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Articles

In 2011, the Census Bureau released its first report on the Supplemental Poverty Measure (SPM). The SPM addresses many criticisms of the official poverty measure, and its intent is to provide an improved statistical picture of poverty. This article examines the extent of poverty identified by the two measures. The authors present a detailed examination of poverty among nonaged adults (those aged 18–64). For a more comprehensive view of poverty and comparison purposes, some findings are presented for younger and older segments of the population.

Adult OASDI Beneficiaries and SSI Recipients Who Need Representative Payees: Projections for 2025 and 2035

by Chris E. Anguelov, Gabriella Ravida, and Robert R. Weathers II*

For Social Security beneficiaries and Supplemental Security Income recipients who are not capable of managing their own benefit payments, the Social Security Administration (SSA) pays benefits to a representative payee. We estimate that the demand for representative payees will increase from 2.94 million beneficiaries in 2013 to 3.27 million by 2025 and to 3.56 million by 2035. Growth in the number of retired-worker beneficiaries by 2025, and the transition of the baby boom generation into the 85-or-older age category by 2035, account for much of the increased demand for representative payees. Although 71.1 percent of disabled-worker beneficiaries who need a payee have a family member serving in that role, only 57.3 percent of retired-worker beneficiaries do. SSA should be prepared to recruit payees in numbers sufficient to meet the future demand, and to devote the resources necessary to monitor payees and prevent their misuse of benefits.

Introduction

The Social Security Administration (SSA) sends monthly cash payments to people who qualify for benefits under the Old-Age, Survivors, and Disability Insurance (OASDI) program and to those who qualify for payments under the Supplemental Security Income (SSI) program. Some people who qualify for monthly payments under these programs have a health condition that prevents them from managing their benefit payments. When a program participant is deemed incapable of managing his or her own monthly benefit, SSA sends the payment to a representative payee—a person or organization designated by SSA to act on the beneficiary's behalf.

Over the next two decades, the number of people receiving benefits from the OASDI and SSI programs will increase because of demographic factors such as the aging of the baby boom generation. The increase in the number of program participants will most likely lead to an increase in the need for representative payees. Although many beneficiaries will have a family member who can serve as a payee, others will not, and SSA will need to find suitable representative payees for them. Expressing concern that SSA has not adequately planned for the increasing numbers of program participants who will need a representative payee, the Government Accountability Office (GAO, 2013) recommended that SSA estimate the long-term increase in the number of individuals who will need a payee, their demographic characteristics, and the

Selected Abbreviations	
GAO	Government Accountability Office
MINT	Modeling Income in the Near Term
OASDI	Old-Age, Survivors, and Disability Insurance
SSA	Social Security Administration
SSI	Supplemental Security Income

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resources that will be needed to meet the increased demand. We address that recommendation by projecting the number and demographic characteristics of beneficiaries who will need a payee. These findings provide the foundation for a strategic plan to administer the representative payee program effectively in the future.

We use administrative data from SSA and program participation projections from Modeling Income in the Near Term (MINT) to estimate the increase in the number of adult OASDI beneficiaries and SSI recipients who will need a representative payee. We study beneficiaries aged 18 or older who are not receiving benefits as disabled adult children or as students aged 18–19. We focus on this group because minor children, disabled adult children, and students aged 18–19 generally have a parent or other family member serving as their payee. To develop our projections, we disaggregate program participants into groups categorized by beneficiary type and age. For each disaggregated group, we compute the proportion of participants with a representative payee and the distribution by type of payee. We then apply the group proportions and the distributions by payee type to the MINT program participation projections for 2025 and 2035. The disaggregated numbers allow us to account for changing distributions by age and type of beneficiary over time, and the results allow SSA to develop plans to target outreach efforts.

We estimate that the number of adult OASDI and SSI program participants who meet our study criteria and need a representative payee will increase from 2,941,037 as of December 2013 to 3,265,577 in 2025 and 3,558,915 in 2035. For beneficiaries whose representative payee is not a family member, we project an increase from 887,086 as of December 2013 to 1,008,175 in 2025 and 1,123,394 in 2035. The model projects that the increases between 2013 and 2025 are due primarily to greater numbers of retired-worker beneficiaries, and that the increases between 2025 and 2035 are due primarily to greater proportions of retired-worker beneficiaries who will be aged 85 or older. The projected growth in payee demand is relatively modest for disabled-worker beneficiaries. By 2035, the gap between the numbers of retired-worker beneficiaries and disabled-worker beneficiaries who need payees is projected to close. We conclude that SSA may need to (1) increase the number of payees to serve the growing demand from retired-worker beneficiaries; (2) bolster monitoring efforts to ensure that payees do not misuse benefits; and (3) provide training to payees to reduce the incidence of elder abuse and financial exploitation.

Our estimates are subject to uncertainty because we assume that the December 2013 proportion of program participants who need a payee (and the distribution by type of payee) will remain the same in 2025 and 2035. However, competing hypotheses about future morbidity patterns support divergent alternative predictions of demand for representative payees (Ailshire, Beltran-Sanchez, and Crimmins 2015). One of these, the expansion-of-morbidity hypothesis, posits that improvements in life expectancy are associated with more years in poor health (Olshansky and others 1991). The logical corollary is that the need for representative payees will increase because greater numbers of long-term survivors are more likely to experience health declines and lose the capacity to manage their finances. Salomon and others (2012) provide recent evidence supporting the expansion-of-morbidity hypothesis. A competing hypothesis posits a compression of morbidity and predicts that substantial improvements in healthy behaviors and functioning will reduce years in poor health (Fries 2005), with the corollary that a smaller proportion of beneficiaries will need a representative payee. Recent research provides some evidence supporting the compression-of-morbidity hypothesis in the United States (Cutler, Ghosh, and Landrum 2014). We acknowledge these hypotheses, yet we believe our assumption that 2013 distributions will not change dramatically by 2035 is reasonable for strategic planning purposes. Nevertheless, we will monitor changes in the demand for representative payees by payee type over time and adjust our estimates as needed.

OASDI, SSI, and Representative Payees

OASDI is a social insurance program that pays monthly benefits to qualified retired and disabled workers and their dependents or survivors. A worker's payroll tax contributions and earnings determine eligibility and benefit amounts. Additional eligibility factors are age (for retired-worker and dependent benefits) and disability (for disabled-worker benefits). SSI is a means-tested program that guarantees a minimum level of income for needy aged, blind, or disabled individuals. Applicants must meet income and resource requirements to qualify for SSI payments, and those younger than 65 must additionally meet SSA's definition of disability. In December 2013, 54,805,000

people received benefits from only the OASDI program, 5,593,000 received payments from only the SSI program, and 2,771,000 received both OASDI benefits and SSI payments (SSA 2014b).

In such a large and diverse population of beneficiaries, not all recipients are capable of managing their own benefits. Therefore, the 1939 Amendments to the Social Security Act authorized SSA to appoint individuals or organizations to serve as representative payees on behalf of beneficiaries who cannot manage their own finances. By 2013, SSA cooperated with over 5.9 million payees handling $74 billion in annual benefits for over 8 million beneficiaries (SSA 2014a).

SSA determines whether an OASDI beneficiary or SSI recipient needs a representative payee case by case. If SSA determines that a beneficiary is not capable of managing his or her benefits, or of directing someone else to manage them, SSA will select a suitable representative payee for that beneficiary. The determination is straightforward in some instances; for example, SSA assigns a representative payee to all beneficiaries aged younger than 15 and to adult beneficiaries declared by a court to be not legally competent. Payees must ensure that beneficiaries have all essentials of living, such as food, clothing, shelter, utilities, dental and medical care, and personal comfort items. Payees are also responsible for putting all unused funds into a savings account for the beneficiary.

Either individuals or organizations can serve as payees. Individual payees are not financially compensated for their duties; however, eligible organizational payees can charge a service fee after SSA grants written approval.[1] Organizational payees can include local or state mental institutions, nursing homes, nonprofit community-based organizations, or fee-for-service organizations.

Selecting Payees

SSA strives to choose payees with the utmost concern for beneficiaries. Overall, 79 percent of payees are members of the beneficiary's family, most commonly a parent or spouse. However, regardless of the relationship, all payees must apply and be approved to represent beneficiaries.

To select payees, SSA reviews applications, interviews applicants, and assesses applicants' ability to serve as payees. If more information about applicants is necessary, the agency looks to third-party sources before making a selection. In 2012, in an attempt to

further assure the selection of proper payees, SSA implemented a pilot program to bar individual payee applicants with certain felony records.[2] The agency formally adopted the criminal bar policy nationwide in February 2014. In 2013, SSA introduced an online tool known as "PayeeWiz," which provides field offices with criminal history information about applicants through the LexisNexis Accurint database. In this way, field offices can use third-party data to supplement applicant self-reporting when applying the criminal bar policy to prevent wrongful payee selection.[3]

Monitoring Payees

After payees are appointed, SSA monitors them to ensure that they fulfill their responsibilities to the beneficiary. Monitoring includes on-site reviews conducted every 3–4 years (depending on the type of payee), reviews of annual accounting forms that track how payees spent benefit payments, and interviews with both payees and beneficiaries. If monitoring detects the misuse of funds or inadequate representation, SSA either reeducates payees on their duties and responsibilities or removes them. Before removing a payee, SSA thoroughly investigates the case to ascertain the best option for the beneficiary.

Challenges Administering the Program

Congress and other observers have expressed concerns that the representative payee program, as currently structured, may be difficult for SSA to administer effectively in the future (GAO 2013, 1). GAO recommended that SSA estimate the long-term increase in the number of individuals who will need a payee as well as their demographic characteristics. We develop a methodology to project the need for representative payees in 2025 and 2035 and use data from SSA records and projections from MINT to produce our estimates.

Methodology and Data

Our methodology accounts for differences in the prevalence of beneficiaries who have representative payees by beneficiary type (OASDI retired worker, spouse, nondisabled widow(er), disabled worker, or disabled widow(er); and SSI) and age group. For example, we compute the percentage of retired-worker beneficiaries with a payee in each of four age groups: younger than 65, 65–74, 75–84, and 85 or older. We apply those percentages to population projections for each age category within each program to estimate

the number within the category who will need a payee in 2025 and in 2035. Finally, we compute the sum of the age-group estimates in each program to obtain a programwide estimate of the need for a payee, and then compute the sum of the programwide estimates to estimate the number of those who will need a payee overall. The equation below provides the mathematical representation of our estimate.

$$P_t = \sum_{i=1}^{J} \sum_{n=1}^{N} p_{i,n,2013} \cdot \widehat{Pop_{i,n,t}} \ ,$$

where P_t is our projection for year t, i represents one of J types of beneficiaries, n represents one of N age categories, $p_{i,n,2013}$ is the 2013 percentage of beneficiaries who have a payee for age category n within program i, and $Pop_{i,n,t}$ is the population projection for age category n within program i in year t (2025, 2035).

Accounting for differences in the percentage of beneficiaries who need a representative payee across programs and age categories is important. As baby boomers reach retirement age, the projected growth in the number of retired-worker beneficiaries is substantially larger than that of disabled-worker, survivor, and spousal beneficiaries. Because the use of representative payees is less prevalent among retired-worker beneficiaries than it is among disabled-worker beneficiaries, our approach will provide a more appropriate estimate than simply multiplying the overall prevalence in 2013 by the beneficiary population projections for 2025 and 2035 would. Similarly, although the growth in the number of retired workers will decrease between 2025 and 2035, the growth in the number of beneficiaries who need a representative payee is projected to increase, as greater numbers of baby boomers enter the 85-or-older age category. Because the need for a representative payee is more prevalent among beneficiaries aged 85 or older, our method will likewise provide a more appropriate estimate of the need for a payee than would simply multiplying the prevalence of payee need by the projected beneficiary populations for each program. Regardless of how they are calculated, the projected overall prevalences will differ from the 2013 overall prevalence because of changing demographic patterns.

We use administrative data from SSA's Master Beneficiary Record and Supplemental Security Record to calculate 2013 program participant counts and the proportions of participants with representative payees. We use these data to compute $p_{i,n,2013}$. The numbers

for the OASDI program match the numbers shown in Table 5.L1 of the *Annual Statistical Supplement to the Social Security Bulletin, 2014.* To avoid double-counting OASDI beneficiaries who also collect SSI payments, we restrict our SSI population to recipients who do not concurrently collect OASDI benefits.

Administrative data from SSA are limited in that they identify only the representative payees that the agency formally recognizes. However, in SSA (2010), the agency's Office of the Inspector General (OIG) identified some beneficiaries aged 85 or older who received help managing their finances without having a formally designated representative payee. In the vast majority of those cases, the OIG determined that a family member was providing that help to the beneficiary. Therefore, holding other factors constant, our estimates will understate the true number of beneficiaries who receive help managing their finances. However, because almost all of the beneficiaries identified by the OIG received informal help from a family member, our estimates of beneficiaries aged 85 or older with a *nonfamily* representative payee should not be affected by that limitation in the administrative data.

We generate the 2025 and 2035 estimates of OASDI beneficiaries using Version 6 of SSA's MINT model. MINT6 provides a complete set of demographic and economic projections for all individuals born from 1926 through 2070, carried forward until death or 2099 (Smith and others 2010). MINT uses data from the 2001 and 2004 Surveys of Income and Program Participation (SIPP), administrative files current as of 2009,[4] and assumptions from *The 2009 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*. MINT does not provide any information on children.

Results and Analysis

In this section, we discuss the use of representative payees as of December 2013 and the projected demand for payees in 2025 and 2035. For all three years, we present data on the distribution of payee demand by beneficiary type and age group, with detail for nonfamily payees. For 2013, we also present the percentage distributions of beneficiaries with payees, by type of payee. Although projections by detailed type of payee are not discussed in this section, tables showing the projected counts (rather than the percentage distributions) by type of payee appear in the Appendix.

In 2013, 42.7 percent of the payees who served retired-worker beneficiaries were nonfamily members, compared with only 28.9 percent for disabled-worker beneficiaries. The projected growth in the number of retired-worker beneficiaries, combined with their greater proportional need for nonfamily payees, indicates that SSA may need to prepare to recruit, screen, train, and monitor additional payees to serve those beneficiaries.

Chart 1 broadly summarizes the projected demand for representative payees among the four most populous beneficiary-type groups. Although the number of disabled-worker beneficiaries who need a payee will grow, it will do so much more slowly than that of retired-worker beneficiaries; in fact, as a proportion of all adult OASDI beneficiaries with a representative payee, disabled workers will decline (Chart 2). Interestingly, the number of nondisabled widow(er) beneficiaries needing a representative payee will decline in the future because increasing numbers of women will have entered the workforce and attained insured status during their working years and thus will receive retired-worker benefits on their own employment

record. Chart 3 tracks the changing age distribution of retired-worker beneficiaries who will need a representative payee. Taken together, Charts 1–3 illustrate how the growth in the need for representative payees will be driven primarily by the increase in the numbers of (1) retired-worker beneficiaries as of 2025 because of the aging of baby boomers and (2) baby boomers who will have reached age 85 by 2035.

Use of Representative Payees in 2013

In December 2013, about 8.2 million of the 63.2 million OASDI beneficiaries and SSI recipients had a representative payee.[5] More than half of those 8.2 million individuals were younger than 18 (Chart 4). Because the representative payee was a custodial parent, grandparent, or other relative in over 98 percent of those cases, we exclude child beneficiaries and recipients from our analysis. Among the remaining 3.7 million beneficiaries with a representative payee, 769,403 were disabled adult children or students aged 18–19. We also exclude those groups from our analysis, and for a similar reason: For the vast majority, their parents served as the

Chart 1.
Number of adult OASDI beneficiaries and SSI recipients with representative payees, by selected beneficiary type: 2013 and projected 2025 and 2035

SOURCE: Authors' calculations using SSA records and MINT projections.

Chart 2.
Retired-worker, nondisabled widow(er), and disabled-worker beneficiaries as percentages of all adult OASDI beneficiaries with a representative payee: 2013 and projected 2025 and 2035
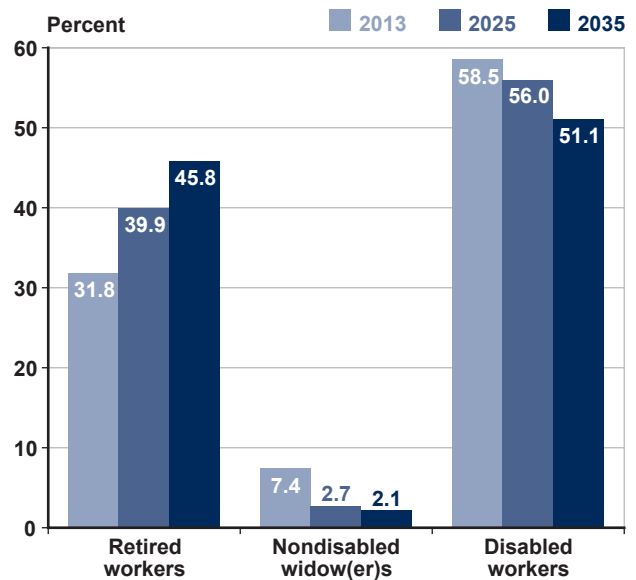
SOURCE: Authors' calculations using SSA records and MINT projections.

Chart 3.

Retired-worker beneficiaries in each of four age groups as percentages of all adult OASDI beneficiaries with a representative payee: 2013 and projected 2025 and 2035
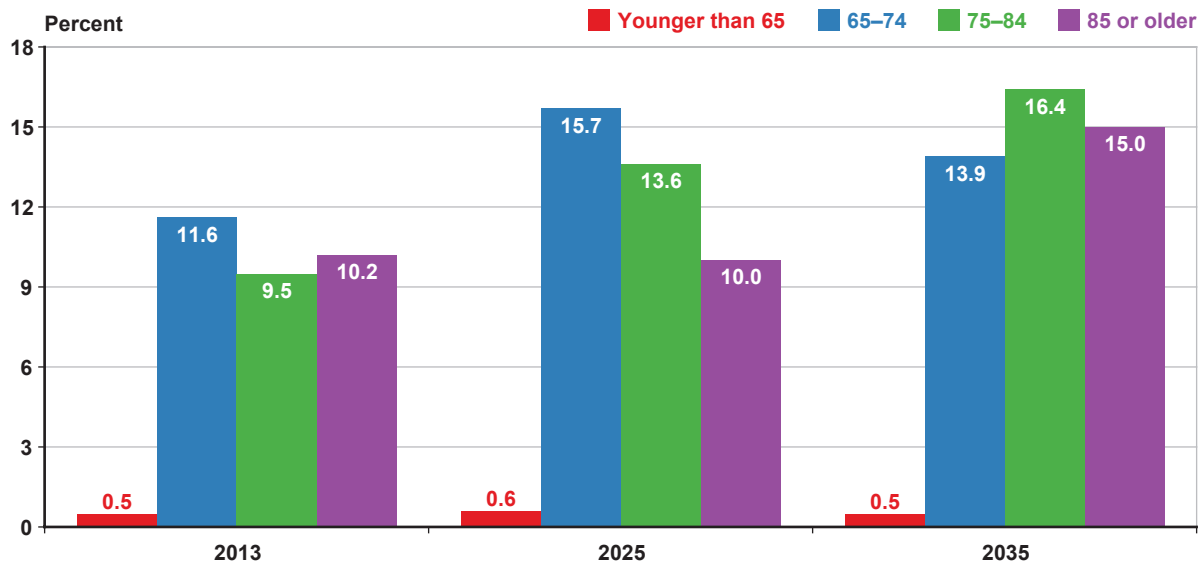
SOURCE: Authors' calculations using SSA records and MINT projections.

Chart 4.

Percentage distribution of all individuals with a representative payee (comprising adult OASDI beneficiaries, by type; adult SSI recipients; and children, regardless of program), 2013
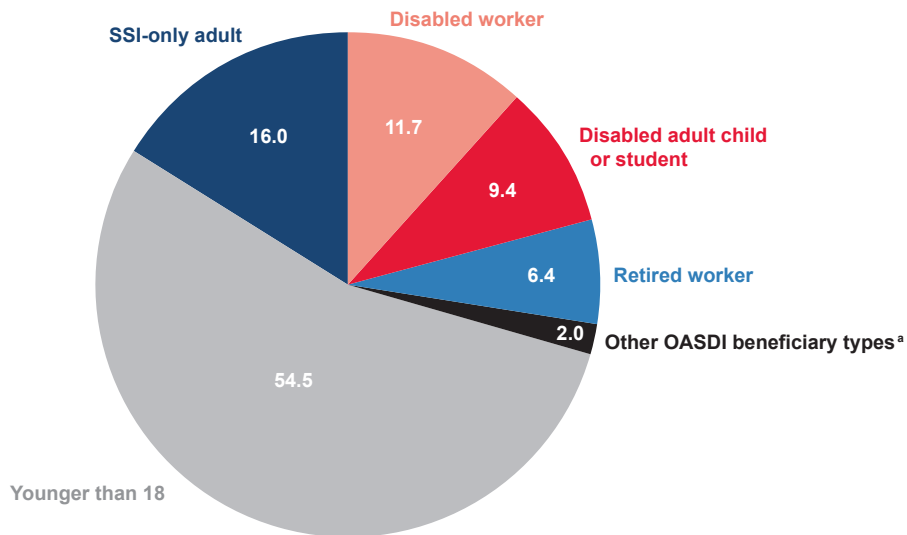
SOURCE: Authors' calculations using SSA records.

a.   Nondisabled widow(er), 1.5 percent; spouse, 0.3 percent; and disabled widow(er), 0.2 percent.

representative payee. Thus, the group we study consists of adults (aged 18 or older) other than disabled adult children and students aged 18–19. Among the group of adult OASDI beneficiaries and SSI recipients we study, about 2.9 million (or 5.1 percent) had a representative payee.

In 2013, 1,636,106 (or 3.1 percent) of adult OASDI beneficiaries had a representative payee (Table 1). Within that group, 957,040 beneficiaries were disabled workers (58.5 percent), followed by 519,780 retired workers (31.8 percent) and 120,565 nondisabled widow(er)s (7.4 percent). The most prevalent types of representative payees for retired-worker beneficiaries were nonmental institutions such as nursing homes (29.6 percent), children (27.1 percent), relatives other than a parent or spouse or child (15.2 percent), and spouses (14.1 percent). For nondisabled widow(er) beneficiaries, representative payees were most often the beneficiary's child (44.4 percent), a nonmental institution (33.6 percent), or a relative outside the immediate family (12.0 percent). The most prevalent types of representative payees for disabled workers were parents (29.8 percent), relatives outside the immediate family (19.0 percent), spouses (16.6 percent), and "other" (9.9 percent). According to SSA records, the "other" representative payee category comprises 10 subcategories, of which the three most common are friends of the beneficiary or of the beneficiary's family, significant others or former spouses, and guardians.

Among adult recipients of SSI payments only, 29.9 percent had a representative payee (Table 2). The age distribution for this population was 91.9 percent aged 18–64, 4.0 percent aged 65–74, and 4.1 percent aged 75 or older (not shown). Overall, the most prevalent types of representative payees were parents (47.3 percent); other relatives, which in this context combines all relatives outside immediate family members and grandparents (16.2 percent); and "other" payees (8.5 percent). However, when focusing on retirement-age recipients (65 or older), we see a shift in the most prevalent types of payees. For recipients aged 65–74, the most prevalent types were other relatives (25.5 percent), children (25.1 percent), and nonmental institutions (19.5 percent). For recipients aged 75 or older, the proportion of representative payees who were the recipient's child spiked to 46.0 percent, followed by other relatives (22.5 percent) and nonmental institutions (16.6 percent).

2025 Projections

We project that the number of program participants overall who need a payee will increase from 2.94 million in 2013 to 3.27 million by 2025, and the number who will have a nonfamily payee will increase by 114,336 to slightly more than 1 million as of 2025 (Table 3). For OASDI beneficiaries, the group with the largest increase in the need of a representative payee by 2025 is retired workers. We project that the number of retired-worker beneficiaries with representative payees will increase from 519,780 to 768,474—a difference of 248,694 beneficiaries, or 47.8 percent. Charts 2 and 3 highlight that rapid growth, which is due to the projected increase in the total number of retired-worker beneficiaries as baby boomers enter the program. That demographic shift is illustrated by the projected demand for payees in the 75–84 age group; by 2025, that group will experience the greatest rate of growth, with an increase of 107,270 beneficiaries, or 69.2 percent (Table 3). Finally, we project that the number of retired-worker beneficiaries who will need a nonfamily member to serve as their payee will increase from 221,784 in 2013 to 326,769 by 2025, indicating that SSA may need to devote additional resources to finding and monitoring payees for an additional 104,985 retired-worker beneficiaries.

The number of disabled-worker beneficiaries who need a representative payee will increase much more slowly than that of retired-worker beneficiaries. From 2013 to 2025, we project demand to increase from 957,040 to 1,077,868 disabled-worker beneficiaries, a difference of only 120,828, or 12.6 percent. The 35–44 age group will exhibit the greatest change, with its need for representative payees projected to increase by 70,602 beneficiaries, or 38.8 percent. We also project a relatively modest increase of about 28,605 disabled-worker beneficiaries who will need a nonfamily representative payee.

The demand for representative payees among nondisabled widow(er) beneficiaries is projected to decrease substantially by 2025 because of the growth in women's labor force participation and the corresponding increase in their eligibility for retired-worker benefits based on their own earning record rather than that of a spouse. We project that the number of nondisabled widow(er)s with representative payees will decline to 52,899, a reduction of 67,666 beneficiaries, or 56.1 percent. The 65–74 age group shows the greatest rate of projected change, with a decrease of 14,519 beneficiaries, or 79.4 percent.

Table 1.

Adult OASDI beneficiaries with a representative payee, by type of payee and beneficiary type and age, December 2013

Beneficiary type and age	Total	With representative payee		Type of representative payee (percentage distribution)									
		Number	Percent	Parent [a]	Spouse	Child [a]	Other relative	Non-mental institution	Mental institution	Social agency	Public official	Financial organiza-tion	Other
All adult beneficiaries	53,565,990	1,636,106	3.1	17.9	14.6	16.1	17.2	17.1	2.5	4.8	0.9	0.5	8.4
Retired worker	37,892,659	519,780	1.4	0.9	14.1	27.1	15.2	29.6	1.5	3.3	1.2	0.4	6.7
Younger than 65	3,167,203	7,715	0.2	3.3	13.5	15.0	27.7	18.6	2.3	5.4	1.4	0.4	12.4
65–74	19,824,033	189,509	1.0	1.3	24.0	17.3	18.5	22.5	2.2	4.6	1.2	0.4	7.9
75–84	10,625,868	154,927	1.5	0.6	13.2	28.2	12.8	32.9	1.3	3.1	1.4	0.4	6.2
85 or older	4,275,555	167,629	3.9	0.7	3.7	37.6	13.2	35.2	0.8	1.8	1.1	0.4	5.5
Spouse	2,442,308	23,620	1.0	1.4	28.8	34.0	10.5	17.1	1.1	2.3	0.8	0.2	3.8
Younger than 65	311,349	2,513	0.8	5.5	48.4	20.3	12.1	4.9	1.1	2.6	0.6	0.3	4.1
65–74	1,251,166	9,965	0.8	0.8	29.6	31.3	11.4	16.3	1.6	3.3	1.0	0.2	4.5
75–84	714,235	7,693	1.1	0.9	25.1	36.8	9.3	21.4	0.9	1.5	0.7	0.2	3.2
85 or older	165,558	3,449	2.1	1.3	20.2	45.6	9.3	18.9	0.3	0.8	0.5	0.1	3.0
Nondisabled widow(er)	4,032,825	120,565	3.0	1.1	0.2	44.4	12.0	33.6	1.0	2.1	1.0	0.3	4.5
Younger than 65	584,424	2,455	0.4	10.0	0.2	41.8	24.3	10.1	1.4	3.6	0.9	0.3	7.2
65–74	1,175,655	18,282	1.6	0.9	0.3	40.5	16.0	28.1	1.7	4.4	1.3	0.3	6.5
75–84	1,198,541	36,353	3.0	0.8	0.2	43.0	10.8	35.6	1.1	2.4	1.2	0.3	4.6
85 or older	1,074,205	63,475	5.9	0.9	0.1	46.4	11.0	34.9	0.7	1.3	0.7	0.2	3.8
Disabled worker	8,940,950	957,040	10.7	29.8	16.6	5.7	19.0	8.3	3.3	6.0	0.8	0.5	9.9
25–34	510,785	156,864	30.7	64.6	4.4	0.1	11.4	3.8	2.5	4.8	0.5	0.4	7.6
35–44	1,030,662	181,778	17.6	47.5	11.5	1.1	13.7	5.7	3.3	6.1	0.6	0.5	10.0
45–54	2,462,661	277,363	11.3	25.2	17.2	5.3	20.9	8.1	3.7	6.8	0.8	0.6	11.4
55–FRA	4,936,842	341,035	6.9	8.1	24.4	11.2	23.8	12.0	3.3	5.8	1.0	0.5	9.9
Disabled widow(er)	257,248	15,101	5.9	5.1	0.5	36.4	25.6	12.5	2.1	5.4	1.0	0.4	10.8
Younger than 55	34,444	2,180	6.3	11.0	0.4	30.4	29.5	5.1	2.2	5.9	0.6	0.4	14.6
55–FRA	222,804	12,921	5.8	4.1	0.6	37.5	25.0	13.8	2.1	5.3	1.0	0.4	10.2

SOURCE: Authors' calculations using SSA records.

NOTES: Rounded components of percentage distributions do not necessarily sum to 100.0.

FRA = full retirement age.

a. Natural, adoptive, or stepparent/stepchild.

Table 2.
Adult SSI-only recipients with a representative payee, by type of payee and age of recipient, December 2013

Recipient age	Total	With representative payee		Type of representative payee (percentage distribution)										
		Number	Percent	Parent [a]	Spouse	Child [a]	Grand-parent	Other relative	Non-mental institution	Mental institution	Social agency	Public official	Financial organiza-tion	Other
All adult recipients	4,370,138	1,304,931	29.9	47.3	3.0	5.8	2.6	16.2	7.0	3.4	5.2	0.7	0.3	8.5
18–64	3,439,117	1,198,858	34.9	51.4	2.8	3.2	2.9	15.5	6.1	3.4	5.3	0.6	0.3	8.7
65–74	414,939	52,136	12.6	1.9	6.5	25.1	0.0	25.5	19.5	4.5	6.5	1.8	0.3	8.4
75 or older	516,082	53,937	10.5	1.1	4.4	46.0	0.1	22.5	16.6	1.9	2.5	0.8	0.1	4.1

SOURCE: Authors' calculations using SSA records.

NOTE: Rounded components of percentage distributions do not necessarily sum to 100.0.

a. Natural, adoptive, or stepparent/stepchild.

Table 3.

Number of adult OASDI beneficiaries and SSI-only recipients with any representative payee and with a nonfamily representative payee, by program and beneficiary type and age: 2013 and projected 2025 and 2035

Beneficiary type and age	2013	2025	2035	Projected change from—		
				2013 to 2025	2025 to 2035	2013 to 2035
Any representative payee						
Overall	2,941,037	3,265,580	3,558,921	324,543	293,341	617,884
OASDI	1,636,106	1,926,004	2,189,442	289,898	263,438	553,336
Retired worker	519,780	768,474	1,001,985	248,694	233,511	482,205
Younger than 65	7,715	11,664	10,526	3,949	-1,138	2,811
65–74	189,509	301,904	305,180	112,395	3,276	115,671
75–84	154,927	262,197	358,443	107,270	96,246	203,516
85 or older	167,629	192,709	327,836	25,080	135,127	160,207
Spouse	23,620	13,006	12,148	-10,614	-858	-11,472
Younger than 65	2,513	1,952	2,022	-561	70	-491
65–74	9,965	5,072	4,852	-4,893	-220	-5,113
75–84	7,693	5,122	4,339	-2,571	-783	-3,354
85 or older	3,449	860	935	-2,589	75	-2,514
Nondisabled widow(er)	120,565	52,899	45,090	-67,666	-7,809	-75,475
Younger than 65	2,455	2,616	2,211	161	-405	-244
65–74	18,282	3,763	3,812	-14,519	49	-14,470
75–84	36,353	16,922	12,262	-19,431	-4,660	-24,091
85 or older	63,475	29,598	26,805	-33,877	-2,793	-36,670
Disabled worker	957,040	1,077,868	1,118,278	120,828	40,410	161,238
25–34	156,864	207,385	207,274	50,521	-111	50,410
35–44	181,778	252,380	252,097	70,602	-283	70,319
45–54	277,363	245,325	268,911	-32,038	23,586	-8,452
55 or older	341,035	372,778	389,996	31,743	17,218	48,961
Disabled widow(er)	15,101	13,757	11,941	-1,344	-1,816	-3,160
Younger than 55	2,180	1,802	973	-378	-829	-1,207
55 to FRA	12,921	11,955	10,968	-966	-987	-1,953
SSI	1,304,931	1,339,576	1,369,479	34,645	29,903	64,548
18–64	1,198,858	1,197,116	1,206,320	-1,742	9,204	7,462
65–74	52,136	77,747	74,901	25,611	-2,846	22,765
75 or older	53,937	64,713	88,258	10,776	23,545	34,321

(Continued)

Table 3.

Number of adult OASDI beneficiaries and SSI-only recipients with any representative payee and with a nonfamily representative payee, by program and beneficiary type and age: 2013 and projected 2025 and 2035—*Continued*

Beneficiary type and age	2013	2025	2035	Projected change from—		
				2013 to 2025	2025 to 2035	2013 to 2035
Nonfamily representative payee						
Overall	886,217	1,000,553	1,121,201	114,336	120,648	234,984
OASDI	559,907	661,376	774,855	101,469	113,479	214,948
Retired worker	221,784	326,769	431,498	104,985	104,729	209,714
Younger than 65	3,124	4,723	4,262	1,599	-461	1,138
65–74	73,699	117,409	118,683	43,710	1,274	44,984
75–84	69,989	118,449	161,928	48,460	43,479	91,939
85 or older	74,972	86,188	146,625	11,216	60,437	71,653
Spouse	5,977	3,258	3,011	-2,719	-247	-2,966
Younger than 65	343	266	277	-77	11	-66
65–74	2,674	1,361	1,303	-1,313	-58	-1,371
75–84	2,145	1,428	1,210	-717	-218	-935
85 or older	815	203	221	-612	18	-594
Nondisabled widow(er)	51,147	22,170	18,827	-28,977	-3,343	-32,320
Younger than 65	580	619	522	39	-97	-58
65–74	7,735	1,592	1,613	-6,143	21	-6,122
75–84	16,413	7,640	5,536	-8,773	-2,104	-10,877
85 or older	26,419	12,319	11,156	-14,100	-1,163	-15,263
Disabled worker	276,127	304,732	317,635	28,605	12,903	41,508
25–34	30,599	40,454	40,432	9,855	-22	9,833
35–44	47,561	66,034	65,958	18,473	-76	18,397
45–54	87,012	76,961	84,361	-10,051	7,400	-2,651
55 or older	110,955	121,283	126,884	10,328	5,601	15,929
Disabled widow(er)	4,872	4,447	3,884	-425	-563	-988
Younger than 55	626	518	279	-108	-239	-347
55 to FRA	4,246	3,929	3,605	-317	-324	-641
SSI	326,310	339,177	346,346	12,867	7,169	20,036
18–64	290,963	290,540	292,774	-423	2,234	1,811
65–74	21,369	31,866	30,700	10,497	-1,166	9,331
75 or older	13,978	16,771	22,872	2,793	6,101	8,894

SOURCE: Authors' calculations using SSA records and MINT projections.

NOTES: Data for 2013 are as of December.

FRA = full retirement age.

For recipients of only SSI payments, we project modest increases in the need for representative payees overall, with more substantial increases among recipients aged 65 or older. We project that by 2025, the number of recipients aged 65–74 with representative payees will increase by 25,611 (or 49.1 percent), and those aged 75 or older will increase by 10,776 (or 20.0 percent). However, the number of recipients aged 18–64 with a representative payee will stay relatively stable, declining slightly from 1,198,858 in 2013 to 1,197,116 in 2025. As with the 2025 OASDI projections, the rapid increase in the elderly population drives the overall SSI increase.

2035 Projections

We project that the number of program participants overall who need a representative payee will increase from 3.27 million in 2025 to 3.56 million by 2035 and that the number of participants who need a nonfamily payee will increase by 120,648 between 2025 and 2035 to 1.12 million. Demographic changes will continue to shift a greater share of program participants toward retired-worker beneficiary status, especially those aged 85 or older, who accounted for 10.2 percent of all beneficiaries with a payee in 2013 and will account for 15.0 percent of them in 2035 (Chart 3).

For 2035, we project that the number of retired-worker beneficiaries with representative payees will grow to 1,001,985—an increase of 233,511 (or 30.4 percent) from 2025 and of 482,205 (or 92.8 percent) from 2013 (Table 3). Among retired workers, the age group with the greatest change between 2025 and 2035 is 85 or older, which will increase by 135,127 beneficiaries (or 70.1 percent). The number of retired-worker beneficiaries with a nonfamily representative payee is projected to increase from 326,769 in 2025 to 431,498 by 2035, nearly doubling the 2013 count.

The number of disabled-worker beneficiaries who need representative payees will also continue to increase between 2025 and 2035, but more slowly. We project a population of 1,118,278 disabled workers with a representative payee by 2035, an increase of 40,410 beneficiaries (3.7 percent) from 2025 and of 161,238 beneficiaries (16.8 percent) from 2013. The age group with the greatest change between 2025 and 2035 (ages 45–54) will increase by 23,586 beneficiaries (9.6 percent). The number of disabled-worker beneficiaries with a nonfamily representative payee is projected to increase from 304,732 in 2025 to 317,635

by 2035, or 41,508 more beneficiaries than there were in 2013.

The demand for representative payees among nondisabled widow(er) beneficiaries will decline less dramatically between 2025 and 2035 than it will have between 2013 and 2025. We project that the number of nondisabled widow(er)s with payees will decline to 45,090 in 2035, a decrease of 7,809 beneficiaries (14.8 percent) from 2025 but of 75,475 beneficiaries (62.6 percent) from 2013. Among the age groups, the greatest change between 2025 and 2035 will occur for the group aged 75–84; its numbers will decline by 4,660 beneficiaries (27.5 percent). Yet the greatest proportional change between 2013 and 2035 will occur in the group aged 65–74, which will decrease by 14,470 beneficiaries, or 79.1 percent.

For recipients of only SSI payments, we project the greatest increase in demand for representative payees between 2025 and 2035 among recipients aged 75 or older. The model suggests that this population will reach 88,258 in 2035, an increase of 23,545 recipients (or 36.4 percent) from 2025 and of 34,321 recipients (or 63.6 percent) from 2013. We expect that the number of recipients aged 18–64 will also increase, but by less than 1 percent of the 2013 level. Specifically, this population is projected to increase by 9,204 recipients (or 0.8 percent) after 2025 and by 7,462 recipients (or 0.6 percent) after 2013. Conversely, we anticipate that the growth in the number of recipients aged 65–74 who need representative payees will stabilize by 2035, having decreased slightly (by 2,846 recipients, or 3.7 percent) after 2025.

Discussion and Conclusions

We estimate that the number of adult OASDI beneficiaries and SSI recipients who meet our study criteria and who need a representative payee will increase from 2.94 million in 2013 to 3.27 million by 2025 and to 3.56 million by 2035. The growth in the number of representative payees is driven primarily by growth in the retired-worker beneficiary population between 2013 and 2025 and by the 85-or-older age group's increasing share of that population as the baby boom generation ages between 2025 and 2035. As baby boomers become retired-worker beneficiaries in the coming years, the number who are estimated to need a representative payee will grow from about 520,000 in 2013 to about 768,000 by 2025. As they enter the 85-or-older age category in increasing numbers by

2035, the number of retired-worker beneficiaries who need a payee will continue to increase to about 1 million. In fact, the gap between retired-worker and disabled-worker beneficiaries who need payees will shrink considerably, from about 437,000 in 2013 to only about 116,000 by 2035.

The growth in demand for representative payees poses management challenges for SSA. Among disabled-worker beneficiaries who needed a payee in 2013, 71.1 percent had a family member serving in that role, but only 57.3 percent of retired-worker beneficiaries with a payee had a family member performing that service. Thus, SSA may not only need to find payees for an increasing retired-worker beneficiary population, it may also need to devote additional resources for monitoring far greater numbers of nonfamily payees to ensure that those payees do not misuse benefits.

SSA is planning for these challenges through several initiatives. First, the agency is conducting pilot projects to recruit more representative payees. One example, the Pro Bono Pilot, is designed to recruit lawyers in good standing to serve as representative payees as part of their required pro bono work. This project will begin in Maryland, and if it proves successful there, SSA plans to expand the pilot to other states. In collaboration with other federal agencies and organizations, SSA will also initiate two other pilot projects to recruit a new pool of payees, to provide them with interdisciplinary training designed to heighten awareness of elder abuse and exploitation, and to develop effective strategies for working with the banking community to help protect beneficiary assets.

Second, SSA is reexamining its methods of monitoring representative payees to protect beneficiaries from payee misuse of their benefits. Those methods will include the following:

- using public records to check the financial background (and any criminal history) of payees;

- sharing data with federal, state, and local organizations responsible for assigning guardians or payees;

- using predictive models to identify benefit-misuse risk factors and to target monitoring activities;

- providing interdisciplinary training on identifying and reporting elder abuse; and

- identifying best practices for monitoring payees.

Third, SSA is reaching out to other public and private organizations that serve the elderly population. By coordinating efforts with those organizations, the agency may be able to find ways to administer its representative payee program more efficiently. These efforts are in their early stages and will need to be sustained in order to address the needs of the growing retired-worker population.

Although our projections are subject to uncertainty, they indicate the scope of the challenges SSA will face in administering the representative payee program. As the agency gains more information on the need for representative payees, researchers will be able to reexamine our estimates and provide additional insight into the strategies that could help SSA manage the representative payee program most effectively.

Table A-1.

Number of adult OASDI beneficiaries with a representative payee, by type of payee and beneficiary type and age, projected 2025 and 2035

Beneficiary type and age	Beneficiaries		Type of representative payee									
	Total	With representative payee	Parent [a]	Spouse	Child [a]	Other relative	Non-mental institution	Mental institution	Social agency	Public official	Financial organiza-tion	Other
2025												
All adult beneficiaries	72,502,321	1,926,004	355,121	290,764	291,087	327,656	332,827	47,474	91,989	18,640	8,725	161,721
Retired worker	59,267,974	768,474	7,320	115,678	200,656	118,051	224,299	11,729	26,090	9,660	3,061	51,930
Younger than 65	4,788,198	11,664	381	1,577	1,748	3,235	2,166	271	635	165	42	1,444
65–74	31,581,319	301,904	3,866	72,412	52,349	55,868	68,068	6,654	13,845	3,763	1,345	23,734
75–84	17,983,200	262,197	1,670	34,591	74,010	33,477	86,255	3,320	8,076	3,610	987	16,201
85 or older	4,915,257	192,709	1,403	7,098	72,549	25,471	67,810	1,484	3,534	2,122	687	10,551
Spouse	1,395,508	13,006	207	3,905	4,262	1,374	2,180	151	301	102	26	498
Younger than 65	241,898	1,952	108	946	395	237	96	22	51	12	5	80
65–74	636,860	5,072	43	1,500	1,589	579	825	82	167	51	9	227
75–84	475,415	5,122	45	1,285	1,886	478	1,096	45	76	35	11	165
85 or older	41,335	860	11	174	392	80	163	2	7	4	1	26
Nondisabled widow(er)	1,923,427	52,899	702	85	23,614	6,328	17,677	480	1,042	502	140	2,329
Younger than 65	622,692	2,616	262	6	1,094	635	265	36	95	25	9	189
65–74	241,962	3,763	35	12	1,523	601	1,057	63	165	49	12	246
75–84	557,881	16,922	138	38	7,278	1,828	6,029	179	404	210	46	772
85 or older	500,892	29,598	267	29	13,719	3,264	10,326	202	378	218	73	1,122
Disabled worker	9,680,807	1,077,868	346,200	171,021	57,531	198,384	86,932	34,821	63,812	8,244	5,439	105,484
25–34	675,291	207,385	133,989	9,027	201	23,714	7,876	5,148	10,008	1,007	742	15,673
35–44	1,430,963	252,380	119,971	29,102	2,748	34,525	14,313	8,335	15,368	1,638	1,215	25,165
45–54	2,178,205	245,325	61,907	42,113	12,975	51,369	19,891	9,093	16,714	1,975	1,438	27,850
55–FRA	5,396,348	372,778	30,333	90,779	41,607	88,776	44,852	12,245	21,722	3,624	2,044	36,796
Disabled widow(er)	234,605	13,757	692	75	5,024	3,519	1,739	293	744	132	59	1,480
Younger than 55	28,449	1,802	198	7	547	532	92	40	106	10	7	263
55–FRA	206,156	11,955	494	68	4,477	2,987	1,647	253	638	122	52	1,217

(Continued)

Table A-1.

Number of adult OASDI beneficiaries with a representative payee, by type of payee and beneficiary type and age, projected 2025 and 2035—*Continued*

Beneficiary type and age	Beneficiaries		Type of representative payee									
	Total	With representative payee	Parent [a]	Spouse	Child [a]	Other relative	Non-mental institution	Mental institution	Social agency	Public official	Financial organiza-tion	Other
2035												
All adult beneficiaries	82,470,374	2,189,442	363,633	317,037	368,309	365,608	413,502	51,086	99,831	21,730	9,779	178,927
Retired worker	69,191,670	1,001,985	8,922	133,984	279,090	148,491	304,035	14,035	31,622	12,498	3,916	65,392
Younger than 65	4,321,689	10,526	344	1,423	1,577	2,920	1,955	244	573	149	38	1,303
65–74	31,924,106	305,180	3,908	73,198	52,917	56,474	68,806	6,727	13,996	3,804	1,359	23,991
75–84	24,584,132	358,443	2,284	47,288	101,177	45,766	117,916	4,539	11,041	4,935	1,349	22,148
85 or older	8,361,743	327,836	2,386	12,075	123,419	43,331	115,358	2,525	6,012	3,610	1,170	17,950
Spouse	1,307,016	12,148	203	3,690	3,953	1,291	1,994	143	285	96	25	468
Younger than 65	250,393	2,022	112	979	409	245	100	23	53	12	6	83
65–74	609,025	4,852	41	1,434	1,520	554	789	79	160	49	9	217
75–84	402,774	4,339	38	1,088	1,598	405	929	38	64	30	9	140
85 or older	44,824	935	12	189	426	87	176	3	8	5	1	28
Nondisabled widow(er)	1,629,688	45,090	600	70	20,166	5,427	15,016	408	881	420	118	1,984
Younger than 65	526,623	2,211	222	5	925	537	224	31	80	21	7	159
65–74	245,106	3,812	36	12	1,542	609	1,071	64	167	50	12	249
75–84	404,317	12,262	100	27	5,274	1,325	4,369	130	292	152	33	560
85 or older	453,642	26,805	242	26	12,425	2,956	9,352	183	342	197	66	1,016
Disabled worker	10,137,515	1,118,278	353,348	179,226	60,697	207,372	90,896	36,247	66,400	8,599	5,668	109,825
25–34	674,935	207,274	133,918	9,022	201	23,701	7,871	5,145	10,003	1,007	741	15,665
35–44	1,429,362	252,097	119,837	29,070	2,745	34,487	14,297	8,325	15,351	1,636	1,213	25,136
45–54	2,387,625	268,911	67,859	46,162	14,222	56,307	21,804	9,967	18,321	2,165	1,576	30,528
55–FRA	5,645,593	389,996	31,734	94,972	43,529	92,877	46,924	12,810	22,725	3,791	2,138	38,496
Disabled widow(er)	204,485	11,941	560	67	4,403	3,027	1,561	253	643	117	52	1,258
Younger than 55	15,375	973	107	4	296	287	50	21	57	5	4	142
55–FRA	189,110	10,968	453	63	4,107	2,740	1,511	232	586	112	48	1,116

SOURCE: Authors' calculations using SSA records and MINT projections.

NOTE: FRA = full retirement age.

Table A-2.

Number of adult SSI-only recipients with a representative payee, by type of payee and age of recipient, projected 2025 and 2035

| Recipient age | Recipients | | Type of representative payee | | | | | | | | | | |
	Total	With representative payee	Parent [a]	Spouse	Child [a]	Grand-parent	Other relative	Non-mental institution	Mental institution	Social agency	Public official	Financial organiza-tion	Other
					2025								
All adult recipients	4,672,084	1,339,576	617,570	41,003	87,636	34,345	219,845	98,516	45,178	69,521	9,318	3,446	113,198
18–64	3,434,122	1,197,116	615,401	33,111	38,343	34,268	185,453	72,622	40,442	62,878	7,431	3,145	104,022
65–74	618,769	77,747	1,449	5,028	19,550	6	19,847	15,163	3,521	5,057	1,399	228	6,499
75 or older	619,193	64,713	720	2,864	29,743	71	14,545	10,731	1,215	1,586	488	73	2,677
					2035								
All adult recipients	4,901,093	1,369,479	622,510	42,115	98,035	34,635	225,836	102,424	45,803	70,396	9,502	3,490	114,733
18–64	3,460,522	1,206,320	620,132	33,365	38,638	34,532	186,879	73,181	40,753	63,361	7,488	3,170	104,821
65–74	596,121	74,901	1,396	4,844	18,834	6	19,120	14,608	3,392	4,872	1,348	220	6,261
75 or older	844,450	88,258	982	3,906	40,563	97	19,837	14,635	1,658	2,163	666	100	3,651

SOURCE: Authors' calculations using SSA records and MINT projections.

a. Natural, adoptive, or stepparent/stepchild.

Notes

[1] For more information on fee-for-service payees, see sections 205(j)(4), 205(j)(6)(A)(ii), 1631(a)(2)(D), and 1631(a)(2)(G)(i)(II) of the Social Security Act.

[2] Although SSA always considered an individual's criminal history when determining suitability as a payee, the pilot program identified the specific felonies for which an applicant would be barred. A criminal record that included human trafficking, false imprisonment, kidnapping, rape/sexual offense, first degree homicide, robbery, fraud, fraud by scheme, theft of government funds/property, abuse/neglect, forgery, or identity theft would automatically bar an applicant from consideration.

[3] For more information on the payee selection process, see section 205(j)(1) of the Social Security Act.

[4] The administrative files used in MINT include the Detailed Earnings Record, the Summary Earnings Record, the Supplemental Security Record, the Master Beneficiary Record, and the Numerical Identifier (or Numident) file.

[5] Our estimate of 8.2 million differs from the 8.6 million reported in GAO (2013) because GAO double-counted beneficiaries who were dually entitled for OASDI and SSI. GAO also included some beneficiaries who were coded as having a representative payee of "self."

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

by David R. Mann, Arif Mamun, and Jeffrey Hemmeter*

Empirical evidence on the relationship between the primary impairments of Social Security disability program beneficiaries and the employment and earnings experiences of those beneficiaries is limited. To provide such evidence, we classify recent Disability Insurance beneficiaries and working-age Supplemental Security Income recipients according to 25 detailed primary-impairment categories and examine their employment and earnings patterns using 2011 data from linked Social Security administrative files. We find substantial heterogeneity in employment and earnings across primary impairments. We also find that if we restrict our sample to beneficiaries with earnings (and then further restrict it to those with earnings above the substantial gainful activity level), some impairment categories that are strongly associated with employment status are not as strongly associated with higher earnings. These findings can inform new initiatives designed to help beneficiaries return to work or successfully transition into the adult workforce.

Introduction

The two major disability 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 grew from 2.9 million in December 1980 to 8.8 million in December 2012, and the number of working-age SSI recipients 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, Table 3; 2013b, Table 4). This growth in program participation has spurred strong policy interest in understanding beneficiary employment patterns and, ultimately, helping some beneficiaries to find work and earn enough to become as self-sufficient as possible (Rupp and Stapleton 1998; Stapleton and Burkhauser 2003).

As these programs have grown, the distribution of disabling conditions among Social Security disability program beneficiaries has also changed.[1] For example, mental impairments accounted for 10.3 percent of DI disabled-worker awards in 1981; that share more

Selected Abbreviations	
AIDS	acquired immune deficiency syndrome
DAF	Disability Analysis File
DI	Disability Insurance
HIV	human immunodeficiency virus
MEF	Master Earnings File

than doubled over most of the ensuing years, peaking at almost 30 percent in 1986, before declining to 18.0 percent in 2012 (SSA 2013a, Table 40). In addition, significant changes in the nature of work over time, such as technological innovations and improved workplace accommodations, have likely affected whether certain specific impairments prohibit individuals from engaging in substantial gainful activity (SGA)—a key factor in the disability determination process.[2] Furthermore, an individual's vocational factors—age, education and training, work history, and job skills—have increasingly become important determinants of initial DI awards (Burkhauser and Daly 2011).

Despite these trends, little is known about the relationship between the specific primary impairment of Social Security disability program beneficiaries and their employment and earnings experiences (although some research has documented different employment rates across broad disability categories—for example, Mamun and others 2011 and Weathers and Wittenburg 2009). Livermore and Goodman (2009) identify several barriers to employment for individuals with disabilities, such as varying degrees of workplace accommodations, variation in occupational needs, and discrimination or stigmatization. Although we concur that those factors (along with others such as differential responses to medical technology and access to necessary health care) may explain observed differences in employment and earnings, in this article we focus on demonstrating the scope of employment and earnings differences, not on examining their potential causes. In doing so, we address a gap in the literature as we define detailed primary-impairment types of recent DI beneficiaries and working-age SSI recipients, and examine their employment and earnings distributions using linked 2011 administrative data from two SSA files—the Disability Analysis File (DAF) and the Master Earnings File (MEF). We identify 25 categories of primary impairment at the time of benefit award, which provides sufficient detail to examine how employment and earnings vary across a wide range of disabling conditions.

Our analysis has two components. First, we provide descriptive population-level statistics on beneficiary employment and earning characteristics by primary impairment. Then, we estimate a series of regression models to examine how primary impairments are associated with employment and earnings. All results are presented separately for three disability program participation categories: DI only, SSI only, and concurrent DI and SSI.

The findings reveal much heterogeneity in employment and earnings across primary-impairment groups:

- Beneficiaries with seemingly similar primary impairments sometimes had divergent employment and earnings outcomes; for example, beneficiaries with anxiety disorders and intellectual disability—both of which are mental impairments—had very different employment and earnings outcomes.

- After controlling for other observed factors, beneficiaries with intellectual disability, visual impairments, hearing impairments, neoplasms, and human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) were among those most likely to be employed across disability programs.

- Beneficiaries with schizoaffective disorders, anxiety disorders, back disorders, and endocrine/nutritional/metabolic diseases were among the least likely to work.

- Although overall employment patterns by impairment type were similar across programs, employment and earnings among SSI-only recipients were not strongly correlated with primary-impairment type, relative to those of DI-only beneficiaries.

- A few impairment categories strongly associated with employment were not as strongly associated with higher earnings (after controlling for employment status) or with earnings above the SGA level.

This study provides policymakers with additional information about the variation in employment experiences along with new data on the variation in earnings among Social Security disability program 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 enable future return-to-work initiatives to better target or tailor interventions based on the likelihood of return to work among beneficiaries with certain primary impairments. Nevertheless, the generally low employment rates and earnings of

SSI and DI beneficiaries documented in this study highlight the challenge of reducing disability program growth by helping current beneficiaries work at substantive levels.

Program Descriptions

DI and SSI, both administered by SSA, are the primary income-support programs for persons with disabilities in the United States. For a person to be eligible for benefits, both programs require him or her to be unable to "engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which…has lasted or can be expected to last for a continuous period of not less than 12 months" (Section 223(d) of the Social Security Act, 42 U.S.C. § 423(d)). Despite using the same definition of disability, the programs differ in terms of additional eligibility criteria, benefit levels, funding sources, and associated benefits such as public health insurance coverage.

DI, as an income-replacement program, is social insurance. For workers with disabilities and sufficient work histories (and their dependents), it provides income if they have impairments that prevent work at or above the SGA level. DI benefits are paid from the DI Trust Fund, into which workers pay via payroll taxes. After 24 months on the DI rolls, all disabled beneficiaries qualify for Medicare benefits.[3] About 8.2 million disabled workers received DI benefits in 2010, with an average monthly benefit of $1,068 (SSA 2013a, Table 3). Upon reaching full retirement age, DI beneficiaries stop receiving payments from the DI Trust Fund and transfer automatically to the Old-Age and Survivors Insurance program.

Unlike DI, SSI is a means-tested program in which beneficiaries qualify for cash assistance based on financial need and other criteria. Individuals with disabilities and older persons with limited incomes and resources are eligible for SSI. Our analysis focuses exclusively on working-age (18–64) recipients of SSI disability payments, who comprised 60 percent of SSI recipients in 2010. SSI payments are drawn from the general fund of the Treasury. Children with disabilities who live in households with limited incomes 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.[4] SSI recipients often also qualify for other need-based supports, such as food assistance (via the Supplemental Nutrition Assistance Program) and housing assistance. Social Security disability program beneficiaries can receive DI and SSI benefits concurrently if they satisfy eligibility criteria for both programs. About 4.6 million working-age individuals received federal SSI disability payments in December 2010, with an average monthly payment of $497 (SSA 2011, Table 5).

Given the large and growing size of these two programs, policy interest has increasingly focused on preventing initial entry into the program while simultaneously helping some beneficiaries leave the program rolls by returning to substantive work or, in the case of many SSI recipients, by entering the labor force for the first time. Consequently, Congress has built work supports into the DI and SSI programs, and SSA has championed a series of initiatives that test or enact employment interventions for disability program beneficiaries. For example, for SSI recipients who work, payments are reduced only $1 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 they essentially provide DI beneficiaries with opportunities to test their ability to engage in SGA without risk of losing benefits.

Several past, ongoing, and planned SSA initiatives and demonstrations have been designed to assist the efforts of SSI and DI beneficiaries to become employed and to allow them to maintain their earnings. For example, the Ticket to Work program, enacted in 1999 and implemented in 2002, encourages disability program beneficiaries to seek employment services from state vocational rehabilitation agencies and other prequalified local rehabilitation service providers (termed *employment networks*) and offers payments to service providers that succeed in helping beneficiaries achieve specific employment milestones (Thornton and others 2004; Livermore and others 2013). Both the completed Benefit Offset Pilot Demonstration and the ongoing Benefit Offset National Demonstration test an intervention that reduces DI benefits by $1 for every $2 of earnings above annualized SGA, instead of suspending or terminating all benefits (Weathers and Hemmeter 2011; Wittenburg and others 2012; Stapleton and others 2010). Some demonstrations target subgroups of disability program beneficiaries for return-to-work supports. The Mental Health Treatment Study, for example, used a supported employment model to provide medical and return-to-work assistance to DI beneficiaries with psychiatric disorders (Frey and others 2011). Some more recent demonstrations have targeted child SSI recipients,

encouraging and assisting them in finding employment as they transition to adulthood. For example, the recently completed Youth Transition Demonstration tested intensive and comprehensive transition supports for child SSI recipients at six locations across the nation, and the current Promoting Readiness of Minors in Supplemental Security Income project is among the first interagency efforts to test interventions designed to assist child SSI recipients (Fraker 2013; Fraker and others 2014; Fraker and Honeycutt 2012).

Recent Analyses of Employment by Impairment Type

Our analysis builds on that of Mamun and others (2011), who also used SSA data to examine the earnings of Social Security disability program beneficiaries. Specifically, they examined how the beneficiary employment rate varies over time and across states. Our study builds on their analysis in multiple ways. In addition to examining beneficiaries' employment status, we consider their earnings to provide a more complete picture of their level of work engagement. Moreover, we use a finer measure of primary impairment (25 categories, compared with 7 categories used in Mamun and others 2011). As our analysis shows, the greater disaggregation of impairment categories captures the heterogeneity in employment and earnings that exists even among beneficiaries with similar impairment classifications. We also use regression models to estimate the prevalence of employment at an annualized SGA level of earnings, which is the earnings level of interest to policymakers seeking to reduce DI program growth.

Relatively few studies have used administrative or survey data to examine the employment or earnings of Social Security disability program beneficiaries by impairment type. Von Wachter, Song, and Manchester (2011) investigated the employment and earnings of both allowed and rejected DI applicants, examining employment among applicants by impairment. However, similar to Mamun and others (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 data on closed vocational rehabilitation cases from the Department of Education's Rehabilitation Services Administration to explore which factors, such as SSI and DI receipt status, are correlated with employment among people with HIV/AIDS. Weathers and Wittenburg

(2009) used data from four major surveys (the American Community Survey, the Current Population Survey, the National Health Interview Survey, and the Survey of Income and Program Participation) to show that employment rates for persons with disabilities in the general population vary widely depending on impairment type. However, with the survey data, they were able to provide employment statistics using concepts that classify disability into only three broad categories of impairment—sensory, physical, and mental. Our analysis adds to the relatively limited research on employment and earnings among disability program beneficiaries by providing more quantitative information for detailed categories of primary impairments.

Data

This study uses linked administrative data for 2011 from two SSA sources: the DAF and the 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. The 2011 DAF contains beneficiary data from January 1996 through December 2011 (Hildebrand, Kosar, Fischer, Page, and others 2013; Hildebrand, Kosar, Fischer, Phelps, and others 2013). The data contained in the DAF include details of benefit award, benefit receipt, and impairment status, as well as beneficiary demographic information. The MEF contains annual earnings data for SSA program beneficiaries compiled from Internal Revenue Service (IRS) data drawn from Forms W-2 and 1040, self-employment tax schedules, 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 (wages and earnings covered by the Federal Insurance Contributions Act [FICA] and the Self-Employment Contributions Act [SECA]), or Medicare-taxable wages and self-employment earnings, minus payments from known third-party sources—such as insurance companies—where payments involve the earnings and tax records described above.[5] Thus, the employment and earnings statistics presented in this article do not reflect the employment and earnings of those whose earnings are not reported to the IRS. MEF records are accessible by authorized SSA staff only.

The analysis sample includes all working-age beneficiaries (ages 18 through 64) who received a DI benefit and/or SSI payment in December 2010.

Thus, our sample excludes new awardees in 2011, but includes beneficiaries who were not necessarily in current-pay status in every month of 2011 (that is, their benefits could have been suspended or terminated for 1 or more months in 2011). Although this sample could include some beneficiaries whose employment and earnings occurred after their benefits were suspended or terminated, it allows us to avoid counting earnings that predate the disability benefit award. By including beneficiaries who may not have been in current-pay status in each month in 2011, we avoid severely underestimating the incidence of paid employment among disability program beneficiaries at any given time. Using December 2010 pay status, we separate beneficiaries into three program participation groups: DI only, SSI disability only, and concurrent DI and SSI disability. Across these three program groups, the analysis sample covers 65.9 percent of persons who received benefits during at least 1 month in 2011.

Except for annual employment and 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 program participation 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 those factors. We use the county-level annual unemployment rates for 2011 from the Bureau of Labor Statistics (2013). County population densities are computed as the ratio of population to land area. We use 1990 county land area data and 2010 county population data from Census Bureau (2000, 2013) to calculate the ratios. For both county population density and county annual unemployment rate, we use the mean-centered values.

Methods

We use two analytical models to investigate employment and earnings of Social Security 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:

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

$$g_i = \beta_0 + \beta_1 x_i + \beta_2 imp_i + \upsilon_i \quad,$$

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 (Appendix Table A-2 lists all the individual characteristics used as covariates in the regression models). Note that no more than one of the elements in imp can have a nonzero value. We use two definitional thresholds for beneficiary employment status. The first includes only those beneficiaries with annual earnings exceeding $1,000;[6] the second includes only those with annual earnings exceeding the annual equivalent of the 2011 SGA level ($12,000 for nonblind beneficiaries and $19,680 for blind beneficiaries). The first definition aims to distinguish significant work effort from small ad hoc earnings over the course of a year; that definition is also used in other recent analyses of employment and earnings among Social Security disability program beneficiaries (for example, Ben-Shalom and Stapleton 2013; Maestas, Mullen, and Strand 2013; Autor and others 2011; Liu and Stapleton 2011; Mamun and others 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; a similar definition of employment was also used in other recent research (for example, Maestas, Mullen, and Strand 2013; Wittenburg and others 2012; Autor and others 2011).

We also construct a multinomial categorical measure of earnings for five earnings levels and then model the measure as an ordinal logistic regression of the following form:

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

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

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 $4,999; $5,000 to $9,999; $10,000 to $19,999; and $20,000 or more.[7] We conduct the earnings analysis using categories rather than a continuous measure because doing so allows us to demonstrate how the beneficiaries are distributed across the earnings spectrum and to examine the relationship between earnings and primary impairment at different levels rather than at the mean only.

Beneficiaries by Primary Impairment

The distribution of beneficiaries by primary impairment varies across programs (Table 1). Of the 25 impairment categories we define, affective disorders (15.4 percent), back disorders (13.0 percent), and intellectual disability (11.8 percent) are the most prevalent primary impairments overall. In total, mental impairments account for 43.7 percent of primary impairments among Social Security disability program beneficiaries, and back disorders and musculoskeletal diseases together account for more than one-fifth (22.4 percent). No other primary-impairment category represents more than 6.4 percent of disability program beneficiaries, with the

majority of the remaining categories representing less than 2 percent of them.

As might be expected for programs with different purposes, the distribution of primary impairments within each program differs somewhat from the aggregate distribution. DI-only beneficiaries are more likely than persons who receive only SSI payments to have a back disorder (18.8 percent versus 5.9 percent) or a musculoskeletal disease (12.7 percent versus 5.5 percent) as their primary impairment. DI-only beneficiaries also report a higher prevalence of other primary impairments often associated with aging, such as circulatory system diseases (7.9 percent versus 4.3 percent) and nervous system diseases (7.7 percent

Table 1.

Disability program beneficiaries, by primary impairment and program participation, 2011

Impairment	Total		DI only		SSI only		Concurrent DI and SSI	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	9,583,864	100.0	4,973,277	100.0	3,168,413	100	1,442,174	100.0
Mental impairments								
Affective disorders	1,476,274	15.4	687,142	13.8	539,262	17.0	249,870	17.3
Schizoaffective disorders	632,242	6.6	208,858	4.2	285,521	9.0	137,863	9.6
Anxiety disorders	347,747	3.6	158,930	3.2	133,876	4.2	54,941	3.8
Intellectual disability	1,126,163	11.8	215,642	4.3	632,336	20.0	278,185	19.3
Other mental impairments	607,739	6.3	201,759	4.1	313,230	9.9	92,750	6.4
Nonmental impairments								
Back disorders	1,246,008	13.0	935,688	18.8	186,866	5.9	123,454	8.6
HIV/AIDS	96,002	1.0	43,911	0.9	36,265	1.1	15,826	1.1
Neoplasms	187,952	2.0	139,243	2.8	32,258	1.0	16,451	1.1
Congenital anomalies	44,467	0.5	9,988	0.2	26,306	0.8	8,173	0.6
Visual impairments	184,155	1.9	98,266	2.0	56,810	1.8	29,079	2.0
Hearing impairments	72,278	0.8	31,656	0.6	27,713	0.9	12,909	0.9
Speech impairments	9,009	0.1	3,016	0.1	4,803	0.2	1,190	0.1
Infectious and parasitic diseases	30,968	0.3	19,393	0.4	7,897	0.3	3,678	0.3
Endocrine, nutritional, and metabolic diseases	289,968	3.0	157,667	3.2	88,239	2.8	44,062	3.1
Diseases of the—								
Musculoskeletal system	902,036	9.4	632,886	12.7	175,119	5.5	94,031	6.5
Blood and blood-forming organs	28,746	0.3	10,437	0.2	12,949	0.4	5,360	0.4
Nervous system	609,924	6.4	380,709	7.7	158,711	5.0	70,504	4.9
Circulatory system	588,768	6.1	393,732	7.9	134,641	4.3	60,395	4.2
Respiratory system	217,670	2.3	125,619	2.5	64,165	2.0	27,886	1.9
Digestive system	124,993	1.3	78,478	1.6	31,003	1.0	15,512	1.1
Genitourinary system	119,833	1.3	76,236	1.5	29,287	0.9	14,310	1.0
Skin and subcutaneous tissue	19,508	0.2	11,725	0.2	5,074	0.2	2,709	0.2
Injuries	346,339	3.6	223,393	4.5	82,403	2.6	40,543	2.8
Other nonmental impairments	255,677	2.7	115,062	2.3	101,596	3.2	39,019	2.7
Unknown	19,398	0.2	13,841	0.3	2,083	0.1	3,474	0.2

SOURCE: Authors' calculations using DAF and MEF.

versus 5.0 percent), which is to be expected because DI-only beneficiaries are typically older than persons who receive SSI payments.[8] SSI-only and concurrent beneficiaries are much more likely to have an intellectual disability (20.0 percent and 19.3 percent, respectively) than are DI-only beneficiaries (4.3 percent). In addition, relative to DI-only beneficiaries, SSI-only recipients are more likely to have affective disorders, schizoaffective disorders, and other mental impairments as their primary impairment. These different impairment distributions are broadly consistent with the design of the respective programs, wherein DI benefits support individuals who are more likely to suffer negative health shocks, and SSI payments support those who are more likely to have life-long impairments that impede work.

Employment and Earnings

In Table 2, we present the shares of beneficiaries who were employed and whose earnings fell within the earnings categories we define, all by primary impairment. A relatively low percentage of disability program beneficiaries in current-pay status in December 2010 worked in calendar year 2011: 11.4 percent of DI-only beneficiaries, 5.4 percent of SSI-only recipients, and 6.9 percent of concurrent beneficiaries were employed (that is, earned $1,000 or more). The employment rate is substantially lower for SSI-only recipients than for DI-only beneficiaries. That result is not surprising because SSI recipients do not need a work history to establish program eligibility, as is required to qualify for DI. These estimates are also consistent with findings in previous studies, such as Mamun and others (2011).

Across primary-impairment categories, the share of beneficiaries who were employed in 2011 ranged from 6.0 percent to 27.4 percent. In the following impairment categories, less than 10 percent of beneficiaries were employed in 2011: affective disorders, schizoaffective disorders, anxiety disorders, musculoskeletal diseases, back disorders, infectious/parasitic diseases, endocrine/nutritional/metabolic diseases, nervous system diseases, circulatory system diseases, respiratory system diseases, digestive system diseases, diseases of the skin and subcutaneous tissue, injuries, and nonmental impairments categorized as "other." For the remaining 11 impairment categories (excluding "unknown"), however, between 10 and 20 percent of beneficiaries were employed in 2011.

Among beneficiaries who were employed in 2011, about three-quarters of DI-only and SSI-only

beneficiaries and about eight-in-nine concurrent beneficiaries earned less than $10,000 (the relative numbers are not shown in the table). Across impairment categories, the shares of beneficiaries who were employed and earned between $1,000 and $4,999 ranged from 2.7 percent (endocrine/nutritional/metabolic diseases) to 7.8 percent (congenital anomalies). Only in the following eight impairment categories do we find more than 5 percent of the beneficiaries earning between $1,000 and $4,999 in 2011: congenital anomalies (7.8 percent), hearing impairments (7.1 percent), intellectual disability (6.5 percent), unknown impairment (6.0 percent), blood and blood-forming organ diseases (5.7 percent), other mental impairments (5.7 percent), neoplasms (5.5 percent), and speech impairments (5.2 percent). Across impairment categories, the share of beneficiaries who earned between $5,000 and $9,999 ranged from 1.6 percent (other impairments) to 5.8 percent (impairment unknown). Besides unknown impairment, the only category in which we find more than 5 percent of the beneficiaries earning between $5,000 and $9,999 in 2011 is hearing impairments.

Table 2 also shows that only a small fraction of beneficiaries in any impairment category earned more than the annualized SGA level in 2011, but this is not surprising. Only 2.2 percent of the DI-only beneficiaries had earnings above that level in 2011, as did 0.8 percent of SSI-only recipients and 0.5 percent of concurrent beneficiaries. The share of beneficiaries who earned above the SGA level in 2011 is less than 5 percent for all impairment categories except unknown impairments, in which 13.2 percent of the beneficiaries earned above the SGA level. The fact that only a small fraction of beneficiaries earned more than the SGA level is unsurprising for two reasons. First, to establish initial eligibility for disability program benefits, all beneficiaries demonstrated that they could not earn above the SGA level at that time. Second, beneficiaries who earn above the SGA level are potentially at risk of benefit suspension or termination, which may create a disincentive for some beneficiaries to earn more. In fact, there is limited evidence that some DI beneficiaries restrain their earnings to below the SGA level to maintain their cash benefits (Schimmel, Stapleton, and Song 2011), although other studies have found opposing evidence (General Accounting Office 2002).

We use a multivariate approach to assess whether differences observed in the descriptive statistics change when controlling for multiple factors. Results from the descriptive analysis provide a snapshot of the

Table 2.
Distribution of disability program beneficiaries among earnings categories, by program and primary impairment, 2011

Program and impairment	Number	Percent-age emp-loyed	Mean earnings ($)		Percentage with earnings—				
			Overall	Among those with earnings	Between $1,000 and $4,999	Between $5,000 and $9,999	Between $10,000 and $19,999	Of $20,000 or more	Above annual-ized SGA [a]
Total	9,583,864	8.7	773	8,694	4.1	2.5	1.5	0.6	1.5
Program									
DI only	4,973,277	11.4	1,149	9,939	4.7	3.5	2.1	1.1	2.2
SSI only	3,168,413	5.4	368	6,605	2.9	1.4	1.0	0.2	0.8
Concurrent DI and SSI	1,442,174	6.9	368	5,119	4.4	1.7	0.7	0.1	0.5
Primary impairment									
Mental impairments									
Affective disorders	1,476,274	7.8	655	8,308	3.4	2.4	1.4	0.5	1.3
Schizoaffective disorders	632,242	6.0	403	6,552	3.0	1.8	0.9	0.2	0.7
Anxiety disorders	347,747	7.0	666	9,315	3.2	2.0	1.2	0.7	1.4
Intellectual disability	1,126,163	10.3	557	5,113	6.5	2.6	1.2	0.1	0.8
Other mental impairments	607,739	10.7	800	7,291	5.7	2.9	1.6	0.5	1.4
Nonmental impairments									
Back disorders	1,246,008	7.4	703	9,414	3.2	2.3	1.3	0.7	1.4
HIV/AIDS	96,002	11.4	1,205	10,429	4.1	3.6	2.5	1.2	2.6
Neoplasms	187,952	15.5	2,363	15,118	5.5	4.0	3.0	3.0	4.9
Congenital anomalies	44,467	11.1	569	4,784	7.8	2.2	0.9	0.2	0.7
Visual impairments	184,155	12.5	1,388	10,993	4.3	3.0	4.0	1.2	1.3
Hearing impairments	72,278	17.0	1,373	7,988	7.1	5.6	3.5	0.9	2.6
Speech impairments	9,009	10.7	927	8,466	5.2	3.0	1.8	0.7	1.8
Infectious and parasitic diseases	30,968	9.9	936	9,407	3.8	3.0	2.2	0.9	2.0
Endocrine, nutritional, and metabolic diseases	289,968	6.3	515	8,128	2.7	2.0	1.1	0.4	1.0
Diseases of the—									
Musculoskeletal system	902,036	8.7	789	9,002	3.7	2.7	1.6	0.7	1.6
Blood and blood-forming organs	28,746	13.5	1,225	8,973	5.7	4.3	2.6	1.0	2.5
Nervous system	609,924	9.8	997	10,018	4.2	2.8	1.8	1.0	2.0
Circulatory system	588,768	8.2	844	10,242	3.5	2.4	1.5	0.8	1.6
Respiratory system	217,670	7.2	618	8,490	3.2	2.3	1.3	0.5	1.2
Digestive system	124,993	9.1	940	10,271	3.6	2.7	1.7	1.0	2.1
Genitourinary system	119,833	12.7	1,354	10,602	4.9	3.8	2.6	1.4	2.9
Skin and subcutaneous tissue	19,508	8.3	735	8,769	3.4	2.8	1.5	0.6	1.5
Injuries	346,339	8.9	1,012	11,293	3.6	2.6	1.7	1.0	2.0
Other nonmental impairments	255,677	6.1	477	7,640	3.2	1.6	1.0	0.3	0.9
Unknown	19,398	27.4	4,535	16,473	6.0	5.8	9.1	6.6	13.2

SOURCE: Authors' calculations using DAF and MEF.

a. $12,000 for nonblind beneficiaries and $19,680 for blind beneficiaries in 2011.

employment rates and earnings among beneficiaries with different impairments. However, the observed variation in employment and earnings across primary impairments 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 where those beneficiaries reside. We conduct multivariate regression analyses of employment and earnings to account for such possibilities, and we present the results in the next section.

Regression Results

Employment and earnings regression models are estimated separately for recipients of DI-only, SSI-only, and concurrent DI-SSI benefits. Tables 3–5 present the odds ratios and marginal-effect estimates for those regressions.[9] The estimated odds ratios reveal how likely an individual with a certain impairment was, with all else equal, to be employed (that is, to earn at least $1,000) in 2011 relative to a beneficiary with the reference-category impairment (diseases of the respiratory system). The marginal-effect estimates reveal how a certain impairment is correlated, with all else equal, with the probability of employment.[10] The estimates for all covariates included in the models are available from the authors upon request. Because each regression is calculated using at least 1 million observations, the estimates are very precise. However, the parameter estimates' standard errors are of limited relevance because the regressions are estimated using the entire population and therefore provide the population parameter values.

In the following subsections, we first discuss the regression estimates showing how the beneficiaries' primary impairments are associated with employment and earnings (conditional on being employed). We then discuss the estimates for employment at the annualized SGA level across primary-impairment categories.

Employment and Conditional Earnings by Primary Impairment

Table 3 presents results for DI-only beneficiaries. The results suggest that beneficiaries with several seemingly dissimilar primary impairments were relatively more likely to be employed in 2011. In fact, relative to persons with respiratory system diseases (the reference category), DI-only beneficiaries in most primary-impairment categories had a greater likelihood of

being employed during 2011, after controlling for other factors. The six categories whose members were most likely to be employed are unknown impairments, hearing impairments, intellectual disability, visual impairments, HIV/AIDS, and neoplasms. Conversely, DI-only beneficiaries with the following impairments were less likely to be employed than were those with respiratory diseases: anxiety disorders, schizoaffective disorders, endocrine/nutritional/metabolic diseases, back disorders, and affective disorders.[11] The marginal-effect estimates help quantify how these differences affect the absolute probability of employment. For instance, having a primary impairment that is positively correlated with employment is associated with a percentage point increase in employment probability (relative to having a respiratory disease) ranging from 0.5 for musculoskeletal diseases to 25.6 for unknown impairment. The impairments with lower odds of employment are associated with no more than a 1.9 percentage point decline in employment probability (for anxiety disorders) relative to respiratory disease.

One might hypothesize that the impairments associated with higher employment rates are also associated with higher conditional earnings. For most primary-impairment categories, employment and conditional earnings in 2011 were either both higher or both lower than those for the reference group (as one can see when comparing the odds ratios for a single impairment across models in Table 3). However, this is not always the case. For example, although DI-only beneficiaries with intellectual disability were relatively more likely to work than were those with a respiratory disease, they were also likely to earn less than those with a respiratory disease, all else being equal.[12]

The impairment categories that include beneficiaries who were relatively more or relatively less likely to work are similar for SSI-only and DI-only beneficiaries, but the likelihood of employment was much weaker among SSI-only recipients (Table 4) than it was among their DI-only counterparts. Similar to DI-only beneficiaries, SSI-only recipients with hearing impairments, neoplasms, HIV/AIDS, and intellectual disability were among the six primary-impairment types most likely to work. However, unlike DI-only beneficiaries, SSI-only recipients with unknown impairments and visual impairments were no more likely to work than were those in the reference category with respiratory disease. Instead, for SSI-only recipients, the two other categories among the six whose members were most likely to be employed were

Table 3.

Regression analysis of employment and earnings among DI-only beneficiaries: Estimated odds ratios and marginal effects, 2011

Primary impairment	Employment status: Logit model				Conditional earnings: Ordered logit model		Earnings at annualized SGA level: [a] Logit model			
	Odds ratio	Standard error	Marginal effect	Standard error	Odds ratio	Standard error	Odds ratio	Standard error	Marginal effect	Standard error
Mental impairments										
Affective disorders	0.974**	0.010	-0.002**	0.001	0.988	0.018	0.936***	0.022	-0.001***	b
Schizoaffective disorders	0.838***	0.011	-0.015***	0.001	0.768***	0.017	0.459***	0.015	-0.009***	b
Anxiety disorders	0.799***	0.010	-0.019***	0.001	1.160***	0.026	1.038	0.029	0.001	0.001
Intellectual disability	2.236***	0.027	0.087***	0.002	0.686***	0.014	0.826***	0.028	-0.002***	b
Other mental impairments	1.243***	0.015	0.022***	0.001	1.048**	0.021	1.254***	0.032	0.005***	0.001
Nonmental impairments										
Back disorders	0.907***	0.009	-0.008***	0.001	1.057***	0.019	0.998	0.023	b	b
HIV/AIDS	1.840***	0.030	0.068***	0.002	1.226***	0.033	1.903***	0.062	0.017***	0.001
Neoplasms	1.703***	0.020	0.062***	0.002	1.668***	0.034	2.456***	0.060	0.030***	0.001
Congenital anomalies	1.556***	0.047	0.046***	0.004	0.783***	0.041	1.037	0.085	0.001	0.001
Visual impairments	1.880***	0.024	0.072***	0.002	1.936***	0.042	1.045	0.033	0.001	0.001
Hearing impairments	2.299***	0.039	0.100***	0.003	1.253***	0.034	1.689***	0.067	0.012***	0.001
Speech impairments	1.431***	0.077	0.036***	0.006	1.183*	0.106	1.445***	0.162	0.008***	0.003
Infectious and parasitic diseases	1.337***	0.031	0.028***	0.003	1.196***	0.047	1.450***	0.072	0.008***	0.001
Endocrine, nutritional, and metabolic diseases	0.856***	0.011	-0.013***	0.001	0.968	0.022	0.805***	0.024	-0.003***	b
Diseases of the—										
Musculoskeletal system	1.056***	0.011	0.005***	0.001	1.039**	0.019	1.062***	0.025	0.001**	b
Blood and blood-forming organs	1.439***	0.041	0.037***	0.003	1.280***	0.060	1.734***	0.097	0.013***	0.002
Nervous system	1.152***	0.012	0.014***	0.001	1.127***	0.021	1.309***	0.031	0.006***	0.001
Circulatory system	1.118***	0.012	0.010***	0.001	1.047**	0.020	1.149***	0.028	0.003***	0.001
Respiratory system (reference category)	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Digestive system	1.120***	0.016	0.011***	0.001	1.188***	0.030	1.376***	0.042	0.007***	0.001
Genitourinary system	1.531***	0.021	0.046***	0.002	1.137***	0.027	1.600***	0.046	0.012***	0.001
Skin and subcutaneous tissue	0.971	0.031	-0.003	0.003	1.101*	0.060	1.040	0.072	0.001	0.001
Injuries	1.121***	0.013	0.011***	0.001	1.217***	0.025	1.406***	0.036	0.007***	0.001
Other nonmental impairments	1.074***	0.016	0.006***	0.001	1.016	0.026	1.149***	0.039	0.002***	0.001
Unknown	5.319***	0.112	0.256***	0.005	3.987***	0.125	14.176***	0.467	0.171***	0.005
Number	c 4,973,277				568,724		c 4,973,223			

SOURCE: Authors' calculations using DAF and MEF.

NOTES: Covariates include sex, age, race/ethnicity, educational attainment, number of dependents, age at disability onset, years since initial eligibility for benefits, status as disabled adult child or disabled widow(er) beneficiary, adjudication level, Medicare enrollment status, county population density and unemployment rate (mean-centered), and state of residence. See Appendix Table A-2.

. . . = not applicable.

* = statistically significant at the 0.10 level using a two-tailed t-test.

** = statistically significant at the 0.05 level using a two-tailed t-test.

*** = statistically significant at the 0.01 level using a two-tailed t-test.

a. $12,000 for nonblind beneficiaries and $19,680 for blind beneficiaries in 2011.

b. Between zero and 0.0005.

c. Sample sizes do not match because some combinations of characteristics perfectly predicted earnings above the SGA level. We removed the 54 individuals with those characteristics from the regression models for earnings above annualized SGA.

Table 4.

Regression analysis of employment and earnings among SSI-only recipients: Estimated odds ratios and marginal effects, 2011

Primary impairment	Employment status: Logit model				Conditional earnings: Ordered logit model		Earnings at annualized SGA level: [a] Logit model			
	Odds ratio	Standard error	Marginal effect	Standard error	Odds ratio	Standard error	Odds ratio	Standard error	Marginal effect	Standard error
Mental impairments										
Affective disorders	1.006	0.024	b	0.001	1.023	0.043	1.110*	0.064	0.001*	b
Schizoaffective disorders	0.758***	0.019	-0.011***	0.001	0.854***	0.038	0.741***	0.044	-0.002***	b
Anxiety disorders	0.890***	0.024	-0.005***	0.001	1.025	0.049	1.001	0.064	b	b
Intellectual disability	1.080***	0.025	0.005***	0.002	0.723***	0.031	0.855***	0.049	-0.002***	0.001
Other mental impairments	1.198***	0.029	0.012***	0.002	0.766***	0.033	0.894*	0.053	-0.001**	0.001
Nonmental impairments										
Back disorders	0.815***	0.023	-0.005***	0.001	1.014	0.051	0.895*	0.060	c*	b
HIV/AIDS	1.273***	0.041	0.009***	0.001	0.913	0.053	1.285***	0.095	0.002***	0.001
Neoplasms	1.308***	0.045	0.010***	0.001	1.153**	0.071	1.510***	0.120	0.003***	0.001
Congenital anomalies	1.021	0.033	0.001	0.001	0.397***	0.026	0.461***	0.048	-0.004***	b
Visual impairments	0.995	0.029	c	0.001	1.400***	0.074	0.588***	0.047	-0.003***	b
Hearing impairments	1.925***	0.057	0.036***	0.002	1.251***	0.066	2.384***	0.163	0.009***	0.001
Speech impairments	1.006	0.058	b	0.002	0.969	0.103	1.101	0.154	0.001	0.001
Infectious and parasitic diseases	1.007	0.064	b	0.002	1.472***	0.168	1.355**	0.181	0.002**	0.001
Endocrine, nutritional, and metabolic diseases	0.795***	0.025	-0.007***	0.001	1.090	0.060	0.836**	0.062	-0.001***	b
Diseases of the—										
Musculoskeletal system	0.947**	0.025	-0.002**	0.001	1.078	0.052	1.068	0.068	b	b
Blood and blood-forming organs	1.362***	0.049	0.014***	0.002	1.053	0.067	1.325***	0.113	0.002***	0.001
Nervous system	0.633***	0.017	-0.019***	0.001	0.952	0.045	0.732***	0.047	-0.002***	b
Circulatory system	0.768***	0.022	-0.007***	0.001	0.993	0.053	0.844**	0.059	-0.001***	b
Respiratory system (reference category)	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Digestive system	0.866***	0.035	-0.004***	0.001	1.164**	0.085	1.046	0.097	b	0.001
Genitourinary system	0.906***	0.033	-0.003***	0.001	1.208***	0.078	1.072	0.086	b	0.001
Skin and subcutaneous tissue	0.910	0.066	-0.003	0.002	1.078	0.138	0.890	0.154	-0.001	0.001
Injuries	0.727***	0.022	-0.010***	0.001	1.270***	0.069	0.961	0.066	c	b
Other nonmental impairments	0.895***	0.025	-0.004***	0.001	1.005	0.052	1.167**	0.079	0.001**	b
Unknown	1.001	0.117	b	0.004	1.350	0.285	1.110	0.287	0.001	0.001
Number	[d] 3,168,413				169,828		[d] 3,167,720			

SOURCE: Authors' calculations using DAF and MEF.

NOTES: Covariates include sex, age, race/ethnicity, educational attainment, number of dependents, age at disability onset, years since initial eligibility for benefits, adjudication level, Medicaid enrollment status, county population density and unemployment rate (mean-centered), and state of residence. See Appendix Table A-2.

. . . = not applicable.

* = statistically significant at the 0.10 level using a two-tailed *t*-test.

** = statistically significant at the 0.05 level using a two-tailed *t*-test.

*** = statistically significant at the 0.01 level using a two-tailed *t*-test.

a. $12,000 for nonblind beneficiaries and $19,680 for blind beneficiaries in 2011.

b. Between zero and 0.0005.

c. Between -0.0005 and zero.

d. Sample sizes do not match because some combinations of characteristics perfectly predicted earnings above the SGA level. We removed the 693 individuals from the regression models for earnings above annualized SGA either because they exhibited those characteristics or because their data for county population density, county unemployment rate, and Medicaid status were missing.

other mental impairments and diseases of the blood and blood-forming organs. The four impairment categories whose members among DI-only beneficiaries were least likely to be employed—anxiety disorders, schizoaffective disorders, endocrine/nutritional/metabolic diseases, and back disorders—were also among the SSI-only groups that were relatively less likely to work. However, the marginal-effect estimates show that having a particular impairment does not have a large effect on employment probability for SSI-only recipients. For instance, having a primary impairment that is positively correlated with employment was associated with no more than a 3.6 percentage point increase in employment probability (hearing impairments) relative to having a respiratory disease. The impairments with lower odds of employment were associated with no more than a 1.9 percentage point reduction in employment probability (nervous system diseases). The magnitude of the positively correlated marginal effects was larger for DI-only beneficiaries than for SSI-only recipients, but the magnitude of negatively correlated marginal effects was about the same across the programs.

Among SSI-only recipients who were employed, we find relatively weak relationships between impairment category and earnings. Point estimates for 13 of the 24 nonreference 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 are not necessarily the categories that are more strongly associated with employment. For example, SSI-only recipients with other mental impairments were more likely to be employed; but, once employed, they were less likely to be in a higher earnings category than were recipients in the reference group.

Most primary-impairment groups that tended to have relatively greater likelihood of employment among DI-only beneficiaries also tended to have greater odds of employment for concurrent beneficiaries (Table 5). The marginal-effect estimates show that, relative to concurrent beneficiaries with respiratory diseases, the magnitude of the effect of having a particular impairment on employment probability ranged from negative 0.4 percentage points (schizoaffective disorders) to 5.8 percentage points (intellectual disability) and was not always statistically significant. The relationship between impairments and conditional earnings is weaker than that between impairments and employment for concurrent beneficiaries; for nine impairments, the estimated odds ratio from the

ordered logit regression of conditional earnings was not statistically significant, even though six of those impairments had a statistically significant relationship with employment. Within impairment categories, the estimated relationships between employment and conditional earnings appear to be most consistent for DI-only beneficiaries, to be least consistent for SSI-only recipients, and to lie somewhere in the middle for concurrent beneficiaries. This finding, which we observe throughout our analysis, is consistent with that of previous studies (for example, Mamun and others 2011; Ben-Shalom and Mamun 2013)

Earnings Above the Annualized SGA Level

For each impairment group, we also use a logistic regression model to estimate the probability that a beneficiary earned an annualized SGA amount (that is, 12 times the monthly SGA amount) or more in 2011. Policymakers may wish to know 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. In estimating the SGA earnings indicator, we account for whether a beneficiary is blind or not in order to apply the appropriate annualized SGA threshold for 2011 ($19,680 and $12,000, respectively). As shown in the results from the ordered logistic regressions of earnings categories, we find that a positive correlation between a primary impairment and employment often—but not always—implies a positive correlation between that impairment and earnings above the SGA level. DI-only beneficiaries with intellectual disability again provide an example of the exception: Although estimates of the employment indicator show a strong positive relationship between having an intellectual disability and employment, a negative marginal effect (of about 0.2 percentage points) exists between having that impairment and earning above the annualized SGA level (Table 3). For both DI-only and SSI-only beneficiaries (Tables 3 and 4), estimates from the regressions for employment status and for earnings above annualized SGA level have the same direction for most primary impairments. Likewise, the magnitude of the estimated relationship between a given impairment and a given outcome is often consistent between the two models. However, the shares of beneficiaries in the reference category (respiratory system diseases) with earnings of at least the SGA level are quite small—only 1.8 percent among DI-only beneficiaries, 0.5 percent among SSI-only recipients, and 0.4 percent among concurrent

Table 5.

Regression analysis of employment and earnings among recipients of concurrent DI and SSI benefits: Estimated odds ratios and marginal effects, 2011

Primary impairment	Employment status: Logit model				Conditional earnings: Ordered logit model		Earnings at annualized SGA level: [a] Logit model			
	Odds ratio	Standard error	Marginal effect	Standard error	Odds ratio	Standard error	Odds ratio	Standard error	Marginal effect	Standard error
Mental impairments										
Affective disorders	1.142***	0.038	0.007***	0.002	0.827***	0.050	1.160	0.120	0.001	0.001
Schizoaffective disorders	0.920**	0.032	-0.004**	0.002	0.593***	0.038	0.648***	0.072	-0.002***	b
Anxiety disorders	1.077**	0.040	0.004*	0.002	0.845**	0.058	1.106	0.129	b	0.001
Intellectual disability	2.393***	0.079	0.058***	0.003	0.474***	0.029	0.859	0.092	-0.001	b
Other mental impairments	1.820***	0.062	0.040***	0.003	0.725***	0.046	1.101	0.121	0.001	0.001
Nonmental impairments										
Back disorders	0.964	0.034	-0.001	0.001	0.870**	0.057	0.904	0.101	b	b
HIV/AIDS	1.504***	0.068	0.019***	0.002	0.855*	0.071	1.532***	0.200	0.002***	0.001
Neoplasms	1.535***	0.068	0.020***	0.002	1.078	0.088	1.720***	0.225	0.003***	0.001
Congenital anomalies	2.219***	0.105	0.046***	0.004	0.376***	0.036	0.436***	0.108	-0.002***	b
Visual impairments	1.319***	0.053	0.013***	0.002	0.988	0.073	0.289***	0.052	-0.003***	b
Hearing impairments	2.152***	0.091	0.047***	0.003	1.065	0.081	2.362***	0.296	0.006***	0.001
Speech impairments	1.736***	0.181	0.026***	0.006	0.799	0.153	1.174	0.413	0.001	0.002
Infectious and parasitic diseases	1.134	0.096	0.005	0.003	0.964	0.154	1.264	0.295	0.001	0.001
Endocrine, nutritional, and metabolic diseases	0.972	0.039	-0.001	0.001	0.926	0.068	0.955	0.119	b	b
Diseases of the—										
Musculoskeletal system	1.145***	0.041	0.005***	0.001	0.880*	0.058	1.035	0.116	b	b
Blood and blood-forming organs	1.414***	0.077	0.017***	0.003	0.835*	0.081	1.157	0.181	0.001	0.001
Nervous system	1.059	0.038	0.003	0.002	0.715***	0.048	0.811*	0.094	-0.001**	b
Circulatory system	1.025	0.039	0.001	0.001	0.838**	0.059	0.860	0.104	-0.001	b
Respiratory system (reference category)	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Digestive system	0.998	0.050	b	0.002	0.881	0.082	1.062	0.162	b	0.001
Genitourinary system	1.274***	0.060	0.011***	0.002	0.914	0.078	1.219	0.167	0.001	0.001
Skin and subcutaneous tissue	0.911	0.086	-0.003	0.003	0.691**	0.122	0.789	0.227	-0.001	0.001
Injuries	0.953	0.038	-0.002	0.002	0.881*	0.065	1.039	0.126	b	0.001
Other nonmental impairments	1.567***	0.065	0.017***	0.002	0.528***	0.044	0.756*	0.119	-0.001**	b
Unknown	2.371***	0.170	0.047***	0.005	1.122	0.148	3.005***	0.592	0.007***	0.002
Number	[c] 1,442,174				98,869		[c] 1,442,044			

SOURCE: Authors' calculations using DAF and MEF.

NOTES: Covariates include sex, age, race/ethnicity, educational attainment, number of dependents, age at disability onset, years since initial eligibility for benefits, status as disabled adult child or disabled widow(er) beneficiary, adjudication level, Medicare and Medicaid enrollment statuses, county population density and unemployment rate (mean-centered), and state of residence. See Appendix Table A-2.

. . . = not applicable.

* = statistically significant at the 0.10 level using a two-tailed *t*-test.

** = statistically significant at the 0.05 level using a two-tailed *t*-test.

*** = statistically significant at the 0.01 level using a two-tailed *t*-test.

a. $12,000 for nonblind beneficiaries and $19,680 for blind beneficiaries in 2011.

b. Between zero and 0.0005.

c. Sample sizes do not match because some combinations of characteristics perfectly predicted earnings above the SGA level. We removed the 130 individuals from the regression models for earnings above annualized SGA either because they exhibited those characteristics or because their data for county population density, county unemployment, and Medicaid status were missing.

beneficiaries (Appendix Tables A-3, A-4, and A-5, respectively). As a result, the relative change in the likelihood of earning above SGA level for a specific impairment category is larger than the change estimated in the employment-status model. For concurrent beneficiaries (Table 5), few primary-impairment categories were strong predictors of annual earnings above the annualized SGA level. Specifically, concurrent beneficiaries with unknown impairments, hearing impairments, and neoplasms were most likely to have earnings above the annualized SGA level, whereas those with visual impairments, congenital anomalies, and schizoaffective disorders were least likely to have such earnings.

Conclusions

Our results provide a variety of new and updated information about Social Security disability program beneficiaries. Our tabulations reveal the distributions of beneficiaries across program types and primary-impairment categories. In addition, they provide a basic picture of beneficiary employment and earnings across program and impairment types. Similar to employment tabulations in previous studies, our findings indicate that a large majority of individuals who were Social Security disability program beneficiaries in December 2010 did not engage in substantial employment in 2011 and, on average, their annual earnings were relatively low even when they did work. Our earnings-category tabulations show that SSI-only recipients were relatively less likely to be in higher earnings categories than were DI-only or concurrent beneficiaries, both overall and across most primary-impairment categories. This is not surprising, given the differences in the eligibility rules for the two programs: Beneficiaries must have a history of earnings to qualify for DI, whereas SSI recipients must not exceed income and asset limits.

Our multivariate regression models, estimated separately for each program, reveal noticeable variations in the relationship between primary-impairment category and both employment and earnings. Impairments that are often lumped together, such as the various mental disorders, exhibit widely varying correlations with employment. Beneficiaries with schizoaffective disorders, for example, were among the least likely to work, whereas those with intellectual disability were among the most likely to work. Thus, the more narrowly defined impairment categories we have constructed for this analysis can provide valuable information for policymakers.

In contrast with the substantial variation in employment and earnings experiences across primary-impairment categories, there is noticeably less variation in the relationships between specific impairment types and employment and earnings across program types. However, for most primary impairments, employment status and impairment category are more strongly correlated for DI-only beneficiaries than they are for SSI-only recipients. Again, we speculate that differences in beneficiary characteristics generated by differences in the programs' respective eligibility criteria explain a substantial portion of this result.

After controlling for observed factors in our analysis, we find that beneficiaries with certain primary impairments are consistently associated with relatively higher or lower employment across program types. Beneficiaries with intellectual disability, visual impairments, hearing impairments, neoplasms, and HIV/AIDS were most likely to be employed. Conversely, beneficiaries with schizoaffective disorders, anxiety disorders, back disorders, and endocrine/nutritional/metabolic diseases were least likely to earn at least $1,000 in 2011.

When compared with employment experiences by primary impairment, the pattern of earnings among beneficiaries who were employed paints a somewhat unexpected picture. The primary impairments that are positively correlated with employment are not always positively correlated with being in a higher earnings category or with having earnings above the annualized SGA level. This result suggests heterogeneity across primary-impairment types in the ability to work a certain number of hours at a given wage level or the ability to obtain a higher wage level.

Policymakers may want to better understand the earnings patterns among Social Security disability program beneficiaries who work because those beneficiaries are presumably the most likely to leave the rolls through work. Similarly, proposals to intervene prior to disability program participation (Liebman and Smalligan 2013) may be more effective if targeted to potential beneficiaries in groups with disabilities that have historically shown relatively greater earnings once they are in the program. Mann and Stapleton (2011) explicitly discuss customizing intervention services by impairment type. Although we are not advocating for any particular proposal, it is clear that identifying the underlying causes of different earnings patterns across impairment types is one important area for future research.

Table A-1.
Primary-impairment categorization scheme

Primary-impairment category	SSA impairment codes
Mental impairments	
Affective disorders	2960–2969, 3110–3119
Schizoaffective disorders	2950–2959, 2980–2989
Anxiety disorders	3000–3019, 3080–3099
Intellectual disability	3170–3194, 3196–3199
Other mental impairments	2900–2949, 2990–2999, 3030–3079, 3100–3109, 3120–3129, 3138–3169, 3195
Nonmental impairments	
Back disorders	7221–7249
HIV/AIDS	0070–0079, 0201–0449, 0540–0559, 0780–0789, 1360–1369
Neoplasms	1400–2399
Congenital anomalies	7400–7599
Visual impairments	3610–3699, 3780–3789
Hearing impairments	3890–3899
Speech impairments	7840–7849
Infectious and parasitic diseases	0110–0119, 0450–0459, 0930–1359, 1380–1389
Endocrine, nutritional, and metabolic diseases	2400–2479, 2500–2559, 2630–2799
Diseases of the—	
Musculoskeletal system	7100–7200, 7250–7399
Blood and blood–forming organs	2800–2899
Nervous system	3200–3419, 3430–3599, 3860–3889
Circulatory system	3420–3429, 3750–3759, 3900–4599
Respiratory system	4600–4869, 4910–5199, 7690–7699
Digestive system	5200–5799
Genitourinary system	5800–6299
Skin and subcutaneous tissue	6900–7099
Injuries	8000–9599
Other nonmental impairments	0000–0069, 0680–0689, 2480–2499, 2580–2589, 3130, 4880–4889, 6300–6889, 7600–7689, 7740–7839, 7850–7959, 9840–9849
Unknown	Any other code

SOURCE: DAF.

NOTE: The specific impairments that correspond with the impairment codes are listed in SSA's Program Operations Manual System (http://policy.ssa.gov/poms.nsf/lnx/0426510015).

Table A-2.
Regression covariates: Characteristics controlled for in the estimation models

Characteristic	Values
Sex	Men (reference category) Women
Race/ethnicity	Non-Hispanic white (reference category) Non-Hispanic black Hispanic Missing data or other
Age group	18–39 40–49 50–59 (reference category) 60–64
Education (in years)	Less than 12 (reference category) 12 13–15 16 or more Missing data
Level of award adjudication	Disability Determination Service (reference category) Administrative law judge or higher Missing data
Age at disability onset	Onset age (in years) Missing data
Number of dependents	Zero (reference category) One Two or more Missing
Years since first eligibility	2 or fewer 3–5 6 or more (reference category)
Disabled widow(er) beneficiary status (DI only)	Yes No (reference category) Missing data
Disabled adult child beneficiary status (DI only)	Yes No (reference category) Missing data
Medicare enrollment status (DI beneficiaries only)	Yes (reference category) No Missing data
Medicaid enrollment status (SSI recipients only)	Yes (reference category) No Missing data
County characteristics (mean-centered)	Population per square mile Unemployment rate County of residence data missing
State of residence	Includes the District or Columbia and Puerto Rico

SOURCE: Authors' determinations.

Table A-3.

Distribution of DI-only beneficiaries among earnings categories, by primary impairment, 2011

Primary impairment	Number	Percent-age emp-loyed	Mean earnings ($)		Percentage with earnings—				
			Overall	Among those with earnings	Between $1,000 and $4,999	Between $5,000 and $9,999	Between $10,000 and $19,999	Of $20,000 or more	Above annual-ized SGA [a]
Total	4,973,277	11.4	1,149	9,939	4.7	3.5	2.1	1.1	2.2
Mental impairments									
Affective disorders	687,142	10.5	974	9,151	4.3	3.5	1.9	0.9	1.8
Schizoaffective disorders	208,858	9.0	629	6,836	4.1	3.3	1.4	0.3	0.8
Anxiety disorders	158,930	9.5	1,059	11,076	3.8	2.7	1.6	1.3	2.2
Intellectual disability	215,642	16.8	911	5,216	9.7	5.4	1.6	0.1	0.8
Other mental impairments	201,759	13.4	1,340	9,897	5.5	4.3	2.4	1.3	2.6
Nonmental impairments									
Back disorders	935,688	8.9	872	9,698	3.7	2.7	1.6	0.8	1.8
HIV/AIDS	43,911	17.8	2,047	11,438	5.8	5.7	4.1	2.2	4.5
Neoplasms	139,243	18.9	3,034	15,939	6.5	4.8	3.7	4.0	6.3
Congenital anomalies	9,988	15.4	1,058	6,720	8.0	4.6	2.1	0.7	1.7
Visual impairments	98,266	18.1	2,172	11,955	5.3	4.4	6.5	1.9	2.1
Hearing impairments	31,656	21.8	1,936	8,826	7.4	8.4	4.7	1.3	3.1
Speech impairments	3,016	14.3	1,653	11,499	5.4	4.8	2.4	1.7	2.9
Infectious and parasitic diseases	19,393	13.3	1,291	9,648	5.0	4.1	2.8	1.3	2.8
Endocrine, nutritional, and metabolic diseases	157,667	8.8	757	8,467	3.8	2.9	1.6	0.6	1.4
Diseases of the —									
Musculoskeletal system	632,886	10.8	1,017	9,295	4.6	3.4	2.0	0.9	2.0
Blood and blood-forming organs	10,437	16.5	1,896	11,414	6.0	5.3	3.3	2.0	3.9
Nervous system	380,709	12.9	1,414	10,859	5.1	3.9	2.5	1.4	2.8
Circulatory system	393,732	10.8	1,165	10,659	4.6	3.2	2.0	1.1	2.2
Respiratory system	125,619	9.9	897	8,921	4.4	3.1	1.7	0.8	1.8
Digestive system	78,478	12.3	1,341	10,852	4.7	3.7	2.4	1.5	3.0
Genitourinary system	76,236	16.8	1,884	11,135	6.3	5.0	3.4	2.1	4.0
Skin and subcutaneous tissue	11,725	10.6	1,003	9,352	4.2	3.5	2.0	0.9	2.0
Injuries	223,393	11.6	1,404	12,007	4.5	3.4	2.2	1.5	2.7
Other nonmental impairments	115,062	8.6	729	8,276	4.2	2.4	1.4	0.6	1.4
Unknown	13,841	35.7	6,167	17,210	6.9	7.4	12.3	9.1	18.1

SOURCE: Authors' calculations using DAF and MEF.

a. $12,000 for nonblind beneficiaries and $19,680 for blind beneficiaries in 2011.

Table A-4.

Distribution of SSI-only disability payment recipients among earnings categories, by primary impairment, 2011

Primary impairment	Number	Percent-age emp-loyed	Mean earnings ($)		Percentage with earnings—				
			Overall	Among those with earnings	Between $1,000 and $4,999	Between $5,000 and $9,999	Between $10,000 and $19,999	Of $20,000 or more	Above annual-ized SGA [a]
Total	3,168,413	5.4	368	6,605	2.9	1.4	1.0	0.2	0.8
Mental impairments									
Affective disorders	539,262	5.0	381	7,467	2.3	1.4	1.1	0.2	0.9
Schizoaffective disorders	285,521	4.1	302	7,045	2.1	1.1	0.8	0.2	0.7
Anxiety disorders	133,876	4.6	333	7,053	2.3	1.2	0.9	0.2	0.8
Intellectual disability	632,336	7.7	465	5,691	4.6	1.8	1.2	0.1	1.0
Other mental impairments	313,230	8.9	526	5,605	5.4	2.1	1.3	0.2	1.0
Nonmental impairments									
Back disorders	186,866	2.3	174	7,565	1.0	0.7	0.4	0.1	0.4
HIV/AIDS	36,265	5.7	504	8,755	2.4	1.7	1.2	0.4	1.2
Neoplasms	32,258	5.2	417	7,938	2.3	1.6	1.0	0.3	1.0
Congenital anomalies	26,306	8.8	396	4,008	6.9	1.2	0.6	0.1	0.5
Visual impairments	56,810	5.8	516	8,641	2.7	1.4	1.2	0.5	0.5
Hearing impairments	27,713	13.0	967	7,277	6.6	3.1	2.7	0.6	2.6
Speech impairments	4,803	8.5	558	6,232	4.8	1.9	1.5	0.3	1.3
Infectious and parasitic diseases	7,897	3.8	348	9,000	1.4	1.1	1.1	0.2	0.9
Endocrine, nutritional, and metabolic diseases	88,239	2.7	211	7,632	1.1	0.9	0.6	0.1	0.5
Diseases of the —									
Musculoskeletal system	175,119	3.1	237	7,602	1.3	1.0	0.7	0.1	0.6
Blood and blood-forming organs	12,949	11.6	857	7,193	5.5	3.6	2.1	0.5	1.9
Nervous system	158,711	4.2	297	6,752	2.4	1.0	0.7	0.2	0.7
Circulatory system	134,641	2.3	180	7,724	1.0	0.7	0.5	0.1	0.4
Respiratory system	64,165	3.3	236	7,114	1.4	1.1	0.6	0.1	0.5
Digestive system	31,003	3.1	244	7,669	1.4	0.9	0.7	0.1	0.6
Genitourinary system	29,287	4.8	410	8,420	1.9	1.4	1.2	0.3	1.0
Skin and subcutaneous tissue	5,074	4.5	339	7,298	1.9	1.5	1.0	0.1	0.8
Injuries	82,403	3.5	296	8,385	1.5	1.0	0.8	0.2	0.7
Other nonmental impairments	101,596	3.8	299	7,640	1.9	1.0	0.7	0.2	0.7
Unknown	2,083	3.9	364	9,239	1.5	1.1	1.1	0.2	0.8

SOURCE: Authors' calculations using DAF and MEF.

a. $12,000 for nonblind beneficiaries and $19,680 for blind beneficiaries in 2011.

Table A-5.

Distribution of disability program beneficiaries receiving concurrent DI and SSI benefits among earnings categories, by primary impairment, 2011

Primary impairment	Number	Percent-age emp-loyed	Mean earnings ($)		Percentage with earnings—				
			Overall	Among those with earnings	Between $1,000 and $4,999	Between $5,000 and $9,999	Between $10,000 and $19,999	Of $20,000 or more	Above annual-ized SGA [a]
Total	1,442,174	6.9	368	5,119	4.4	1.7	0.7	0.1	0.5
Mental impairments									
Affective disorders	249,870	6.2	371	5,808	3.5	1.7	0.9	0.1	0.6
Schizoaffective disorders	137,863	5.1	270	4,968	3.4	1.2	0.5	0.1	0.4
Anxiety disorders	54,941	6.0	342	5,486	3.6	1.6	0.8	0.1	0.5
Intellectual disability	92,750	10.7	551	4,937	6.8	2.9	1.0	0.1	0.6
Other mental impairments	278,185	11.2	490	4,088	8.3	2.2	0.7	0.0	0.4
Nonmental impairments									
Back disorders	123,454	3.7	224	5,923	2.0	1.2	0.5	0.1	0.3
HIV/AIDS	15,826	7.1	474	6,473	3.6	2.1	1.2	0.2	0.9
Neoplasms	16,451	7.1	496	6,810	3.5	2.1	1.3	0.2	0.9
Congenital anomalies	8,173	13.4	530	3,712	10.5	2.5	0.3	0.1	0.2
Visual impairments	29,079	6.8	443	6,310	3.8	1.8	1.2	0.2	0.2
Hearing impairments	12,909	13.7	865	6,167	7.4	3.9	2.0	0.4	1.6
Speech impairments	1,190	10.3	570	5,291	6.1	2.9	1.2	0.1	0.8
Infectious and parasitic diseases	3,678	4.8	329	6,611	2.6	1.3	0.8	0.2	0.6
Endocrine, nutritional, and metabolic diseases	44,062	4.1	259	6,168	2.1	1.4	0.6	0.1	0.4
Diseases of the —									
Musculoskeletal system	94,031	4.6	285	6,078	2.4	1.5	0.6	0.1	0.4
Blood and blood-forming organs	5,360	11.9	804	6,585	5.7	3.9	2.0	0.3	1.4
Nervous system	70,504	5.8	318	5,244	3.6	1.5	0.6	0.1	0.4
Circulatory system	60,395	3.9	238	5,959	2.1	1.2	0.5	0.1	0.4
Respiratory system	27,886	3.8	242	6,127	1.9	1.3	0.6	0.0	0.4
Digestive system	15,512	4.8	303	6,121	2.6	1.4	0.6	0.1	0.5
Genitourinary system	14,310	6.7	463	6,708	3.4	2.2	0.9	0.3	0.8
Skin and subcutaneous tissue	2,709	5.2	321	6,009	2.9	1.7	0.4	0.2	0.5
Injuries	40,543	4.8	303	6,086	2.7	1.3	0.7	0.1	0.5
Other nonmental impairments	39,019	4.4	199	4,012	3.4	0.8	0.3	0.0	0.2
Unknown	3,474	8.4	532	6,032	4.7	2.3	1.2	0.2	1.1

SOURCE: Authors' calculations using DAF and MEF.

a. $12,000 for nonblind beneficiaries and $19,680 for blind beneficiaries in 2011.

Notes

[1] Because DI and SSI are programmatically distinct, individuals who receive SSI payments are often referred to as "SSI recipients" to distinguish them from "Social Security beneficiaries" or the more specific "DI beneficiaries." However, for the sake of simplicity, in this article we sometimes use the word "beneficiaries" to indicate awardees of either SSI or DI, including those who receive concurrent benefits from both programs.

[2] In 2011, engaging in SGA meant earning at least $1,000 per month for a nonblind individual or $1,640 per month for a blind individual (SSA n.d.). SGA amounts have been adjusted annually based on the national average wage index since 1978 (for blind individuals) and since July 1999 (for all others).

[3] DI beneficiaries who have amyotrophic lateral sclerosis or end-stage renal disease qualify for Medicare benefits immediately, as do new DI beneficiaries whose entitlement is retroactive to at least 24 months prior to DI award.

[4] To determine Medicaid eligibility, 39 states and the District of Columbia use SSI criteria, and 11 states use more restrictive eligibility criteria.

[5] Individuals with FICA- or SECA-covered earnings that are not also Medicare taxable have their earnings capped at the FICA/SECA 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.

[6] In our population, 3.7 percent of DI-only beneficiaries, 3.8 percent of SSI-only recipients, and 4.5 percent of concurrent-benefit recipients have earnings greater than $0 but less than $1,000.

[7] Because we define employment as having earnings of at least $1,000, our statistical tables omit data for beneficiaries earning less than $1,000.

[8] Statistics on beneficiary age and other characteristics are available from the authors upon request.

[9] The estimated coefficients from the regressions are available from the authors upon request.

[10] Essentially, these estimates correspond with the average change in the outcome variables for all individuals when the variable of interest is changed from 0 to 1, with all other variables set to their actual values. For more information, see Bartus (2005).

[11] The odds ratio for diseases of the skin and subcutaneous tissue is also less than 1, but that result is not statistically significant.

[12] Although the odds ratio calculations depend on the choice of reference category, the fact that we have found one instance of deviation between employment and conditional earnings using any reference group is sufficient to support our claim that impairment groups whose members are more likely to work are not necessarily those groups whose members have higher earnings.

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Retirement Plan Coverage by Firm Size: An Update

by Irena Dushi, Howard M. Iams, and Jules Lichtenstein*

Previous research indicates that small businesses tend to be less likely than larger ones to offer retirement benefits to their employees. This means that resolving issues of adequate retirement savings requires an understanding of the role businesses play in retirement policy and how a business's decision on offering retirement benefits determines workers' choices regarding retirement savings. The relationship between firm size and retirement plan sponsorship is particularly important given the Obama administration's retirement proposals to create automatic individual retirement accounts. Obviously, accurate information is important for policymakers not only in formulating retirement income-security policies that would better target workers not covered by a retirement plan, but also to assess more fully the impact of policy alternatives on workers' retirement plan behavior.

In this article, we build on our previous work and provide an update of the relationship between pension plan coverage and firm size among private-sector workers, using data from the Survey of Income and Program Participation (SIPP) for 3 years: 2006, 2009, and 2012. More specifically, we report on three important measures: the proportions of employers who offered a retirement plan, the proportions of employees who participated in a retirement plan, and the proportions of employees who took up a retirement plan conditional on their employers having offered one. Following previous work, our measures of pension coverage and participation take into account, and correct for, survey-response errors in the SIPP by using information in the W-2 records regarding tax-deferred earnings to defined contribution plans. Our findings show that compared with 2006, the offer and participation rates of any pension plan increased in 2009 and 2012; the differences were relatively small, but statistically significant. Although offer and participation rates differed substantially by firm size throughout the period, take-up rates (conditional on plans being offered) differed little among workers in firms with 10 or more employees.

Introduction

Previous research has shown that a substantial proportion of workers in the private sector have no access to a pension plan,[1] and that workers in large firms are more likely to have access to pensions than those in small firms. Hence, the primary challenge for both researchers and policymakers interested in retirement security has been how to expand pension coverage and participation, as a means of saving for retirement, so that workers have enough income in retirement to avoid sharp drops in their living standards. Policymakers have implemented many options—such as Simplified Employee Pension (SEP) plans and Savings Incentive Match Plans for

Employees (SIMPLE)—to help small businesses overcome some of the obstacles of sponsoring retirement plans. More recently, the current administration has proposed new policies to expand retirement savings. Under the Obama administration's automatic individual retirement account (IRA) proposal, employers in

Selected Abbreviations	
DB	defined benefit
DC	defined contribution
IRA	individual retirement account
SIPP	Survey of Income and Program Participation

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business for at least 2 years and who have more than 10 employees would be required to offer an automatic IRA option to employees, under which regular contributions would be made to that IRA through payroll deductions. However, employers who sponsor a qualified retirement plan (for example, SEP or SIMPLE) for their employees would not have to provide an automatic IRA for those employees. According to the administration's proposal, employers would not have to match employee contributions nor choose or arrange default investments options. Instead, a low-cost, standard type of investment alternative would be prescribed by statute or regulation (Department of the Treasury 2014, 141–144). It is estimated that through this automatic IRA program, approximately 75 million employees working in private-sector firms with more than 10 employees who are not currently offered any pension plan would be able to save for retirement (Iwry and John 2007).

From a research and policymaking point of view, it is very important to have accurate estimates of pension coverage, participation, and take up to estimate the impact of new proposals. In general, in estimating pension coverage, researchers rely heavily on survey reports; however, the estimates of access or plan offering vary widely. Iwry and John (2007), using information from the 2004 Survey of Consumer Finances, estimated that half of the workforce had no employer-provided plan. Our estimates from Current Population Survey (CPS) data for 2012 indicate that 51 percent of private-sector employees aged 21–64 were offered a pension plan from their employer, and 42 percent reported inclusion in the plan. Using data from the 2006 Survey of Income and Program Participation (SIPP), Dushi, Iams, and Lichtenstein (2011, Table 1) estimated that 65 percent of private-sector employees aged 21–64 self-reported being offered a retirement plan; that proportion increases to 72 percent when self-reported data are augmented with information from the matched W-2 payroll records. Consistent with those authors' findings, the Employment Benefit Research Institute, based on their 2014 Retirement Confidence Survey, reported that 70 percent of workers were offered a retirement plan (Helman and others 2014, 18). Wu and Rutledge (2014, Table 2), using data from the Health and Retirement Study (HRS) for older workers (aged 50–58) over the 1992–2010 period, estimated that about 76 percent of workers were offered a retirement plan by their employer. Among workers in low-income households (with income of less than 300 percent of the federal poverty level), 59 percent were offered a plan compared with 82 percent of workers in households that were not low income.[2]

A recent analysis by Munnell and Bleckman (2014) suggests that estimates of plan coverage depend on the sector of employment (public or private); hours of work (any, part time, or full time); definition used (employer offering, employee inclusion, or participation); and the source of assessment (employers or employees). The authors compared estimates from employers' reports in the Bureau of Labor Statistics' National Compensation Survey (NCS) with estimates from respondents' reports in the CPS. Their findings showed that in the NCS, pension coverage of workers aged 25–64 varied from 64 percent to 79 percent. In the CPS, 52 percent to 63 percent of workers reported being covered by a pension plan depending on hours of work and sector of employment (Munnell and Bleckman 2014, Table 2).[3] Furthermore, the authors observed that estimates of participation in retirement plans were more similar in the NCS and CPS than estimates regarding plan access and offering.[4] Plausibly, this may suggest that the concepts of access and offer are more abstract for survey respondents than the concept of pension plan participation.

One reason for the variation across population surveys is that survey respondents may incorrectly report their pension plan information. Previous research has documented the widespread inconsistencies between survey-reported characteristics of defined benefit (DB) pensions and the plan characteristics detailed in the employer Summary Plan Description (Mitchell 1988; Gustman and Steinmeier 2004, 2005; Gustman, Steinmeier, and Tabatabai 2009). Respondent-reporting error is also found when survey respondents answered questions about defined contribution (DC) plans (Dushi and Iams 2010; Dushi, Iams, and Lichtenstein 2011; Dushi and Honig 2014). Using SIPP data matched to Social Security W-2 tax records, Dushi and Iams (2010) found that the participation rate in DC plans based on respondents' self-reports was lower than the rate when using W-2 records (by 11 percentage points), suggesting that respondents either do not understand the survey questions about participation or they do not recall making a decision to participate in a DC plan. The authors also found inconsistencies between the survey report and the W-2 records regarding contribution amounts to DC plans. Dushi and Honig (2014), using data for older workers in the HRS, found that although respondents

interviewed in 1998 and 2004 were more likely to correctly report whether they were included in DC plans, they were no more accurate in reporting whether they contributed to their plans than were respondents interviewed in 1992. The authors also found that respondents in the three cohorts (1992, 1998, and 2004) significantly overstated their annual contributions. Given the presence of respondent-reporting errors, researchers have used different approaches to correct for them, such as examining information from employers' Summary Plan Descriptions,[5] examining respondents' pension reports when those individuals are near retirement or newly retired,[6] or by supplementing survey reports of participation in DC plans with data from W-2 tax records.[7]

According to our recent analysis of the 2006 SIPP data matched to respondents' W-2 records, overall, about 28 percent of private-sector workers aged 21–64 did not have access to any type of retirement plan through their workplace (Dushi, Iams, and Lichtenstein 2011, Table 1). Moreover, 50 percent of private-sector workers in small firms (with fewer than 100 employees) had no retirement plans available, compared with about 16 percent of workers in large firms (with 100 or more employees). By contrast, conditional on the employer offering a retirement plan, the take-up rate among workers in small and large firms was essentially the same—about 80 percent, suggesting that employees in small firms are as likely to take up the plan once they are offered. These substantial differences in offer rate by firm size suggest that it is important to make it easier for small firms to provide some sort of retirement plan to their employees.

The purpose of this analysis is to update our previous estimates based on data from early 2006 (Dushi, Iams, and Lichtenstein 2011) with data from the summer of 2009 and early 2012. Two major influences are reflected in the findings using the 2009 and 2012 data. First, the 2006 Pension Protection Act, among other legislative changes, allowed employers to enroll their employees automatically in DC-type plans. As a result, enrollment in retirement plans is quite likely to have increased because default enrollment leads to higher participation rates.[8] Second, evidence indicates that the Great Recession of 2007–2009 had an impact on employers' matching contributions to DC plans (Towers Watson 2010), and that it also led to a reduction in employees' participation and contributions to such plans (Dushi, Iams, and Tamborini 2013; Dushi and Iams 2015). Hence, it is plausible to expect that

these changes have influenced the overall offer, participation, and take-up rates of retirement plans after 2006, and it is likely that the impact of those changes differ by firm size. Thus, our estimates of offer, participation (inclusion), and take-up rates of retirement plans for 2006, 2009, and 2012 may, to some extent, provide evidence of the impact of the 2006 Pension Protection Act and the Great Recession of 2007–2009. In addition, using the responses of the same individual in 2009 and 2012, we assess changes in pension coverage over the 2009–2012 period among private-sector workers by firm size.

Our findings show that offer and participation rates of any retirement plan in 2009 and 2012 were significantly higher than the offer and participation rates in 2006.[9] The participation rate in any pension plan among all private-sector employees increased from 58 percent in 2006 to around 62 percent in 2012 (the difference is statistically significant at the 5 percent level). The take-up rate also significantly increased, from 80 percent in 2006 to around 83 percent in 2009 and 2012. While throughout the period, offer and participation rates differed substantially by firm size, there was little difference in the take-up rate of any retirement plan (conditional on being offered) among workers in firms with 10 or more employees.

The following four sections of the article provide a discussion of the data and methodology, describe the findings of our analysis, address policy changes, and present overall conclusions.

Data and Methodology

The data for this study come from the SIPP, which is conducted by the Census Bureau. The SIPP is the principal, nationally representative household survey for the entire labor force, monitoring pension type, coverage and participation, and the shift from DB to DC plans. More specifically, we use data from the Topical Module on Retirement and Pension Plan Coverage of the 2004 SIPP Panel; respondent interviews were conducted over the 4-month period from February to May 2006. In addition, we also use data from topical modules 3 and 11 of the 2008 SIPP Panel; pension information was reported in the summer of 2009 and again in early 2012. The sample for this analysis consists of private-sector wage and salary workers aged 21–64.[10] Our measurement of firm size is based on employee self-reported responses.[11]

In the topical module, SIPP respondents are asked if the employer offered a pension or retirement

plan and whether they were included in the plan.[12] If respondents were included in a plan, they are asked about the type of plan. Then, the SIPP collects information about whether the respondents have contributed to an individual account or retirement plan during the survey year, whether the contributions were tax-deferred, the amount and frequency of contributions, and whether their employers contributed to the plan and the amount of the employer contributions.[13]

Dushi, Iams, and Lichtenstein (2011) documented the presence of reporting errors in the SIPP that were either because of the respondent misunderstanding the survey questions or other reporting procedures, such as Census imputation of missing data[14]—regarding offer, participation, and take-up rates. In this analysis, we supplement SIPP data with information from the respondent's W-2 payroll tax records.[15] Similar to the method used in our previous article, we adjust the survey reports with information from W-2 tax records regarding tax-deferred contributions to DC plans, to correct for the presence of measurement error in self-reports of DC plans and to obtain a more accurate picture of the pension offer, participation, and take-up rates.[16] The main field of interest from the W-2 record is whether in a given year there were tax-deferred contributions to a retirement plan.[17] The presence of positive tax-deferred contributions in the W-2 record is an indication that the respondent not only was offered, but also participated in a DC plan. Thus, we define a respondent as being *offered* any pension plan if he or she reported that the employer offered a pension plan, an investment account plan, a tax-deferred retirement savings plan, or if his or her W-2 tax record indicated tax-deferred earnings to a retirement account; *offer* of a DC plan is defined similarly.[18] We define *participation* in a pension plan if the respondent reported inclusion in a plan, or if the W-2 record indicated the presence of tax-deferred earnings to a retirement account, whereas we define *participation* in a DC plan only according to information in the W-2 record.[19] We define *take up* as a respondent participating in a pension plan, conditional on being offered a plan; *take up* of a DC plan is defined similarly.[20] In this analysis, we use information in the W-2 record that corresponds to the year of the survey (that is, tax-deferred contributions in 2006 for the early 2006 survey data, the 2009 records for the summer of 2009 survey data, and the 2011 records for early 2012 survey data).[21]

We first present the offer, participation, and take-up rates of any type of pension plan (DC, DB, or cash balance)[22] and then separately present the rates for DC plans, by firm size. Next, we estimate the change in offer, participation, and take up between 2009 and 2012 among respondents interviewed in both topical modules.

Results

Our findings cover the following three focal areas: (1) offer, participation, and take-up rates of any type of retirement plan; (2) offer, participation, and take-up rates of DC plans; and (3) changes in offer, participation, and take-up rates over time among respondents who stayed in the same job and those who changed jobs.

Offer, Participation, and Take-Up Rates of Any Type of Retirement Plan

Offer, participation, and take-up rates of any retirement plan by firm-size categories among private-sector workers for each of the 3 years under study are shown in Table 1. Overall, the offer rate seems to have increased only slightly (by 3 percentage points) between 2006 and 2009, and from there it remained the same in 2012 (columns 1–3). A similar pattern is observed among employees working in firms with 100 or more employees. By contrast, offer rates decreased among workers in firms with fewer than 10 employees, from 34 percent in 2006 to 28 percent in 2012, suggesting that the Great Recession of 2007–2009 may have played a role. Interestingly, in firms with 10–24 and 25–49 employees, the offer rates were almost the same in 2006 and 2009, but increased in 2012 (by 4–5 percentage points). Among workers in firms with 50–99 employees, the offer rate decreased from 70 percent in 2006 to 67 percent in 2009, and then increased again to 73 percent in 2012. It is worth noting here that the offer rates among firms with fewer than 100 employees were much lower (around 50 percent) than those in firms with 100 or more employees (around 87 percent), suggesting that a policy such as the proposed automatic IRA, which targets smaller firms, is likely to have an important impact on access to retirement plans. Not surprisingly, the offer rates increased with firm size, and firms with fewer than 10 employees had the lowest offer rate (28 percent in 2012).

Table 1.

Offer, participation, and take-up rates of any retirement plan among private-sector workers in 2006, 2009, and 2012, by firm-size categories (in percent)

Firm size (number of employees)	Offer of any retirement plan			Participation in any retirement plan			Take up of any retirement plan		
	2006 (1)	2009 (2)	2012 (3)	2006 (4)	2009 (5)	2012 (6)	2006 (7)	2009 (8)	2012 (9)
All	72	75 *	75 *	58	63 *	61 *	80	83 *	82 *
100 or more	84 †	87 *†	87 *†	68 †	73 *†	71 *†	81 †	84 *†	82 *†
Fewer than 100	50	50	52 *	39	40	42 *	79	79	80 *
Fewer than 10	34	33	28 *	28	27	23 *	83	82	82
10–24	46	46	51 *	36	35	42 *	77	78	82 *
25–49	60	59	63 *	46	47	51 *	77	81	80 *
50–99	70	67 *	73 *	54	52 *	57 *	78	78	78
10 or more	77 †	81 *†	80 *†	62 †	67 *†	65 *†	80 †	83 *	82 *
Number of observations	23,753	20,499	14,464	23,753	20,499	14,464	15,631	15,525	10,873

SOURCE: Data are from the 2006 topical module 7 of the 2004 Survey of Income and Program Participation (SIPP) Panel and the 2009 and 2012 topical modules 3 and 11, respectively, of the 2008 SIPP Panel. Samples from both panels are matched to Social Security W-2 records.

NOTES: The samples consist of private-sector wage and salary workers aged 21–64 at the interview year. Estimates are weighted using survey weights. Offer is defined as equal to 1 if the employer offers any retirement plan (either a defined benefit (DB), defined contribution (DC), or cash balance plan) and 0 otherwise. Participation is defined as equal to 1 if the respondent reports either inclusion in a DB plan or active participation (that is, making tax-deferred contributions) in a DC plan and 0 otherwise. Conditional on being offered any retirement plan, take up is defined as equal to 1 if the respondent participates in a plan and 0 otherwise. The three definitions adjust the respondent's report in the SIPP with information in the W-2 record (that is, if the W-2 record indicates a positive tax-deferred contribution). In other words, if a SIPP respondent reports not being offered (or participating in) a pension plan and the W-2 record indicates that he or she made a tax-deferred contribution to a DC account in the survey year, then the respondent is classified as being offered and participating in a retirement plan.

* denotes that the difference in the rates in each row between 2006 and 2009 (and/or between 2006 and 2012) is statistically significant at the 5 percent or better level.

† denotes that the difference in the rates within each column between firms with 100 or more employees and firms with fewer than 100 employees and between firms with 10 or more employees and firms with fewer than 10 employees is statistically significant at the 5 percent or better level.

Columns 4–6 reveal that overall participation rates in a pension plan (that is, inclusion) significantly increased from 58 percent in 2006 to around 61 percent in 2012, suggesting that changes in offer rates quite likely have contributed to the increase in participation. This pattern also suggests that the larger increase from 2006 to 2009 could be because of the 2006 Pension Protection Act, whereas the decrease from 2009 to 2012 could be because of the Great Recession of 2007–2009. The same pattern is evident among firms with 100 or more employees. By contrast, the participation rate in smaller firms (those with 10–24 and 50–99 employees) slightly decreased in 2009, but it increased in 2012. Among firms with fewer than 10 employees, the participation rate decreased from 28 percent in 2006 to 23 percent in 2012. Similar to the offer rate, the participation rate

of workers in firms with fewer than 100 employees was much lower (a difference of about 30 percentage points) than the rate of their counterparts in firms with 100 or more employees. Although the participation rates increased with firm size, in 2012, the rate remained below 25 percent for firms with fewer than 10 employees and below or near 50 percent for firms with 10–24 and 25–49 employees, respectively.

Conditional on being offered a pension plan, the overall take-up rate increased from 80 percent in 2006 to 83 percent and 82 percent in 2009 and 2012, respectively (columns 7–9); the increase was small, but statistically significant at the 5 percent level. Thus, the slight increase in offer rates (by about 3 percentage points) quite likely led to a proportional increase in take-up rates (by about 2–3 percentage points).

Interestingly, the take-up rates in firms with 10 or more employees follow the same pattern, whereas in firms with fewer than 10 employees, the take-up rates were almost unchanged over the period. Furthermore, the take-up rates in firms with fewer than 10 employees were as high as the take-up rates in firms with 100 or more employees and, in general, they were higher (by 4–6 percentage points in 2006 and 2009) than the rates in firms with 10–24 employees. This finding suggests that workers in small firms are not much different in their decision to take up retirement plans when offered; therefore, increasing the offer rate among workers in small firms would plausibly increase their participation in such plans and help bolster their retirement security.

Offer, Participation, and Take-Up Rates of DC Plans

As DB plans are being "frozen" or eliminated, DC plans are becoming the dominant type of retirement plan available to employees (Bureau of Labor Statistics 2010, Table 2). Overall, we find that among private-sector workers, the offer rate of DC plans increased from 60 percent in 2006 to 63 percent in 2009, and then declined to 61 percent in 2012; those changes while small in magnitude, are statistically significant at the 5 percent level (Table 2, columns 1–3). As expected, the offer rate in 2012 was substantially higher among workers in firms with 100 or more employees than in firms with fewer than 100 employees (72 percent versus 40 percent). Among firms with

Table 2.

Offer, participation, and take-up rates of DC plans among private-sector workers in 2006, 2009, and 2012, by firm-size categories (in percent)

Firm size (number of employees)	Offer of a DC plan			Participation in a DC plan			Take up of a DC plan		
	2006 (1)	2009 (2)	2012 (3)	2006 (4)	2009 (5)	2012 (6)	2006 (7)	2009 (8)	2012 (9)
All	60	63 *	61 *	44	46 *	45 *	73	74 *	73
100 or more	71 †	73 *†	72 *†	53 †	55 *†	53 †	74 †	75 *†	74 †
Fewer than 100	39	38	40 *	27	26	28	70	67 *	70
Fewer than 10	24	23	20 *	17	16	14 *	71	69 *	72 *
10–24	36	34 *	38 *	24	22 *	26 *	68	65 *	69
25–49	48	45 *	48	34	31 *	34	70	68 *	70
50–99	59	53 *	59	41	35 *	40	70	66 *	68 *
10 or more	65 †	67 *†	65 †	48 †	50 *†	48 †	73 †	74 *†	73
Number of observations	23,753	20,499	14,464	23,753	20,499	14,464	14,403	12,872	8,867

SOURCE: Data are from the 2006 topical module 7 of the 2004 Survey of Income and Program Participation (SIPP) Panel and the 2009 and 2012 topical modules 3 and 11, respectively, of the 2008 SIPP Panel. Samples from both panels are matched to Social Security W-2 records.

NOTES: The samples consist of private-sector wage and salary workers aged 21–64 at the interview year. Estimates are weighted using survey weights. The three definitions adjust the respondent's report in the SIPP with information in the W-2 record (that is, if the W-2 record indicates a positive tax-deferred contribution). More specifically, offer is defined as equal to 1 if the employer offers a defined contribution (DC) retirement plan and 0 otherwise. If a SIPP respondent reports not being offered a DC plan and the W-2 record indicates that he or she made a tax-deferred contribution to a DC plan in the survey year, then the respondent is classified as being offered a DC plan. By contrast, if the SIPP respondent reported being offered a DC plan, but the W-2 record indicates that no contributions were made, we consider the respondent as being offered because there is no way we can tell from the W-2 record whether the offer was made or not. The definitions of participation in and take up of a DC plan take into account only information in the W-2 record, if the respondent made a tax-deferred contribution in the survey year. Thus, participation is defined as equal to 1 if the respondent, according to the W-2 record, made tax-deferred contributions in a DC plan and 0 otherwise. Conditional on being offered a DC plan, take up is defined as equal to 1 if the respondent participates in a DC plan and 0 otherwise.

* denotes that the difference in the rates in each row between 2006 and 2009 (and/or between 2006 and 2012) is statistically significant at the 5 percent or better level.

† denotes that the difference in the rates within each column between firms with 100 or more employees and firms with fewer than 100 employees and between firms with 10 or more employees and firms with fewer than 10 employees is statistically significant at the 5 percent or better level.

http://www.socialsecurity.gov/policy/docs/ssb/

fewer than 100 employees, the proportion offered a plan increased with firm size, from about 20 percent in firms with fewer than 10 employees to 59 percent in firms with 50–99 employees. Over the period, among firms with fewer than 100 employees, the offer rate slightly decreased in 2009 compared with 2006, but then increased again in 2012. An exception is firms with fewer than 10 employees, where the offer rate decreased throughout the period.

Among all private-sector workers, over the period under study, around 45 percent had made tax-deferred contributions to DC plans as indicated by their W-2 tax records (columns 4–6); the increase in the participation rate between 2006 and 2009 and between 2006 and 2012 was small (by 1–2 percentage points), but statistically significant. Similar to previous patterns, in 2012, workers in large firms with 100 or more employees were more likely to participate in DC plans than were their counterparts in small firms with fewer than 100 employees (53 percent versus 28 percent, respectively. Participation rates in small firms range from 14 percent in firms with fewer than 10 employees to 40 percent in those with 50–99 employees. Except in the smallest firm (with fewer than 10 employees), where the rates decreased monotonically over the study period, participation rates in the firms with 10–24, 25–49, and 50–99 employees dipped in 2009, but bounced back to previous levels in 2012.

Overall, about three-quarters of employees who were offered a DC plan took it up (columns 7–9). The take-up rates remained almost unchanged over the period in firms with 100 or more employees, and they decreased only slightly in 2009 in firms with fewer than 100 employees. Interestingly, in 2012, there was no substantial difference in the take-up rates by firm size, ranging from 72 percent in firms with fewer than 10 employees to 68 percent in firms with 50–99 employees and up to 74 percent in firms with 100 or more employees. These findings suggest that the main factor in lower participation rates among workers in smaller firms may be the lack of an offer of a DC plan. Hence, if all uncovered workers were offered a DC plan or an IRA plan in 2012, all else being equal, one would expect that about three-quarters of them may have participated.

Changes in Offer, Participation, and Take-Up Rates Over Time

In Tables 1 and 2, we treat the samples in 2009 and 2012 as two separate cross sections; in fact, both samples are from the 2008 Panel of the SIPP. Hence, the cross-section estimates allow for the possibility that over the period, survey respondents may have gained or lost pension coverage for different reasons, or they may have even opted out of the survey. Next, we take advantage of the panel aspect of the 2008 SIPP and examine changes in individuals' offer, participation, and take-up rates over the period, from the first pension module conducted in the summer of 2009 to the second pension module conducted in early 2012. To the best of our knowledge, no one has used this panel aspect to examine changes over time, particularly by firm size. We restrict the sample to respondents who were interviewed and had a wage and salary job in both 2009 and 2012.[23]

Because changes in offer, participation, and take-up rates are affected by whether respondents changed jobs over the period, we present estimates separately for workers who were in the same job in both years (that is, "job stayers") and those who were in a different job in both years (that is, "job changers").[24] For 2009 and 2012, the percentage distribution of offer, participation, and take-up rates by firm-size categories is given in Tables 3a, 3b, and 3c, respectively, for the overall sample and separately for job stayers and job changers. Among all workers who stayed in the same job over the period, 68 percent were offered a plan in both years, and 56 percent participated in a plan in both years (Tables 3a and 3b, respectively, panel A, column 4). An additional 16 percent of respondents were not offered a plan in both years, and 27 percent did not participate (Tables 3a and 3b, respectively, panel A, column 1); the 11 percentage point difference between those two rates suggests that a nontrivial proportion elected not to participate in a plan even when offered. Table 3a also shows that among job stayers, 9 percent of respondents who were not offered a plan in 2009 were offered a plan in 2012 (panel A, column 2), whereas 7 percent of respondents who were offered a plan in 2009 were not offered a plan in 2012 (column 3); the latter figure reflects either respondents' misreport of plan offers in one of the two interviews, Census imputation error, or changes in plan offering by employers (although less likely).

We derive the take-up rates only for workers who were offered a plan in both years. Thus, among job stayers, 82 percent of employees continued to take up a plan in both 2009 and 2012 (Table 3c, panel A, column 4), whereas the 5 percent who took up the plan in 2009 seemed to have decided not to take it up in 2012 (column 3). An additional 7 percent decided to take up the offered plan in 2012, although they were also offered one in 2009 (column 2); however, another

Table 3a.

Percentage distribution of offer rates of any retirement plan among private-sector workers, by whether those workers were in the same or a different job in 2009 and 2012 and by broad firm-size categories (in percent)

Firm size (number of employees)	Not offered in 2009 or 2012 (1)	Not offered in 2009, but offered in 2012 (2)	Offered in 2009, but not offered in 2012 (3)	Offered in 2009 and in 2012 (4)	Total number
Panel A: Job stayers (in the same job)					
All	16	9	7	68	10,850
Fewer than 100	32	9	11	48	3,577
100 or more	6	9	5	80	7,073
Fewer than 10	55	6	13	26	986
10 or more	10	10	6	74	9,664
Panel B: Job changers (in a different job)					
All	31	29	8	32	4,201
Fewer than 100	52	21	8	19	1,473
100 or more	16	38	4	42	2,341
Fewer than 10	71	10	9	10	459
10 or more	24	34	5	37	3,355

SOURCE: Data are from the 2009 and 2012 topical modules 3 and 11, respectively, of the 2008 Survey of Income and Program Participation (SIPP) Panel matched to Social Security W-2 records.

NOTES: The sample consists of private-sector wage and salary workers aged 21–64 at the 2009 survey interview. The sample of respondents is divided into two subsamples: (1) workers who were in the same job in both 2009 and 2012 and (2) those who were in different jobs in 2009 and 2012.

Estimates are weighted using survey weights. Offer is defined as equal to 1 if the employer offers any retirement plan (either a defined benefit (DB), defined contribution (DC), or cash balance plan) and 0 otherwise. This definition adjusts the respondent's report in the SIPP with information in the W-2 record (that is, if the W-2 record indicates a positive tax-deferred contribution). In other words, if a SIPP respondent reports not being offered a pension plan and the W-2 record indicates that he or she made a tax-deferred contribution to a DC account in the survey year, then the respondent is classified as being offered a retirement plan.

The authors performed the Chi[2] test of the difference in percentage distribution between job stayers (Panel A) and job changers (Panel B) for each firm-size category and found that the differences are statistically significant at the 5 percent level.

7 percent did not take up the offer in either year (column 1). These findings suggest that the majority of respondents who stayed in the same job did not change their take-up decision over this 3-year period.

As expected, job stayers in large firms (with 100 or more employees) were more likely than their counterparts in small firms (with fewer than 100 employees) to have been offered a plan and to have participated in that plan in both years (Tables 3a and 3b, panel A, column 4). A substantially larger proportion of job stayers in small firms (32 percent) were not offered a plan in both years, compared with only 6 percent of workers in large firms (Table 3a, column 1). Interestingly, similar proportions (9 percent) of job stayers in large and small firms who were not offered a plan in 2009 were

newly offered one in 2012. Table 3b (column 2) shows that the proportion of workers who started participating in 2012 was only slightly higher in large firms than it was in small firms (11 percent versus 9 percent). In addition, compared with large firms, a slightly higher proportion of job stayers in small firms who participated in a plan in 2009 stopped participating in 2012 (9 percent versus 6 percent, column 3). Workers' decisions to take up a plan varied very little by firm size (Table 3c). Although the proportions of job stayers who were not offered or did not participate in a plan in both years were substantially higher among those in firms with fewer than 10 employees (Tables 3a and 3b, column 1), the take-up rate was similar to the overall rate (Table 3c, column 1).

Table 3b.
Percentage distribution of participation rates of any retirement plan among private-sector workers, by whether those workers were in the same or a different job in 2009 and 2012 and by broad firm-size categories (in percent)

Firm size (number of employees)	Did not participate in 2009 or 2012 (1)	Did not participate in 2009, but participated in 2012 (2)	Participated in 2009, but did not participate in 2012 (3)	Participated in 2009 and in 2012 (4)	Total number
Panel A: Job stayers (in the same job)					
All	27	10	7	56	10,850
Fewer than 100	44	9	9	39	3,577
100 or more	18	11	6	65	7,073
Fewer than 10	64	5	10	21	986
10 or more	22	11	7	60	9,664
Panel B: Job changers (in a different job)					
All	49	19	7	25	4,201
Fewer than 100	64	14	7	15	1,473
100 or more	38	25	4	33	2,341
Fewer than 10	78	8	6	8	459
10 or more	44	22	5	28	3,355

SOURCE: Data are from the 2009 and 2012 topical modules 3 and 11, respectively, of the 2008 Survey of Income and Program Participation (SIPP) Panel matched to Social Security W-2 records.

NOTES: The sample consists of private-sector wage and salary workers aged 21–64 at the 2009 survey interview. The sample of respondents is divided into two subsamples: (1) workers who were in the same job in both 2009 and 2012 and (2) those who were in different jobs in 2009 and 2012.

Estimates are weighted using survey weights. Participation is defined as equal to 1 if the respondent reports either inclusion in a defined benefit (DB) or active participation (that is, making tax-deferred contributions) in a defined contribution (DC) plan and 0 otherwise. These definitions adjust the respondent's report in the SIPP with information in the W-2 record (that is, if the W-2 record indicates a positive tax-deferred contribution). In other words, if a SIPP respondent reports not participating in a pension plan and the W-2 record indicates that he or she made a tax-deferred contribution to a DC account in the survey year, then the respondent is classified as participating in a retirement plan.

The authors performed the Chi[2] test of the difference in percentage distribution between job stayers (Panel A) and job changers (Panel B) for each firm-size category and found that the differences are statistically significant at the 5 percent level.

The percentage distributions may not sum to 100 because of rounding.

Not surprisingly, offer, participation, and take-up rates were much lower among workers who changed jobs between 2009 and 2012 than among those who remained in the same job during the period (Tables 3a, 3b, and 3c, panel B compared with panel A). Thus, while only 16 percent of job stayers were not offered a plan in both years, a significantly higher proportion of job changers (31 percent) were not offered a plan in both years (Table 3a, panels A/B, column 1). By contrast, about two-thirds of job stayers were offered a pension plan in both years, compared with a third of job changers (column 4). It is interesting to note that a higher proportion of job changers than of job stayers

(29 versus 9 percent) who did not have a pension offer in 2009, had an offer in 2012 (column 2). This suggests that there was some decision among job changers to move from jobs that did not offer a retirement plan to jobs that did offer a plan. Furthermore, 49 percent of job changers did not participate in a plan in both years, compared with 27 percent of their job stayer counterparts (Table 3b, panels A/B, column 1); the difference is significant at the 5 percent level. Workers who remained in the same job over the 2009–2012 period were significantly more likely to participate in a plan in both years than were those who changed jobs (column 4).

Table 3c.

Percentage distribution of take-up rates of any retirement plan among private-sector workers, by whether those workers were in the same or a different job in 2009 and 2012 and by broad firm-size categories (in percent)

Firm size (number of employees)	Did not take up in 2009 or 2012 (1)	Did not take up in 2009, but took up in 2012 (2)	Took up in 2009, but did not take up in 2012 (3)	Took up in 2009 and in 2012 (4)	Total number
Panel A: Job stayers (in the same job)					
All	7	7	5	82	7,408
Fewer than 100	7	7	5	81	1,692
100 or more	7	7	4	82	5,707
Fewer than 10	9	6	5	80	250
10 or more	7	7	4	82	7,149
Panel B: Job changers (in a different job)					
All	8	9	5	78	1,388
Fewer than 100	8	9	7	77	290
100 or more	8	9	6	77	1,017
Fewer than 10	4	9	7	80	46
10 or more	8	9	6	77	1,261

SOURCE: Data are from the 2009 and 2012 topical modules 3 and 11, respectively, of the 2008 Survey of Income and Program Participation (SIPP) Panel matched to Social Security W-2 records.

NOTES: The sample consists of private-sector wage and salary workers aged 21–64 at the 2009 survey interview. The sample of respondents is divided into two subsamples: (1) workers who were in the same job in both 2009 and 2012 and (2) those who were in different jobs in 2009 and 2012.

Estimates are weighted using survey weights. Conditional on being offered any retirement plan, take up is defined as equal to 1 if the respondent participates in a plan and 0 otherwise. This definition adjusts the respondent's report in the SIPP with information in the W-2 record (that is, if the W-2 record indicates a positive tax-deferred contribution). In other words, if a SIPP respondent reports not taking up the offered pension plan and the W-2 record indicates that he or she made a tax-deferred contribution to a defined contribution (DC) account in the survey year, then the respondent is classified as taking up the plan. Take-up rates are calculated conditional on the respondent being interviewed in both years and of being offered a pension plan in both years.

The authors performed the Chi[2] test of the difference in percentage distribution between job stayers (Panel A) and job changers (Panel B) for each firm-size category and found that the differences are statistically significant at the 5 percent level.

The percentage distributions may not sum to 100 because of rounding.

Policy Changes

To increase retirement plan participation, the current administration's focus is on increasing plan offerings. According to Iwry and Johns (2007), the automatic IRA plan would apply to employers with 10 or more employees, who do not sponsor a pension plan of any type and who have been in business for at least 2 years. Disregarding the 2-year requirement in the proposal, our data suggest that about three-quarters of private-sector workers were in firms that offered any type of pension plan (Table 1, columns 1–3). Under the automatic IRA, employees without a pension plan offer would automatically be enrolled in an IRA plan, although they have the choice of opting out of the plan. Our estimates indicate that take-up rates of those employees would be around 80 percent (columns 7–9). Hence, if the automatic IRAs were introduced to all private-sector employees not offered *any* pension plan by their employer, we would expect the overall participation rate to increase by about 21 percentage points.[25] If the automatic IRAs were introduced to only workers in firms with 10 or more employees who were not offered a DC plan, then the overall participation rate would increase by about 25 percentage points.[26] Note that our estimates assume the same take-up rate as that in the case of plans without automatic enrollment, suggesting that the take-up rate may be even higher under automatic enrollment, all else being equal.

Conclusion

It is well documented that the self-reported rates of offer, participation, and take up identified by workers are prone to reporting error either because of misunderstanding of survey questions or reporting procedures, such as Census imputation of missing data. However, accurate information regarding whether employers offer a retirement plan to their employees and whether workers participate in the plan is important for both researchers and policymakers.

In this analysis, we update our previous estimates for 2006 with estimates from more recent years (2009 and 2012) and provide more accurate rates by supplementing SIPP survey reports with information on tax-deferred contributions in W-2 records. We find that the percentage of employees who were offered a retirement plan increased from 72 percent in 2006 to 75 percent in 2012, whereas the participation rate in any retirement plan among all private-sector workers increased from 58 percent to 61 percent over this period (while the magnitude of the increase is relatively small, the difference is statistically significant at the 5 percent level). However, conditional on being offered a pension plan, about four-fifths of employees took up a plan, and the take-up rate increased between 2006 and 2012 (a small but statistically significant change).

Regarding the relationship between firm size and the employer's decision to offer a plan and the worker's decision to participate in a plan, we find that, in general, offer and participation rates were higher among firms with 100 or more employees than they were among firms with fewer than 100 employees. While the offer rate of the latter group increases with firm size, overall it was still at 52 percent among small firms in 2012. Interestingly, despite differences in offer rates by firm size, the take-up rates—conditional on being offered—were similar across firm sizes and across years.

Findings based on the longitudinal panel of respondents working in both 2009 and 2012 reveal that offer, participation, and take-up rates were higher among workers who remained in the same job over the period than among workers who had a different job in 2012 than the one they held in 2009. Among job stayers, about 56 percent participated in a plan in both years, whereas about 27 percent did not participate in either year. By contrast, only 25 percent of job

changers participated in a plan in both years, while 49 percent did not participate in either year. The proportions of job stayers who did not participate in both years were substantially higher among workers in firms with fewer than 10 employees than they were for those in firms with 10 or more employees (22 percent versus 64 percent); respective proportions were even higher among job changers (44 percent versus 78 percent). It is worth noting that job changers in firms with 10 or more employees were about two times more likely than job stayers to participate in a plan in 2012, but not in 2009 (22 percent versus 11 percent), suggesting that about a third of workers who changed jobs over the period moved into jobs that offered retirement plans.

Overall, the main implication of our findings is that, contrary to widely accepted beliefs, the proportion of private-sector workers with pension offers and participation is higher than previous research has found, suggesting that future retirees may have wider access to retirement funds because of higher participation. Yet, workers in small firms (with fewer than 100 employees) are less likely to have an offer of or to participate in any pension plan than are workers in large firms (with 100 or more employees).

As noted earlier, the Obama administration's proposal for an automatic IRA is aimed at the workforce employed by companies with 10 or more employees that do not offer any type of pension plan. According to our estimates, if automatic IRAs were introduced to all private sector-workers not offered *any* pension plan, then the participation rate in 2012 would have been higher by about 21 percentage points. If automatic IRAs were instead introduced to private-sector workers in firms with 10 or more employees who were not offered a DC plan, then their participation rate in 2012 would have been about 25 percentage points higher. It is also worth noting that while such policy is likely to increase participation among employees who are not offered a pension plan, more work needs to be done to promote financial literacy, to provide education, and/or to implement automatic enrollment to increase participation among workers who have a plan offer, but choose not to participate. This would raise those workers' awareness of the importance of saving in tax-deferred plans for their retirement preparedness.

Table A-1.

Pension plan offer, participation, and take-up rates, by private- and public-sector status, full- and part-time status, and data source (in percent)

Sector, job status, and data source	Offer	Participation	Take up
Private sector			
Full time			
NCS [a]	70	60	85
SIPP or W-2 reports [b]	75	63	84
Part time			
NCS [a]	31	23	73
SIPP or W-2 reports [b]	49	27	55
State and local public sector			
Full time			
NCS [c]	99	95	97
SIPP or W-2 reports [b]	92	85	92
Part time			
NCS [c]	39	37	93
SIPP or W-2 reports [b]	75	41	55

SOURCES: Data are from the 2004 Survey of Income and Program Participation (SIPP) Panel, wave 7 topical module conducted in 2006, Social Security W-2 tax records, and National Compensation Survey data.

a. Department of Labor, National Compensation Survey: Employee benefits in private industry in the United States, March 2007, Table 1.

b. Authors' calculations using data from the 2004 SIPP Panel, wave 7 topical module conducted in 2006 matched to W-2 tax records (Social Security Administration's Detailed Earnings Records). The definition of offer, participation, and take-up rates takes into account a respondent's report in the SIPP and/or if the W-2 tax record indicates a positive tax-deferred contribution amount. If the respondent in the SIPP reports not being offered or participating in a pension plan and the W-2 record indicates a positive tax-deferred contribution amount, then he or she is classified as being offered a plan and participating in a pension plan.

c. Department of Labor, National Compensation Survey: Employee benefits in state and local governments in the United States, September 2007, Table 1.

Notes

[1] Throughout the article, we use "pension plan" and "retirement plan" interchangeably.

[2] It is worth noting that in the overall population, offer rates are quite likely to vary by age and income level. Given that the HRS sample is comprised of people aged 51 or older, the offer rates are likely to be higher than they are for people at younger ages.

[3] The NCS estimates reveal that pension access among private-sector workers was 65 percent in 2012 and 64 percent in 2013 (Table 2 in Bureau of Labor Statistics 2012 and 2013). These estimates appear to be for all workers with any hours of work.

[4] We compared offer, participation, and take-up rates from 2007 NCS data with 2006 SIPP data separately for public and private-sector workers and by whether they were full- or part-time workers. The estimates provided in the Appendix (Table A-1) show that among private-sector full-time workers, offer and participation rates are slightly higher in the SIPP (after adjustment with W-2 record data) than in the NCS, whereas there are no differences in the take-up rates.

[5] See Mitchell (1988); Gustman and Steinmeier (2004, 2005); and Gustman, Steinmeier, and Tabatabai (2009).

[6] See Chan and Huff Stevens (2004) and Hurd and Rohwedder (2007).

[7] See Turner, Muller, and Verma (2003); Dushi and Iams (2010); Dushi, Iams, and Lichtenstein (2011); and Dushi and Honig (2014).

[8] See Madrian (2012) for a summary of previous literature on the impact of automatic enrollment on participation rates.

[9] Moving forward, we use the term "significant" to mean statistically significant, even if the magnitude of the change is not substantial.

[10] The reported estimates are weighted using person-sample weights and also account for the SIPP's complex sampling procedures.

[11] The automatic IRA proposal's focus is on firms with more than 10 employees. However, in our tabulation, we refer to firms with 10 or more employees. It is worth noting that in 2012, the Census Bureau changed the firm-size category ranges. In 2012, the firm sizes were categorized as follows: fewer than 10, 10–25, 26–50, 51–99, and 100 or more. In 2006 and 2009, the firm sizes were categorized as follows: fewer than 10, 10–24, 25–49, 50–99, and 100 or more. In this analysis, we describe the data using firm-size categories from 2006 and 2009. We have no way of knowing the impact on our estimates of such change in firm-size categories.

[12] The Employee Retirement Income Security Act (ERISA) permits certain restrictions regarding employees who are eligible to participate in a retirement plan when an employer offers one. The SIPP question assumes that the employer offers a retirement plan to the respondent and the respondent is eligible to participate in the plan. However, it may be the case where an employee works in a firm that offers a plan, but he or she is not yet eligible to participate in that plan. Thus, to the extent that such an employee reports that his or her employer offered a plan, but he or she was not eligible to participate in it, the offer rate will be biased upward. In addition, when asked whether the respondent is included in the plan, the wording of "being included" might be interpreted differently by different workers.

[13] See Dushi and Iams (2010) for a more detailed discussion of the SIPP questionnaire structure regarding pensions.

[14] Dushi and Iams (2010) discuss these types of errors and the follow-up question regarding DC plans that lead to higher offer and participation rates. Other researchers who produced lower rates using the same 2004 SIPP data seem to have not used this follow-up question.

[15] We find that when tax records are used, both pension offer and participation rates are higher than those estimated when using only the worker's self-reported information.

[16] About 85 percent of respondents in the 2004 SIPP Panel and 94 percent in the 2008 Panel have had their survey reports matched to their Social Security W-2 records.

[17] Starting in 1990, the W-2 tax record contains a separate field for the amounts of tax-deferred contributions to retirement accounts. Starting in 2005, for each job a worker holds in a given year, the W-2 record contains information (in addition to total compensation, taxable earnings, and so forth) on the amount of earnings that were tax deferred to a retirement plan and the type of plan (401(k), 403(b), 408, 457, and 501 accounts).

[18] Note that the lack of a tax-deferred contribution in the W-2 record does not necessarily indicate that the employee was not offered a DC plan or any other pension plan. We have no way of knowing from the W-2 records whether the self-reported information regarding the plan offer was valid or not because the employee may have been offered a plan, but chose not to participate in it.

[19] We do not classify as DC plan participants those respondents who according to self-reports were in plans that did not require them to contribute to the plan and for whom only the employer was making contributions to the account. For that group, the W-2 record indicates no tax-deferred contributions. Dushi and Iams (2010) indicated that less than 3 percent of respondents in the SIPP were in this group.

[20] For more detailed definitions of offer, participation, and take up, see Dushi, Iams, and Lichtenstein (2011).

[21] W-2 records for 2012 were not available at the time this work was completed.

[22] Technically, a cash balance plan is considered a DB plan.

[23] We focus on wage and salary workers in both years because pensions are offered only to those who are employed. According to our estimates, about 72 percent of wage and salary workers in our sample were in the same job in both 2009 and 2012, while 28 percent changed jobs in that period. It is plausible that workers in the latter group were at risk of not being offered a plan in the new job or of changing their pension participation and take-up decision in the new job when a plan was offered.

[24] Note that the sample of workers who changed jobs between 2009 and 2012 excludes those who lost their jobs by 2012 and those who reported self-employment in 2012.

[25] We estimate the percentage as the proportion of employees not offered a pension plan multiplied by the take-up rate of those who were offered a plan (see Table 1, columns 1–3 and 7–9). For any pension, about 22 percent in 2006 (0.28×0.80), about 21 percent in 2009 (0.25×0.83), and about 21 percent in 2012 (0.25×0.82) would be expected to participate if the take-up rates of offered employees were applied. Corresponding proportions for DC retirement plans (Table 2, columns 1–3 and 7–9) would be about 26 percent in 2006 (0.35×0.73), about 24 percent in 2009 (0.33×0.74), and about 26 percent in 2012 (0.35×0.73).

[26] According to Karamcheva and Sanzenbacher (2010), the characteristics of workers choosing jobs that offer pensions may differ from those of workers choosing jobs without pension offers, which in turn is quite likely to have an effect on participation rates. The authors estimated that the participation rate observed among workers who were in jobs that offered pensions would decrease by 23 percent when applied to workers in jobs without pension offers.

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The Supplemental Poverty Measure (SPM) and Nonaged Adults: How and Why the SPM and Official Poverty Estimates Differ

by Benjamin Bridges and Robert V. Gesumaria*

In November 2011, the Census Bureau released its first report on the Supplemental Poverty Measure (SPM). The SPM addresses many criticisms of the official poverty measure, and its intent is to provide an improved statistical picture of poverty. This article examines the extent of poverty identified by the two measures. We present a detailed examination of poverty among nonaged adults (those aged 18–64). For a more comprehensive view of poverty and comparison purposes, some findings are presented for younger and older segments of the population. We compare and contrast poverty estimates produced under the official and new measures and investigate why the official and SPM estimates differ.

Introduction

The Census Bureau has recently begun the annual publication of alternative estimates of poverty for the U.S. population based on new methods intended to address shortcomings in the official measure of poverty. The new Supplemental Poverty Measure (SPM) produces a somewhat higher overall estimate of the number of poor and substantially alters the composition of the poverty population—much less child poverty, much more aged poverty, and more poor nonaged adults.

In this article, we present a detailed examination of poverty among nonaged adults (those aged 18–64). This age group accounts for 60 percent of persons who are poor under the SPM. Our analysis employs public-use microdata files recently released by the Census Bureau. For a more comprehensive view of poverty and comparison purposes, we present some findings for younger and older segments of the population.[1] We compare and contrast the poverty estimates produced under the official and new measures for 2011. We also attempt to discern why the SPM and official estimates differ.

The choice of poverty measure affects the poverty status of participants in the Social Security Administration's (SSA's) Old-Age, Survivors, and Disability Insurance (OASDI) program and the Supplemental Security Income (SSI) program administered by SSA. Moreover, these programs have substantial effects on the poverty status of nonaged adults. About 90 percent of SPM-poor nonaged adults are in family units that pay payroll taxes. About a fifth of nonaged adults are in units receiving Social Security (OASDI) benefits or SSI payments.

The official poverty measure consists of a set of thresholds for families of different sizes and

Selected Abbreviations	
CPS/ASEC	Current Population Survey's Annual Social and Economic Supplement
FCSU	food, clothing, shelter, and utilities
LIHEAP	Low-Income Home Energy Assistance Program
MOOP	medical out-of-pocket [expenses]

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compositions that are compared with before-tax cash income to determine a family's poverty status.[2] That measure was developed in the early 1960s by SSA's Mollie Orshansky. The poverty thresholds associated with the official measure are the minimum amounts of such income that families of particular sizes and compositions need in order to be considered not poor.[3] When they were developed, the official thresholds represented the cost of a minimum food diet multiplied by 3 (to allow for expenditures on other goods and services). The thresholds have been kept constant in purchasing power over time by increasing their money values to keep pace with increases in the general price level.

Critics of the official measure point out that the official income or resource measure fails to account for noncash government benefits, taxes, medical out-of-pocket (MOOP) expenses, and work expenses. Those critics also argue that the official thresholds are a very narrow measure of necessary expenditures—that is, food—and are based on very old data. The official thresholds also fail to adjust for geographic differences in the cost of living.[4]

In November 2011, the Census Bureau released its first report on the new SPM (Short 2011).[5] The SPM addresses numerous concerns of official measure critics, and its intent is to provide an improved statistical picture of poverty. The SPM income or resource measure is cash income *plus* in-kind government benefits (such as food stamps and housing subsidies) *minus* nondiscretionary expenses (taxes, MOOP expenses, and work expenses). The SPM thresholds are based on a broad measure of necessary expenditures—food, clothing, shelter, and utilities (FCSU)—and are based on recent, annually updated expenditure data. The SPM thresholds are adjusted for geographic differences in the cost of living.[6]

The official poverty measure and the SPM produce rather different estimates of the composition of poverty among demographic and socioeconomic groups (by race, Social Security beneficiary status, and so forth). Moreover, the impact of taxes (payroll taxes, refundable tax credits, and income taxes) and in-kind government benefits (food stamps, housing subsidies, and so forth) are directly reflected in SPM estimates, but not in the official poverty estimates.

In the next section, we describe in more detail the various features of the SPM (unit definition, resource measure, and threshold measure) and contrast them with the corresponding features of the official poverty measure. In the following two sections, we present for 2011 an empirical examination of the two poverty measures. First, for various groups, we compare the SPM poverty estimates with official estimates. We present some estimates for all age groups, but focus on persons aged 18–64. Then, for nonaged adults, we estimate the effects of various features of the SPM on poverty levels. In effect, we attempt to discern why SPM estimates for nonaged adults differ from official estimates.

We find that for the total population, the SPM poverty rate (16.1 percent) exceeds the official rate (15.1 percent).[7] For broad age groups, the SPM and official measures give quite different results. For persons aged 18–64, the SPM poverty rate (15.6 percent) exceeds the official rate (13.7 percent). Compared with the official measure, the SPM shows much more poverty for persons aged 65 or older (an increase in the poverty rate from 8.7 percent to 15.1 percent) and much less poverty for persons younger than age 18 (a decrease from 22.3 percent to 18.2 percent). Higher SPM poverty rates are found for nearly all of the age subgroups in the 18–64 range.

Many people are classified as poor by only one of the two measures. Five percent of the nonaged adults in our sample are counted as nonpoor by the official measure, but as poor by the SPM. On the other hand, 3.1 percent of nonaged adults are counted as poor by the official measure, but as nonpoor by the SPM.

We examine poverty of nonaged adults for various demographic and socioeconomic groups. Among the groups with the largest percentage increases in poverty when shifting from the official measure to the SPM are persons with private health insurance, persons in units that have an owner with a mortgage, and those of Asian descent.[8] Among the groups with little to no change in poverty are blacks, persons in units that have a homeowner with no mortgage, persons

residing in the Midwest, women, and persons who did not work during the year. Two groups have substantial decreases in poverty: persons with public health insurance only and those residing outside metropolitan statistical areas (MSAs).

As we show later, the combined effect of all changes (from the official poverty measure to the SPM) in the *resource* measure increases the poverty rate of nonaged adults by 1.7 percentage points. The combined effect of all the changes in the *threshold* measure increases the poverty rate by 2.8 percentage points.

Key Features of the Official Poverty Measure and the SPM

Measurement of poverty within the population has three critical elements:

1. *Unit* measures. Which individuals in a household can reasonably be expected to share resources?

2. *Resource* measures. What should be counted as resources?

3. *Threshold* measures. What minimum resources are required to be considered nonpoor?

In this section, we consider each of those elements in turn.[9] The SPM and official poverty estimates examined in this article use the public-use version of the 2012 Current Population Survey's Annual Social and Economic Supplement (CPS/ASEC), which gives income amounts for calendar year 2011.[10] In the following three subsections, we describe the official and SPM elements as they were implemented for the 2012 CPS/ASEC. Box 1 summarizes the conceptual differences between the two poverty measures.

Unit Measures

The official measure uses as its unit of analysis the Census-defined family, which includes all persons residing together who are related by birth, marriage, or adoption; it treats all unrelated individuals aged 15 or older independently. Proponents of the SPM unit criticize the failure of the official unit to include all persons at an address who are likely to share resources. In particular, those proponents believe that the official-unit concept does not treat cohabiters and their relatives properly.

Proponents of the SPM believe that the SPM unit better represents the unit that shares economic

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Box 1.
Poverty measure concepts: Official and SPM

Concept	Official poverty measure	Supplemental Poverty Measure (SPM)
Unit definition	Conventional definition: Families and unrelated individuals	Broadened definition: All related individuals who live at the same address, including any cohabiters and their relatives and foster children
Resource measure	Before-tax cash income	Cash income *plus* noncash transfers (such as food stamps and housing subsidies) and refundable tax credits *minus* income and payroll taxes, medical out-of-pocket expenses, and work expenses (includes childcare expenses)
Threshold level for base two-adult/two-child unit	Three times the cost of a minimum food diet (from the Department of Agriculture), updated by the U.S. Consumer Price Index	33rd percentile of expenditures on food, clothing, shelter, and utilities (from recent Bureau of Labor Statistics surveys) multiplied by 1.2
Threshold adjustments	Implicit equivalence scale that varies by family size, composition, and age of the family head	Explicit equivalence scale that varies by unit size and composition, but not by age of unit head; also, adjustments for differences in housing costs by (1) housing status (owner with a mortgage and so forth) and (2) geographic area

SOURCES: Short (2012), http://www.census.gov/hhes/povmeas/methodology/supplemental/research/Short_ResearchSPM2011.pdf; and DeNavas-Walt, Proctor, and Smith (2012), http://www.census.gov/newsroom/releases/archives/income_wealth/cb12-172.html.

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resources. The SPM unit includes all related persons at the same address, any cohabiters and their relatives, and any coresident unrelated children who are cared for by the family (such as foster children).[11] Most non-aged adults in SPM units that differ from their official units are in SPM units that contain cohabiters.

Resource Measures

The official resource measure is family before-tax money income.[12] Persons in families whose before-tax money income is less than the family's threshold are classified as poor. Proponents of the SPM believe that the official resource measure has the following major weaknesses:[13]

1. The official resource measure does not reflect the effects of a number of government benefit and tax programs that alter the resources available to families and, thus, their poverty status. Those programs are in-kind public benefits, refundable tax credits, and various taxes—some of which are large. For example, in fiscal year 2011, federal outlays for the Supplemental Nutrition Assistance Program or SNAP (formerly known as the Food Stamp Program) amounted to about $80 billion or 2.1 percent of all federal outlays. Federal expenditures for refundable tax credits and for housing subsidies were about $80 billion and $40 billion, respectively (Falk 2012). All three of these in-kind benefit programs are designed to assist the low-income population.[14]

2. The official resource measure does not account for expenses that are necessary to hold a job and to earn income. These expenses include transportation costs for getting to and from work and the costs of childcare for working families. More than 80 percent of the population under study are members of SPM units with work expenses.[15] For those units, such expenses can be substantial; unit work expenses on average amount to 12 percent of SPM poverty thresholds.

3. The official resource measure does not consider MOOP expenses, which include expenditures for health insurance premiums, a person's own medical care (hospital visits, medical providers, dental services, prescription medicine, vision aids, and medical supplies), and over-the-counter health-related products. More than 95 percent of our sample universe are members of SPM units with MOOP expenses. For those units, MOOP expenses can be large; unit MOOP expenses on average amount to 22 percent of SPM poverty thresholds. In addition,

there is great dispersion around this average; a minority of units have very high MOOP expenses relative to their poverty thresholds.

The SPM resource measure attempts to overcome these weaknesses of the official resource measure. The SPM resource measure is the sum of cash income *plus* refundable tax credits and any in-kind government benefits that units can use to meet their basic needs, which are represented in the thresholds, *minus* taxes and other nondiscretionary expenses for critical goods not included in the thresholds. The SPM thresholds represent the amount needed for a basic set of goods—FCSU—and an additional amount allowed for other basic needs (for example, household supplies, personal care, nonwork-related transportation). The importance of these various additions to and subtractions from cash income varies greatly across age groups.

Box 2 summarizes the derivation of the SPM resource concept. The SPM resource measure includes the following government in-kind benefit programs: (1) Housing subsidies, (2) the Low-Income Home Energy Assistance Program (LIHEAP), (3) the National School Lunch Program (NSLP), (4) the Supplemental Nutrition Assistance Program (SNAP), and (5) the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). For programs 1,

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Box 2.
Deriving SPM unit resources

SPM resources = money income from all sources—

Plus:
- Housing subsidies
- Low-Income Home Energy Assistance (LIHEAP)
- National School Lunch Program (NSLP)
- Supplemental Nutrition Assistance Program (SNAP)
- Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
- Refundable tax credits (such as earned income tax credits (EITC))

Minus:
- Federal individual income taxes
- State individual income taxes
- Payroll taxes
- Child support paid
- Medical out-of-pocket (MOOP) expenses
- Work expenses (includes childcare expenses)

SOURCE: Short (2012), http://www.census.gov/hhes /povmeas/methodology/supplemental/research/Short _ResearchSPM2011.pdf.

NOTE: SPM = Supplemental Poverty Measure.

3, and 5, the CPS/ASEC collects information only on recipiency, but not on amounts received. In estimating the amounts of those benefits, the Census Bureau uses information from other government agencies.[16]

Housing subsidies, LIHEAP benefits, and SNAP benefits are intended to help both nonaged and aged persons. On the other hand, NSLP and WIC benefits are intended to help nonaged persons. All of these programs are targeted to low-income individuals.

The SPM resource measure also includes the following refundable tax credits: (1) the earned income tax credit (EITC) and (2) the additional federal child-care tax credit. These credits are intended to help low-income working units, especially those with children.

The following expenses are deducted in deriving SPM unit resources: (1) federal individual income tax (after nonrefundable credits), (2) state individual income tax, (3) Social Security tax payments by employees and the self-employed *plus* federal employee retirement payroll deductions, (4) child support paid, (5) MOOP expenses, and (6) work expenses (including childcare expenses). The CPS/ASEC does not collect information on taxes, refundable tax credits, or work expenses. The Census Bureau applies a tax-calculating computer program to the CPS/ASEC to simulate taxes and tax credits and uses information from another household survey to estimate work expenses.[17]

It should be clear that the relative impact of various types of expenses on household resources tends to vary by age. For instance, low-income aged units typically have no or low income tax liabilities. Payroll taxes and work expenses affect working families. Child support payments come mostly from nonaged persons.

MOOP expenses are very important for aged persons, but are also important for nonaged persons. As stated earlier, MOOP expenses include the payment of health insurance premiums *plus* other medically necessary items, such as prescription drugs and doctor copayments that are not covered by insurance.[18] Subtracting MOOP expenses from income, in addition to subtracting taxes and work expenses, leaves the amount of income that the SPM unit has available to purchase the basic bundle of goods included in the threshold.

Threshold Measures

The official measure uses a set of thresholds for families of different sizes and compositions. The threshold values depend on family size, number of children, and age of the family head (younger than age 65 or aged 65 or older). At the time they were developed, the official thresholds represented the cost of a minimum food diet multiplied by 3 (to allow for expenditures on other goods and services).[19] The thresholds are indexed annually by the U.S. Consumer Price Index for all items.

Proponents of the SPM believe that the official threshold measure has the following major weaknesses:

1. Official thresholds are based on only one category of necessary expenditures; that is, food. (For 2011, food expenditures accounted for only 36 percent of the bundle of necessary expenditures or FCSU that form the basis of the SPM thresholds.)[20] The expenditure information used is more than 50 years old. The share of food in expenditures is much lower now than it was 50 years ago. The threshold levels are fixed in real or inflation-adjusted dollars and do not reflect real increases over time in spending on basic needs.

2. The official threshold measure does not adjust for differences in FCSU-expenditure needs resulting from differences in unit housing-tenure status. For example, homeowners with mortgages on average need to make sizable mortgage payments. (In determining SPM thresholds for 2011, the FCSU needs of units that have owners with mortgages are estimated by the Bureau of Labor Statistics (2012) to have been 21 percent larger than those of units that have owners with no mortgages.)

3. The official threshold measure does not adjust for geographic differences in the cost of living, which are often large. (For 2011, the geographic-adjustment factors used in the SPM ranged from .80 for the lowest-cost area to 1.48 for the highest-cost area.)

4. Official thresholds use family size and composition adjustments that in some cases produce questionable results. For example, in some cases, single-parent families have higher thresholds than married-couple families of the same size, implying that children cost more than adults in certain size families. Proponents of the SPM believe that the evidence used in setting thresholds for aged units and for one-person nonaged units is quite weak. In addition, the fact that the equivalence scales are implicit and not transparent is a substantial weakness.

The SPM threshold measure attempts to overcome the weaknesses of the official threshold measure and has the following properties:

1. As stated earlier, SPM thresholds represent the amount needed for a basic set of goods that consists of FCSU and an additional amount allowed for other basic needs (household supplies, personal care, non-work-related transportation). The basic FCSU needs reflect expenditures on this basic bundle of goods around the 33rd percentile of the expenditure distribution, as reported in the Bureau of Labor Statistics' Consumer Expenditure Survey (CE).[21] The SPM thresholds for 2011 are based on 2007–2011 data from the CE. To include other basic needs in the threshold, the basic FCSU needs are multiplied by 1.2. Over time, the thresholds are not fixed in real or inflation-adjusted dollars. Each year, the thresholds are updated using the most recent CE data.

2. The SPM thresholds are adjusted for differences in shelter and utility expenditure needs. The thresholds depend on unit housing-tenure status. The groups within that category consist of units that have owners with mortgages, owners with no mortgages, and renters. The adjustments are based on CE data.

3. The thresholds are adjusted for geographic differences in housing costs. The adjustment factors are for more than 300 areas and are based on American Community Survey estimates of apartment rents.

4. The threshold for units with two children (the base threshold) is derived from CE data as described in item 1 above. The thresholds for other unit types (differing in size and number of children) are then derived by applying an explicit equivalence scale to this base threshold.[22] Equivalence scales are measures of the relative cost of living for units of different sizes and compositions that are otherwise similar. For example, if a unit of two adults can live as well as a unit of two adults and two children while spending only three-fourths as much, then relative to the reference unit of two adults and two children, the equivalence-scale value for a two-adult unit is three-fourths. For the purpose of poverty measurement, an equivalence scale is used to adjust the threshold value for the reference unit to provide corresponding thresholds for other unit types. The three-parameter SPM equivalence scale used has the following four properties: (1) a child always costs less than an adult; (2) the scale always exhibits economies of scale in consumption; (3) the scale does not depend on the age of the

unit head; and (4) for one-person nonaged units, the SPM-scale value is rather different from the official-scale value.[23]

Official and SPM Estimates: A Comparison

In this section, we begin our empirical examination of the two poverty measures. For the various age groups, we compare the SPM poverty estimates with official estimates. Then in the following section, for our focus group (persons aged 18–64), we estimate the effects of various features of the SPM on poverty levels. In effect, we look at why SPM estimates for our nonaged adult sample differ from the official estimates.

We begin this section by looking at poverty for the total population and for various groups of nonaged and aged persons. Next, we examine deep poverty and the distribution of our sample by welfare-ratio intervals. Then, we examine movements into and out of poverty. Finally, we look at poverty of nonaged adults for various demographic and socioeconomic groups.

Poverty by Age Groups

Table 1 gives the numbers and percentages of people in poverty for the total population under study and for various age groups and detailed age subgroups. For the total population, the SPM poverty rate (16.1 percent) exceeds the official rate (15.1 percent) by 1.0 percentage point.[24] The number of people poor under the SPM (49.8 million) exceeds the number of people poor under the official measure (46.6 million) by 3.2 million or 7 percent.[25]

Both Table 1 and the accompanying chart show that for broad age groups, the SPM and official measures give quite different results. For adults aged 18–64, the SPM poverty rate (15.6 percent) exceeds the official rate (13.7 percent) by 1.8 percentage points or by 13 percent. Compared with the official measure, the SPM shows much more poverty for aged adults (those aged 65 or older) and much less poverty for children (those younger than age 18). For the group aged 65 or older, the SPM poverty rate (15.1 percent) exceeds the official rate (8.7 percent) by 6.4 percentage points.[26] On the other hand, for children, the SPM rate (18.2 percent) is lower than the official rate (22.3 percent) by 4.1 points.[27] Compared with the official measure, the SPM shows much smaller age-group differences in poverty rates. As the chart shows, the official poverty rate for nonaged adults is much lower than that for children and much higher than that for aged adults; however, the SPM poverty rate for nonaged adults is only modestly

Table 1.

Number and percentage of people in poverty under the two poverty measures, by selected age groups, 2011

| Age group | Total number | Official poverty | | SPM poverty | | Percentage point difference between SPM and official poverty rates |
		Number	Percent	Number	Percent	
Total population	308,827	46,618	15.1	49,797	16.1	1.0
			Broad age groups			
Younger than 18	74,108	16,506	22.3	13,484	18.2	-4.1
18–64	193,213	26,492	13.7	30,052	15.6	1.8
65 or older	41,507	3,620	8.7	6,260	15.1	6.4
			Narrow age subgroups			
18–24	30,140	6,209	20.6	6,968	23.1	2.5
25–34	41,219	6,537	15.9	6,633	16.1	0.2
25–29	20,893	3,513	16.8	3,605	17.3	0.4
30–34	20,326	3,024	14.9	3,028	14.9	0.0
35–44	39,927	4,873	12.2	5,396	13.5	1.3
35–39	19,140	2,583	13.5	2,756	14.4	0.9
40–44	20,787	2,290	11.0	2,640	12.7	1.7
45–54	43,955	4,795	10.9	5,888	13.4	2.5
45–49	21,583	2,417	11.2	2,906	13.5	2.3
50–54	22,372	2,378	10.6	2,982	13.3	2.7
55–64	37,971	4,080	10.7	5,167	13.6	2.9
55–61	27,814	2,983	10.7	3,798	13.7	2.9
62–64	10,157	1,097	10.8	1,369	13.5	2.7

SOURCE: The public-use version of the 2012 Current Population Survey's Annual Social and Economic Supplement.

NOTES: Numbers are in thousands.

SPM = Supplemental Poverty Measure.

Chart.

Official and SPM poverty rates, by broad age group, 2011
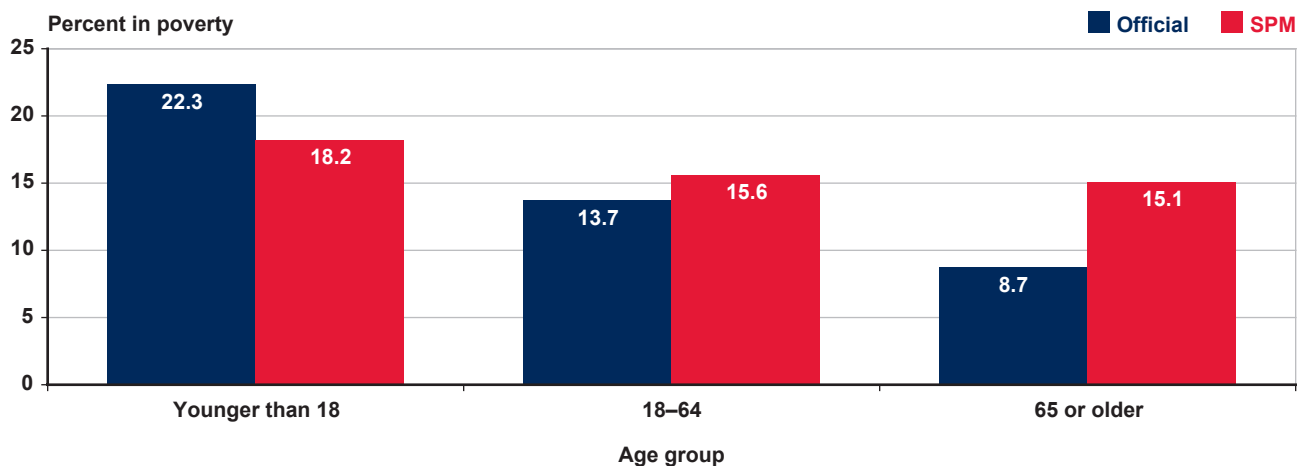
SOURCE: The public-use version of the 2012 Current Population Survey's Annual Social and Economic Supplement.

NOTE: SPM = Supplemental Poverty Measure.

lower than that for children and is very similar to that for aged adults.

For nonaged adults, we also look at poverty rates for detailed age subgroups (Table 1). For the great majority of the detailed age subgroups, the SPM rates exceed the official poverty rates. For the subgroups ranging from ages 30–34 to 50–54, this excess increases with age—from 0 percentage points to 2.7 points. The excesses for the subgroups aged 55–61 and 62–64 are 2.9 and 2.7 percentage points, respectively.

Deep Poverty by Age Groups

Persons in units with resources that amount to less than 50 percent of the unit threshold are said to be in deep poverty. Table 2 gives the numbers and percentages of persons in deep poverty for most of the same age groups shown in Table 1.

For the total population, the SPM deep poverty rate (5.2 percent) is 1.5 percentage points lower than the official measure deep poverty rate (6.7 percent). By contrast, the SPM poverty rate (16.1 percent) exceeds the official poverty rate (15.1 percent) by 1.0 percentage point or by 7 percent. Although the SPM counts 4.6 million fewer people in deep poverty, the number

of SPM nondeep poor exceeds the official poverty count of nondeep poor by 7.8 million people.

For broad age groups of the aged and nonaged populations, the SPM and official measures give quite different results for deep poverty. For persons aged 18–64, the SPM deep poverty rate (5.5 percent) is lower than the official deep poverty rate (6.3 percent) by some 13 percent. Compared with the official measure, for deep poverty (and for overall poverty), the SPM shows a much higher rate for the aged (65 or older) and a much lower rate for children (younger than age 18). For the aged, the SPM deep poverty rate (4.3 percent) is nearly double the official deep poverty rate (2.3 percent). On the other hand, for children, the SPM rate (5.1 percent) is nearly half the official rate (10.3 percent). Note that under the official measure, the deep poverty rate for nonaged adults (6.3 percent) is much lower than that for children (10.3 percent) and much higher than that for the aged (2.3 percent); however, under the SPM, the deep poverty rate for nonaged adults (5.5 percent) is slightly higher than that for children (5.1 percent) and only modestly higher than that for the aged (4.3 percent). Compared with the official measure, the SPM shows much smaller age-group differences in deep poverty rates.

Table 2.
Number and percentage of people in deep poverty[a] under the two poverty measures, by selected age groups, 2011

Age group	Total number	Official deep poverty		SPM deep poverty		Percentage point difference between SPM and official deep poverty rates
		Number	Percent	Number	Percent	
Total population	308,827	20,727	6.7	16,141	5.2	-1.5
Younger than 18	74,108	7,624	10.3	3,789	5.1	-5.2
18–64	193,213	12,164	6.3	10,578	5.5	-0.8
18–24	30,140	3,187	10.6	2,520	8.4	-2.2
25–29	20,893	1,823	8.7	1,255	6.0	-2.7
30–34	20,326	1,351	6.6	990	4.9	-1.8
35–39	19,140	1,149	6.0	850	4.4	-1.6
40–44	20,787	960	4.6	849	4.1	-0.5
45–49	21,583	1,064	4.9	1,010	4.7	-0.3
50–54	22,372	952	4.3	1,061	4.7	0.5
55–61	27,814	1,239	4.5	1,463	5.3	0.8
62–64	10,157	439	4.3	579	5.7	1.4
65 or older	41,507	940	2.3	1,773	4.3	2.0

SOURCE: The public-use version of the 2012 Current Population Survey's Annual Social and Economic Supplement.

NOTES: Numbers are in thousands.

SPM = Supplemental Poverty Measure.

a. People in units with resources that amount to less than 50 percent of the poverty threshold.

For nonaged adults, we also look at deep poverty rates for detailed age subgroups (Table 2). For each of the subgroups in the age 25–49 range, the SPM rate is lower than the official deep poverty rate, but the difference between the two rates decreases as age increases. By contrast, for each of the subgroups in the age 50–64 range, the SPM rate exceeds the official deep poverty rate and the difference increases with age.

Distribution of Persons by Welfare-Ratio Intervals and Age Groups

We next compare distributions of economic welfare measured using SPM concepts with those measured using official poverty measure concepts. Table 3 shows the percentage distributions of people in the various age groups by welfare-ratio intervals. The welfare ratio is defined as the ratio of a unit's resources to its unit poverty threshold. People in poverty and in deep

Table 3.

Percentage distribution of people under the two poverty measures, by welfare-ratio[a] intervals and selected age groups, 2011

Age group	Welfare-ratio intervals						
	Less than 0.50	0.50–0.99 [b]	1.00–1.24 [b]	1.25–1.49 [b]	1.50–1.99 [b]	2.00–3.99 [b]	4.00 or more
Official							
Total population	6.7	8.4	4.8	5.1	9.5	30.5	35.1
Younger than 18	10.3	12.0	6.0	6.0	10.3	29.1	26.3
18–64	6.3	7.4	4.0	4.4	8.5	30.2	39.1
18–24	10.6	10.0	5.6	5.9	10.9	30.4	26.7
25–29	8.7	8.1	4.4	5.1	10.0	33.2	30.4
30–34	6.6	8.2	4.7	4.8	9.1	31.7	34.8
35–39	6.0	7.5	4.6	4.6	9.1	31.5	36.7
40–44	4.6	6.4	3.5	4.5	7.9	32.3	40.8
45–49	4.9	6.3	3.2	3.8	7.7	31.1	43.0
50–54	4.3	6.4	3.0	3.6	6.9	27.5	48.3
55–61	4.5	6.3	3.3	3.2	6.8	26.0	49.9
62–64	4.3	6.5	3.3	4.3	7.7	29.0	44.9
65 or older	2.3	6.5	5.8	6.5	12.6	34.2	32.2
SPM							
Total population	5.2	10.9	8.6	8.4	15.0	34.2	17.7
Younger than 18	5.1	13.1	10.4	10.9	17.5	31.6	11.4
18–64	5.5	10.1	7.6	7.5	14.2	35.3	19.9
18–24	8.4	14.8	10.2	9.7	16.5	30.6	9.9
25–29	6.0	11.2	8.5	8.8	16.2	35.7	13.6
30–34	4.9	10.0	8.1	8.7	15.7	36.6	16.0
35–39	4.4	10.0	7.8	8.5	14.9	36.9	17.4
40–44	4.1	8.6	7.1	7.2	14.9	38.7	19.4
45–49	4.7	8.8	7.0	6.6	14.1	36.6	22.3
50–54	4.7	8.6	6.3	5.6	12.3	35.8	26.6
55–61	5.3	8.4	6.1	5.5	10.8	34.0	30.0
62–64	5.7	7.8	6.2	5.5	11.9	35.1	27.7
65 or older	4.3	10.8	9.7	8.4	14.3	33.6	18.9

SOURCE: The public-use version of the 2012 Current Population Survey's Annual Social and Economic Supplement.

NOTES: Row percentages sum to approximately 100.0.

SPM = Supplemental Poverty Measure.

a. The ratio of unit resources to the unit poverty threshold.

b. Less than the lower bound of the next interval.

poverty are those in units with welfare ratios less than 1.0 and less than 0.5, respectively.

Compared with the official measure, for the total population, the SPM shows a higher share of people in each of the four middle welfare-ratio intervals (with ratios equal to or greater than 1.00 and less than 4.00) and a much lower share in the top welfare-ratio interval (with ratios of 4.00 or more). This pattern also holds for almost all the nonaged subgroups (ranging from the subgroup aged 18–24 to the subgroup aged 62–64), shown in Table 3. For the broad 18–64 age group, the official poverty measure assigns 47.1 percent of people to the four middle welfare-ratio intervals compared with 64.6 percent under the SPM. The lower shares in the top welfare-ratio interval result in large part from the subtraction of tax payments in computing the SPM resource measure.

"Movements" Into and Out of Poverty by Age Groups

When the basis for poverty measurement changes, the composition of the population designated as poor also changes. We refer to such redesignations in poverty status as *movements* into and out of poverty that are solely attributable to the switch to a different method for determining who is poor.[28] We now discuss the effects on poverty status (movements into and out of poverty) of changing the way that poverty is measured—from the official measure to the SPM.

Table 4 gives percentages of people exiting poverty, staying in poverty, and entering poverty for the various age groups and subgroups. We have seen that for the total population, the SPM poverty rate (16.1 percent) exceeds the official rate (15.1 percent). Switching to the SPM moves some persons into poverty (official non-poor who become SPM poor) and others out of poverty (official poor who become SPM nonpoor). Switching to the SPM moves about 5.0 percent of the population into poverty and about 3.9 percent out of poverty, which accounts for the 1.0 percentage point net increase in the measured poverty rate. Some 11.2 percent of the population is considered poor under both poverty measures.

For nonaged adults, the SPM poverty rate (15.6 percent) exceeds the official rate (13.7 percent). Switching to the SPM moves about 5.0 percent of the population aged 18–64 into poverty and about 3.1 percent out of poverty. Some 10.6 percent of nonaged adults are considered poor under both poverty measures. For most of the narrow age subgroups of nonaged adults, the ratio of the percentage entering poverty to the percentage

Table 4.
Percentage of people defined as poor under the official poverty measure and poverty-status effects of a shift to the SPM, by selected age groups, 2011

Age group	Official poor [a]	Exit poverty [b]	Stay in poverty [c]	Enter poverty [d]	SPM poor [e]
Total population	15.1	3.9	11.2	5.0	16.1
Younger than 18	22.3	7.4	14.9	3.4	18.2
18–64	13.7	3.1	10.6	5.0	15.6
18–24	20.6	4.4	16.2	7.0	23.1
25–29	16.8	4.7	12.1	5.1	17.3
30–34	14.9	4.4	10.5	4.4	14.9
35–39	13.5	3.5	10.0	4.4	14.4
40–44	11.0	2.4	8.6	4.1	12.7
45–49	11.2	2.4	8.8	4.6	13.5
50–54	10.6	1.9	8.7	4.6	13.3
55–61	10.7	2.1	8.6	5.0	13.7
62–64	10.8	1.8	9.0	4.4	13.5
65 or older	8.7	1.4	7.3	7.7	15.1

SOURCE: The public-use version of the 2012 Current Population Survey's Annual Social and Economic Supplement.

NOTE: SPM = Supplemental Poverty Measure.

a. "Exit poverty" column *plus* "Stay in poverty" column.

b. Official poor, but SPM nonpoor.

c. Official poor and SPM poor.

d. Official nonpoor, but SPM poor.

e. "Stay in poverty" column *plus* "Enter poverty" column.

exiting poverty exceeds 1.5. Over the 30–64 age range, that ratio increases with age, from about 1 to about 2.5.

For aged adults (65 or older), the SPM poverty rate (15.1 percent) exceeds the official rate (8.7 percent). Switching to the SPM moves about 7.7 percent of the aged population into poverty and only about 1.4 percent out of poverty, which accounts for the large increase in that group's poverty rate. Some 7.3 percent of aged adults are considered poor under both poverty measures.

For children (younger than age 18), the SPM poverty rate (18.2 percent) is lower than the official rate (22.3 percent). Switching to the SPM moves about 3.4 percent of children into poverty and about 7.4 percent out of poverty. A very sizable percentage of children (14.9 percent) are considered poor under both poverty measures.

Table 5 gives joint percentage distributions of non-aged adults (18–64), by their official measure and SPM welfare-ratio intervals and change categories: exiting poverty, entering poverty, poor under both measures, and not poor under both measures. For nonaged adults, much of the movement into and out of poverty occurs near the poverty line, as one might expect. Thus, of the 9.6 million people entering poverty, some 57 percent move from the 1.00–1.49 official measure welfare-ratio interval to the 0.50–0.99 SPM interval.[29] Similarly, of the 6.1 million people exiting poverty, 62 percent move from the 0.50–0.99 welfare-ratio interval under the official measure to the 1.00–1.49 interval under the SPM. Of those who are poor under both poverty measures, approximately 9 percent move into deep poverty and nearly 15 percent move out of deep poverty.

Table 5.

Changes in poverty status of adults aged 18–64, by welfare-ratio[a] interval, 2011: Joint percentage distributions by change category

Official measure welfare-ratio interval	SPM welfare-ratio interval					
	Less than 0.50	0.50–0.99 [b]	1.00–1.49 [b]	1.50–1.99 [b]	2.00–3.99 [b]	4.00 or more
Exiting poverty [c]						
Less than 0.50	0.0	0.0	14.3	5.0	4.8	1.4
0.50–0.99 [b]	0.0	0.0	61.7	8.1	4.1	0.6
Entering poverty [d]						
1.00–1.49 [b]	6.0	56.4	0.0	0.0	0.0	0.0
1.50–1.99 [b]	2.1	22.1	0.0	0.0	0.0	0.0
2.00–3.99 [b]	2.2	10.7	0.0	0.0	0.0	0.0
4.00 or more	0.3	0.3	0.0	0.0	0.0	0.0
Poor under both measures						
Less than 0.50	37.5	14.5	0.0	0.0	0.0	0.0
0.50–0.99 [b]	9.3	38.7	0.0	0.0	0.0	0.0
Not poor under both measures						
1.00–1.49 [b]	0.0	0.0	5.1	1.1	0.3	0.0
1.50–1.99 [b]	0.0	0.0	5.3	3.0	0.7	0.1
2.00–3.99 [b]	0.0	0.0	5.1	12.3	18.5	0.5
4.00 or more	0.0	0.0	0.1	0.6	23.5	23.8

SOURCE: The public-use version of the 2012 Current Population Survey's Annual Social and Economic Supplement.

NOTES: For each change category (nonaged adults who exit poverty, those who enter poverty, those poor under both poverty measures, and those not poor under both poverty measures), the percentages sum to approximately 100.0.

SPM = Supplemental Poverty Measure.

a. The ratio of unit resources to the unit poverty threshold.

b. Less than the lower bound of the next higher interval.

c. Official poor, but SPM nonpoor.

d. Official nonpoor, but SPM poor.

Poverty of Nonaged Adults by Various Demographic and Socioeconomic Characteristics

We now turn to more detailed comparisons of SPM and official poverty for nonaged adults and examine results for various demographic and socioeconomic groups.

Table 6 shows poverty numbers, poverty rates, and differences in poverty by sex, race and Hispanic origin, nativity, unit housing-tenure status, residence, region, health insurance coverage, Social Security beneficiary status, marital status, work experience, payroll tax status, and disability status. Among the demographic and socioeconomic groups we discuss, the largest percentage increases in poverty (column 5) are for persons with private health insurance, persons in units that have an owner with a mortgage, and Asians.[30] Correspondingly, the largest percentage point increases in poverty (column 4) are for the foreign born, Hispanics, Asians, and for persons residing in the West. The groups with very little to no change in poverty are blacks, persons in units that have an owner with no mortgage, those residing in the Midwest, women, and nonworkers. The groups with substantial decreases in poverty are persons with public health insurance only and those residing outside MSAs.

Usually, within a category, the group that has the larger percentage increase in poverty also has the larger percentage point increase in its poverty rate. For example, in the region category, the percentage increases in poverty for the West, Northeast, South, and Midwest are 34, 18, 7, and -3, respectively. The corresponding percentage point increases in poverty rates are 5.0, 2.2, 0.9, and -0.4.

Among housing-tenure status groups, persons in units that have an owner with no mortgage show very little change in poverty. On the other hand, two groups—persons in units that have an owner with a mortgage and persons in units that have a renter—show increases in poverty of 51 percent and 8 percent, respectively; that is, their SPM poverty exceeds their official poverty. This pattern of percentage differences reflects in considerable part the fact that the SPM thresholds take unit housing-tenure status into account. In addition, MOOP expenses and taxes are more important in increasing poverty for owners with mortgages than for renters.[31] SNAP and housing subsidies are more important in reducing poverty for nonaged adults in units that have renters than for those in units that have owners with mortgages.

For the residence category, nonaged adults residing inside MSAs have an increase in poverty of 20 percent. On the contrary, those residing outside MSAs have a very sizable decrease in poverty (-17 percent). This pattern of percentage differences reflects the fact that the SPM threshold incorporates adjustments for geographic differences in housing costs.

Among regions, nonaged adults residing in the West and Northeast have the largest percentage increases in poverty (34 percent and 18 percent, respectively). On the other hand, persons residing in the Midwest and South have percentage changes of -3 and 7 percent, respectively. Again, these patterns of percentage differences reflect the fact that the SPM threshold incorporates adjustments for geographic differences in housing costs.[32]

Nonaged adult Hispanics have a larger relative increase in poverty (27 percent) than do non-Hispanic whites (10 percent).[33] Foreign-born individuals have a much larger relative increase in poverty (37 percent) than do their native-born counterparts (6 percent).[34] These patterns of percentage differences in large part reflect the fact that the SPM threshold incorporates adjustments for geographic differences in housing costs.

For each of the previous five categories (unit housing-tenure status, residence, region, Hispanic origin, and nativity), differences between the SPM and official thresholds play a key role in shaping the patterns of percentage differences in poverty changes. For other demographic and socioeconomic categories, differences in unit definition and resource measure between the official poverty measure and the SPM drive the differences in poverty rates under the two measures.

The relative increase in poverty is considerably larger for married nonaged adults (35 percent) than for those not married (6 percent). This difference in part reflects the fact that the SPM and official units differ.[35] The percentage increase in poverty is markedly larger for men (26 percent) than for women (4 percent). This difference in part also reflects the fact that the SPM and official units differ.

Nonaged adults with work experience during the year have a considerably larger relative increase in poverty (32 percent) than do those with no work experience during the year (2 percent). This difference in part reflects the fact that payroll taxes, income taxes, work expenses, and MOOP expenses are more important through their effects (in reducing SPM resources) in increasing poverty for workers than for nonworkers.

Table 6.

Percentage of adults aged 18–64 in poverty under the two poverty measures, by selected characteristics, 2011

Characteristic	Number	Percent		Difference between SPM and official poverty rates	
		Official poor	SPM poor	Percentage point	Percent
Total population	193,213	13.7	15.6	1.8	13
Sex					
Men	94,947	11.8	14.9	3.0	26
Women	98,266	15.5	16.2	0.7	4
Race[a] and Hispanic origin					
White	151,416	11.9	13.8	1.9	16
White, not Hispanic	123,101	9.8	10.8	1.0	10
Black	24,831	24.1	24.4	0.3	1
Asian	10,873	11.9	17.2	5.2	44
Hispanic (any race)	31,643	21.1	26.7	5.6	27
Nativity					
Native born	160,814	12.8	13.6	0.8	6
Foreign born	32,399	18.4	25.3	6.9	37
Naturalized citizen	13,683	11.4	16.9	5.4	47
Not a citizen	18,716	23.5	31.4	7.9	34
Unit housing-tenure status					
Owner with a mortgage	89,922	5.1	7.8	2.6	51
Owner without a mortgage/rent free[b]	39,040	13.2	13.0	-0.2	-2
Renter	64,250	26.0	28.0	2.0	8
Residence[c]					
Inside MSAs	164,053	13.3	16.0	2.6	20
Outside MSAs	27,817	15.8	13.2	-2.6	-17
Region					
Northeast	34,943	12.1	14.3	2.2	18
Midwest	40,958	12.9	12.4	-0.4	-3
South	71,663	14.4	15.3	0.9	7
West	45,649	14.7	19.7	5.0	34
Health insurance coverage					
Private insurance	129,178	4.6	7.2	2.6	57
Public insurance only	23,076	40.3	35.4	-4.9	-12
No insurance	40,959	27.5	30.7	3.2	12
SPM unit's beneficiary status					
With Social Security and/or SSI	11,296	18.6	18.6	0.0	0
Without Social Security nor SSI	181,917	13.4	15.4	2.0	15
Marital status					
Married[d]	98,537	6.9	9.3	2.4	35
Not married[e]	94,675	20.8	22.1	1.2	6
Widowed	3,400	22.2	24.5	2.3	10
Divorced	20,390	19.0	18.6	-0.4	-2
Never married	62,784	20.6	22.1	1.5	7
Work experience					
All workers	144,163	7.2	9.4	2.3	32
Worked full time, year round	97,443	2.8	5.1	2.3	82
Worked less than full time, year	46,720	16.3	18.5	2.2	13
Did not work during year	49,049	32.9	33.5	0.6	2

Continued

Table 6.

Percentage of adults aged 18–64 in poverty under the two poverty measures, by selected characteristics, 2011—*Continued*

Characteristic	Number	Percent		Difference between SPM and official poverty rates	
		Official poor	SPM poor	Percentage point	Percent
Disability status[f]					
With a disability	14,968	28.8	27.6	-1.2	-4
Without a disability	177,309	12.5	14.6	2.1	17

SOURCE: The public-use version of the 2012 Current Population Survey's Annual Social and Economic Supplement.

NOTES: Numbers are in thousands.

MSA = metropolitan statistical area; SPM = Supplemental Poverty Measure; SSI = Supplemental Security Income.

a. Excludes people who report more than one race.

b. Includes nonowners who live rent free.

c. Excludes a small number of persons where confidentiality rules prevent identification of MSA status on the public-use data file. Such identification is available on the Census Bureau's internal data file.

d. Married, spouse present in the household.

e. In addition to the widowed, divorced, or never married, this category also includes those who are married with the spouse absent from the household.

f. Disability status is not defined for persons in the armed forces.

For SPM units with payroll tax liability, nonaged adults have a sizable relative increase in poverty (24 percent). Those in units with no payroll taxes have very high poverty rates, but the shift from the official measure to the SPM produces little relative change in their poverty. This pattern of percentage differences in part reflects the fact that payroll taxes, work expenses, and MOOP expenses are more important through their effects (in reducing resources) in raising the poverty levels for persons in units with payroll tax liability.

There is a 4 percent *decrease* in poverty for non-aged adults with a disability.[36,37] On the other hand, those without a disability have an increase in poverty of 17 percent. This difference reflects in part the fact that payroll taxes and work expenses are more important in increasing poverty for persons with no disabilities and the fact that SNAP and housing subsidies are more important through their effects (in increasing SPM resources) in reducing poverty for persons with disabilities.[38]

Nonaged adults in units with no Social Security beneficiaries nor SSI recipients have a larger relative increase in poverty (16 percent) than do those in units with Social Security and/or SSI benefit receipt (6 percent).[39] This pattern of percentage increases reflects in part the fact that payroll taxes and work expenses are more important in increasing poverty for persons in

units with no Social Security benefits nor SSI payments and the fact that SNAP benefits and housing subsidies are more important in reducing poverty for persons in units with Social Security and/or SSI benefit receipt.[40] In addition, the percentage differences between beneficiaries and nonbeneficiaries reflect the differing effects of adjustments for geographic differences in living costs and housing status.

Nonaged adults with only public health insurance have a sizable decrease in poverty (-12 percent).[41] On the other hand, those with private health insurance and those with no health insurance have increases in poverty (57 and 12 percent, respectively).[42] This pattern of percentage differences in part reflects the fact that SNAP and housing subsidies are more important in reducing poverty among persons with only public insurance than for those with private insurance or no insurance. In addition, MOOP expenses and taxes are more important in increasing poverty among persons with private insurance than for those with no insurance.

Blacks aged 18–64 have a smaller poverty increase (1 percent) than do whites (16 percent). SNAP and housing subsidies are more important in reducing poverty for blacks than for whites. Asians, on the other hand, have a larger poverty increase (44 percent) than do whites (16 percent). These percentage differences

between Asians and whites reflect the differing effects of adjustments for geographic differences in housing costs, differences in unit definitions, and differences in the role of MOOP expenses.

For six of the previously discussed categories (work experience, payroll tax status, disability status, Social Security and/or SSI benefit receipt status, health insurance coverage, and race), differences between the SPM and official resource measures play a key role in determining the patterns of percentage differences in poverty changes.

Effects of Various Features of the SPM on Poverty Rates Among Nonaged Adults

The 1.8 percentage point increase in measured poverty among the nonaged adult population can be attributed to specific features of the SPM. A number of those features increase poverty, but others reduce it. We now consider the effects of the SPM's resource, threshold, and unit measures.

Effects of Elements of the Resource Measure

In this subsection, we discuss the effects of noncash transfers and refundable tax credits. Then, we address taxes and other nondiscretionary expenses. We then examine the cumulative effect of the resource measure.

Noncash transfers and refundable tax credits. For each of these programs, we compare SPM poverty with the poverty that results when the benefits of the program are subtracted from the resource measure, but the SPM thresholds and SPM units are unchanged.[43] We view the change in poverty as the result of a specified change in the way poverty is measured.

There is another way to interpret the change in poverty. We could view the change in poverty as the effect of a change in program policy for a given measure of poverty, namely, the effect on SPM poverty of introducing the program. Our estimate of the increase in resources that is the result of the introduction of the program equals the amount of program benefits.[44] It does not include any changes in other resource components that are due to the program's behavioral (work effort and so forth) and interprogram effects.[45]

The six benefit and tax credit programs considered here are refundable tax credits,[46] housing subsidies, LIHEAP, NSLP, SNAP, and WIC. Table 7 gives the percentage point decreases in the SPM poverty rate for adults aged 18–64 attributed to each of these six programs. Three of these governmental programs—refundable tax credits, SNAP, and housing

subsidies—have quite discernible effects on SPM poverty of nonaged adults. Refundable tax credits have the largest impact. Including tax credits, SNAP, and housing subsidies in the resource measure reduces the measured poverty rate by 2.1, 1.2, and 0.7 percentage points, respectively. Refundable tax credits are primarily intended to help low-income working families with children.[47] SNAP and housing subsidies target the nonaged and aged low-income populations. The other three programs are not large enough to have sizable effects on poverty rates. The sum of the six individual effects is 4.4 percentage points.

Government cash transfers such as Social Security benefits and SSI payments are included as resources by both the SPM and the official poverty measure.[48] Including Social Security and SSI benefit amounts in SPM resources reduces the SPM poverty rate of nonaged adults by 4.1 and 1.2 percentage points, respectively (not shown). Including Social Security and SSI in the official resource measure reduces the official poverty rate by smaller numbers of percentage points (3.0 and 0.7, also not shown).

Table 7 (columns 2–6) gives the percentage point decreases in the SPM poverty rates of nonaged adults in five narrow age subgroups (18–24, 25–34, 35–44, 45–54, and 55–64) attributed to refundable tax credits and to each of the five noncash transfer programs. As we might expect, the poverty-rate effect of tax credits decreases sharply as age increases beyond the 35–44 range because older individuals are less likely to be in units with children that would qualify for those tax credits. Moreover, the effect of SNAP decreases as age increases beyond the 25–34 range. By contrast, the effect of housing subsidies does not vary much by age.

Taxes and other nondiscretionary expenses. For each expense element, we compare SPM poverty with the poverty that results when we use SPM resources *plus* the expense-element amount as our resource measure, but continue to use the SPM thresholds and SPM units. The six expense items considered here are federal income taxes,[49] payroll taxes,[50] state income taxes,[51] child support paid, MOOP expenses, and work expenses. Table 7 (bottom panel, column 1) gives the percentage point increases in the SPM poverty rate of the total nonaged adult population, attributed to each of these six expense items—four of which have substantial effects on the SPM poverty rate of nonaged adults. MOOP expenses have the largest effect; subtracting those expenses in calculating the resource measure increases the measured poverty rate by 2.8 percentage points.[52] The poverty-rate increases

Table 7.

Percentage point changes in the SPM poverty rate attributed to individual additions to and subtractions from SPM resources for adults aged 18–64, by selected age groups, 2011

SPM resource additions and subtractions	Total (18–64)	18–24	25–34	35–44	45–54	55–64
	Poverty-reducing components					
Additions (refundable tax credits and noncash transfers)						
Refundable tax credits	-2.1	-2.9	-3.2	-3.0	-1.3	-0.4
Housing subsidies	-0.7	-0.8	-0.8	-0.6	-0.7	-0.8
LIHEAP (energy assistance)	-0.1	-0.1	-0.1	[a] -0.0	-0.1	-0.1
School lunches	-0.2	-0.2	-0.3	-0.4	-0.1	-0.1
SNAP (formerly the Food Stamp Program)	-1.2	-1.7	-1.6	-1.2	-0.9	-0.8
WIC	-0.1	-0.2	-0.2	-0.1	[a] -0.0	[a] -0.0
	Poverty-increasing components					
Subtractions (taxes and other nondiscretionary expenses)						
Federal income taxes	0.6	0.8	0.6	0.4	0.5	0.6
Payroll taxes	1.4	1.8	1.6	1.4	1.1	1.0
State income taxes	0.2	0.4	0.2	0.2	0.2	0.2
Child support paid	0.2	0.1	0.2	0.3	0.2	0.1
MOOP expenses	2.8	3.1	2.4	2.5	2.7	3.5
Work expenses	1.7	2.5	2.2	1.7	1.3	1.1
Combined effect of all SPM additions and subtractions [b]	1.7	2.4	0.4	0.7	2.1	3.0

SOURCE: The public-use version of the 2012 Current Population Survey's Annual Social and Economic Supplement.

NOTES: LIHEAP = Low-Income Home and Energy Assistance Program; MOOP = medical out-of-pocket; SNAP = Supplemental Nutrition Assistance Program; SPM = Supplemental Poverty Measure; WIC = Special Supplemental Nutrition Program for Women, Infants, and Children.

a. Negative, but greater than -0.05.

b. Because of the interaction effect and rounding, the combined effect does not equal the sum of the individual changes.

attributed to work expenses, payroll taxes, and federal income taxes are 1.7, 1.4, and 0.6 percentage points, respectively.[53]

Almost 90 percent of SPM-poor nonaged adults are members of SPM units with MOOP expenses. For those units, MOOP expenses can be quite high; for nonaged adults in those units, their unit's MOOP expenses on average amount to 20 percent of their unit's SPM poverty threshold. About 65 percent of SPM-poor nonaged adults are members of SPM units with work expenses and about 65 percent are members of units with payroll tax payments. The comparable figure for federal income taxes is about 25 percent. Recall that work expenses include those for childcare. The sum of these six individual expense effects is a 6.9 percentage point increase in the SPM poverty rate.

Table 7 (bottom panel, columns 2–6) also gives the percentage point increases in the SPM poverty rates of persons in five age subgroups of nonaged adults, attributed to each of the nondiscretionary expense items. We find that the poverty-rate effect of MOOP

expenses is largest for the 55–64 subgroup. For both work expenses and payroll taxes, poverty-rate effects decrease steadily as age increases.

All resource elements. Here we compare SPM poverty with the poverty that results when we replace the SPM resource measure with the official resource measure, but use the SPM thresholds and units. We find that the SPM poverty rate (15.6 percent) exceeds the modified poverty rate by 1.7 percentage points (Table 7). In other words, using the SPM resource measure increases the poverty rate by 1.7 points.

The combined effect on poverty of all the differences between the SPM resource measure and the official resource measure need not equal the sum of the effects of the 12 individual differences. There can be substantial interaction effects. For example, although including either SNAP benefits or a housing subsidy in the resource measure may not move a unit out of poverty, including both benefits may do so.[54]

The sum of the six poverty-increasing resource measure elements (6.9 percentage points) exceeds the

sum of the six poverty-reducing resource measure elements (4.4 percentage points) by 2.5 percentage points. Thus, the net interaction effect is -0.8 percentage points (1.7 – 2.5).

The combined effect of resource-measure differences on poverty rises steadily with age, from an increase of 0.4 percentage points for the 25–34 subgroup to an increase of 3.0 percentage points for the 55–64 subgroup.

Effects of Elements of the Threshold Measure

We now examine the effects of various elements of the SPM threshold measure; that is, housing status, geographic area, threshold level, and equivalence scale. In addition, we consider the combined effect of the various elements of the SPM threshold measure. These effects on the SPM poverty rate for nonaged adults are given in Table 8.

Housing-status adjustments. The SPM thresholds depend on a unit's housing-tenure status group. The groups are units that have owners with mortgages, owners without mortgages, and renters. All thresholds for units that have owners without mortgages are 15 percent lower than they would be if the thresholds did not depend on housing status. Correspondingly, thresholds for units that have owners with mortgages and renters are respectively 3 percent and 1 percent higher than they would be if the thresholds did not depend on housing status.[55]

To estimate the effect of housing-status adjustments, we remove them from the SPM thresholds and compare SPM poverty with the poverty that results when we use these modified thresholds. We find that the housing-status adjustment *decreases* the poverty

rate of the nonaged adult population by 0.4 percentage points.[56] About 20 percent of that population who are poor in the absence of this adjustment reside in units that have owners with no mortgages; the adjustment markedly lowers their thresholds and moves many of these people out of poverty. The adjustment decreases the poverty rate for people in units that have owners with no mortgages by 3.7 percentage points.[57] For people in units that have owners with mortgages and those in units that have renters, there are small increases in their poverty rates (0.5 percentage points each).

Among the age subgroups of nonaged adults, the decreases in poverty rates that are due to the housing-status adjustments are largest for the 45–54 and 55–64 subgroups at 0.5 and 0.7 percentage points, respectively. These are the age subgroups with the highest percentages of poor people in units that have owners with no mortgages.

Geographic adjustments. The SPM thresholds are adjusted to reflect geographic differences in living costs. The adjustment factors depend on housing-status group and area rent levels. Rent data for more than 300 areas are from the American Community Survey. For a given housing-status group, the geographic-adjustment factor is derived by multiplying an area's rent-index value by the group's share of housing expenditures (shelter *plus* utilities) in its threshold and adding this product to the group's nonhousing share. The rent index is the ratio of the area's rent to the national average rent.[58]

The rent-index values range from about 0.60 to 1.90. For units that have owners with mortgages, owners without mortgages, and renters, the shares of expenses for housing in the thresholds are .507, .401, and .497,

Table 8.
Percentage point changes in the SPM poverty rate attributed to individual features of the SPM threshold for adults aged 18–64, by selected age groups, 2011

Threshold feature	Total (18–64)	18–24	25–34	35–44	45–54	55–64
Housing-status adjustment	-0.4	-0.4	[a] 0.0	-0.2	-0.5	-0.7
Geographic adjustment	0.6	0.8	0.8	0.9	0.3	0.3
Threshold level	2.5	3.2	2.7	2.4	2.0	2.1
Equivalence scale	0.4	1.3	0.4	0.3	0.4	[a] 0.0
Combined effect of all SPM threshold features [b]	2.8	4.8	3.4	2.9	2.1	1.4

SOURCE: The public-use version of the 2012 Current Population Survey's Annual Social and Economic Supplement.

NOTE: SPM = Supplemental Poverty Measure.

a. Positive, but less than 0.05.

b. Because of the interaction effect and rounding, the combined effect does not equal the sum of the individual changes.

respectively (Bureau of Labor Statistics 2012). For nonaged adults, the geographic-adjustment factors average about 1.02 and range from 0.80 to 1.48.

We remove the geographic adjustments from the SPM thresholds and compare SPM poverty with the poverty that results when we use those modified thresholds.[59] The geographic adjustment *increases* the overall poverty rate of nonaged adults by 0.6 percentage points (Table 8). The adjustment raises thresholds for people in higher-cost areas and thus moves 3.7 million of them into poverty; on the other hand, the adjustment lowers thresholds for people in lower-cost areas and thus moves 2.6 million of them out of poverty. It markedly increases poverty in two regions (the Northeast and West) and decreases poverty in the other two regions (the Midwest and South).[60] The adjustment decreases poverty substantially for people living outside of MSAs and increases it for those living inside MSAs.

Among the age subgroups of nonaged adults, the increases in poverty rates that are due to the geographic adjustments are smallest for the 45–54 and 55–64 subgroups at 0.3 percentage points each.[61]

Threshold level. With no housing-status adjustment and no geographic adjustment, the SPM threshold for the two-adult/two-child unit for 2011 would have been $25,000.[62] The two-adult/two-child official threshold for 2011 was $22,811. Thus, for this base unit, the official threshold is only 91.24 percent of the SPM threshold.

To estimate the effect of the threshold-level difference, we remove that difference by multiplying each unit's SPM threshold by .9124. We then compare SPM poverty with the poverty that results when we use these modified thresholds. This change *increases* the poverty rate for nonaged adults by 2.5 percentage points (Table 8).

Equivalence scales. There are important differences between the official and SPM equivalence scales. Both scales depend on unit size and number of unit children, but they depend on these two factors in somewhat different ways, as we will show. The official scale also depends on the age of the unit head; one-person and two-person units with aged heads have lower scale values than corresponding units with nonaged heads.

In estimating the total effect of using the SPM equivalence scale on poverty of nonaged adults, we incorporate the official equivalence scale into the SPM thresholds as follows. For each poverty measure, the equivalence-scale value is set equal to 1.00 for a nonaged two-adult/two-child unit. For each unit type, we compute the ratio of the official-scale value to the SPM-scale value, where unit type is defined by unit size, number of children, and whether the unit head is at least age 65. We next multiply each unit's SPM threshold by the ratio of scale values to obtain modified thresholds. We find that using the SPM equivalence scale *increases* the poverty rate for nonaged adults by 0.4 percentage points, an increase of 0.8 million persons (Table 8).[63]

Using the SPM scale increases poverty for units for which the SPM-scale value is greater than the official-scale value and decreases poverty for units for which the SPM-scale value is less than the official-scale value. Table 9 shows the ratios of the SPM equivalence-scale value to the official measure equivalence-scale value for the various unit types. The ratio of the SPM-scale value to the official-scale value exceeds 1.00 for all units with three to eight persons and zero to two children, excluding units with four persons and two children; for those units, using the SPM scale increases the number of nonaged adults in poverty by 2.3 million. On the other hand, the ratio of these scale values is less than 1.00 for all units with three to eight persons and three to seven children; for those units, using the SPM scale reduces the number of nonaged adults in poverty by 0.3 million. Correspondingly, using the SPM scale for one-person nonaged units reduces the poverty of nonaged adults by 1.0 million.

Among the narrow age subgroups of nonaged adults, there are increases in poverty rates resulting from using the SPM equivalence scale for four of the five subgroups (Table 8). For the 55–64 subgroup, there is no change in poverty.[64]

All threshold elements. We now examine the combined effect of adjustments for housing and geographic area, threshold level, and equivalence scale on poverty of nonaged adults. For each SPM unit, we replace the SPM threshold with the official threshold. The official thresholds depend on SPM unit size, number of unit children, and whether the unit head is at least age 65. We then compare SPM poverty with the poverty that results when we use these modified thresholds, but continue to use the SPM resource measure and SPM units.

We find that using the SPM thresholds increases the poverty rate of nonaged adults by 2.8 percentage

Table 9.
Ratio of the SPM equivalence-scale value to the official poverty measure equivalence-scale value, by unit size, age of unit head, and number of children

Unit size and age of unit head [a]	Number of children							
	0	1	2	3	4	5	6	7
One person								
Younger than age 65	0.90	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Aged 65 or older	0.98	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Two people								
Unit head younger than age 65	0.99	1.03	. . .	. . .	. . .	. . .	. . .	. . .
Unit head aged 65 or older	1.10	1.03	. . .	. . .	. . .	. . .	. . .	. . .
Three people	1.30	1.11	1.05	. . .	. . .	. . .	. . .	. . .
Four people	1.20	1.08	1.00	0.95	. . .	. . .	. . .	. . .
Five people	1.17	1.07	1.01	0.95	0.92	. . .	. . .	. . .
Six people	1.15	1.08	1.03	0.98	0.93	0.91	. . .	. . .
Seven people	1.11	1.05	1.02	0.97	0.94	0.90	0.91	. . .
Eight people	1.09	1.04	1.01	0.97	0.94	0.91	0.88	0.86

SOURCE: Authors' calculations.

NOTES: SPM = Supplemental Poverty Measure; . . . = not applicable.

a. Ratios for units with three or more persons do not depend on the age of the unit head.

points (Table 8). The sum of the four individual threshold-element effects—housing adjustment (decreases the poverty rate by 0.4 percentage points), geographic adjustment (increases the rate by 0.6 points), threshold level (increases the rate by 2.5 points), and equivalence scale (increases the rate by 0.4 points)—yields a poverty-rate increase of 3.1 percentage points. Thus, the interaction effect is a poverty-rate decrease of 0.3 percentage points (2.8 − 3.1).

Among the narrow age subgroups of nonaged adults, the increases in the poverty rate that result from the combination of all the threshold changes is smallest for the 55–64 subgroup, at 1.4 percentage points (Table 8).

Effects of Unit Definition

We now compare the official poverty of nonaged adults (18–64) with the poverty that results when we use the SPM unit, but use the official resource and threshold concepts.[65] We find that replacing the official unit with the SPM unit *reduces* the poverty rate for nonaged adults by 1.4 percentage points (Table 10).

The majority of nonaged adults stay in the same unit; that is, their SPM unit is the same as their official unit. However, about 10 percent of them end up in a new unit; that is, in a SPM unit that differs from their official unit. Some 97 percent of these new-unit

persons end up in larger SPM units.[66] Replacing the official unit with the SPM unit moves about a sixth of these new-unit persons out of poverty; a very small proportion moves into poverty. In larger units, there is more resource sharing and more economies of scale that tend to reduce the number of people in poverty.

Among the age subgroups of nonaged adults, the decrease in poverty rates because of the change in unit declines with age, from 2.8 percentage points for the 18–24 subgroup to 0.7 percentage points for the 55–64 subgroup (Table 10). The percentage of nonaged adults ending up in new units decreases with age, from 15 percent for the 25–34 subgroup to 5 percent for the 55–64 subgroup (not shown).

Effect of All Elements of the SPM

For nonaged adults, the SPM poverty rate exceeds the official rate by 1.8 percentage points. The combined effect of all changes (from the official measure to SPM) in the resource measure increases the poverty rate by 1.7 percentage points. The combined effect of all changes in the threshold measure increases the poverty rate by 2.8 points. On the other hand, replacing the official unit with the SPM unit reduces the poverty rate by 1.4 points. The sum of the resource, threshold, and unit effects (1.7 + 2.8 − 1.4) is 3.1 points. Thus, the interaction effect in this case is a substantial -1.3 percentage points (1.8 − 3.1).

Table 10.
Percentage point change in the SPM poverty rate attributed to features of the SPM for adults aged 18–64, by selected age groups, 2011

SPM element	Total (18–64)	18–24	25–34	35–44	45–54	55–64
All resource features	1.7	2.4	0.4	0.7	2.1	3.0
All threshold features	2.8	4.8	3.4	2.9	2.1	1.4
Unit	-1.4	-2.8	-2.0	-1.0	-0.9	-0.7
Combined effect of all features [a]	1.8	2.5	0.2	1.3	2.5	2.9

SOURCE: The public-use version of the 2012 Current Population Survey's Annual Social and Economic Supplement.

NOTE: SPM = Supplemental Poverty Measure.

a. Because of the interaction effect and rounding, the combined effect does not equal the sum of individual changes.

Summary of Empirical Findings

First, we provide an overview of our comparisons of official measure and SPM estimates. Then, we summarize our analysis of the effects of the various features of the SPM on poverty of the nonaged adult population.

Comparison of Official and SPM Estimates

For the total population under study, the SPM poverty rate (16.1 percent) exceeds the official rate (15.1 percent). For broad age groups, the SPM and official measures give quite different results. For nonaged adults (18–64), the SPM poverty rate (15.6 percent) exceeds the official rate (13.7 percent) by 13 percent. Larger discrepancies are observed for the younger and older segments of the population. Compared with the official measure, the SPM shows much more poverty for adults aged 65 or older (an increase in the poverty rate, from 8.7 percent to 15.1 percent) and substantially less poverty for children younger than age 18 (a decrease in the poverty rate, from 22.3 percent to 18.2 percent). Compared with the official measure, the SPM shows much smaller age-group differences in poverty rates. Among nonaged adults, we also observe that for the majority of narrow age subgroups, the SPM poverty rates exceed the official rates.

For the total population under study, the SPM deep poverty rate (5.2 percent) is lower than the official deep poverty rate (6.7 percent). For broad age groups, the SPM and official measure give quite different results for deep poverty. For nonaged adults (18–64), the SPM deep poverty rate (5.5 percent) also is lower than the official deep poverty rate (6.3 percent). Compared with the official measure, the SPM shows a much higher rate for deep poverty among aged adults and a much lower rate for children.

Switching to the SPM moves about 5.0 percent of nonaged adults into poverty and about 3.1 percent out of poverty. Much of this movement into and out of poverty occurs near the poverty line.

We examine poverty of nonaged adults (18–64) for various demographic and socioeconomic groups (Table 6). Among the groups with the largest percentage increases in poverty are people with private health insurance, those in units that have an owner with a mortgage, and Asians. Some groups (blacks, persons in units that have an owner with no mortgage, those residing in the Midwest, women, and nonworkers) have very small changes in poverty. Several groups (persons with only public health insurance and those residing outside MSAs) have substantial decreases in poverty. Workers have a large percentage increase in poverty, but nonworkers have little change in poverty.

Effects of SPM Features on the Poverty Rates of Nonaged Adults

For nonaged adults, the SPM poverty rate (15.6 percent) exceeds the official rate (13.7 percent) by 1.9 percentage points.

The combined effect of all changes (from the official measure to the SPM) in the resource measure is to *increase* the poverty rate by 1.7 percentage points. Among the six poverty-increasing resource elements (that is, taxes and other nondiscretionary expenses), MOOP expenses, work expenses, and payroll taxes produce the largest increases in the poverty rate—2.8, 1.7, and 1.4 percentage points, respectively. Among the six poverty-reducing resource elements (that is, refundable tax credits and noncash transfers), refundable tax credits and SNAP produce the largest decreases in the poverty rate—2.1 and 1.2 percentage points, respectively.

The combined effect of all the changes in the threshold measure is to *increase* the poverty rate by 2.8 percentage points. Raising the threshold level increases the poverty rate by 2.5 percentage points and is by far the largest of the individual threshold-element effects.

Replacing the official unit with the SPM unit *reduces* the poverty rate by 1.4 percentage points.[67]

Concluding Comments

The impact of taxes (payroll taxes, refundable tax credits, and income taxes) and government noncash benefit programs (food stamps, housing subsidies, and so forth) are directly reflected in SPM estimates, but not in official poverty estimates.

Additional research on the SPM should prove very fruitful. We could benefit from research evaluating the SPM and testing alternative methods of improving it. Additional research is needed on elements of both the resource and threshold measures. Further investigation of the valuation of work expenses, adjustments for underreporting of income and expenses, and geographic adjustments of thresholds should be of high priority. Finally, more research on how and why the SPM and official poverty estimates differ would be worthwhile, particularly regarding population subgroups such as children.

Appendix A: Evolution of the SPM

What ultimately became the official poverty measure was developed by Mollie Orshansky of SSA, from 1963 through 1964 (Orshansky 1963, 1965a, 1965b). In May 1965, the Office of Economic Opportunity, newly established as part of the Johnson administration's War on Poverty, adopted the Orshansky measure as a working or quasi-official definition of poverty.[68] In August 1969, the Orshansky measure was designated as the federal government's official statistical definition of poverty (Fisher 1992). Only a few minor changes in the measure have been made since 1969.

Over time, concerns about the adequacy of the official measure increased. As a result, in the early 1990s at the request of Congress, the National Academy of Sciences (NAS) undertook an independent scientific study of the concepts, measurement methods, and information needs for a poverty measure. For that purpose, NAS established the Panel on Poverty and Family Assistance, which released its 1995 report, *Measuring Poverty: A New Approach* (Citro and Michael 1995). Based on its assessment of the weaknesses of the official poverty measure, the NAS

panel recommended a considerably different poverty measure that it believed would much better reflect contemporary government policy and economic and social realities.

Over the next 15 years or so, numerous government and nongovernment studies examined alternative poverty measures. For example, the Census Bureau released studies that presented a set of experimental poverty measures based on the recommendations of the NAS panel (Short and others 1999; Short 2001). Those studies suggested that the new measures would identify as poor a rather different population than that identified by the official poverty measure.

In 2009, the Office of Management and Budget formed a working group of representatives from a number of government agencies to consider improving the measurement of poverty. This working group was asked to develop a set of initial starting points to permit the Census Bureau, in cooperation with the Bureau of Labor Statistics, to produce a supplemental poverty measure. The Interagency Technical Working Group on Developing a Supplemental Poverty Measure (ITWG) issued its report in 2010.[69]

In 2011, the Census Bureau released its first report on the SPM (Short 2011). That report described the new measure in some detail and presented estimates of SPM-based poverty for both 2009 and 2010. The second, third, and fourth annual SPM reports presented estimates for 2011, 2012, and 2013, respectively (Short 2012, 2013, 2014). The recently released SPM is largely based on the recommendations of the NAS panel; deviations from the panel's recommendations reflect suggestions from the ITWG and more current research.

Appendix B: CPS Data for Components of the SPM Resource Measure

The sources of the dollar values for the various in-kind benefits, refundable tax credits, tax liabilities, and other nondiscretionary expense items given in the CPS/ASEC data file are discussed in this Appendix. We begin by discussing (1) in-kind benefits, and (2) taxes and refundable tax credits.

- **Housing subsidies.** The CPS/ASEC collects information on recipiency, but not on amounts received. To estimate amounts of such assistance, the Department of Housing and Urban Development program rules are applied to CPS households.

- **Low-Income Home Energy Assistance Program (LIHEAP).** The CPS/ASEC collects information on amounts received.

- **National School Lunch Program (NSLP).** The CPS/ASEC collects information on recipiency, but not on amounts received. To value benefits, the Census Bureau uses the amount of the cost per lunch from the Department of Agriculture's Food and Nutrition Service.

- **Supplemental Nutrition Assistance Program (SNAP).** The CPS/ASEC collects information on amounts received.

- **Special Supplemental Nutrition Program for Women, Infants, and Children (WIC).** The CPS/ASEC collects information on recipiency, but not on amounts received. To value the benefits, the Census Bureau uses program information from the Department of Agriculture.

- **Taxes and refundable tax credits.** The CPS/ASEC does not collect information on taxes and refundable tax credits, but relies on a tax calculator to simulate them. The calculator is a computer program that incorporates the main features of federal and state tax laws. These simulations also use a statistical match of the CPS/ASEC to the Internal Revenue Service's Statistics of Income microdata file of tax returns.

We conclude by discussing other necessary expenses that are subtracted from resources.

- **Child support paid.** The CPS/ASEC collects information on amounts paid.

- **Medical out-of-pocket (MOOP) expenses.** The CPS/ASEC collects information on amounts paid for (1) health insurance premiums; (2) over-the-counter health-related products; and (3) medical care (hospital visits, medical providers, dental services, prescription medicine, vision aids, and medical supplies). Caswell and O'Hara (2010) conclude that CPS/ASEC estimates of MOOP expenditures compare favorably to estimates from the Medical Expenditure Panel Survey (MEPS) and the Survey of Income and Program Participation (SIPP). The MEPS, in particular, devotes considerably more effort to collecting MOOP expenditures than does the CPS/ASEC.

- **Work-related expenses (excludes childcare expenses).** The CPS/ASEC does not collect information on work-related expenses (travel to work, tools, uniforms, and so forth). Information on amounts of work expenses from the most recent SIPP is used to estimate those expenses for workers in the CPS/ASEC.

- **Childcare expenses.** The CPS/ASEC collects information on amounts of such expenses (any type of childcare while parents are at work).

Notes

[1] In an earlier article (Bridges and Gesumaria 2013), we focused on the measurement of poverty among adults aged 65 or older.

[2] There are two slightly different versions of the official poverty measure: (1) poverty thresholds, which are more detailed and primarily used for statistical purposes; and (2) poverty guidelines, which are a simplified version of the thresholds, primarily used for administrative purposes. In this article, we use the term "official poverty measure" to denote the poverty threshold measure. For a discussion of the two measures, see the Institute for Research on Poverty (2013).

[3] All members of a family unit are assigned the same poverty status; that is, poor or not poor.

[4] An extensive discussion of such criticisms appears in Citro and Michael (1995).

[5] Subsequently, the Census Bureau released SPM reports in 2012, 2013, and 2014 (Short 2012, 2013, 2014).

[6] For a discussion of the evolution of the SPM, see Appendix A.

[7] The poverty rate is the percentage of people in a group who are classified as poor.

[8] Throughout the article, changes in poverty that are due to changes in the poverty measure used are the changes in poverty that result from switching from the official measure to the SPM.

[9] This section draws heavily on Short (2012). Refer to that report for further details.

[10] The 2012 CPS/ASEC is a household survey of the U.S. civilian noninstitutionalized population; it also includes military personnel who live in a household with at least one civilian adult. The number of households interviewed was about 74,000. Some 7,000 households were not interviewed because there was no available participant.

[11] For a detailed discussion of the SPM and official unit measures, see Provencher (2011).

[12] Money income in the CPS/ASEC consists of (1) earnings; (2) unemployment compensation; (3) workers' compensation; (4) Social Security; (5) Supplemental Security Income (SSI); (6) public assistance (Temporary Assistance for Needy Families (TANF) and general assistance); (7) veterans' payments; (8) survivor benefits;

(9) disability benefits; (10) pension or retirement income; (11) interest; (12) dividends; (13) rents, royalties, and estates and trusts; (14) educational assistance; (15) alimony; (16) child support; (17) financial assistance from outside of the household; and (18) other income.

[13] For a critique of the resource-based SPM, see Meyer and Sullivan (2012). Those authors favor a consumption-based poverty measure.

[14] Federal outlays for Supplemental Security Income (SSI) and Temporary Assistance for Needy Families (TANF) were about $56 billion and $17 billion. Both of these *cash* benefit programs are also designed to assist the low-income population.

[15] This estimate is from the authors' tabulation of the 2012 CPS/ASEC public-use file.

[16] The sources of the dollar values for the various in-kind benefits, taxes, and other nondiscretionary expense items given on the CPS/ASEC public-use data file are discussed in Appendix B. For more details, see Short (2012) and references cited therein.

[17] See note 16.

[18] Respondents reported amounts of premium and non-premium MOOP expenses in the 2012 CPS/ASEC.

[19] For families of three or more persons, the multiplier is 3. However, for families of two persons, the multiplier is 3.7. Without using a food plan and a multiplier, the thresholds for unrelated individuals were set at 80 percent of the corresponding thresholds for two-person families.

[20] Bureau of Labor Statistics (2012).

[21] To be more precise, "expenditures around the 33rd percentile" is the average of expenditures within the 30th to 36th percentile portion of the expenditure distribution.

[22] In this article, the terms adults and children are used in two slightly different ways.

In calculating equivalence-scale values and thresholds values, all persons younger than age 15 and dependent persons aged 15–17 are counted as children; all persons aged 18 or older and nondependent persons aged 15–17 are counted as adults.

In all other parts of the article, the term "children" signifies persons younger than age 18 and the term "adults" means persons aged 18 or older. The term "nonaged adults" denotes persons aged 18–64.

[23] The three-parameter scale values are calculated as follows:

1. SPM unit with one or two adults and no children—
   unadjusted-scale value = $[\text{number of adults}]^{0.5}$

2. SPM unit with one adult and one or more children (mostly single-parent units)—
   unadjusted-scale value = $[1 + 0.8 + 0.5(\text{number of children} - 1)]^{0.7}$

3. All other SPM units—
   unadjusted-scale value = $[\text{number of adults} + 0.5(\text{number of children})]^{0.7}$

In equation (2), the first child is treated as 80 percent of an adult; each additional child is treated as 50 percent of an adult. In equation (3), each child is treated as 50 percent of an adult. The numbers of adult equivalents are given by the expressions inside the brackets. For example, for a two-adult/two-child unit, equation (3) shows that the number of adult equivalents is three.

Economies of scale require that whenever an additional equivalent adult is added to an SPM unit, the unit's equivalence-scale value divided by the number of adult equivalents decreases. The exponents outside the brackets are the economy-of-scale factors. The smaller exponent (0.5) exhibits greater economies of scale than does the larger exponent (0.7).

The Census Bureau then adjusts all unadjusted-scale values proportionally so that the adjusted-scale value for the two-adult/two-child unit equals 1. The base threshold level for the two-adult/two-child unit is then multiplied by the adjusted-scale values to derive threshold values for the other unit types.

[24] The Census Bureau's report on official poverty shows a poverty rate of 15.0 percent for 2011 (DeNavas-Walt, Proctor, and Smith 2012). That report excludes all unrelated individuals younger than age 15 from the universe of official poverty calculations.

In the Census Bureau's report on SPM poverty (Short 2012) and in this article, these unrelated individuals are included in the universe for official and SPM poverty calculations. In the official poverty calculations, all of these unrelated individuals are counted as poor. In the SPM poverty calculations, they are assumed to share the resources of their SPM unit.

[25] The SPM thresholds incorporate adjustments for geographic differences in housing costs. Because of confidentiality restrictions, the geographic information available for use in calculating the SPM thresholds on the public-use data file is slightly more limited than that available for use in calculating the SPM thresholds on the Census Bureau's internal data file. Thus, this article's SPM poverty estimates differ slightly from those in Short (2012).

[26] The subtraction of MOOP expenses is the major cause of the increase in the measured poverty rate of the aged population.

[27] Refundable tax credits are very important for units with children.

[28] This terminology is somewhat different from that ordinarily used in the poverty literature, in which movements into and out of poverty are attributable to changes in a unit's financial resources.

[29] To be more precise, "1.00–1.49" means equal to or greater than 1.00, but less than 1.50. Correspondingly,

"0.50–0.99" means equal to or greater than 0.50, but less than 1.00.

[30] For full-time, year-round workers (a subgroup of our sample population not discussed), there is an 82 percent increase in poverty,

[31] The mean age of poor nonaged adults in units with mortgages is about 5 years greater than that of poor nonaged adults in units with renters.

[32] The percentages of poor nonaged adults living inside MSAs is highest for those living in the West and Northeast (about 90 percent) and lowest for those in the Midwest and South (about 80 percent).

[33] About 60 percent of poor nonaged (18–64) Hispanic adults are foreign born. The percentages of poor nonaged adults who are Hispanic are highest in the West and Northeast and lowest in the Midwest and South.

[34] About 60 percent of poor nonaged (18–64) foreign-born adults are Hispanic. The percentages of poor nonaged adults who are foreign born are highest in the West and Northeast and lowest in the Midwest and South.

[35] A substantial minority of nonmarried individuals ends up in a new unit, that is, in a SPM unit that differs from their official unit; the vast majority of those new units are larger than the official units. With larger units, there is more resource sharing and more economies of scale that tend to reduce the number of people in poverty. By contrast, relatively few married persons end up in new units.

[36] To identify persons with a disability, we use the variable "prdisflg." A person with a disability must have one or more of the following conditions: (1) deafness or serious difficulty hearing; (2) blindness or serious difficulty seeing; (3) serious difficulty concentrating, remembering, or making decisions; (4) serious difficulty walking or climbing stairs; (5) difficulty dressing or bathing; (6) difficulty doing errands, such as visiting a doctor's office or shopping. This definition of disability differs from the statutory definition of disability used by SSA to administer the Social Security Disability Insurance and SSI programs. In addition, the definition of disability used in this article does not indicate whether the disability limits or prevents work.

[37] About a fourth of poor nonaged adults with a disability are Social Security beneficiaries.

[38] Almost half of poor nonaged adults with no disability are workers. By contrast, only about a sixth of that population with a disability are workers.

[39] Almost half of poor nonaged adult Social Security beneficiaries have a disability.

[40] Almost half of poor nonaged adult Social Security nonbeneficiaries are workers. By contrast, less than a tenth of poor beneficiaries are workers.

[41] Among poor nonaged adults with only public health insurance coverage, Medicaid coverage is considerably more common than Medicare coverage.

[42] Some 15 percent of poor nonaged adults with private health insurance coverage also have public health insurance coverage.

[43] For example, we compute the effect on the SPM poverty rate of adding refundable tax credits to the SPM resource measure using the following steps:

1. We subtract the value of each SPM unit's refundable tax credits from its SPM resource measure.

2. For each unit, we then compare that modified resource measure to the unit's SPM threshold to determine the modified poverty status of its members.

3. We then calculate the percentage of nonaged adults whose modified poverty status is poor; that is, we calculate the modified poverty rate. For this case, the modified poverty rate is 17.7 percent.

4. Finally, we compare the modified poverty rate with the SPM poverty rate. For nonaged adults, the SPM poverty rate is 15.6 percent.

The inclusion of refundable tax credits in the resource measure thus reduces the poverty rate by 2.1 percentage points (15.6 – 17.7).

[44] These program benefit amounts usually incorporate behavioral and interprogram effects.

[45] An interprogram effect exists when program rules specify that the benefit amount of one program affects the benefit amount of another program.

[46] The federal earned income tax credit *plus* the refundable portion of the federal child tax credit *plus* other refundable federal credits.

[47] About 45 percent of SPM poor nonaged adults are in SPM units that receive refundable federal tax credits.

[48] Other government cash transfers included as resources by both the SPM and official poverty measures are (1) unemployment insurance, (2) workers' compensation, and (3) Temporary Assistance for Needy Families (TANF) and general assistance.

[49] Federal individual income tax after subtracting nonrefundable tax credits.

[50] Contributions by employees and the self-employed to the Old-Age, Survivors, Disability, and Health Insurance program *plus* retirement contributions by federal employees.

[51] State income tax after credits. Some amounts are negative.

[52] For persons with only public insurance, this MOOP subtraction increases the poverty rate by 4.3 percentage points. For persons with private health insurance and those with no health insurance, the corresponding figures are 2.5 and 3.0 percentage points.

[53] Subtracting payroll taxes from the official resource measure increases the official measure poverty rate by 0.8 percentage points.

[54] The interaction effect is not the same as the interprogram effect discussed earlier (note 45).

[55] With no geographic adjustment and no housing-status adjustment, the threshold for the two-adult/two-child unit would be 1.2($20,833) or $25,000. The base FCSU expenditure is $20,833, and 20 percent is added to the base expenditure to allow for other basic needs (household supplies, personal care, and nonwork-related transportation). With no geographic adjustment, basic thresholds for two-adult/two-child units would be $25,703 for owners with mortgages; $21,175 for owners without mortgages; and $25,222 for renters. Those three amounts are 103 percent, 85 percent, and 101 percent of $25,000. (See the Bureau of Labor Statistics 2012).

[56] Preliminary thresholds are multiplied by geographic-adjustment factors to obtain final thresholds. Those factors depend on the housing-status group and on area rent. The inclusion of housing-status group in the calculation of geographic-adjustment factors reduces the poverty rate for nonaged adults by 0.1 percentage points. We include this effect as part of the effects of the geographic-adjustment factors and not as part of the effects of the housing-status adjustment.

[57] Not shown in the article's tables.

[58] The adjustment factors are calculated using the following formula:

$\text{Factor}_{ah} = \text{HousingShare}_h \times (\text{Rent}_a / \text{Rent}_n) + (1 - \text{HousingShare}_h)$, where a denotes geographic area, h denotes housing-status group, and n denotes national. See Renwick (2011).

[59] Renwick (2011) made such estimates for an earlier year.

[60] Not shown in the article's tables.

[61] These are the two age subgroups with lower percentages of poor people living in the West, slightly higher percentages in the South, and slightly higher percentages outside of MSAs.

[62] Derived from the Bureau of Labor Statistics (2012).

[63] We estimate the role of the official threshold's differential treatment of one-person and two-person units with aged heads. We find that this differential treatment has very little effect on the poverty of nonaged adults.

[64] This subgroup has the lowest proportion of poor individuals in units with three to eight persons and zero to two children and the highest proportion of poor individuals in one-person units.

[65] Note that here we compare official poverty with the poverty that results when we change a specified feature of the official measure. In all of our previous estimates of poverty effects, we compare SPM poverty with the poverty that results when we change a specified feature of the SPM. For the case of unit definition, the approach that we use here is considerably easier to implement than our usual approach.

[66] For the remaining people whose SPM unit changes, their SPM unit and their official unit are of the same size, but differ in membership.

[67] For aged adults (65 or older), Bridges and Gesumaria (2013) report the following results:

The combined effect of all the changes in the resource measure is an increase in the poverty rate of 5.5 percentage points. Of the subtractions of taxes and other nondiscretionary expenses, only the subtraction of MOOP expenses results in a large increase in the measured poverty rate (7.1 percentage points). This effect is substantially larger than that of any other change in resource measure, threshold measure, or unit definition. Of the additions of noncash transfers and refundable tax credits, the addition of housing subsidies produces the largest decrease in the poverty rate (1.2 percentage points).

The combined effect of all the changes in the threshold measure increases the poverty rate by 1.6 percentage points. Raising the threshold level and using the SPM equivalence scale increases the poverty rate by 2.8 percentage points and 1.3 percentage points, respectively. On the other hand, the housing-status adjustment decreases the poverty rate by 2.8 percentage points.

Replacing the official unit with the SPM unit reduces the poverty rate slightly, by 0.3 percentage points.

[68] In its 1964 report, the President's Council of Economic Advisors (CEA) set forth a poverty threshold of $3,000 (in 1962 dollars) for all families of two or more persons and a threshold of $1,500 for unrelated individuals. The Orshansky set of thresholds, in which the thresholds increase with family size, was clearly superior to the CEA alternative.

[69] See ITWG (2010).

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