	1.923 (0.817)	0.038 (0.032)	2.277 (1.909)	- -	- -
County Unemployment (centered)	0.939*** (0.002)	-0.003*** 0.000	1.041*** (0.005)	1.004 (0.010)	0 0.000
Age of Disability Onset	0.970*** (0.001)	-0.001*** 0.000	1.015*** (0.001)	0.995** (0.002)	-0.000** 0.000
Missing Onset Age	1.62 (0.874)	0.026 (0.035)	0 (0.001)	- -	- -
Adjudication Level					
DHU	1.085* (0.049)	0.004* (0.002)	1.383*** (0.125)	1.686*** (0.258)	0.002*** (0.001)
ALJ or higher	0.797*** (0.029)	-0.009*** (0.001)	1.106 (0.085)	1.048 (0.142)	0 0.000

TABLE IV.3 (CONTINUED)

	Employment Status: Logit Model		Conditional Earnings: Ordered Logit Model	Earnings at Annualized SGA Level: Logit Model	
	Odds Ratio	Marginal Effect	Odds Ratio	Odds Ratio	Marginal Effect
Missing	1.071*** (0.024)	0.003*** (0.001)	0.786*** (0.047)	0.844 (0.110)	0 0.000
Years Since Award (reference: 0 to 2 years)					
3 to 5 years	1.006 (0.031)	0 (0.001)	0.862** (0.052)	1.193 (0.137)	0 0.000
6 or more years	1.155*** (0.016)	0.007*** (0.001)	1.069** (0.030)	1.111** (0.058)	0.000** 0.000
Medicare Eligibility at Award (reference: eligible)					
Not eligible	1.871*** (0.043)	0.035*** (0.002)	1.231*** (0.054)	1.526*** (0.142)	0.001*** 0.000
Missing	1.771*** (0.040)	0.031*** (0.002)	1.266*** (0.061)	1.618*** (0.171)	0.001*** 0.000
Medicaid Eligibility at Award (reference: eligible)					
Not eligible	1.390*** (0.053)	0.016*** (0.002)	1.338*** (0.104)	1.657*** (0.220)	0.002*** 0.000
DAC Status (reference: not a DAC)	0.868*** (0.025)	-0.006*** (0.001)	0.938 (0.059)	0.700*** (0.091)	-0.001*** 0.000
DWB Status (reference: not a DWB)	0.536*** (0.032)	-0.028*** (0.003)	0.479*** (0.056)	0.310*** (0.061)	-0.003*** 0.000
Includes State Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	1,189,193		59,096	1,189,087	

Notes: Standard error of the estimated parameter shown in parentheses. Total sample size shown for column 3 does not match that of column 1 because some combinations of characteristics predicted earnings above annualized SGA perfectly. The few individuals with these characteristics were removed from the estimated regression models for earnings above annualized SGA. These included individuals with missing county density, county unemployment, disability onset date, and Medicaid status.

*/**/*** Estimate is significantly different from zero at the .10/.05/.01 level, respectively, using a two-tailed t-test.

- Coefficient not estimated due to multicollinearity.

ALJ = administrative law judge; DAC = disabled adult children; DHU = Disability Hearing Unit; DWB = disabled widow(er) beneficiaries; SGA = substantial gainful activity.

The impairment categories from which beneficiaries are relatively more or relatively less likely to work are similar for SSI-only and DI-only beneficiaries. Similar to DI-only beneficiaries, SSI-only beneficiaries listing a hearing impairment, blood disorder, HIV/AIDS, neoplasm, or intellectual disability were more likely to work. In addition, SSI-only beneficiaries with other mental disorders were also more likely to work. SSI-only beneficiaries with schizoaffective disorders, anxiety disorders, back disorders, and endocrine/nutritional disorders were among those relatively less likely to work. The marginal effects estimates show, however, that for SSI-only beneficiaries the magnitude of the effect of having a particular impairment on employment probability is not large. For instance, having a primary impairment that is positively correlated with employment is associated with no more than a 3 percentage-point increase in employment probability. The impairments with lower odds of employment are associated with less than a 1.7 percentage-point reduction in employment probability. The magnitude of these effects was larger for DI-only beneficiaries.

Turning to the analysis of earnings for SSI-only beneficiaries who were employed, we see a weaker overall relationship between impairment category and earnings. Point estimates for several primary impairment categories are not statistically significant. Among the significant point estimates, we observe again that the primary impairment categories positively correlated with higher conditional earnings were not necessarily the primary impairment categories more strongly associated with employment. SSI-only beneficiaries with infectious diseases, for example, are not among the most likely to be employed but are among the most likely to be in a higher earnings category once employed.

Not surprisingly, the results for concurrent beneficiaries lie somewhere in between the DI-only and SSI-only beneficiary results. This finding, which we observe throughout our analysis, is consistent with previous studies (for example, Mamun et al. 2011; Ben-Shalom and Mamun 2013). Most primary impairment groups that tended to have relatively greater odds of employment for DI-only and SSI-only beneficiaries, also tended to have greater odds of employment for concurrent beneficiaries. In addition, we found that concurrent beneficiaries with congenital disorders or other disorders were relatively more likely to work. However, the marginal effects estimates show that for concurrent beneficiaries the magnitude of the effect of having a particular impairment on employment probability is quite small, and in some cases very close to zero.

The link between employment and conditional earnings is weakest for concurrent beneficiaries. For several impairment categories, the estimated odds ratio from the ordered logit regression of conditional earnings is not statistically significant. For primary impairment categories for which the estimated odds ratio is significant for concurrent beneficiaries, the direction of the relationship with conditional earnings is often opposite the direction observed for the odds of employment.

2. Earnings Above Annualized SGA Level

For each program group, we also estimated a logistic regression model for an indicator of whether a beneficiary earned 12 times the monthly SGA amount or more in 2011. Policy makers are ultimately interested in the extent to which beneficiaries engage in SGA—the key earnings level that, if surpassed, can lead to benefit suspension or termination under certain circumstances. Given the importance of earnings at the SGA level, we analyzed the indicator of earnings above the annual equivalent of the nonblind SGA level. Similar to the results from the ordered logistic regressions, the estimates for earnings above the SGA level show that a positive correlation between a primary impairment and employment does not always imply a positive

correlation between that same impairment and earnings above the SGA level. DI-only beneficiaries with intellectual disabilities again provide a strong example of this result: although estimates for the employment indicator show a strong positive relationship between having an intellectual disability and employment, there exists a negative relationship (of about a 0.2 percentage points) between having an intellectual disability and earnings above the annualized SGA level. For both DI-only and SSI-only beneficiaries, estimates from the two regressions (for employment and earnings above annualized SGA level) have the same direction for most primary impairments. The magnitude of the estimated relationship between impairment and the outcomes are also often consistent between the two models; however, for some impairments, they differ widely between the two models. For instance, all else equal, DI-only beneficiaries with a visual impairments are 88 percent more likely to be employed relative to the reference group (that is, beneficiaries with respiratory system disorders), but they are about 300 percent more likely to have earnings above annualized SGA level. For concurrent beneficiaries, few primary impairments categories were strong predictors of annual earnings above the annualized SGA level. Specifically, concurrent beneficiaries with anxiety disorders, HIV/AIDS, and hearing impairments were more likely to have earnings above annualized SGA, whereas those with schizoaffective disorders, nervous system disorders, and congenital disorders were less likely to have such earnings.

3. Employment, Conditional Earnings, and Other Characteristics

As noted earlier, in estimating the relationship of employment and earnings with impairments, we controlled for a range of individual characteristics and other county- and state-level factors. As shown in Tables IV.1, IV.2, and IV.3, the estimated relationship of these characteristics with employment and conditional earnings is generally congruent across disability program groups: female beneficiaries are more likely to be employed than male beneficiaries; blacks are more likely to be employed than whites; the likelihood of employment increases with greater educational attainment; younger adult beneficiaries are more likely to be employed; and beneficiaries who have spent more time on the disability benefit rolls are less likely to work. In addition, the adjudication level of disability award decision is also associated with the likelihood of employment with beneficiaries whose award decisions were made through the initial review at the DDS having greater likelihood of being employed than beneficiaries whose award decisions were made after one or more appeals through the DHU or at the ALJ level. These results from the multivariate analysis are consistent with findings from other studies (for example, Ben-Shalom and Mamun 2013; Autor et al. 2011, Liu and Stapleton 2011; Mamun et al. 2011; Hennessey and Muller 1995).

We also found that across program groups, local economic and other conditions are associated with the beneficiaries' likelihood of employment. The population density and unemployment rate in the beneficiaries' county of residence (both centered around the mean for all counties) are negatively correlated with their likelihood of employment. Counties with higher population density than average are more likely to have greater employment opportunities but also greater labor market competition; thus, a priori the direction of the relationship between population density and beneficiary employment is ambiguous. Our estimates suggest that the association between county density and beneficiary employment is quite low, but the direction is negative, thereby implying that tougher labor market competition slightly dominated the greater employment opportunities in more densely populated counties. Counties with lower than average county-level unemployment rates indicate stronger local economic conditions and are expected to support greater beneficiary employment. Thus, the negative association between county

unemployment rate and employment among disability beneficiaries is consistent with our expectation. In addition, we found that even after accounting for county-level economic conditions, the state of residence influenced the likelihood of employment among disability beneficiaries. There is substantial variation in state-specific effects on employment, but they are generally consistent across the three disability program groups (see Figure IV.1). For instance, across all program groups, beneficiaries in Iowa are more likely to be employed than beneficiaries in Oklahoma or West Virginia, all else equal. However, in several states, one group (usually DI) is more likely to work than the other two (see, for example, Kansas). The large variation in state-specific effects on employment is similar to findings in other studies (for example, Ben-Shalom and Mamun 2013; Liu and Stapleton 2011; and Mamun et al. 2011). The results suggest that state-specific factors, including state policies and state-level job market prospects are often correlated with employment among Social Security disability beneficiaries, even after accounting for other important individual characteristics and local economic factors.

B. Estimated Probabilities of Different Levels of Earnings for Select Beneficiary Profiles

To gain a better understanding of how likely beneficiaries with certain impairments are to achieve certain earnings thresholds, we use estimates from the ordered logit regression on all earnings categories (including earnings less than \$1,000) to predict the probability of having certain levels of earnings for beneficiaries in each program group combined and also for select beneficiary profiles (Table IV.4). The profiles, which vary by gender, age, and primary impairment, were chosen because they represent a substantial proportion of beneficiaries under one or both program titles. For all profiles, we assume that the beneficiaries have been in the program for six or more years, are eligible for Medicare (for DI beneficiaries) and/or Medicaid (for SSI beneficiaries), and were allowed benefits at the initial DDS application review stage.

The profiles for DI-only beneficiaries illustrate the heterogeneity in earnings across age groups and primary impairment statuses. The overall predicted probability of employment for DI-only beneficiaries is 11.4 percent. Employment probabilities range from 11.8 percent (for white, male beneficiaries ages 60 to 64 with anxiety disorder) to 45 percent (for white, female beneficiaries ages 18 to 39 with intellectual disability), though employment probabilities for most profiles range between 15 and 20 percent. White beneficiaries ages 18 to 30 with intellectual disabilities and black beneficiaries ages 40 to 49 with HIV/AIDS show the highest estimated probability of having higher levels of earnings. For instance, women meeting the HIV/AIDS profile have an 8 percent probability of earning between \$10,000 and \$19,999 and a 4 percent probability of earning \$20,000 or more. For women meeting the intellectual disability profile, the probability of earning \$20,000 or more is about 5.6 percent. Across all profiles and in aggregate, the higher the earnings level, the smaller the fraction of beneficiaries estimated to have earnings in that level. About 4.8 percent of DI-only beneficiaries will earn in the range of \$1,000 to \$4,999, but the fraction falls to 3.5 percent to 2.1 percent to less than 1 percent for the successive categories of higher earnings. Keeping age and primary impairment constant, we observe no large differences in employment probabilities by gender, though women are consistently slightly more likely to work and be in higher earnings categories.

Figure IV.1. State Fixed Effects: Coefficient Estimates from Logistic Regression Models of Employment for DI-Only, SSI-Only, and Concurrent Beneficiaries

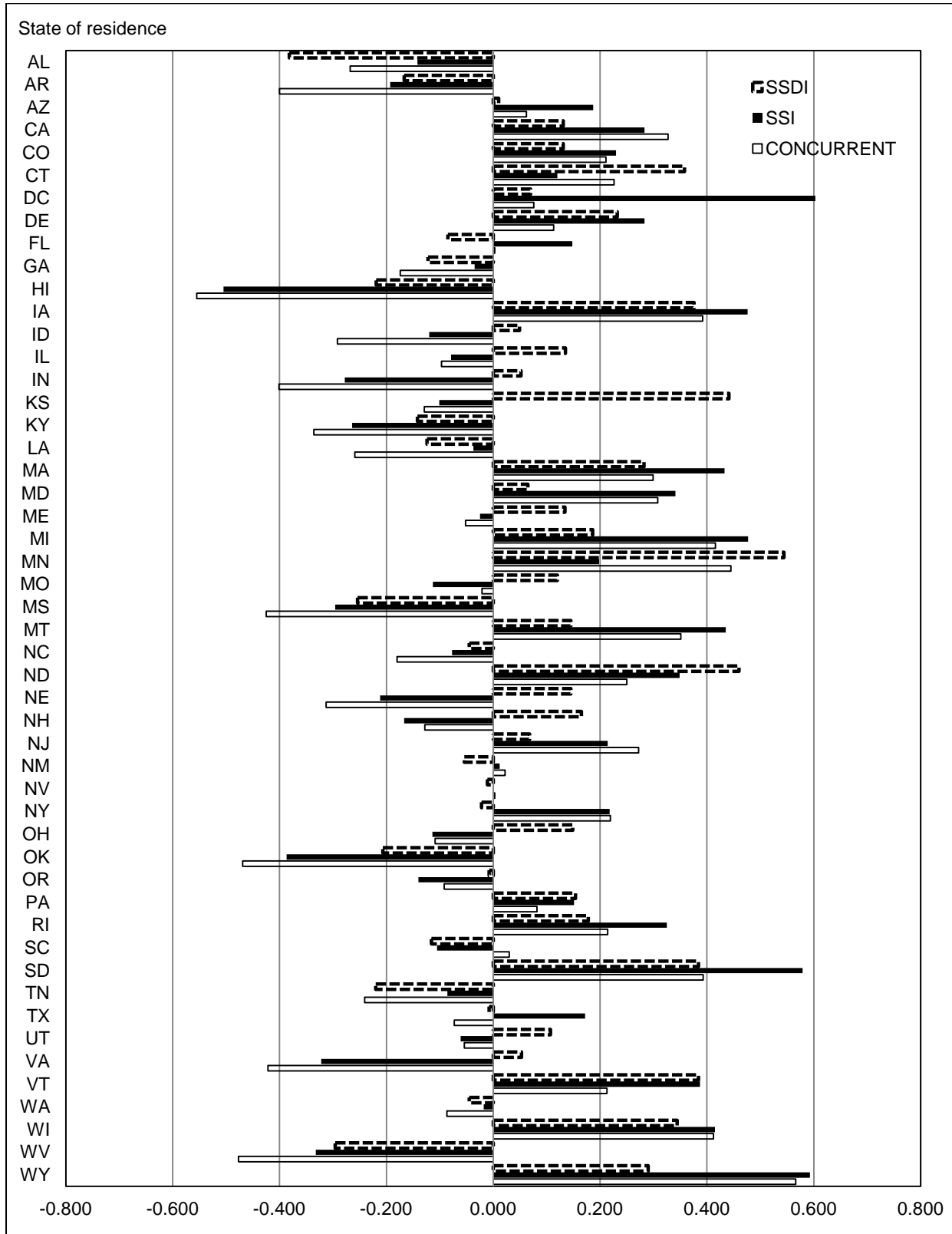


Table IV.4. Predicted Probabilities of Different Levels of Earnings for Selected Profiles of Beneficiaries, by Payment Title

	DI-only					SSI-only					Concurrent				
	Not Employed	\$1,000-\$4,999	\$5,000-\$9,999	\$10,000-\$19,999	≥ \$20,000	Not Employed	\$1,000-\$4,999	\$5,000-\$9,999	\$10,000-\$19,999	≥ \$20,000	Not Employed	\$1,000-\$4,999	\$5,000-\$9,999	\$10,000-\$19,999	≥ \$20,000
Overall	88.62	4.79	3.53	2.10	0.96	95.16	2.76	1.24	0.75	0.10	95.05	3.59	0.95	0.38	0.03
White, Back Disorder, 50–59															
Male	85.29	6.21	4.57	2.71	1.23	98.72	0.75	0.32	0.19	0.02	92.15	5.73	1.49	0.59	0.05
Female	83.96	6.71	5.00	2.98	1.36	98.62	0.81	0.34	0.20	0.03	91.58	6.13	1.6	0.63	0.05
White, Musculoskeletal, 50–59															
Male	83.28	6.96	5.22	3.12	1.43	98.53	0.86	0.37	0.21	0.03	91.33	6.31	1.65	0.66	0.05
Female	83.28	6.96	5.22	3.12	1.43	98.53	0.86	0.37	0.21	0.03	91.33	6.31	1.65	0.66	0.05
Black, HIV/AIDS, 40–49															
Male	64.85	12.54	11.21	7.64	3.76	94.03	3.44	1.51	0.90	0.12	79.5	14.34	4.26	1.76	0.15
Female	62.49	13.07	11.97	8.32	4.15	93.58	3.69	1.63	0.98	0.12	78.23	15.15	4.57	1.89	0.16
White, Anxiety, 60–64															
Male	88.22	5.07	3.64	2.12	0.95	99.04	0.57	0.24	0.14	0.02	92.44	5.52	1.43	0.56	0.05
Female	87.12	5.50	3.99	2.34	1.05	98.96	0.61	0.26	0.15	0.02	91.89	5.91	1.54	0.61	0.05
Hispanic, Nervous, 50–59															
Male	83.42	6.90	5.17	3.09	1.41	98.69	0.77	0.33	0.19	0.02	91.47	6.21	1.62	0.64	0.05
Female	81.96	7.43	5.64	3.40	1.56	98.58	0.83	0.35	0.21	0.03	90.86	6.64	1.75	0.69	0.06
White, Intellectual, 18–39															
Male	57.45	14.02	13.58	9.88	5.07	93.97	3.47	1.53	0.91	0.12	67.78	21.42	7.35	3.18	0.27
Female	54.94	14.41	14.36	10.71	5.58	93.51	3.73	1.65	0.99	0.13	66.1	22.34	7.84	3.42	0.29
Black, Endo/Nutritional, 50–59															
Male	84.10	6.65	4.95	2.95	1.34	97.78	1.30	0.56	0.33	0.04	88.44	8.34	2.25	0.9	0.07
Female	82.69	7.17	5.41	3.25	1.49	97.60	1.40	0.60	0.35	0.04	87.64	8.89	2.42	0.97	0.08

DI = Disability Insurance; SSI = Supplemental Security Income.

The earnings distributions for SSI-only beneficiaries across our select profiles show that, other characteristics held constant, SSI-only beneficiaries are much less likely to work or be in one of the higher earnings categories, compared to DI-only beneficiaries. Employment probabilities for SSI-only beneficiaries range in our profiles from less than 1 percent (for white, male beneficiaries ages 60 to 64 with anxiety disorders) to about 6.5 percent (for white, female beneficiaries ages 18 to 39 with intellectual disabilities), and average about 4.8 percent in aggregate. For most of our profiles, less than 1 percent of SSI-only beneficiaries make \$10,000 or more a year. As with the DI-only beneficiary profiles, in the SSI-only beneficiary profiles there is little difference in employment probabilities across genders.

The estimated probabilities of different levels of earnings for the concurrent beneficiaries profiles fall in between those for the DI-only and SSI-only beneficiary profiles. As with the DI-only and SSI-only probabilities, the concurrent beneficiary profiles that are most likely to work include those with HIV/AIDS or intellectual disabilities. The employment probability for all concurrent beneficiaries is about 5 percent, though for the profiles we report on, the employment probabilities range between 7.6 percent (for white, male beneficiaries ages 60 to 64 with anxiety disorders) and 33.9 percent (for white, female beneficiaries ages 18 to 39 with intellectual disabilities). Overall, about 3.6 percent of concurrent beneficiaries will earn between \$1,000 and \$4,999, though a substantially higher proportion of those matching the HIV/AIDS or intellectual disability profiles are likely to earn in that range. The percentage of concurrent beneficiaries likely to earn \$10,000 or more is small and closely resembles the analogous probabilities for SSI-only beneficiaries.

V. CONCLUSIONS

Our study results provide a variety of new and updated information about the distribution of primary impairments among Social Security disability program beneficiaries and their employment and earnings. Our tabulations reveal how beneficiaries with different primary impairments vary in demographic and other characteristics. In addition, our tabulations provide a basic picture of employment and earnings across program titles and impairment types. We found that, similar to employment tabulations in previous studies, a large majority of Social Security disability beneficiaries in 2011 did not engage in substantive employment and, on average, their annual earnings are relatively low when they do work. Our earnings category tabulations show that both overall and across most primary impairment categories, SSI-only beneficiaries are relatively less likely to be in higher earnings categories than DI-only or concurrent beneficiaries. This is not surprising given the differences in the eligibility rules for the two programs: beneficiaries must have a work history to qualify for DI, whereas SSI recipients must meet income and assets limitations.

Estimates from our various multivariate regression models reveal noticeable variation in the relationship of primary impairment status with employment and earnings. Beneficiaries with impairments that are often lumped together, such as those categorized as “mental” in nature, have widely varying correlations with employment. Beneficiaries with anxiety disorders, for example, are among the least likely to work, whereas beneficiaries with intellectual disabilities are among the most likely to work. Thus, considering a finer, more detailed construction of impairment groups as those constructed in our analysis is important and can provide valuable information for policy makers. A comparison between the estimated relationship of primary impairments with employment and with earnings conditional on being employed paints a somewhat unexpected picture: primary impairments positively correlated with employment are not necessarily positively correlated with being in a higher earnings category or with having earnings above the annualized SGA level. Finally, the predicted probabilities of employment and earnings for some relatively more prevalent beneficiary profiles also reveal the significant variation in employment and earnings probabilities across different subgroups of beneficiaries.

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APPENDIX TABLES

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Table A.1. Primary Impairment Categorization Scheme

Primary Impairment Category	SSA Impairment Codes (Value of DX1Xyymm in DAF)
Affective Disorders	2960-2969, 3110-3119
Schizoaffective Disorders	2950-2959, 2980-2989
Anxiety Disorders	3000-3019, 3080-3099
Other Mental Disorders	2900-2949, 2990-2999, 3030-3079, 3100-3109, 3120-3129, 3138-3169, 3195
Intellectual Disability	3170-3194, 3196-3199
Back	7221-7249
Diseases of the Musculoskeletal System	7100-7200, 7250-7399
Infectious and Parasitic Diseases	0110-0119, 0450-0459, 0930-1359, 1380-1389
HIV/AIDS	0070-0079, 0201-0449, 0540-0559, 0780-0789, 1360-1369
Neoplasms	1400-2399
Endocrine, Nutritional, and Metabolic Diseases	2400-2479, 2500-2559, 2630-2799
Blood and Blood-Forming Organs	2800-2899
Visual Impairments	3610-3699, 3780-3789
Hearing Impairments	3890-3899
Speech Impairments	7840-7849
Diseases of the Nervous System	3200-3419, 3430-3599, 3860-3889
Diseases of the Circulatory System	3420-3429, 3750-3759, 3900-4599
Diseases of the Respiratory System	4600-4869, 4910-5199, 7690-7699
Diseases of the Digestive System	5200-5799
Diseases of the Genitourinary System	5800-6299
Diseases of the Skin and Subcutaneous Tissue	6900-7099
Congenital Anomalies	7400-7599
Injuries	8000-9599
Other	0000-0069, 0680-0689, 2480-2499, 2580-2589, 3130, 4880- 4889, 6300-6889, 7600-7689, 7740-7839, 7850-7959, 9840- 9849
Missing	Any other code

DAF = Disability Analysis File; SSA = Social Security Administration.

Table A.2. Earnings Distribution Among DI-Only Beneficiaries, by Primary Impairment Status

	N	Employed	Mean Earnings	Conditional Mean Earnings	\$1,000 to \$4,999	\$5,000 to \$9,999	\$10,000 to \$19,999	≥ \$20,000	Earnings Above Annualized SGA
DI-only	4,976,232	11.4	\$1,081	\$9,412	4.8	3.5	2.1	1.0	2.12
Impairment Type									
Affective disorders	686,060	10.4	\$913	\$8,657	4.4	3.5	1.9	0.7	1.69
Schizoaffective disorders	207,392	9.0	\$606	\$6,602	4.1	3.3	1.4	0.2	0.72
Anxiety disorders	158,723	9.4	\$1,010	\$10,638	3.8	2.8	1.6	1.3	2.13
Other mental disorders	201,657	13.4	\$1,311	\$9,693	5.6	4.3	2.4	1.2	2.49
Intellectual disability	214,871	16.8	\$907	\$5,185	9.7	5.4	1.6	0.1	0.76
Back	937,616	8.9	\$836	\$9,298	3.8	2.7	1.6	0.8	1.69
Diseases of the musculoskeletal system	635,762	10.8	\$977	\$8,902	4.7	3.4	2.0	0.8	1.9
Infectious and parasitic diseases	19,460	13.3	\$1,268	\$9,451	5.1	4.2	2.8	1.2	2.68
HIV/AIDS	43,745	17.6	\$1,949	\$10,989	5.8	5.8	4.1	2.0	4.18
Neoplasms	140,267	18.6	\$2,605	\$13,944	6.7	4.9	3.8	3.2	5.55
Endocrine, nutritional, and metabolic diseases	158,144	8.8	\$729	\$8,155	3.9	2.9	1.6	0.5	1.37
Blood and blood-forming organs	10,431	16.3	\$1,702	\$10,388	6.1	5.3	3.4	1.6	3.5
Visual impairments	98,521	18.1	\$2,128	\$11,731	5.4	4.4	6.5	1.8	6.84
Hearing impairments	31,515	21.4	\$1,793	\$8,323	7.4	8.4	4.6	0.9	2.64
Speech impairments	3,029	14.3	\$1,567	\$10,889	5.5	4.9	2.3	1.6	2.77
Diseases of the nervous system	381,897	12.9	\$1,380	\$10,590	5.2	3.9	2.5	1.4	2.75
Diseases of the circulatory system	396,360	10.9	\$1,128	\$10,239	4.7	3.2	2.0	1.0	2.16
Diseases of the respiratory system	126,561	10.0	\$869	\$8,560	4.5	3.1	1.7	0.7	1.71
Diseases of the digestive system	78,665	12.1	\$1,240	\$10,130	4.8	3.7	2.3	1.3	2.74
Diseases of the genitourinary system	76,567	16.6	\$1,690	\$10,115	6.5	5.1	3.4	1.7	3.6
Diseases of the skin and subcutaneous tissue	11,741	10.5	\$945	\$8,906	4.2	3.5	2.0	0.8	1.87
Congenital anomalies	9,983	15.3	\$1,012	\$6,449	8.1	4.6	2.1	0.5	1.5
Injuries	223,146	11.5	\$1,305	\$11,282	4.5	3.5	2.2	1.3	2.5
Other	114,956	8.6	\$698	\$7,942	4.2	2.5	1.4	0.5	1.28
Missing	9,163	22.1	\$2,344	\$10,502	6.5	5.8	8.0	1.9	7.56

^a Estimates for the impairment group have been suppressed because of small sample size.

DI = Disability Insurance; SGA = substantial gainful activity.

Table A.3. Earnings Distribution Among SSI-Only Beneficiaries, by Primary Impairment Status

	N	Employed	Mean Earnings	Conditional Mean Earnings	\$1,000 to \$4,999	\$5,000 to \$9,999	\$10,000 to \$19,999	≥ \$20,000	Earnings Above Annualized SGA
SSI-only	3,036,829	4.9	\$305	\$6,004	2.8	1.2	0.8	0.1	0.58
Impairment Type									
Affective disorders	516,621	4.5	\$322	\$6,963	2.2	1.3	0.9	0.1	0.71
Schizoaffective disorders	270,822	3.9	\$262	\$6,542	2.1	1.0	0.7	0.1	0.54
Anxiety disorders	128,198	4.0	\$268	\$6,418	2.1	1.1	0.7	0.1	0.54
Other mental disorders	292,968	8.0	\$433	\$5,110	5.2	1.8	0.9	0.1	0.65
Intellectual disability	613,141	7.2	\$406	\$5,247	4.6	1.6	1.0	0.1	0.71
Back	178,938	2.0	\$142	\$6,924	0.9	0.7	0.4	0.1	0.28
Diseases of the musculoskeletal system	167,860	2.7	\$195	\$6,982	1.2	0.9	0.5	0.1	0.41
Infectious and parasitic diseases	7,611	3.4	\$292	\$8,471	1.4	1.0	0.9	0.1	a
HIV/AIDS	34,795	5.3	\$430	\$8,010	2.3	1.7	1.0	0.2	0.87
Neoplasms	30,797	4.2	\$294	\$6,827	2.1	1.3	0.6	0.2	0.56
Endocrine, nutritional, and metabolic diseases	85,334	2.4	\$178	\$7,142	1.1	0.8	0.5	0.1	0.36
Blood and blood-forming organs	12,366	10.6	\$711	\$6,499	5.3	3.3	1.7	0.3	1.39
Visual impairments	54,881	5.1	\$396	\$7,500	2.6	1.3	0.9	0.3	0.94
Hearing impairments	26,379	11.0	\$674	\$5,896	6.5	2.6	1.7	0.2	1.38
Speech impairments	4,527	7.2	\$420	\$5,469	4.5	1.5	1.0	0.2	a
Diseases of the nervous system	153,975	3.7	\$223	\$5,703	2.3	0.9	0.5	0.1	0.38
Diseases of the circulatory system	129,315	2.1	\$152	\$7,210	1.0	0.7	0.4	0.1	0.31
Diseases of the respiratory system	61,735	2.8	\$193	\$6,645	1.3	1.0	0.5	0.1	0.38
Diseases of the digestive system	29,756	2.7	\$193	\$7,014	1.3	0.8	0.5	0.1	0.41
Diseases of the genitourinary system	28,251	4.2	\$315	\$7,414	1.8	1.3	0.9	0.1	0.67
Diseases of the skin and subcutaneous tissue	4,897	4.1	\$287	\$6,870	1.8	1.3	0.9	0.1	a
Congenital anomalies	25,777	8.3	\$330	\$3,480	6.8	1.0	0.3	0.1	a
Injuries	78,920	3.0	\$225	\$7,418	1.4	0.9	0.6	0.1	0.49
Other	96,959	3.1	\$211	\$6,509	1.7	0.8	0.5	0.1	0.41
Missing	2,006	3.2	\$228	\$6,911	1.4	1.0	0.8	0.1	a

^a Estimates for the impairment group have been suppressed because of small sample size.
SGA = substantial gainful activity; SSI = Supplemental Security Income.

Table A.4. Earnings Distribution Among Concurrent Beneficiaries, by Primary Impairment Status

	N	Employed	Mean Earnings	Conditional Mean Earnings	\$1,000 to \$4,999	\$5,000 to \$9,999	\$10,000 to \$19,999	≥ \$20,000	Earnings Above Annualized SGA
Concurrent	1,189,193	5.0	\$231	\$4,327	95.0	3.6	1.0	0.4	0.0
Impairment Type									
Affective disorders	207,287	4.2	\$231	\$5,209	95.8	2.6	1.0	0.5	0.0
Schizoaffective disorders	119,863	3.5	\$166	\$4,305	96.5	2.6	0.7	0.3	0.0
Anxiety disorders	45,943	4.1	\$213	\$4,959	95.9	2.7	0.9	0.4	0.0
Other mental disorders	77,124	7.5	\$330	\$4,097	92.5	5.6	1.4	0.5	0.0
Intellectual disability	248,310	8.8	\$338	\$3,488	91.2	7.2	1.2	0.4	0.0
Back	88,634	2.3	\$131	\$5,552	97.7	1.3	0.7	0.3	0.0
Diseases of the musculoskeletal system	71,228	2.8	\$161	\$5,614	97.2	1.6	0.8	0.3	0.0
Infectious and parasitic diseases	3,104	3.3	\$196	\$5,793	96.8	1.9	0.9	0.4	0.1
HIV/AIDS	13,596	4.9	\$302	\$5,845	95.1	2.8	1.4	0.6	0.1
Neoplasms	12,200	4.2	\$230	\$5,316	95.9	2.4	1.2	0.5	0.0
Endocrine, nutritional, and metabolic diseases	34,751	2.6	\$152	\$5,590	97.4	1.5	0.8	0.3	0.0
Blood and blood-forming organs	4,408	8.4	\$499	\$5,720	91.6	4.5	2.7	1.2	0.1
Visual impairments	24,932	4.8	\$253	\$5,039	95.2	3.2	1.0	0.5	0.1
Hearing impairments	10,842	9.2	\$460	\$4,798	90.8	6.3	2.0	0.8	0.2
Speech impairments	1,027	7.2	\$282	\$3,594	92.8	5.6	1.4	0.3	.
Diseases of the nervous system	57,506	4.0	\$177	\$4,127	96.1	3.0	0.7	0.3	0.0
Diseases of the circulatory system	44,578	2.4	\$137	\$5,550	97.6	1.4	0.7	0.3	0.0
Diseases of the respiratory system	21,573	2.5	\$150	\$5,739	97.5	1.3	0.9	0.3	0.0
Diseases of the digestive system	11,119	2.9	\$158	\$5,144	97.1	1.8	0.8	0.3	0.0
Diseases of the genitourinary system	11,923	4.4	\$247	\$5,438	95.6	2.6	1.2	0.4	0.1
Diseases of the skin and subcutaneous tissue	2,124	3.3	\$183	\$5,359	96.8	2.1	0.9	0.3	.
Congenital anomalies	6,982	10.8	\$355	\$2,963	89.2	9.8	0.9	0.1	0.0
Injuries	32,221	3.1	\$172	\$5,270	96.9	2.0	0.8	0.3	0.1
Other	35,429	3.6	\$148	\$3,536	96.4	2.9	0.5	0.2	0.0
Missing	2,489	4.1	\$157	\$3,260	95.9	3.4	0.6	0.1	.

^a Estimates for the impairment group have been suppressed because of small sample size.
SGA = substantial gainful activity.

Table A.5. Regression Analysis of Employment and Earnings Among DI-Only Beneficiaries: Estimated Coefficients

	Employment Status: Logit Model Coefficient	Conditional Earnings: Ordered Logit Model Coefficient	Earnings at Annualized SGA Level: Logit Model Coefficient
Primary Impairment Categories (reference: respiratory system disorders)			
Affective disorders	-0.027*** (0.010)	-0.005 (0.018)	-0.085*** (0.024)
Schizoaffective disorders	-0.166*** (0.013)	-0.234*** (0.022)	-0.833*** (0.034)
Anxiety disorders	-0.224*** (0.013)	0.166*** (0.023)	0.047* (0.028)
Other mental disorders	0.223*** (0.012)	0.082*** (0.020)	0.251*** (0.026)
Intellectual disability	0.810*** (0.012)	-0.332*** (0.021)	-0.203*** (0.035)
Back	-0.097*** (0.010)	0.063*** (0.018)	0.007 (0.023)
Diseases of the musculoskeletal system	0.055*** (0.010)	0.045** (0.018)	0.067*** (0.024)
Infectious and parasitic diseases	0.291*** (0.023)	0.191*** (0.040)	0.387*** (0.050)
HIV/AIDS	0.616*** (0.016)	0.235*** (0.027)	0.658*** (0.033)
Neoplasms	0.493*** (0.012)	0.421*** (0.020)	0.810*** (0.025)
Endocrine, nutritional, and metabolic diseases	-0.156*** (0.013)	-0.019 (0.023)	-0.212*** (0.031)
Blood and blood forming organs	0.351*** (0.029)	0.224*** (0.048)	0.497*** (0.058)
Visual impairments	0.633*** (0.013)	0.702*** (0.022)	1.379*** (0.026)
Hearing impairments	0.816*** (0.017)	0.221*** (0.028)	0.389*** (0.042)
Speech impairments	0.362*** (0.054)	0.180** (0.090)	0.381*** (0.114)
Diseases of the nervous system	0.148*** (0.011)	0.146*** (0.019)	0.302*** (0.024)
Diseases of the circulatory system	0.113*** (0.011)	0.059*** (0.019)	0.158*** (0.024)
Diseases of the digestive system	0.105*** (0.015)	0.167*** (0.025)	0.309*** (0.031)
Diseases of the genitourinary system	0.410*** (0.014)	0.104*** (0.024)	0.428*** (0.030)
Diseases of the skin and subcutaneous tissue	-0.037 (0.032)	0.107* (0.055)	0.017 (0.072)
Congenital anomalies	0.444*** (0.030)	-0.224*** (0.052)	-0.017 (0.086)
Injuries	0.108*** (0.012)	0.193*** (0.020)	0.312*** (0.026)
Other	0.069*** (0.015)	0.022 (0.026)	0.102*** (0.035)
Missing	1.030*** (0.028)	0.764*** (0.044)	1.673*** (0.047)

TABLE A.5 (CONTINUED)

	Employment Status: Logit Model Coefficient	Conditional Earnings: Ordered Logit Model Coefficient	Earnings at Annualized SGA Level: Logit Model Coefficient
Sex (reference: male)			
Female	0.113*** (0.003)	-0.177*** (0.005)	-0.206*** (0.007)
Age Group (reference: 50–59)			
18 to 39	0.602*** (0.007)	0.242*** (0.012)	0.723*** (0.016)
40 to 49	0.269*** (0.005)	0.080*** (0.008)	0.289*** (0.010)
60 to 64	-0.138*** (0.004)	-0.096*** (0.007)	-0.235*** (0.009)
Race/Ethnicity (reference: non-Hispanic white)			
Non-Hispanic black	0.154*** (0.004)	-0.020*** (0.007)	0.047*** (0.009)
Hispanic	-0.106*** (0.007)	-0.062*** (0.013)	-0.180*** (0.015)
Missing or other	-0.028*** (0.007)	0.025** (0.012)	0.024* (0.013)
Education (reference: fewer than 12 years)			
12 years	0.368*** (0.006)	0.128*** (0.010)	0.535*** (0.015)
13–15 years	0.575*** (0.007)	0.360*** (0.011)	0.987*** (0.015)
16 or more years	0.895*** (0.007)	0.850*** (0.012)	1.686*** (0.015)
Missing	0.436*** (0.006)	0.234*** (0.011)	0.616*** (0.016)
Number of Dependents (reference: zero)			
One	0.007 (0.005)	-0.080*** (0.009)	-0.01 (0.011)
Two or more	-0.019*** (0.006)	0.008 (0.011)	0.099*** (0.012)
Missing	-0.987*** (0.034)	-1.040*** (0.066)	-1.864*** (0.133)
County Density (centered)	-0.000*** 0.000	0.000*** 0.000	0.000*** 0.000
Missing County Density	0.009 (0.114)	0.309 (0.192)	0.212 (0.206)
County Unemployment (centered)	-0.057*** (0.001)	-0.023*** (0.001)	-0.070*** (0.002)
Onset Age	-0.003*** 0.000	0.002*** 0.000	0.003*** (0.001)
Missing Onset Age	-0.892 (0.609)	-13.506 (596.567)	0 0.000
Adjudication Level			
DHU	-0.086*** (0.019)	-0.016 (0.031)	-0.179*** (0.048)
ALJ or higher	-0.023** (0.010)	0.059*** (0.018)	0.038 (0.023)
Missing	-0.354*** (0.011)	-0.308*** (0.019)	-0.313*** (0.033)

TABLE A.5 (CONTINUED)

	Employment Status: Logit Model Coefficient	Conditional Earnings: Ordered Logit Model Coefficient	Earnings at Annualized SGA Level: Logit Model Coefficient
Years Since First Eligibility (reference: 0 to 2 years)			
3 to 5 years	0.669*** (0.009)	0.257*** (0.015)	0.949*** (0.017)
6 or more years	0.086*** (0.004)	-0.030*** (0.007)	0.191*** (0.009)
Medicare Status (reference: enrolled)			
Not enrolled	-0.137*** (0.010)	-0.179*** (0.017)	-0.197*** (0.018)
Missing	0.261*** (0.008)	-0.198*** (0.015)	0.164*** (0.017)
DAC Status (reference: not a DAC)			
	-0.486*** (0.035)	-0.325*** (0.066)	-0.860*** (0.136)
DWB Status (reference: not a DWB)			
	-0.092** (0.046)	-1.115*** (0.085)	-1.011*** (0.153)
States (reference: Alaska)			
Alabama	-0.382*** (0.043)	-0.189** (0.074)	-0.560*** (0.082)
Arizona	0.01 (0.043)	-0.058 (0.074)	-0.172** (0.081)
Arkansas	-0.167*** (0.043)	-0.353*** (0.074)	-0.627*** (0.084)
California	0.131*** (0.042)	0.207*** (0.072)	0.269*** (0.079)
Colorado	0.131*** (0.043)	-0.129* (0.074)	-0.140* (0.082)
Connecticut	0.358*** (0.043)	-0.079 (0.074)	0.028 (0.083)
Delaware	0.232*** (0.047)	-0.152* (0.080)	-0.037 (0.091)
District of Columbia	0.07 (0.059)	0.322*** (0.101)	0.360*** (0.106)
Florida	-0.085** (0.042)	-0.069 (0.072)	-0.207*** (0.079)
Georgia	-0.122*** (0.042)	-0.136* (0.073)	-0.227*** (0.080)
Hawaii	-0.219*** (0.050)	-0.216** (0.086)	-0.369*** (0.095)
Idaho	0.049 (0.046)	-0.432*** (0.080)	-0.483*** (0.093)
Illinois	0.135*** (0.042)	-0.166** (0.072)	-0.181** (0.080)
Indiana	0.052 (0.042)	-0.311*** (0.073)	-0.388*** (0.081)
Iowa	0.376*** (0.043)	-0.478*** (0.074)	-0.363*** (0.085)
Kansas	0.441*** (0.043)	-0.285*** (0.074)	-0.099 (0.083)
Kentucky	-0.142*** (0.043)	-0.207*** (0.074)	-0.350*** (0.081)
Louisiana	-0.124*** (0.043)	-0.091 (0.074)	-0.216*** (0.081)

TABLE A.5 (CONTINUED)

	Employment Status: Logit Model Coefficient	Conditional Earnings: Ordered Logit Model Coefficient	Earnings at Annualized SGA Level: Logit Model Coefficient
Maine	0.134*** (0.044)	-0.415*** (0.077)	-0.503*** (0.089)
Maryland	0.065 (0.043)	-0.023 (0.074)	-0.016 (0.081)
Massachusetts	0.282*** (0.042)	-0.167** (0.073)	-0.116 (0.080)
Michigan	0.186*** (0.042)	-0.335*** (0.073)	-0.249*** (0.080)
Minnesota	0.544*** (0.042)	-0.455*** (0.073)	-0.313*** (0.082)
Mississippi	-0.254*** (0.044)	-0.127* (0.076)	-0.342*** (0.084)
Missouri	0.120*** (0.042)	-0.382*** (0.073)	-0.448*** (0.081)
Montana	0.145*** (0.047)	-0.336*** (0.082)	-0.393*** (0.096)
Nebraska	0.145*** (0.045)	-0.458*** (0.078)	-0.589*** (0.091)
Nevada	-0.011 (0.046)	0.109 (0.079)	0.001 (0.088)
New Hampshire	0.165*** (0.044)	-0.417*** (0.077)	-0.489*** (0.088)
New Jersey	0.068 (0.042)	-0.038 (0.073)	-0.031 (0.080)
New Mexico	-0.054 (0.045)	-0.166** (0.077)	-0.312*** (0.087)
New York	-0.022 (0.042)	-0.166** (0.072)	-0.292*** (0.079)
North Carolina	-0.045 (0.042)	-0.141* (0.073)	-0.143* (0.080)
North Dakota	0.460*** (0.049)	-0.263*** (0.083)	-0.197** (0.100)
Ohio	0.149*** (0.042)	-0.267*** (0.072)	-0.244*** (0.080)
Oklahoma	-0.207*** (0.043)	-0.301*** (0.074)	-0.653*** (0.083)
Oregon	-0.008 (0.043)	-0.272*** (0.075)	-0.335*** (0.084)
Pennsylvania	0.154*** (0.042)	-0.283*** (0.072)	-0.296*** (0.079)
Rhode Island	0.178*** (0.047)	-0.185** (0.081)	-0.215** (0.095)
South Carolina	-0.116*** (0.043)	-0.233*** (0.074)	-0.325*** (0.082)
South Dakota	0.384*** (0.048)	-0.420*** (0.082)	-0.494*** (0.102)
Tennessee	-0.220*** (0.042)	-0.267*** (0.073)	-0.410*** (0.081)
Texas	-0.008 (0.042)	-0.038 (0.072)	-0.079 (0.079)
Utah	0.107** (0.045)	-0.323*** (0.077)	-0.320*** (0.088)

TABLE A.5 (CONTINUED)

	Employment Status: Logit Model Coefficient	Conditional Earnings: Ordered Logit Model Coefficient	Earnings at Annualized SGA Level: Logit Model Coefficient
Vermont	0.384*** (0.048)	-0.443*** (0.082)	-0.345*** (0.099)
Virginia	0.053 (0.042)	-0.098 (0.073)	-0.099 (0.080)
Washington	-0.045 (0.043)	-0.06 (0.074)	-0.146* (0.081)
West Virginia	-0.296*** (0.044)	-0.206*** (0.076)	-0.434*** (0.084)
Wisconsin	0.344*** (0.042)	-0.465*** (0.073)	-0.418*** (0.082)
Wyoming	0.290*** (0.053)	-0.151* (0.090)	-0.091 (0.106)
Puerto Rico	-0.971*** (0.123)	-0.241 (0.207)	-0.875*** (0.223)
Intercept	-1.522*** (0.157)		-0.984* (0.565)
Ordered Logit Cut point 1		-3.068*** (0.295)	
Cut point 2		-1.698*** (0.295)	
Cut point 3		-0.265 (0.295)	
N	4,976,232	564,926	4,976,179
R Squared	0.04640	0.02140	0.07780

Note: Standard error of the estimated parameter shown in parentheses.

*/**/*** Estimate is significantly different from zero at the .10/.05/.01 level, respectively, using a two-tailed t-test.

ALJ = administrative law judge; DAC = disabled adult children; DHU = Disability Hearing Unit; DWB = disabled widow(er) beneficiaries; SGA = substantial gainful activity.

Table A.6. Regression Analysis of Employment and Earnings Among SSI-Only Beneficiaries: Estimated Coefficients

	Employment Status: Logit Model Coefficient	Conditional Earnings: Ordered Logit Model Coefficient	Earnings at Annualized SGA Level: Logit Model Coefficient
Primary Impairment Categories (reference: respiratory system disorders)			
Affective disorders	0.049* (0.026)	0.014 (0.047)	0.179*** (0.068)
Schizoaffective disorders	-0.196*** (0.027)	-0.154*** (0.049)	-0.177** (0.071)
Anxiety disorders	-0.088*** (0.029)	0.019 (0.053)	0.070 (0.076)
Other mental disorders	0.239*** (0.026)	-0.254*** (0.048)	-0.044 (0.070)
Intellectual disability	0.157*** (0.026)	-0.318*** (0.047)	-0.103 (0.068)
Back	-0.183*** (0.030)	0.007 (0.055)	-0.055 (0.079)
Diseases of the musculoskeletal system	-0.041 (0.029)	0.054 (0.053)	0.049 (0.076)
Infectious and parasitic diseases	0.022 (0.069)	0.358*** (0.125)	0.401*** (0.153)
HIV/AIDS	0.293*** (0.035)	-0.145** (0.063)	0.247*** (0.088)
Neoplasms	0.202*** (0.038)	0.025 (0.070)	0.222** (0.101)
Endocrine, nutritional, and metabolic diseases	-0.213*** (0.033)	0.049 (0.061)	-0.191** (0.087)
Blood and blood-forming organs	0.333*** (0.039)	0.026 (0.070)	0.236** (0.102)
Visual impairments	-0.002 (0.032)	0.242*** (0.059)	0.414*** (0.080)
Hearing impairments	0.624*** (0.032)	0.007 (0.059)	0.610*** (0.086)
Speech impairments	0.002 (0.063)	-0.076 (0.123)	0.050 (0.179)
Diseases of the nervous system	-0.448*** (0.028)	-0.183*** (0.053)	-0.490*** (0.078)
Diseases of the circulatory system	-0.238*** (0.032)	-0.032 (0.058)	-0.150* (0.083)
Diseases of the digestive system	-0.148*** (0.044)	0.134* (0.081)	0.066 (0.112)
Diseases of the genitourinary system	-0.115*** (0.039)	0.115 (0.071)	-0.056 (0.099)
Diseases of the skin and subcutaneous tissue	-0.077 (0.077)	0.113 (0.141)	-0.058 (0.198)
Congenital anomalies	0.102*** (0.034)	-1.000*** (0.074)	-1.000*** (0.138)
Injuries	-0.331*** (0.033)	0.179*** (0.060)	-0.069 (0.083)
Other	-0.147*** (0.031)	-0.130** (0.058)	-0.008 (0.083)
Missing	-0.034 (0.130)	0.234 (0.238)	-0.131 (0.341)
Sex (reference: male)			
Female	0.068***	0.300***	0.393***

TABLE A.6 (CONTINUED)

	Employment Status: Logit Model Coefficient	Conditional Earnings: Ordered Logit Model Coefficient	Earnings at Annualized SGA Level: Logit Model Coefficient
	(0.006)	(0.011)	(0.016)
Age Group (reference: 50–59)			
18 to 39	1.257*** (0.012)	0.354*** (0.023)	1.613*** (0.032)
40 to 49	0.512*** (0.011)	0.363*** (0.020)	0.914*** (0.027)
60 to 64	-0.379*** (0.016)	-0.287*** (0.030)	-0.787*** (0.048)
Race/Ethnicity (reference: non-Hispanic white)			
Non-Hispanic black	0.576*** (0.007)	0.701*** (0.013)	1.249*** (0.021)
Hispanic	0.278*** (0.010)	0.709*** (0.019)	1.158*** (0.025)
Missing or other	0.172*** (0.009)	-0.024 (0.019)	0.072** (0.036)
Education (reference: fewer than 12 years)			
12 years	0.164*** (0.008)	-0.086*** (0.016)	-0.050** (0.023)
13–15 years	0.298*** (0.015)	-0.135*** (0.028)	0.066 (0.041)
16 or more years	0.614*** (0.025)	-0.123** (0.048)	0.451*** (0.069)
Missing	-0.087*** (0.008)	-0.137*** (0.015)	-0.169*** (0.021)
County Density (centered)			
	-0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Missing County Density			
	-0.197 (0.339)	-0.890 (0.722)	- -
County Unemployment (centered)			
	-0.063*** (0.002)	0.045*** (0.003)	0.006 (0.004)
Onset Age			
	-0.007*** (0.000)	0.021*** (0.001)	0.011*** (0.001)
Missing Onset Age			
	-0.332 (0.518)	-0.075 (0.949)	0.309 (1.012)
Adjudication Level			
DHU	0.348*** (0.021)	0.221*** (0.039)	0.447*** (0.055)
ALJ or higher	0.018 (0.036)	0.173*** (0.067)	0.244*** (0.088)
Missing	0.365*** (0.012)	-0.141*** (0.023)	0.039 (0.039)
Years Since First Eligibility (reference: 0 to 2 years)			
3 to 5 years	-0.047*** (0.011)	-0.441*** (0.022)	-0.417*** (0.033)
6 or more years	-0.018** (0.008)	-0.262*** (0.015)	-0.321*** (0.022)
Medicaid Status (reference: enrolled)			
Not enrolled	0.354*** (0.027)	0.174*** (0.051)	0.512*** (0.074)
Missing	0.021 (1.017)	0.694 (1.507)	- -
States (reference: Alaska)			
Alabama	-0.142** (0.071)	0.705*** (0.144)	0.948*** (0.315)

TABLE A.6 (CONTINUED)

	Employment Status: Logit Model Coefficient	Conditional Earnings: Ordered Logit Model Coefficient	Earnings at Annualized SGA Level: Logit Model Coefficient
Arizona	0.187*** (0.072)	0.498*** (0.147)	1.213*** (0.317)
Arkansas	-0.193*** (0.073)	0.315** (0.149)	0.551* (0.322)
California	0.283*** (0.069)	0.462*** (0.141)	1.123*** (0.312)
Colorado	0.230*** (0.073)	0.158 (0.151)	0.995*** (0.322)
Connecticut	0.120* (0.068)	-0.333** (0.142)	-0.002 (0.319)
Delaware	0.283*** (0.085)	0.265 (0.171)	0.705** (0.359)
District of Columbia	0.603*** (0.076)	0.431*** (0.151)	1.350*** (0.321)
Florida	0.148** (0.069)	0.594*** (0.142)	1.112*** (0.313)
Georgia	-0.035 (0.070)	0.614*** (0.143)	0.910*** (0.314)
Hawaii	-0.505*** (0.083)	0.171 (0.172)	0.244 (0.359)
Idaho	-0.120 (0.076)	-0.071 (0.162)	0.348 (0.345)
Illinois	-0.079 (0.064)	0.386*** (0.133)	0.783** (0.304)
Indiana	-0.278*** (0.066)	0.147 (0.137)	0.440 (0.309)
Iowa	0.476*** (0.073)	-0.100 (0.153)	0.711** (0.337)
Kansas	-0.101 (0.070)	-0.216 (0.148)	0.109 (0.330)
Kentucky	-0.264*** (0.072)	0.385*** (0.146)	0.539* (0.319)
Louisiana	-0.037 (0.070)	0.634*** (0.143)	1.028*** (0.314)
Maine	-0.025 (0.081)	-0.034 (0.169)	0.289 (0.368)
Maryland	0.341*** (0.070)	0.259* (0.144)	0.996*** (0.316)
Massachusetts	0.433*** (0.070)	0.155 (0.143)	0.991*** (0.315)
Michigan	0.477*** (0.070)	0.242* (0.142)	1.118*** (0.314)
Minnesota	0.198*** (0.065)	-0.262* (0.137)	0.309 (0.313)
Mississippi	-0.296*** (0.073)	0.406*** (0.148)	0.562* (0.319)
Missouri	-0.113* (0.065)	-0.311** (0.137)	0.002 (0.312)
Montana	0.435*** (0.084)	0.069 (0.178)	0.729* (0.395)
Nebraska	-0.212*** (0.075)	-0.000 (0.158)	0.237 (0.346)
Nevada	-0.001 (0.074)	0.258* (0.149)	0.522 (0.320)

TABLE A.6 (CONTINUED)

	Employment Status: Logit Model Coefficient	Conditional Earnings: Ordered Logit Model Coefficient	Earnings at Annualized SGA Level: Logit Model Coefficient
New Hampshire	-0.167** (0.079)	-0.186 (0.170)	0.281 (0.361)
New Jersey	0.214*** (0.070)	0.092 (0.144)	0.702** (0.316)
New Mexico	0.012 (0.075)	0.243 (0.155)	0.736** (0.327)
New York	0.218*** (0.069)	0.259* (0.142)	0.836*** (0.314)
North Carolina	-0.077 (0.070)	0.132 (0.144)	0.491 (0.316)
North Dakota	0.349*** (0.089)	-0.122 (0.191)	0.403 (0.451)
Ohio	-0.114* (0.064)	0.222* (0.133)	0.479 (0.305)
Oklahoma	-0.387*** (0.067)	0.037 (0.140)	0.092 (0.316)
Oregon	-0.140** (0.069)	-0.314** (0.145)	-0.326 (0.332)
Pennsylvania	0.151** (0.069)	0.253* (0.142)	0.864*** (0.313)
Rhode Island	0.325*** (0.080)	0.169 (0.162)	0.718** (0.339)
South Carolina	-0.105 (0.073)	-0.024 (0.149)	0.252 (0.323)
South Dakota	0.579*** (0.086)	-0.131 (0.187)	0.416 (0.456)
Tennessee	-0.086 (0.071)	0.641*** (0.144)	1.069*** (0.315)
Texas	0.172** (0.069)	0.649*** (0.141)	1.354*** (0.312)
Utah	-0.061 (0.074)	-0.018 (0.154)	0.198 (0.345)
Vermont	0.387*** (0.087)	0.107 (0.183)	0.825** (0.395)
Virginia	-0.322*** (0.065)	0.084 (0.136)	0.114 (0.309)
Washington	-0.018 (0.071)	0.184 (0.147)	0.709** (0.319)
West Virginia	-0.332** (0.075)	0.603*** (0.153)	0.763** (0.327)
Wisconsin	0.415*** (0.071)	0.254* (0.145)	1.087*** (0.317)
Wyoming	0.593*** (0.100)	-0.013 (0.218)	1.214*** (0.425)
Intercept	-3.983*** (0.074)		-8.100*** (0.322)
Ordered Logit Cut point 1		1.592*** (0.150)	
Cut point 2		2.983*** (0.151)	

TABLE A.6 (CONTINUED)

	Employment Status: Logit Model Coefficient	Conditional Earnings: Ordered Logit Model Coefficient	Earnings at Annualized SGA Level: Logit Model Coefficient
Cut point 3		5.398*** (0.152)	
N	3,036,829	147,264	3,036,159
R squared	0.0778	0.0541	0.0735

Note: Standard error of the estimated parameter shown in parentheses. Total sample size shown for column 3 does not match that of column 1 because some combinations of characteristics predicted earnings above SGA perfectly. The few individuals with these characteristics were removed from the estimated regression models for earnings above annualized SGA. These included individuals with missing county density, county unemployment, and Medicaid status.

*/**/** Estimate is significantly different from zero at the .10/.05/.01 level, respectively, using a two-tailed t-test.

- Coefficient not estimated due to multicollinearity.

ALJ = administrative law judge; DAC = disabled adult children; DHU = Disability Hearing Unit; DWB = disabled widow(er) beneficiaries; SGA = substantial gainful activity.

Table A.7. Regression Analysis of Employment and Earnings Among Concurrent Beneficiaries: Estimated Coefficients

	Employment Status: Logit Model Coefficient	Conditional Earnings: Ordered Logit Model Coefficient	Earnings at Annualized SGA Level: Logit Model Coefficient
Primary Impairment Categories (reference: respiratory system disorders)			
Affective disorders	0.133*** (0.046)	-0.147* (0.087)	0.273* (0.160)
Schizoaffective disorders	-0.107** (0.047)	-0.529*** (0.091)	-0.341** (0.171)
Anxiety disorders	0.058 (0.050)	-0.095 (0.098)	0.399** (0.177)
Other mental disorders	0.543*** (0.047)	-0.462*** (0.090)	0.128 (0.171)
Intellectual disability	0.871*** (0.045)	-0.890*** (0.087)	-0.116 (0.164)
Back	-0.028 (0.050)	-0.068 (0.095)	0.106 (0.174)
Diseases of the musculoskeletal system	0.079 (0.050)	-0.158* (0.095)	0.089 (0.174)
Infectious and parasitic diseases	0.133 (0.111)	0.023 (0.218)	0.054 (0.387)
HIV/AIDS	0.399*** (0.060)	-0.204* (0.114)	0.502** (0.197)
Neoplasms	0.335*** (0.064)	-0.12 (0.123)	0.091 (0.234)
Endocrine, nutritional, and metabolic diseases	-0.039 (0.056)	-0.089 (0.106)	-0.068 (0.196)
Blood and blood-forming organs	0.267*** (0.072)	-0.16 (0.133)	0.138 (0.237)
Visual impairments	0.243*** (0.054)	-0.213** (0.105)	0.304 (0.188)
Hearing impairments	0.634*** (0.057)	-0.157 (0.110)	0.600*** (0.205)
Speech impairments	0.438*** (0.132)	-0.730** (0.295)	-0.585 (0.726)
Diseases of the nervous system	0.022 (0.050)	-0.531*** (0.098)	-0.415** (0.187)
Diseases of the circulatory system	-0.014 (0.054)	-0.165 (0.104)	-0.097 (0.190)
Diseases of the digestive system	-0.029 (0.072)	-0.115 (0.142)	0.128 (0.251)
Diseases of the genitourinary system	0.148** (0.063)	-0.277** (0.122)	-0.059 (0.221)
Diseases of the skin and subcutaneous tissue	-0.138 (0.132)	-0.581** (0.265)	-0.147 (0.439)
Congenital anomalies	0.818*** (0.060)	-1.432*** (0.153)	-1.220*** (0.439)
Injuries	-0.108** (0.055)	-0.196* (0.107)	-0.003 (0.193)
Other	0.523*** (0.054)	-0.692*** (0.115)	-0.122 (0.224)
Missing	0.560*** (0.112)	-0.972*** (0.280)	-0.72 (0.726)

TABLE A.7 (CONTINUED)

	Employment Status: Logit Model Coefficient	Conditional Earnings: Ordered Logit Model Coefficient	Earnings at Annualized SGA Level: Logit Model Coefficient
Sex (reference: male)			
Female	0.069*** (0.009)	0.290*** (0.020)	0.469*** (0.040)
Age Group (reference: 50–59)			
18 to 39	0.838*** (0.015)	0.535*** (0.036)	1.519*** (0.071)
40 to 49	0.233*** (0.014)	0.277*** (0.033)	0.741*** (0.064)
60 to 64	-0.132*** (0.022)	-0.113** (0.050)	-0.569*** (0.109)
Race/Ethnicity (reference: non-Hispanic white)			
Non-Hispanic black	0.417*** (0.010)	0.891*** (0.023)	1.424*** (0.046)
Hispanic	0.033* (0.017)	0.590*** (0.036)	0.876*** (0.066)
Missing or other	0.104*** (0.018)	0.164*** (0.042)	0.133 (0.104)
Education (reference: fewer than 12 years)			
12 years	0.001 (0.014)	-0.184*** (0.029)	-0.225*** (0.055)
13–15 years	0.129*** (0.023)	-0.195*** (0.047)	-0.002 (0.082)
16 or more years	0.376*** (0.042)	-0.031 (0.085)	0.362** (0.149)
Missing	-0.109*** (0.012)	-0.196*** (0.027)	-0.269*** (0.050)
Number of Dependents (reference: zero)			
One	-0.234*** (0.034)	0.467*** (0.068)	0.358*** (0.109)
Two or more	-0.104*** (0.038)	0.854*** (0.070)	0.863*** (0.096)
Missing	-1.157*** (0.028)	0.073 (0.061)	-0.664*** (0.130)
County Density (centered)	-0.000*** 0.000	0.000*** 0.000	0.000*** 0.000
Missing County Density	0.654 (0.425)	0.823 (0.839)	- -
County Unemployment (centered)	-0.063*** (0.003)	0.040*** (0.005)	0.004 (0.010)
Onset Age	-0.030*** (0.001)	0.015*** (0.001)	-0.005** (0.002)
Missing Onset Age	0.483 (0.539)	-13.156 (745.359)	- -
Adjudication Level			
DHU	0.081* (0.045)	0.324*** (0.090)	0.522*** (0.153)
ALJ or higher	-0.226*** (0.036)	0.101 (0.076)	0.047 (0.136)
Missing	0.068*** (0.023)	-0.241*** (0.060)	-0.17 (0.130)
Years Since First Eligibility (reference: 0 to 2 years)			
3 to 5 years	0.006 (0.031)	-0.148** (0.061)	0.177 (0.115)

TABLE A.7 (CONTINUED)

	Employment Status: Logit Model Coefficient	Conditional Earnings: Ordered Logit Model Coefficient	Earnings at Annualized SGA Level: Logit Model Coefficient
6 or more years	0.144*** (0.014)	0.066** (0.028)	0.105** (0.052)
Medicare Status (reference: enrolled)			
Not enrolled	0.626*** (0.023)	0.208*** (0.044)	0.423*** (0.093)
Missing	0.572*** (0.023)	0.236*** (0.048)	0.481*** (0.106)
Medicaid Status (reference: enrolled)			
Not enrolled	0.330*** (0.038)	0.291*** (0.077)	0.505*** (0.133)
DAC Status (reference: not a DAC)	-0.142*** (0.029)	-0.064 (0.063)	-0.357*** (0.131)
DWB Status (reference: not a DWB)	-0.623*** (0.060)	-0.735*** (0.116)	-1.170*** (0.197)
States (reference: Alaska)			
Alabama	-0.268** (0.110)	0.955*** (0.267)	0.553 (0.602)
Arizona	0.062 (0.114)	0.660** (0.275)	0.677 (0.614)
Arkansas	-0.400*** (0.113)	0.417 (0.275)	0.155 (0.616)
California	0.327*** (0.107)	0.531** (0.263)	0.582 (0.597)
Colorado	0.211* (0.114)	0.152 (0.281)	0.344 (0.631)
Connecticut	0.226** (0.107)	-0.311 (0.271)	-0.403 (0.628)
Delaware	0.113 (0.135)	0.152 (0.329)	-0.246 (0.777)
District of Columbia	0.076 (0.139)	0.674** (0.309)	0.3 (0.662)
Florida	0.003 (0.109)	0.708*** (0.264)	0.579 (0.599)
Georgia	-0.174 (0.110)	0.864*** (0.266)	0.423 (0.602)
Hawaii	-0.555*** (0.142)	0.564* (0.335)	0.181 (0.733)
Idaho	-0.292** (0.118)	-0.798** (0.330)	-2.204* (1.156)
Illinois	-0.097 (0.102)	0.314 (0.254)	0.348 (0.585)
Indiana	-0.401*** (0.105)	0.116 (0.261)	-0.08 (0.597)
Iowa	0.392*** (0.112)	0.024 (0.280)	-0.281 (0.681)
Kansas	-0.129 (0.108)	-0.348 (0.277)	-0.531 (0.647)
Kentucky	-0.336*** (0.112)	0.365 (0.272)	0.138 (0.614)
Louisiana	-0.259** (0.110)	0.950*** (0.268)	0.7 (0.601)
Maine	-0.052 (0.119)	0.112 (0.298)	-0.089 (0.691)

TABLE A.7 (CONTINUED)

	Employment Status: Logit Model Coefficient	Conditional Earnings: Ordered Logit Model Coefficient	Earnings at Annualized SGA Level: Logit Model Coefficient
Maryland	0.308*** (0.111)	0.376 (0.270)	0.374 (0.611)
Massachusetts	0.299*** (0.109)	0.297 (0.266)	0.275 (0.605)
Michigan	0.416*** (0.109)	0.339 (0.266)	0.609 (0.601)
Minnesota	0.445*** (0.103)	-0.392 (0.260)	-0.176 (0.606)
Mississippi	-0.425*** (0.114)	0.570** (0.273)	0.193 (0.609)
Missouri	-0.021 (0.103)	-0.322 (0.259)	-0.314 (0.597)
Montana	0.351*** (0.125)	0.151 (0.317)	0.564 (0.720)
Nebraska	-0.313*** (0.114)	-0.179 (0.291)	-1.821** (0.915)
Nevada	0.003 (0.120)	0.209 (0.287)	0.443 (0.622)
New Hampshire	-0.128 (0.117)	-0.28 (0.302)	-0.374 (0.709)
New Jersey	0.272** (0.110)	0.211 (0.270)	0.284 (0.608)
New Mexico	0.022 (0.117)	0.412 (0.285)	0.436 (0.635)
New York	0.219** (0.108)	0.395 (0.264)	-0.252 (0.605)
North Carolina	-0.18 (0.110)	0.166 (0.268)	-0.198 (0.609)
North Dakota	0.250* (0.129)	-0.011 (0.338)	0.481 (0.766)
Ohio	-0.109 (0.101)	0.041 (0.254)	-0.163 (0.587)
Oklahoma	-0.469*** (0.106)	0.159 (0.265)	-0.07 (0.604)
Oregon	-0.092 (0.108)	-0.276 (0.275)	-0.778 (0.660)
Pennsylvania	0.082 (0.108)	0.314 (0.265)	0.283 (0.601)
Rhode Island	0.214* (0.125)	0.171 (0.306)	-0.424 (0.744)
South Carolina	0.03 (0.112)	0.272 (0.273)	0.085 (0.615)
South Dakota	0.393*** (0.129)	-0.049 (0.341)	0.557 (0.777)
Tennessee	-0.241** (0.111)	0.712*** (0.269)	0.535 (0.604)
Texas	-0.073 (0.108)	0.740*** (0.264)	0.648 (0.597)
Utah	-0.054 (0.114)	-0.177 (0.292)	-0.102 (0.679)
Vermont	0.213* (0.125)	-0.142 (0.327)	-1.417 (1.163)
Virginia	-0.422*** (0.104)	-0.063 (0.259)	-0.607 (0.599)

TABLE A.7 (CONTINUED)

	Employment Status: Logit Model Coefficient	Conditional Earnings: Ordered Logit Model Coefficient	Earnings at Annualized SGA Level: Logit Model Coefficient
Washington	-0.087 (0.112)	0.27 (0.275)	0.102 (0.623)
West Virginia	-0.477*** (0.118)	0.742*** (0.286)	0.184 (0.648)
Wisconsin	0.412*** (0.109)	0.163 (0.269)	0.345 (0.611)
Wyoming	0.566*** (0.143)	0.227 (0.355)	-0.364 (1.163)
Intercept	-1.455*** (0.194)		-4.900*** (0.861)
Ordered Logit Cut point 1		0.532 (0.419)	
Cut point 2		2.114*** (0.419)	
Cut point 3		4.834*** (0.422)	
N	1,189,193	59,096	1,189,087
R Squared	0.0956	0.0842	0.0881

Note: Standard error of the estimated parameter shown in parentheses. Total sample size shown for column 3 does not match that of column 1 because some combinations of characteristics predicted earnings above annualized SGA perfectly. The few individuals with these characteristics were removed from the estimated regression models for earnings above annualized SGA. These included individuals with missing county density, county unemployment, disability onset date, and Medicaid status.

*/**/*** Estimate is significantly different from zero at the .10/.05/.01 level, respectively using a two-tailed t-test.

- Coefficient not estimated due to multicollinearity.

ALJ = administrative law judge; DAC = disabled adult children; DHU = Disability Hearing Unit; DWB = disabled widow(er) beneficiaries; SGA = substantial gainful activity.

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