MATHEMATICA
CENTER FOR
STUDYING DISABILITY POLICY

DRC Working PAPER

WORKING PAPER NUMBER: 18-05

Developing Income-Related Statistics on Federal Disability Beneficiaries Using Nationally Representative Survey Data

October 2018

Jody Schimmel Hyde*
Sarah Croake
Alex Bryce
Matt Messel, Social Security Administration

*Corresponding author's contact information:
Mathematica Policy Research
1100 First Street, NE, 12th Floor
Washington, DC 20002-4221
Email: jschimmel@mathematica-mpr.com
Reference Number: 40112.D-MP-15-Q3

The research reported herein was performed pursuant to a grant from the U.S. Social Security Administration (SSA) funded as part of the Disability Research Consortium. The opinions and conclusions expressed are solely those of the authors and do not represent the opinions or policy of SSA or any agency of the Federal Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of the contents of this report. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply endorsement, recommendation or favoring by the United States Government or any agency thereof.

This page has been left blank for double-sided copying.

ACKNOWLEDGMENTS

The authors wish to thank Irna May Connor and Maura Bardos for their programming work leading to the statistics contained in this report. We would also like to thank Lynn Fisher at the Social Security Administration and John Czajka of Mathematica for insights in our analysis design based on their earlier work. This manuscript also benefitted from the review and comments of Gina Livermore, Denise Hoffman, and David Stapleton of Mathematica's Center for Studying Disability Policy. The research reported herein was performed pursuant to a grant from the Social Security Administration (SSA), funded as part of the Disability Research Consortium. The opinions and conclusions expressed are solely those of the author(s) and do not represent the opinions or policy of SSA or any agency of the federal government. Neither the United States government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of the contents of this report. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply endorsement, recommendation, or favoring by the United States government or any agency thereof.

This page has been left blank for double-sided copying.

CONTENTS

This page has been left blank for double-sided copying.

ABSTRACT

Project Number

D-MP-15-Q3

Title

Developing Income-Related Statistics on Social Security Disability Beneficiaries Using Nationally Representative Survey Data

Authors

Jody Schimmel Hyde, Sarah Croake, Alex Bryce, and Matt Messel (SSA)

Date

October 2018

Key findings and implications

The Social Security Administration (SSA) has strong interest in investigating the extent to which Social Security Disability Insurance (SSDI) beneficiaries and Supplemental Security Income (SSI) recipients are financially secure, and in documenting that information on a regular basis. Yet, because SSA only collects from beneficiaries the information required to administer its programs, it does not have access to their complete financial status and must glean this information from another source. This report helps to achieve that objective by considering the strengths and limitations of using several nationally representative survey data sources to produce statistics related to income and poverty for SSDI and SSI beneficiaries.

We consider statistics derived from three sources: the Current Population Survey Annual Social and Economic Supplement (CPS-ASEC) and the Survey of Income and Program Participation (SIPP), both collected by the United States Census Bureau, and the National Beneficiary Survey (NBS) collected by SSA. We selected these sources in consultation with SSA—after reviewing a range of available data—because they are nationally representative, measure beneficiary status, and span the range of working-age adults. The CPS-ASEC and SIPP are also linkable to SSA administrative data, which overcomes issues of survey respondents misreporting benefit receipt. We produced one version of statistics from those sources based solely on self-report (using the Public Use File, or PUF), and another version for which we substituted self-reported information about SSDI and SSI receipt with administrative records covering the same time period as the survey (using a Restricted Access File, or RAF). The NBS sample was derived from administrative records and using that information to measure disability benefit receipt. The SIPP and CPS-ASEC allow for comparisons of beneficiaries to non-beneficiaries, but that is not possible with the NBS, which surveys only beneficiaries. In the case of the NBS, we used only the RAF version of the file, which contains the more detailed income and poverty data available for our analysis.

Using each of these five data sources, we produced statistics on income and poverty measures that are comparable (to the extent possible) to those that have appeared in other SSA publications. In this report, we document cross-survey differences with an eye toward helping

SSA select the most appropriate source for a potential chart book, and to help explain how results would have differed had another source been selected instead.

We find the following:

- Even though all of the surveys are nationally representative, responses imply differences in the size of the beneficiary population as well as the share of beneficiaries who are DI-only, SSI-only, or concurrent. The beneficiary shares differ between the PUF and RAF versions of the SIPP and CPS-ASEC in ways generally consistent with earlier literature. Aggregate statistics on beneficiary counts mask what we found to be large misreporting of beneficiary status at the individual level, especially in the CPS-ASEC.
- Many sample characteristics are similar across surveys but there are some differences, including distributions of sex, age, marital status, and household size. Some, though not all, of these differences can be explained by differences in the survey questions and structure. Differences in beneficiary characteristics between the PUF and RAF versions of a data set highlight subgroups that are likely to misreport their benefits, including young and old respondents (who may confuse SSI and SSDI, or Old-Age and Survivors Insurance [OASI] and SSDI) and those who are married (who may misreport spousal benefits from another program).
- Despite differences in the beneficiary characteristics, the CPS-ASEC and SIPP generally paint a similar picture in overall mean and median household income, with modest differences between the PUF and RAF versions of each data set. The NBS is an outlier compared with the other two data sets: NBS shows that mean income levels among beneficiaries are approximately 30 to 50 percent lower than for the other surveys. This reflects several differences in how the NBS queries respondents about income relative to other surveys, and makes income data in the NBS of questionable value.
- Findings from the CPS-ASEC and SIPP show that beneficiaries are substantially more likely to be in poverty or near poverty than non-beneficiaries; SSDI-only beneficiaries fare better than SSI recipients. Consistent with the findings of other researchers, we find that poverty rates are slightly lower in the SIPP than in the CPS-ASEC, with more respondents in the SIPP being in income groups just above poverty. NBS poverty rates for beneficiaries are substantially higher than those from the other surveys, owing to the lower reported income levels.
- Beneficiaries receive a large share of their individual and family incomes from disability benefits. Although there are magnitude differences across the surveys, each paints a relatively similar picture about the main sources of beneficiary income, and the differences between SSDI-only beneficiaries, SSI recipients, and non-beneficiaries.

The implications of the findings are:

- Had the SIPP not undergone a significant redesign in 2014, it would have been the dominant choice for a chart book because it has been documented to better collect income from those in lower income groups and has been best for capturing a full financial picture of beneficiaries. Its collection of income and beneficiary status at the monthly level may also be beneficial for more accurate measurement, though the longitudinal nature of the survey is

not without challenges. The redesigned SIPP makes cross-time comparisons complicated and reduces some of the benefits of the survey for assessing beneficiary status and income.

- The CPS-ASEC does not capture income in the same detail as the SIPP, but it generally yields similar income and poverty statistics, has been used in other chart books released by SSA, and is the source of commonly reported national statistics on poverty. Its income questions were also redesigned in 2014, so there may differences in the statistics produced before versus after that time, but benchmarking to the earlier years may be possible. The fact that the CPS-ASEC is released on a routine annual cycle makes it the best candidate for producing a chart book.
- The linkage of the CPS-ASEC and SIPP to SSA administrative records offers the opportunity to more accurately measure beneficiary status for the majority of respondents whose records are linked. Our recommendation, however, is to use only the PUF version of the data for a routine chart book. The availability of the linkage for the RAF is often delayed many months past the survey data release and securing access can take many additional months. Moreover, misreporting in the PUF of benefits status occurs quite frequently at the individual level, raising challenges when using administrative data for certain sources of income while relying on self-report for the remainder of income.
- The NBS has the benefit of accurate reporting of beneficiary status based on its sampling frame, but the intent of its design was not to collect detailed income information. Therefore, we would not recommend its use in a future chart book effort, and we caution that statistics derived from the NBS may overstate beneficiary poverty status and understate beneficiary income. If the NBS income questions were redesigned in future waves to align better with those in the CPS-ASEC, it would be a much stronger source of data for a future chart book.

This page has been left blank for double-sided copying.

I. INTRODUCTION

The Social Security Administration (SSA) has a strong interest in understanding the financial well-being of Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI) beneficiaries, and in providing that information to the public at regular intervals. SSDI and SSI provide a stable, though modest, source of income to the many adults with disabilities who ultimately need them. In December 2016, 12 million people ages 18 to 64 received SSDI or SSI (8 million received SSDI only, 3.5 million received SSI only, and 1.3 million received both). The average monthly benefits were $1,037 ($1,236 for SSDI-only, $681 for SSI-only, and $783 for concurrent) (SSA 2018). One-third of working-age SSDI and SSI beneficiaries rely on their monthly benefit check as their sole source of income, and many live in poverty (Bailey and Hemmeter 2015). Estimates also show that many more beneficiaries would be in poverty if SSDI or SSI benefits were reduced. Therefore, it is extremely important that public officials understand the financial status of beneficiaries when discussing benefit reductions as a way to alleviate fiscal pressures.

A. Analysis overview

We designed this report to provide information to SSA that would allow the development of a recurring publication about the income and poverty status of working-age (ages 18 through full retirement age) disability beneficiaries. SSA previously released a chart book on the income of disabled worker beneficiaries using data from 1994 (SSA 2001), and has more recently released similar information for SSDI and SSI beneficiaries in a series of publications (most recently, Bailey and Hemmeter 2015). SSA would like to report beneficiary income and poverty statistics on a more regular basis for a lay audience, in a format that would be similar to its biennial *Income of the Population 55 and Older* series. Agency staff also indicated that SSA would be

interested in understanding how the findings for a chart book would vary if a different data source had been used.

Although SSA knows the amount it pays to each beneficiary and has other income information necessary to administer program benefits, it does not collect data on all income for the beneficiary or the beneficiary's household. We developed statistics using three survey data sources, which we selected because they were nationally representative, collected income data, and collected information on receipt of SSDI and SSI (Livermore et al. 2011). The first two data sources we considered, the Current Population Survey Annual Social and Economic Supplement (CPS-ASEC) and the Survey of Income and Program Participation (SIPP), are collected by the United States Census Bureau and are accessible to the public. Each sample is nationally representative of the population residing in the United States and not living in an institution (defined by the Census Bureau to include correctional facilities, skilled-nursing facilities, psychiatric hospitals, and in-patient hospice facilities).[1] In the past, SSA has used the SIPP for publications related to disability beneficiaries, and it has used the CPS as the source of information for its *Income of the Population 55 and Older* publication.

The CPS-ASEC and SIPP each ask respondents about their receipt of SSDI and SSI, and release that information as part of the public use file (PUF). That information is not always reliable, however, as respondents may confuse the two disability benefit programs, confuse Social Security retirement and disability benefits, or misreport the amount of income received from one of these sources relative to the other (Meyer et al. 2015; Olson 2002; Davies and Fisher 2009). Because of the reliability concerns, we worked with SSA to obtain the permissions

[1] Although residents of these facilities do not represent a large share of the nation's population, they might include a disproportionate share of SSDI and SSI beneficiaries. It is important to note that the statistics derived from CPS and SIPP are therefore are not representative of the beneficiary population overall, but are representative for those who are not institutionalized at the time of the survey.

necessary from the Census Bureau to access the CPS-ASEC and SIPP linked to SSA administrative data. In this case, we used the administrative record of SSDI and SSI benefit receipt, contained in a restricted access file (RAF) instead of the self-reported survey data for beneficiaries who consented to having their administrative data linked.[2] The benefit of the RAF is that it draws upon the breadth of information available in the survey along with SSA benefit receipt recorded in administrative data. We produce one set of statistics based on the survey data in the PUF and a second set based on the RAF data; the difference in the statistics is the source of information for both disability beneficiary status and income from disability benefits. A great deal has been written in the past, predominantly by researchers at SSA, related to the strengths and limitations of using survey versus administrative data (see for example, Davies and Fisher 2009). We will discuss key findings from that research in what follows, but it was not our intent to replicate those efforts.

We also consider statistics derived from a third data source, the Representative Beneficiary Sample in the National Beneficiary Survey (NBS). SSA funds the NBS to collect data from a nationally representative sample of SSDI and SSI beneficiaries (and a separate sample of participants in the Ticket to Work program). The advantage of the NBS is that its sample was selected based on SSA administrative records (Wright et al. 2012), meaning that benefits status and income from benefits is accurately reported. Further, in contrast to the CPS-ASEC and SIPP, respondents to the NBS can be residing in institutions when interviewed.

Although the NBS does have a separate RAF and PUF, the PUF data were not useful for this purpose. Specifically, the RAF contains the full set of information collected from respondents

[2] Consistent with SSA guidance, when survey respondents had available administrative data, we used that in place of self-reported data about beneficiary status and income from benefits but retained the self-reported information for those who did not have administrative data available. As we describe in what follows, about 9 in 10 respondents in the CPS-ASEC and SIPP had administrative data available.

but is available only to SSA staff for analysis. The NBS PUF is publicly available, but to minimize disclosure risk about beneficiaries' personal information, it contains more aggregated data and was less useful for purposes of this study. We used the RAF for our analysis, as it contains more detailed measures not available to the public, including more detailed measures of income and poverty. We refer to this source only as the NBS in what follows.

The statistics we developed correspond to calendar year 2009, selected in consultation with SSA as a way to fill the gap between the earlier chart book on disabled workers and the more recent publications on disability beneficiaries.[3] We consider several income-based outcomes including mean and median family income; family income accounting for family size; income relative to poverty; and the share of individual and family income represented by different sources, including Social Security benefits. We assumed these measures to be of strong policy interest after reviewing existing SSA publications related to beneficiary income.

We produced statistics for SSDI-only and SSI beneficiaries, and for non-beneficiaries where possible, and by individual and family characteristics. We limit our discussion to differences in beneficiary income and poverty status by data source. In other words, we focus on reasons the results we present may vary by data source—due to differences in the nature of the questions, the recall period for income information, the periodicity at which income data is collected from respondents, and other reasons. In our conclusions, we offer an assessment of the strengths and limitations for using each survey data source to produce a chart book in the future.

[3] SSA asked that we also provide information that would allow them to "fill in" additional years with the same statistics for purposes of constructing a time trend using the SIPP and CPS-ASEC. Based on the timing of our assessment using 2009 data, an earlier similar publication covering calendar year 2001, and our analysis that started in 2015, we provided a concordance of the measures we use and source variables needed for developing similar statistics from each source in 2004 and 2013. Because changes in the SIPP and CPS-ASEC were relatively small at this time, the concordance we developed probably could be applied to other years in this period as well.

B. More details about the surveys we used in the analysis

We defined subgroups of individuals, family structure, and income as consistently as possible across the surveys we used. Each of the three data sources we considered has a slightly different data collection method and focus that affected certain measures and the interpretation of differences across surveys. In this section, we take a high-level view of key survey features. Appendix A provides much more detailed information about the ways in which we accounted for specific survey design features.

The CPS-ASEC is a cross-sectional survey conducted every spring that asks respondents to provide information about the income and benefits they received in the previous calendar year. Therefore, the 2010 CPS-ASEC we used in our analysis contains information from calendar year 2009. Other information is collected based on status at the time of the survey, including educational attainment and family composition. Information is collected about all members of the household; designations for members of a family unit are provided by the U.S. Census Bureau for the purpose of constructing income statistics for the unit used in the development of the official poverty measure.

The SIPP is a panel study that, during the period of our analysis, interviewed respondents every few months over several years. SIPP respondents provide information about income and benefits at the monthly level, which can be aggregated to produce statistics covering a calendar year. The SIPP was re-engineered in 2014, a point to which we return to in the conclusions when discussing carrying a chart book forward into the future using the SIPP. We used the 2008 panel to measure income in calendar year 2009 using information respondents provided that included the 2009 months. Because 2009 was relatively close to the start of the panel, attrition was

relatively low.[4] We used the sampling weights the SIPP provided to develop nationally representative estimates. Similar to the CPS-ASEC, the SIPP contains information that allows measuring income for the family unit, though the measures are not always consistent, as we describe in what follows.

Both the CPS-ASEC and SIPP ask respondents about income from SSDI as well as SSI. We use this survey-reported information to develop our PUF-based measures of beneficiary status. Respondents to both surveys may offer permission to have their survey reports linked to SSA administrative records, and when they did, we were able to replace the self-reported beneficiary status with administrative data about benefit receipt during 2009. Approximately 9 out of 10 respondents had an administrative record available. In the RAF version of our statistics, we used the administrative record in those cases but continued to rely on self-reports from the survey data when the administrative record was not available. This allowed us to include the full sample and rely on the full set of survey weights in our analysis.

The NBS is a cross-sectional survey of disability beneficiaries and is designed to be representative of the beneficiary population. Unlike the other surveys, it includes individuals who reside in institutions. We used data from the 2010 NBS, which was based on a sample of beneficiaries as of June 2009, with interviews conducted between April and December 2010. The NBS was designed with a focus on disability beneficiary work activity and as a result, the information it collects related to income differs in significant ways from that in the CPS-ASEC and SIPP. We describe these differences in more detail in the Chapter III, and when interpreting differences across surveys.

[4] We found that 92 percent of working-age respondents to the first wave of the 2008 SIPP panel were interviewed in at least one month of 2009.

C. Report structure

We begin by documenting the measurement of beneficiary status in each of the data sources, the number of beneficiaries represented in each, and the characteristics of beneficiaries, in Chapter II. In Chapter III, we detail the measures of financial well-being we consider in this report that are based on total income, sources of income, and income relative to federal poverty guidelines. Results are in Chapter IV. A set of companion Excel tables contains more detailed statistics, including detailed income and poverty statistics by the subgroups we identified in Chapter II. They also include the means and standard errors for the numbers we report. In Chapter V, we conclude with recommendations related to the development of a recurring chart book of income statistics for disability program beneficiaries.

This page has been left blank for double-sided copying.

II. COUNTS AND CHARACTERISTICS OF BENEFICIARIES

In this chapter, we describe the number and characteristics of working-age beneficiaries when using the five data sources we consider: CPS-ASEC (PUF and RAF), SIPP (PUF and RAF), and NBS. We begin by identifying beneficiary status in each survey. We provide unweighted counts of beneficiaries based on survey responses to get a sense of the sample size from each source. We also produce weighted beneficiary counts at the national level, which we developed after accounting for the complex design of each survey (see Appendix A). We use weighted estimates for the remainder of our analysis. Finally, we highlight key differences in beneficiary characteristics across the surveys.

A. Identifying beneficiaries

We began by identifying all survey respondents who were between the ages of 18 and 65 (the full retirement age in 2009 was 66).[5] We categorized each respondent based on his or her participation in SSDI and/or SSI. We identified beneficiaries in the SIPP and CPS based on the report of positive income from the relevant program (SSDI or SSI) during calendar year 2009. In the case of SIPP, individuals were asked about beneficiary status in each of the months during the year.[6] If the respondent had at least one month with a report of positive income from SSDI (or SSI), we categorized him or her as an SSDI (or SSI) beneficiary. In the CPS-ASEC PUF, this was reported by respondents to include any point during 2009, covering the same period as the

[5] We defined age at the time of the survey for the CPS-ASEC using the age variable contained in the PUF. Accessing date of birth information (not available in the CPS) allowed us to identify age as of December 31, 2009 for respondents to the SIPP and the NBS.

[6] In about 1.5 percent of age-eligible respondents, the survey contained beneficiary status in fewer than 12 months. In those cases, we considered only the months in which data was available. We used the same months of available data to identify beneficiary status in the administrative data.

SIPP. Concurrent beneficiary status was defined as having SSDI and SSI at some point during the year, though not necessarily at the same time.

In the PUF versions of the CPS-ASEC and SIPP, we measured beneficiary status similarly, albeit imperfectly. For SSI, we flagged a respondent as receiving SSI if he or she reported a federal SSI payment for an adult. In the case of SSDI benefits, both surveys combine information about Social Security retirement (Old Age Survivors Insurance [OASI]) and SSDI. Individuals who report income in this category are asked whether the benefits are for retirement or disability, or for another reason including spousal, widow, or child benefits. These last several categories could potentially be retirement or disability benefits. Because of that, we erred on the side of inclusion and categorized individuals as SSDI beneficiaries if they potentially received SSDI benefits.[7]

In the RAF versions of both the SIPP and CPS, we instead used the administrative information about beneficiary status for respondents whose survey record was matched to SSA administrative data. The majority of respondents meeting our age selection criteria—88 percent in the CPS-ASEC and 91 percent in the SIPP—had a matched administrative record. In cases with an administrative match, we identified beneficiaries based on being in current pay status and receiving non-zero income from benefits (a non-zero federal payment in the case of SSI) in at least one month during the year, to align with the definition we used in the PUF version of each data source. In the case of the SIPP, we limited beneficiary status to months in which data was also available in the PUF, so that the PUF and RAF measures were defined over the same

[7] A spouse, widow, or child may be entitled to retirement or disability benefits on the basis of someone else's work history. Because our analysis is limited to working-age adults, children in this group could be receiving disability benefits as disabled adult children (DAC) and widows could receive disability benefits as disabled widow beneficiaries (DWB). The majority of beneficiaries—and the majority of those we identified in the CPS-ASEC and SIPP—received disabled worker benefits based on their own work history.

period. In the remaining approximately 10 percent of cases, we continued to use the self-reported survey data.

Beneficiaries in the NBS were identified as part of the sample selection process, limited to those who were in current pay status based on SSA administrative data as of June 30, 2009 (Wright et al. 2012). Hence, in contrast to the SIPP and CPS-ASEC beneficiary definitions spanning a year, the program status measure is based on status in a specific month. Further, the measure of beneficiary status does not necessarily align with beneficiary status as of the date of the survey, which we conducted 10 to 18 months later. Unlike the other sources, the NBS does not contain data for non-beneficiaries.

B. Beneficiary counts

SSA reports that there were slightly fewer than 12 million working-age beneficiaries receiving SSDI or SSI in December 2009; 7.55 million received SSDI only (63 percent), 3.05 million received SSI only (25 percent), and 1.4 million received both SSDI and SSI (12 percent) (SSA 2010). Estimates of the number of beneficiaries based on each survey differed from this total.[8] In part, this reflects that each survey uses a different estimate of the population at a slightly different point in time to yield national estimates, so these differences are expected to some degree.[9] Yet, the amount of variation in beneficiary counts seems larger than would be expected based on those differences alone. The NBS count, which is for a single month that is six months before SSA's published count, is 10.95 million beneficiaries. The CPS-ASEC and

[8] In part, this is because our analysis sample included 65-year-olds, but the published statistics were limited to ages 18 to 64; this would be expected to increase beneficiary counts in the surveys relative to the published statistics by a small amount.

[9] After applying sample weights as we describe in Appendix A, the CPS-ASEC weighted sample represents of 193.4 million working-age adults, compared with 192.6 million working-age adults represented by the SIPP sample. This is a relatively small difference, and the direction and magnitude are consistent with findings for the full population by Czjaka and Denmead (2008). As those authors discuss, these differences likely reflect the time point for which the weights are representative as well as the population controls used in the weighting (Czajka and Denmead 2008).

SIPP were based on full year status, so we would expect more than 12 million beneficiaries if participation was not completely static during the year. The CPS-ASEC undercounts beneficiaries, with 10.4 million in the PUF and 11.4 million in the RAF. The SIPP PUF overestimated relative to published statistics, with 14.8 million beneficiaries; the SIPP RAF total beneficiary count was lower, at 11.96 million. Of course, we do not expect the CPS-ASEC and SIPP measures to perfectly align with administrative statistics because we erred on the side of including beneficiaries who might have been receiving only retirement benefits (overcounting beneficiaries) and also because the surveys exclude institutional populations (undercounting beneficiaries) Nevertheless, our beneficiary counts are in line with the evidence summarized in Davis and Fisher (2009), who note that "self-reported data in the CPS slightly underreport OASDI receipt and significantly underreport SSI receipt. Self-reported data in the SIPP slightly overreport receipt of OASDI; however, the picture is more complicated for receipt of SSI, depending on the year of analysis and whether the data are analyzed from a monthly or annual perspective."

The surveys also differed from administrative data regarding the share of beneficiaries who were SSDI-only, SSI-only, and concurrently in both programs (63, 25, and 12 percent, respectively) (Table II.1). Somewhat surprisingly, given that the sample is based on administrative data, the NBS had a lower share in SSDI-only (54 percent), but higher shares in SSI-only (29 percent) and concurrent (18 percent). The CPS-ASEC and SIPP also differed from published statistics, though not in a consistent way across the surveys. Notably, the share of beneficiaries who were concurrent was about half as large in the CPS-ASEC PUF as the share in published statistics, and it was about twice as large in the SIPP as it was in published statistics. When using the RAF versions of those data sets, the share concurrent was much closer to

Table II.1 The working-age population by beneficiary status, 2010 CPS-ASEC and 2008 SIPP panel covering calendar year 2009

Sample size (Unweighted, weighted, percent of total, percent of beneficiaries)	CPS-ASEC (PUF)	CPS-ASEC (RAF)	SIPP (PUF)	SIPP (RAF)	NBS
Number of working-age (18–65) adults	128,845	128,845	46,176	46,176	2,288
	193,426,346	193,426,346	192,672,876	192,672,876	10,948,500
	100.0	100.0	100.0	100.0	100.0
	--	--	--	--	--
Self-reported beneficiary status					
Non-beneficiaries	122,322	121,778	42,307	43,032	--
	183,011,737	181,995,477	177,903,933	180,714,911	
	94.6	94.1	92.3	93.8	
	--	--	--	--	
SSDI-only beneficiaries	3,912	4,045	2,135	1,921	874
	6,296,236	6,615,300	7,848,259	7,099,349	5,862,355
	3.3	3.4	4.1	3.7	--
	60.5	57.9	53.1	59.4	53.5
SSI-only beneficiaries	2,144	2,166	861	811	905
	3,424,019	3,493,899	3,482,904	3,248,368	3,170,748
	1.8	1.8	1.8	1.7	--
	32.9	30.6	23.6	27.2	28.9
Concurrent beneficiaries	467	856	873	412	509
	694,354	1,321,670	3,437,780	1,610,248	1,915,397
	0.4	0.7	1.8	0.8	--
	6.7	11.6	23.3	13.7	17.5

Source: Authors' calculations using the 2010 CPS-ASEC, the 2008 panel of the SIPP, SSA administrative data, and the 2010 NBS.

published statistics. The PUF and RAF versions of the CPS-ASEC also had notably higher shares of SSI-only beneficiaries (31 to 33 percent) than published statistics.

Because SSI is a means-tested program, the financial status of SSI recipients is different from that of non-recipients, even when including those receiving SSDI, who have a more substantial work history. Accordingly, we present each of the income-based measures for SSDI-only beneficiaries and SSI recipients (both SSI-only and concurrent SSI/SSDI beneficiaries). As a comparison, when available, we also present statistics for non-beneficiaries. Of course, many non-beneficiaries are healthier than their beneficiary peers; individuals who work to develop a chart book may want to consider developing statistics for a group that is more similar to beneficiaries using a measure of a work-limiting health condition or other proxy for disability status.

C. Comparing individual beneficiary status in the PUF and RAF

Although the general pattern of beneficiary status in the CPS-ASEC and SIPP is relatively similar in the PUF and the RAF, the individual variation is much more substantial. Table II.2 shows the share of beneficiaries based on administrative status in the RAF who report the same status in the PUF. Each row sums to 100 percent. For example, among respondents to the SIPP-ASEC who were identified as SSDI-only beneficiaries in the RAF, PUF records identified 51.9 percent as SSDI-only, 12.8 percent as SSI-only, 1.7 percent as concurrent, and 23.7 percent as non-beneficiaries. The structure of this table mirrors a similar comparison made by Hyunh et al. (2002) based on monthly data in earlier SIPP panels, though our analysis considers benefits status over the full calendar year.

We find that overall, alignment at the individual level is quite poor in the CPS-ASEC (Table II.2). For example, just half of SSDI-only beneficiaries based on SSA administrative data reported themselves as SSDI-only beneficiaries; 13 percent report receiving SSI-only, 2 percent

report concurrently receiving benefits from both programs, and 24 percent report not being beneficiaries at all. The picture is worse for SSI-only and concurrent beneficiaries: only 43 and 31 percent of respondents correctly reported their status in the PUF, and 20 to 30 percent reporting not being beneficiaries at all. On the opposite side, 15 percent of non-beneficiaries based on the administrative record in the RAF reported being beneficiaries in the PUF.

Table II.2. Individual alignment of PUF and RAF beneficiary status in the CPS-ASEC and SIPP

Benefits status based on 2009 administrative data in the RAF	Self-reported benefits status in the PUF			
	SSDI-only	SSI-only	Concurrent	None
CPS-ASEC				
SSDI-only	**51.9**	12.8	1.7	23.7
SSI-only	14.8	**42.7**	3.0	28.2
Concurrent	25.4	20.1	**30.5**	19.6
None	0.9	0.2	0.0	**85.4**
SIPP				
DI-only	**67.5**	5.9	14.0	6.7
SSI-only	6.2	**57.7**	23.1	4.9
Concurrent	6.8	7.0	**72.8**	3.2
None	1.5	0.4	0.2	**88.6**

Source: Authors' calculations using the 2010 CPS-ASEC 2010 and calendar year (CY) 2009 SIPP from the 2008 SIPP panel. The RAF versions of the CPS-ASEC and SIPP use SSA administrative data on SSDI and SSI benefit receipt in the place of self-reports for all records matched to SSA data.

Note: Results are unweighted. Analysis is limited to beneficiaries who had a match to the administrative data, and based on unweighted counts. Each row sums to 100 percent and shows the share of beneficiaries based on RAF data in each of the beneficiary categories (columns) based on status reported in the PUF; both measures look over all months of 2009 (with the exception of SIPP respondents with fewer than 12 months of data, in which case only those months are included).

The SIPP performs better than the CPS: 68 percent of SSDI-only beneficiaries correctly report their status in the PUF, and 58 percent of SSI-only beneficiaries and 72 percent of concurrent beneficiaries do (Table II.2). In contrast to the CPS-ASEC, misreporting in the SIPP tends to be predominantly due to beneficiaries misreporting the program in which they participated. Relatively few (7 percent or less) of beneficiaries identified in the RAF indicated that they were not beneficiaries in the PUF. Just over 11 percent of non-beneficiaries based on the RAF reported being beneficiaries in the PUF. The alignment between the PUF and RAF

based on the 2008 panel of the SIPP is lower than Hyunh et al. (2002) reported; they found that about 85 percent of SSDI-only beneficiaries, 80 percent of SSI-only recipients, and 73 percent of concurrent beneficiaries correctly reported their status, based on data from the 1996 and 2001 SIPP panels. Between those panels and the 2008 panel, the U.S. Census Bureau made changes in what constituted a match to administrative records, resulting in higher match rates. It seems that the increases in match rates may have yielded lower match quality, perhaps incorrectly identifying cases to be a match based on a set of observable characteristics that were not truly a match. This is purely speculation, and beyond the scope of this report, but might be worth additional investigation.

The substantial misreporting of beneficiary status at the individual level, particularly in the CPS, where so many beneficiaries indicate not receiving benefits at all, is troubling for two reasons. First, it calls into question the quality of survey responses in a way that is similar to other recent work that suggests surveys perform poorly at capturing income from all sources (Bee and Mitchell 2017) and particularly badly for income from transfers and public programs (Meyer and Mittag 2015; Meyer et al. 2009 and 2015). It also has important implications for the approach of overlaying survey self-reports with administrative data when the latter are available. The next section highlights that the RAF versus PUF beneficiary samples are different on certain characteristics, and the next chapter highlights potential concerns for overwriting income received for benefits in light of misreporting. Assessing survey quality relative to the administrative data was beyond the scope of this project because of earlier assessments. This issue may be worth revisiting.

D. Beneficiary characteristics

Along with considering groups of beneficiaries, we drew upon data collected in each survey to consider personal demographic characteristics, household and family characteristics, and the

receipt of other types of non-SSA benefits. The companion Excel files contain all of the statistics we present in this report stratified by these characteristics. To the extent possible, we defined these measures consistently across the surveys,[10] though in several cases, measures available in the CPS-ASEC and SIPP were not available in the NBS.

- **Personal demographic characteristics:** Sex, race, Hispanic ethnicity, age, marital status, and educational attainment.
- **Family and household characteristics:** Living arrangements (alone, with relatives, with non-relatives), household type (family or non-family), homeownership status, household size, and family income quintile.
- **Receipt of non-SSA benefits:** Health insurance coverage (uninsured, sources of coverage), veteran status, and receipt of public assistance (food, energy, and housing).

The Census Bureau collects both the CPS-ASEC and SIPP, so the wording of questions and response categories are often quite similar across the sources (see Appendix C for a description of how we measured characteristics in each survey). Therefore, we were usually able to identify similar or identical subgroups in each survey. In some cases, there were small differences in categorization that affected how we defined certain subgroups, but for which we do not expect large resulting differences in the share of the population represented in each survey. For example, the CPS-ASEC includes many more race designations than does the SIPP; we aggregated categories to white, black, and other. As another example, the CPS-ASEC includes a category among those who are married for "married-spouse absent," and the SIPP does not. In cases in which the survey questions differed, we did not see large deviations in the resulting subgroups we defined, usually because our subgroups were aggregated to be large enough that such deviations in the survey would have minimal impact.

[10] Appendix Table C.1 contains the specifics about which variables we used to define each of the measures.

The NBS did not necessarily contain identical question wording or categories to other surveys, though for most of the subgroups we considered, the groupings were quite similar. The key difference between the NBS and other sources is that several of the outcomes we consider were simply not asked of NBS respondents. For example, the NBS did not collect information related to household structure, homeownership status, or veteran status. We also did not consider income quintiles in the NBS; even though it would have been possible to do so using household income, it would have been of limited value because the NBS did not collect data from non-beneficiaries. Income quintiles for beneficiaries only would not be useful to compare to income quintiles across all working-age adults and their families, so we excluded this measure in the NBS.

E. Differences in beneficiary characteristics across surveys

The differences in beneficiary characteristics across the surveys were relatively modest when considering the differences in survey designs and target populations (Table II.3). We focus primarily across two types of differences: (1) differences between the PUF to the RAF versions of the same survey because these differences signal which groups are likely to be overrepresented or underrepresented in the public use version of the survey and (2) differences between the CPS-ASEC and SIPP RAF relative to the NBS because this may signal places where the beneficiary sample collected by the Census Bureau surveys (based on being nationally representative overall) differ from that in the NBS (based on being nationally representative of working-age beneficiaries). Notable differences include:

- **Sex.** A higher share of the weighted beneficiary sample was female in the PUF versions of the data than in the RAF versions. This was true for SSDI-only and SSI beneficiaries. For example, in the CPS-ASEC and SIPP PUF, 54 percent of SSDI-only beneficiaries were female, but the share female for that group in the RAF sources ranged from 45 percent in the NBS to 48 percent in the CPS-ASEC RAF.

Table II.3. Characteristics of beneficiaries in 2009, by data source

	SSDI-only					SSI				
	CPS-ASEC PUF	CPS-ASEC RAF	SIPP PUF	SIPP RAF	NBS	CPS-ASEC PUF	CPS-ASEC RAF	SIPP PUF	SIPP RAF	NBS
Weighted n (millions)	6.518	6.615	7.848	7.099	5.862	4.118	4.816	6.921	4.859	5.086
Sex										
Male	45.7	52.0	45.7	54.1	54.9	44.2	44.6	44.7	43.2	44.8
Female	54.3	48.0	54.3	45.9	45.1	55.8	55.4	55.3	56.8	55.2
Race										
White only	77.9	78.9	78.3	77.0	76.6	66.7	63.1	64.3	62.9	61.7
Black only	17.7	16.8	16.3	17.2	16.6	27.1	30.7	28.1	28.9	30.0
Other	4.5	4.3	5.4	5.8	6.8	6.2	6.3	7.6	8.1	8.3
Ethnicity										
Hispanic	9.7	8.6	10.8	10.1	9.2	13.4	16.5	14.9	16.0	16.0
Non-Hispanic	90.3	91.4	89.2	89.9	90.8	86.6	83.5	85.1	84.0	84.0
Age										
18–24	5.4	1.3	5.7	1.0	0.9	10.2	14.3	11.5	13.9	10.6
25–34	7.6	5.2	5.8	5.9	4.2	13.3	16.4	17.0	17.7	16.1
35–44	13.6	11.8	11.1	12.8	12.4	17.0	16.9	18.0	15.2	16.9
45–54	26.6	27.9	22.9	27.3	28.8	27.0	26.0	25.2	25.5	24.7
55–65	46.8	53.7	54.5	53.0	53.6	32.4	26.4	28.2	27.7	31.7
55–59	17.9	22.0	16.2	21.7	21.9	16.4	14.0	13.5	13.2	16.0
60–61	9.3	11.4	10.2	11.3	10.8	6.7	4.7	5.8	5.1	7.8
62–65	19.6	20.3	28.2	19.9	20.9	9.3	7.7	8.9	9.4	7.9
Marital Status										
Married	40.6	47.8	43.7	43.8	46.0	21.3	16.9	21.5	17.7	12.3
Widowed	11.8	6.6	12.0	7.0	4.1	5.3	5.4	4.5	4.0	5.5
Never married	25.2	21.4	22.4	24.0	21.9	45.4	51.9	48.2	51.1	52.7
Divorced/separated	22.4	24.3	21.9	25.2	28.0	28.0	25.8	25.9	27.3	29.5
Years of Education										
Less than high school	22.3	18.8	17.5	17.1	27.9	34.4	38.5	31.5	35.0	50.0
High school graduate/GED	38.8	40.0	33.9	34.1	36.8	37.9	39.4	36.2	37.5	33.2
Some college	26.1	28.3	37.1	38.2	26.8	20.8	17.5	27.5	23.0	12.9
College graduate	12.8	12.8	11.5	10.6	8.5	6.9	4.5	4.8	4.5	3.9
Living arrangement										
Lives alone	20.7	22.2	22.2	24.8	21.0	26.4	21.7	23.4	24.7	28.1
Lives with relatives	72.8	71.3	71.8	67.5	70.1	65.6	69.5	64.9	62.0	57.4
Lives only with nonrelatives	6.5	6.4	6.0	7.7	8.9	8.0	8.8	11.7	13.3	14.5

Table II.3 (*continued*)

	SSDI-only					SSI				
	CPS-ASEC PUF	CPS-ASEC RAF	SIPP PUF	SIPP RAF	NBS	CPS-ASEC PUF	CPS-ASEC RAF	SIPP PUF	SIPP RAF	NBS
Household type										
Family										
Married couple	45.4	51.0	48.7	48.2	--	29.3	27.8	31.4	29.2	--
Male householder	6.4	6.3	6.0	6.6	--	7.7	8.8	7.0	6.6	--
Female householder	21.0	14.0	17.8	13.7	--	28.5	32.9	29.1	29.3	--
Nonfamily	27.2	28.7	27.5	31.6	--	34.4	30.5	32.4	34.9	--
Homeownership status										
Owned	64.1	66.5	68.9	65.5	--	42.9	40.0	41.6	38.5	--
Not owned	35.9	33.5	30.2	33.5	--	57.1	60.0	56.6	59.7	--
Public housing	6.2	5.9	6.2	7.8	--	14.2	12.7	19.0	20.4	--
Other	29.8	27.6	23.9	25.7	--	42.9	47.4	37.6	39.3	--
Household size										
1	20.7	22.3	22.2	24.8	31.3	26.4	21.7	23.4	24.7	44.3
2	37.9	41.3	38.9	38.2	39.1	30.5	27.9	26.1	29.3	18.5
3–4	30.5	28.2	29.0	28.9	23.6	29.4	32.9	32.1	29.2	24.1
5 or more	11.0	8.3	9.9	8.1	6.0	13.7	17.5	18.4	16.8	13.1
Total family income										
Lowest quintile	36.3	29.2	27.6	28.3	--	59.5	63.7	52.6	61.0	--
Lower middle quintile	27.8	29.6	30.2	28.9	--	21.3	19.7	28.1	22.6	--
Middle quintile	16.6	19.7	20.5	20.8	--	10.3	9.4	11.2	10.4	--
Upper middle quintile	12.3	13.9	14.7	14.6	--	5.9	4.7	5.3	3.6	--
Highest quintile	7.0	7.5	7.0	7.4	--	2.9	2.5	2.9	2.3	--
Health Insurance										
Medicaid only	10.7	8.7	6.1	6.3	2.8	51.2	48.0	42.5	48.2	35.1
Medicare only	27.4	26.4	13.5	13.7	25.9	1.8	7.2	0.7	1.1	6.7
Private only	14.2	11.4	15.7	8.0	9.1	0.7	3.7	1.4	1.7	2.5
Medicaid and Medicare	10.9	14.1	17.3	24.3	18.2	28.8	19.6	29.5	30.5	23.8
Medicaid and private	1.6	2.4	2.2	3.9	1.3	7.8	3.7	12.4	8.5	2.4
Medicare and private	13.8	15.0	25.8	23.7	16.7	0.7	0.8	0.7	0.0	0.8
Medicaid, Medicare, and private	1.3	2.3	5.5	9.3	1.5	3.7	1.3	7.6	4.6	1.0
Other public coverage	2.6	2.3	0.0	0.0	1.9	0.5	1.6	0.0	0.0	1.9
All other coverage	6.6	7.2	9.5	8.5	6.5	3.9	2.3	4.3	2.7	2.6
None (uninsured)	10.9	10.3	4.5	2.2	14.9	0.9	11.8	0.9	1.7	21.2
Veteran Status										
Veteran	11.6	14.1	13.1	14.2	--	6.3	3.6	4.2	2.6	--
Non-veteran	88.3	85.8	86.9	85.8	--	93.7	96.4	95.8	97.4	--

Table II.3 (*continued*)

	SSDI-only					SSI				
	CPS-ASEC PUF	CPS-ASEC RAF	SIPP PUF	SIPP RAF	NBS	CPS-ASEC PUF	CPS-ASEC RAF	SIPP PUF	SIPP RAF	NBS
Household receipt of assistance										
Energy	9.0	8.7	11.4	12.3	2.8	18.4	17.1	22.7	23.9	5.4
Housing	9.4	9.2	9.6	11.7	4.8	22.2	20.5	28.4	30.7	8.3
Food (SNAP)	23.3	18.4	24.1	25.1	18.6	46.2	50.1	57.1	64.5	51.5

Source: Authors' calculations using the 2010 CPS-ASEC 2010, CY 2009 SIPP from the 2008 SIPP panel, and 2010 NBS. The RAF versions of the CPS-ASEC and SIPP use SSA administrative data on SSDI and SSI benefit receipt in the place of self-reports for all records matched to SSA data.

Note: With the exception of the first row of the table, the remaining cells are percentages based on weighted counts using the weights provided by the U.S. Census Bureau. With the exception of the receipt of energy assistance, the sum across the subgroups in each category sum to 100 percent.

- **Age.** The age distribution of the PUF beneficiary samples was more concentrated in younger age groups than in the RAF samples. For example, 5 to 6 percent of the CPS-ASEC and SIPP PUF SSDI-only beneficiaries were in the 18-to-24-years-old age group, compared with 1 percent in the RAF versions of the data. When moving from the PUF to the RAF, CPS-ASEC SSDI-only respondents became more concentrated in ages 55 to 61, and a change from the SIPP PUF to RAF led to a much lower share of SSDI-only beneficiaries in the group who were 62 to 65 years old. These differences suggest that there may be confusion about differentiating between SSDI and SSI among younger respondents, and about differentiating between OASI and SSDI among older respondents.
- **Marital status.** Moving from the PUF to the RAF version of the CPS-ASEC led to a lower share of SSDI-only beneficiaries being married and a higher share of SSI beneficiaries being married. In the SIPP, this pattern was true for SSI beneficiaries, but for SSDI-only beneficiaries, the main source of change was a decrease in the share widowed and an increase in the share divorced or separated. The differences between the PUF and RAF suggests that survey reports may have misreported spousal or widow benefits, or that our inclusion of cases with spousal, widow, or childhood benefits as disability beneficiaries might have been in error. The RAF estimates in both cases were more closely aligned to the share of married beneficiaries in the NBS than the PUF versions.
- **Education.** The distribution of educational attainment of beneficiaries is quite different in the NBS than in other sources. In the NBS, 28 percent of SSDI-only beneficiaries and 50 percent of SSI beneficiaries had less than a high school education. The corresponding shares in the CPS-ASEC RAF were 19 and 40 percent, and in the SIPP RAF were 17 and 35 percent. These differences were offset by a lower share of beneficiaries in the NBS reporting some college education compared with estimates from other sources.
- **Household size.** NBS respondents are more concentrated in singleton households than respondents to the SIPP and CPS-ASEC RAF. This is especially marked for SSI beneficiaries. In the CPS-ASEC RAF, 22 percent of SSDI-only and SSI beneficiaries live alone; that share is 25 percent in the SIPP RAF. In the NBS, 31 percent of SSDI-only and 44 percent of SSI beneficiaries report living alone. These differences are offset by a higher share of CPS-ASEC and SIPP respondents reporting living in households with three or more householders.
- **Health insurance.** Relative to the CPS, the SIPP has a higher share of beneficiaries reporting health insurance coverage in 2009 and a lower uninsured rate, likely because more frequent data collection increases opportunities to recall coverage. The NBS has a substantially higher share uninsured relative to the other sources. Relative to the CPS, the SIPP also has a higher share of beneficiaries reporting multiple sources of coverage, particularly among SSDI-only beneficiaries. In all surveys, a non-trivial share of SSDI-only beneficiaries report having only Medicaid. This may be partly because some respondents are still in the Medicare waiting period and partly because of misreporting Medicare as Medicaid.
- **Use of public assistance.** The NBS asks respondents about use of public assistance at the time of the survey; the CPS-ASEC and SIPP ask about use over the previous year. It is important to keep this in mind when interpreting why fewer NBS respondents reported using food, energy, or housing assistance than respondents in the other surveys. SIPP RAF

beneficiaries generally reported higher use of public assistance than the other survey sources, reflecting a combination of the monthly question structure in the CPS-ASEC and the more accurate beneficiary status relative to the PUF.

This page has been left blank for double-sided copying.

III. MEASURES OF FINANCIAL WELL-BEING

In this chapter, we describe the measures of financial well-being that we selected for our analysis. The majority of the measures we derived from the CPS-ASEC and SIPP are constructed at the family level, which offers a fuller financial picture of the resources to which an individual might have access than individual income alone. Moreover, the family context is consistent with the official poverty measure used in the United States. According to the Census Bureau, a family consists of individuals residing together who are related by blood, marriage or adoption; unrelated persons residing in the household are not included. Information on the procedure we used to generate family income is in Appendix A.

The NBS, unlike the other sources, collects data at the household level. In many cases, the household likely aligns with the family, but not always. As such, some of the difference we observe between the NBS and other sources is due to this difference. The NBS collected more detailed income information at the individual level, so we also produced statistics for individual-level income to support comparisons to the CPS-ASEC and SIPP.

A. Family-based measures of income and poverty

We calculated the following measures of financial status for each working-age survey respondent, using information reported by that respondent and by and/or on behalf of other family members:[11]

- **Total annual family income.** In the CPS-ASEC and SIPP, we aggregated annual individual income from each member within the same family to develop a measure of total family income over the calendar year. In the NBS, we used the measure of total household income provided by the beneficiary; this information comes from a response to a single question rather than summing across sources or household members.

[11] Related subfamily members, including elderly parents living with grown children, or grown children living with parents, are recorded in the CPS-ASEC with an FTYPE=3. In these cases, we followed the guidance from SSA and used the family income reported by the primary family (which also incorporates that of the related subfamily) when constructing income so as to not double count this income. A similar manipulation was not required in the SIPP.

- **Total annual family income, adjusted for family size.** Because living expenses do not scale one for one with the addition of each family member, a family of four would not typically require twice the income of a two-person family to afford the same standard of living. To account for this, we followed SSA (2001) to scale family income based on the number of people in the family. Scaling factors were derived by comparing the weighted average poverty threshold in 2009 for a family of a given size to that for one person.[12]
- **Poverty status.** Poverty status is based in part on family size; the Census Bureau provides the relevant poverty threshold for each respondent according to the reported family size. In the CPS-ASEC and SIPP, the poverty measure compares family income to that threshold to determine whether the person was living in poverty. As we describe in Appendix A, we did not use annualized income (for which we effectively imputed income in months it was not available) for this measure in the SIPP, but rather summed income and poverty thresholds over the months data was available, then compared income over available months to poverty income over the same number of months (which was 12 months in most cases, but not all). In the NBS, poverty is constructed based on reported household income and household size, rather than the Census Bureau's definition of family.
- **Share of annual family income in various income categories**. Using the income categories described in the next section, we computed the share of income in observed months that was derived from each source, so the sum across all sources equaled 100 percent. We provide detailed statistics about the share of income from Social Security sources, including OASI, SSDI, and SSI. In the SIPP and CPS-ASEC, we calculated income shares based on both annual individual and family incomes. In the NBS, income sources were available only at the individual level for income received during the previous calendar month. We compare the individual measures across the three sources, recognizing that income received in the previous month may not be comparable to income received over the full year.

B. Categorizing income in the CPS-ASEC and SIPP

We categorized income into groups to minimize differences across surveys, following SSA publications including Bailey and Hemmeter (2015), the earlier disabled workers chart book (SSA 2001), and *Income of the Population 55 or Older* (SSA 2016). The categories are: public assistance (including SSI and other assistance); Social Security (including disability and retirement benefits); earnings, asset, and property income; private disability or pension benefits; and all other income. Appendix Table A.1 includes the categorization of specific variables used

[12] These factors can be found at http://www.census.gov/hhes/www/poverty/data/threshld/thresh09.html. For example, the scaling factor applied to a family of four was 10,956/21,945. In essence, we would have divided family income by 2.003 before comparing this measure to that of family income for one person.

from each of the surveys. We selected the components in each of these categories so that the total income calculation aligned with the official definition of poverty; because of that, we excluded lump sum and in-kind income amounts.

The broad categories of income and the main sources of income in each category are the same in the SIPP and CPS-ASEC (Table III.1).[13] Yet, there might still be differences in the amount of income reported in each category for reasons that could include the recall period (monthly data reported every four months in the SIPP, annually in the CPS), question wording and placement in the survey, and specificity of income sources. For example, the SIPP asks about income from SSI separately for child and adult benefits, and also the federal and state portions, whereas the CPS-ASEC asks a single question for each respondent about income from SSI. These differences have been carefully investigated and documented by others, such as Czajka and Denmead (2008).

The RAF versions of the CPS-ASEC and SIPP categorize OASI, SSDI, and SSI income in the same groups as the PUF, using administrative data in place of survey data (see Appendix B for more information about our definition of beneficiary status and measurement of income from benefits using the RAF; see Appendix C for the beneficiary definition based on the PUF). An important caveat about this approach is that income from benefits is based on administrative records and the remainder of the income data remains based on self-report. Respondents might have correctly reported total income but misreported the shares; replacing one component of income and recalculating the total may lead to a bias in total income that was not there when using survey data alone. For example, if a beneficiary reported $20,000 in total income in the

[13] The table highlights major income sources; the specific question structure is different for the CPS and SIPP and many more sources of income are queried in the CPS, as documented by Fisher (2008).

Table III.1. Income sources in the each survey mapped to summary categories

	CPS-ASEC	SIPP	NBS
Public assistance	• SSI benefits • Public assistance or welfare • Other public assistance	• SSI (adult and child, federal and state) • Public assistance (including Aid to Families with Dependent Children [AFDC] and Temporary Assistance to Needy Families [TANF]) • General assistance • Other welfare • Food assistance • Clothing assistance • Short-term cash assistance	• SSI benefits (drawn from administrative data) • Public assistance • Other government programs such as housing or energy assistance
Social Security	• Social security payments • Other social security income	• Social Security (adult and child)	• SSDI payment (drawn from administrative data)
Earnings	• Total earnings • Other income from wages or salary; nonfarm self-employment; farm self-employment	• Income from earnings, aggregated across sources by Census Bureau • Incidental or casual earnings	• Earnings
Assets and property	• Interest income • Rent income • Dividends from stocks or mutual funds • Survivor's income from estates or trusts • Other income from: interest; dividends; rents or royalties; estates or trusts	• Total property (asset) income, aggregated across sources by Census Bureau	•
Private disability, retirement and pensions	• Survivor's, disability, or retirement income from: - United States railroad retirement - Federal government - United States military - State or local government - Company or union - Survivor pension - Accident or disability insurance - Temporary sickness insurance - Black Lung miner or survivor - Regular payments from Individual Retirement Account (IRA), Keogh plan, or 401(k) accounts - Regular payments from annuities or paid-up life insurance	• Railroad retirement income • Federal civil service pensions • United States military retirement pay • State government pensions • Local government pensions • Pension from union or company • Income from paid-up life insurance policy • Sickness, accident, or disability insurance • Employer disability payments • Other retirement, disability, or survivor accounts	• Private disability • Private or government pensions

Table III.1 (*continued*)

	CPS-ASEC	SIPP	NBS
	• Other income from private pensions; state disability payments; disability payments (own insurance)		
All other income	• Unemployment benefits • Workers' compensation (own and survivor) • Veterans' payments • Child support payments • Alimony payments • Other survivor's income • Financial assistance income • Other income from: unemployment compensation; strike benefits; longest job; anything else	• State unemployment compensation • Supplemental unemployment benefits • Workers' compensation • Veterans' compensation or payments • Child support payments • Foster child care payments • Alimony payments • Money from relatives or friends • Severance pay • Miscellaneous cash income • Other government income	• Workers' compensation • Veterans' benefits • Unemployment benefits • Other income received on a regular basis, including child support, interest from savings or checking accounts, or dividends

survey, $10,000 of which is from SSDI benefits, but the administrative data shows $12,000, this approach would substitute in the $12,000 for SSDI and recalculate total income as $22,000. We have no way of knowing the direction of the bias introduced by using the RAF instead of the PUF for Social Security benefits, but we do know it likely occurs frequently. In this case, the calculated total income may be higher than the actual total income, but in other cases, the opposite might be true.

Replacing Social Security benefits with the RAF values instead of the PUF becomes potentially more extreme when beneficiary status is completely misreported in the survey. Suppose an individual did not indicate being an SSDI beneficiary in the survey, but instead reported his or her SSDI benefits as coming from private disability benefits. If those benefits were $12,000 and total income was reported as $22,000 the approach of using the RAF would add in additional SSDI benefits (of say, $12,000), bringing total income to $34,000. The converse would be true if the respondent indicated SSDI benefits in the survey that were not identified in the administrative data. As we show in Appendix B, the overall share of the population identified as a beneficiary is relatively close when using the RAF versus the PUF, but that masks a significant amount of misreporting at the individual level. Thus, for a substantial share of beneficiaries, it is impossible to know whether the income based on the sum of self-reported components in the PUF or income based on the administrative record of benefit receipt in the RAF is accurate. Moreover, this method may lead to substantial deviations in unknown ways related to the combining of income across family members or respondent confusion about SSDI and SSI benefits.

C. Income measurement in the NBS

The NBS was not designed to collect detailed income data from beneficiaries, and as such, the information it contains is much less complete and differs in substantial ways from the CPS-

ASEC and SIPP. To the extent possible, we combined available income information into the same categories as in the other surveys (Table III.1). The resulting income measures are nonetheless not fully comparable for several reasons including:

- Total household income over the past calendar year is collected from a single question, rather than aggregating across sources of individual income. NBS respondents do provide information about income received from a limited set of sources, but those are at the individual level and cover only the previous month.
- There are far fewer income categories asked of respondents in the NBS than in other sources, likely leading to less complete information about income in the NBS than in the other sources.
- The NBS poverty calculations are based on household income, whereas the SIPP and CPS-ASEC poverty statistics are based on family income, consistent with Census Bureau guidelines.
- Income from SSI and SSDI are derived from administrative records; other income components are self-reported by beneficiaries.

This page has been left blank for double-sided copying.

IV. RESULTS

In this chapter, we focus on differences across the surveys in the financial status of our subgroups based on beneficiary status (SSDI-only, SSI, and non-beneficiary). We found, not surprisingly, that non-beneficiaries had substantially higher family incomes than beneficiaries, and that SSDI-only beneficiaries had higher family incomes than SSI beneficiaries. We focus our discussion on differences that are based on the survey source, mindful that the intent of this report is to inform the development of a routine chart book of income-related statistics on beneficiaries, and to document how results for a chart book would likely differ by source.

A. Total family income

We begin by discussing differences in mean and median family income across the sources. We found that total family income values in the CPS-ASEC and SIPP were relatively close across the two sources, and regardless of whether using the PUF or RAF versions of the data. In the CPS-ASEC and SIPP, the approximate annual family income values were $75,000 for non-beneficiaries, $45,000 for SSDI-only beneficiaries, and $30,000 for SSI beneficiaries (Table IV.1). Adjusting for family size as described in Chapter III, Section A changed the magnitude of those values to approximately $47,000, $30,000, and $19,000, but the general pattern of the differences remained.

Using the RAF instead of the PUF versions of the CPS-ASEC and SIPP did not substantially change the magnitude of the differences across groups, though some interesting differences emerged. Using the PUF versions, we found that beneficiaries in the SIPP reported higher mean and median family income compared with beneficiaries in the CPS-ASEC; the non-beneficiary sample reported lower average and median family income. This is consistent with SIPP capturing relatively higher incomes at the lower end of the income distribution that Czajka and Denmead

Table IV.1. Mean and median family income in 2009, by beneficiary status

	Mean	Standard Error	Median
Family Income			
CPS-ASEC PUF			
SSDI-only beneficiaries	43,274	904	29,927
SSI beneficiaries	30,904	1,073	17,379
Non-beneficiaries	77,690	497	57,175
CPS-ASEC RAF			
SSDI-only beneficiaries	45,266	892	33,705
SSI beneficiaries	30,238	899	16,649
Non-beneficiaries	78,161	497	59,959
SIPP PUF			
SSDI-only beneficiaries	44,577	951	35,538
SSI beneficiaries	32,037	984	21,810
Non-beneficiaries	72,631	430	57,962
SIPP RAF			
SSDI-only beneficiaries	44,308	862	35,994
SSI beneficiaries	28,606	1,038	18,424
Non-beneficiaries	72,342	424	57,664
NBS[1]			
SSDI-only beneficiaries	31,090	2,435	20,640
SSI beneficiaries	14,751	630	9,215
Family Income, Adjusted for Family Size			
CPS-ASEC PUF			
SSDI-only beneficiaries	29,648	612	20,857
SSI beneficiaries	19,948	611	12,857
Non-beneficiaries	48,966	291	37,462
CPS-ASEC RAF			
SSDI-only beneficiaries	31,655	583	24,206
SSI beneficiaries	18,612	497	11,716
Non-beneficiaries	49,260	290	37,784
SIPP PUF			
SSDI-only beneficiaries	30,698	608	24,937
SSI beneficiaries	20,255	496	15,379
Non-beneficiaries	46,039	265	36,379
SIPP RAF			
SSDI-only beneficiaries	31,036	567	25,190
SSI beneficiaries	18,323	528	13,320
Non-beneficiaries	45,853	261	36,221
NBS[1]			
SSDI-only beneficiaries	--	--	--
SSI beneficiaries	--	--	--

Source: Authors' calculations using the 2010 CPS-ASEC 2010, CY2009 SIPP from the 2008 SIPP panel, and 2010 NBS. The RAF versions of the CPS-ASEC and SIPP use SSA administrative data on SSDI and SSI benefit receipt in the place of self-reports for all records matched to SSA data.

[1] Income reported in the NBS is total household income; the CPS-ASEC and SIPP use family income. We did not construct a measure of household income adjusted for size, because non-related members of the same household may not share resources in the same way as families.

(2008) discussed.[14] These differences persist, though to a lesser extent, after adjusting for the number of individuals in the family. Using the RAF versions, SSDI-only and SSI beneficiaries in the CPS-ASEC had higher mean family incomes than in the SIPP, though the CPS-ASEC results were only 2 percent higher for SSDI-only beneficiaries and 5 percent higher for SSI recipients. Differences in income adjusted for family size were even smaller. The reverse relationship held for median family income, with higher median income in the SIPP RAF compared with the CPS-RAF; 7 percent higher for SSDI-only beneficiaries and 11 percent higher for SSI beneficiaries.

A second important point about total income is that the NBS income values were substantially lower than those in the other sources; $31,090 for SSDI-only and $14,751 for SSI beneficiaries. These values are about half as large as those in the CPS-ASEC and SIPP. Because the NBS measures household instead of family income, its income values are not directly comparable to the other sources, though we would generally expect values to be closer than what we found. A likely reason for the difference is that the NBS asks respondents to provide a single number for household income in the previous year but CPS-ASEC and SIPP ask for individual income across family members and also across many sources of income before aggregating to the family level. Recalling total household income for the full previous calendar year—particularly for respondents whose NBS surveys were relatively late in 2010—likely results in substantial underreporting bias. Also, the NBS includes individuals residing in institutions who might have lower than average incomes, so all else being equal, we would expect lower incomes in the NBS than in the other sources that survey only those who live in the community. One final

[14] We found further evidence of this when we considered mean income at each quintile of the income distribution. SIPP had a higher mean family income in the lowest quintile, but CPS had higher mean income in the highest quintile (not shown; contained in companion Excel files).

possibility is that respondents to the NBS, who are being interviewed by SSA and know that their benefits are dependent on income, may intentionally understate their income.

B. Family income relative to poverty

The SIPP and CPS-ASEC confirmed that beneficiaries are substantially more likely to be in poverty than non-beneficiaries, and that SSI beneficiaries experience poverty more often than SSDI-only beneficiaries. Yet, although the data sets generally painted a consistent picture of mean and median family income, they were more divergent on the share of beneficiaries living in poverty. Our results are consistent with the findings of Czajka and Denmead (2008), who found that the SIPP has a lower share of individuals in poverty than the CPS-ASEC, American Community Survey, or Medical Expenditure Panel Survey, but has a higher share near poverty. Relative to the CPS-ASEC, the official source of poverty measurement in the United States, our comparison of beneficiaries indicates that poverty estimates in the NBS are too high.

Considering non-beneficiaries first, the CPS-ASEC and SIPP reported 11 to 12.5 percent of individuals living in poverty, with a slightly higher share in poverty in the CPS-ASEC compared with the SIPP (Table IV.2). Using the RAF instead of the PUF made very little difference in the share in poverty. Conversely, a higher share of non-beneficiaries in the CPS had incomes at or above 400 percent of poverty compared with the SIPP, again true for both the PUF and RAF versions.

Turning to SSDI-only beneficiaries, the CPS-ASEC PUF is an outlier relative to the CPS-ASEC and SIPP PUF and RAF, having a higher share of the group in poverty than the other sources. The CPS-ASEC PUF shows 20.2 percent of SSDI-only beneficiaries in poverty, compared with 13.7 percent in the CPS-ASEC RAF 12.9 percent in the SIPP PUF, and 12.2

percent in the SIPP RAF (Table IV.2). All of these values are substantially lower than the 27.1 percent of SSDI-only beneficiaries in the NBS who were in poverty.[15]

Considering SSI recipients, all of the data sources report a substantial share living in poverty, and we find the same general pattern of higher poverty rates from the CPS-ASEC relative to the SIPP (Table IV.2). Approximately 43 to 48 percent of SSI recipients are in poverty according the CPS-ASEC, with a slightly higher poverty rate in the RAF than in the PUF. According to the SIPP, these values are lower, at about 31 to 38 percent in the SIPP, again with a higher poverty rate when using the RAF. The NBS estimates are again much higher than estimates from other sources, with an estimated 73 percent of SSI recipients in poverty, of whom one-third are estimated to have household income less than 50 percent of the poverty threshold.

Earlier work by SSA staff has documented beneficiary poverty using the SIPP linked to administrative records, so we sought to align our statistics to that work. We found lower rates of poverty when compared with SIPP-based estimates from Bailey and Hemmeter (2015), who found 19 percent of SSDI and 42 percent of SSI recipients in poverty. We believe there are a few reasons for this difference. First, our estimates assess poverty over a 12-month timeframe, rather than the four months Bailey and Hemmeter studied; a longer window would lead to more income being reported.[16] Second, we included concurrent beneficiaries as part of the SSI group, while Bailey and Hemmeter group them with SSDI-only beneficiaries. Because poverty rates for concurrent beneficiaries are between those for SSDI-only and SSI-only beneficiaries, we expected our SSDI-only and SSI rates to be lower than their SSDI and SSI-only rates,

[15] Our estimate for SSDI-only beneficiaries is the same as that reported by Livermore and Bardos (2014), providing confirmation that our calculation is not the source of the substantially higher rate of poverty reported in the NBS.

[16] We found that examining only a one-month period (using the last month of reported SIPP data) increased poverty estimates by 5 percentage points for SSDI-only beneficiaries, and by 11 percentage points for SSI beneficiaries, bringing our estimates much closer to those reported by Bailey and Hemmeter. Other studies have also observed that measuring poverty over a longer timeframe yields lower rates (Williams undated).

respectively—with especially large effects for the SSDI-only versus SSDI. Third, Bailey and Hemmeter's estimates are for a later year (2010) than our estimates, with potentially a different composition of beneficiaries.

Table IV.2. Distribution of family income relative to the poverty threshold in 2009, CPS-ASEC and SIPP, by beneficiary status

	Family income as a share of the poverty threshold (row sums to 100 percent)				
	<50%	50–99%	100–199%	200–399%	>=400%
CPS-ASEC PUF					
SSDI-only beneficiaries	3.0	17.2	32.0	29.2	18.6
SSI beneficiaries	6.6	36.5	28.9	19.5	8.5
Non-beneficiaries	6.2	6.3	15.6	30.1	41.9
CPS-ASEC RAF					
SSDI-only beneficiaries	1.2	12.5	31.2	34.1	21.0
SSI beneficiaries	6.7	41.0	28.7	16.5	7.1
Non-beneficiaries	6.0	6.1	15.5	30.2	42.2
SIPP PUF					
SSDI-only beneficiaries	1.8	11.1	30.6	36.4	20.1
SSI beneficiaries	4.2	27.0	38.5	23.0	7.4
Non-beneficiaries	4.9	6.4	16.9	31.9	40.0
SIPP RAF					
SSDI-only beneficiaries	1.2	12.0	30.0	35.7	21.1
SSI beneficiaries	2.1	36.1	37.9	18.5	5.5
Non-beneficiaries	4.8	6.5	17.0	32.0	39.7
NBS1					
SSDI-only beneficiaries	5.4	22.0	42.3	21.0	9.2
SSI beneficiaries	22.7	50.3	18.7	6.8	1.6

Source: Authors' calculations using the 2010 CPS-ASEC 2010, CY 2009 SIPP from the 2008 SIPP panel, and 2010 NBS. The RAF versions of the CPS-ASEC and SIPP use SSA administrative data on SSDI and SSI benefit receipt in the place of self-reports for all records matched to SSA data.

[1] Income reported in the NBS is total household income, while the CPS-ASEC and SIPP use family income. We did not construct a measure of household income adjusted for size, because non-related members of the same household may not share resources in the same way as families.

C. Sources of family income, CPS-ASEC and SIPP

In this section, we consider differences in the sources of family income to better understand the main income sources for families of beneficiaries relative to non-beneficiaries. The NBS did not survey its respondents about family income sources so we consider only the CPS-ASEC and SIPP. Table IV.3 documents the share of income reported from each of the key sources. Each row sums to 100, representing the average distribution of family income across sources. Though

there are differences across the surveys, we generally find a relatively consistent pattern across the sources.

Table IV.3. Distribution of family income across sources, by beneficiary status

	Share of family income, by source (row sums to 100 percent)						
	SSI	Other public	OASDI	Earnings	Assets/ property	Private disability and pensions	Other
CPS-ASEC PUF							
SSDI-only beneficiaries	0.5	0.38	58.7	28.6	1.8	5.3	4.7
SSI beneficiaries	52.8	1.4	14.4	23.5	1.1	3.4	3.5
Non-beneficiaries	0.5	0.48	3.8	85.3	2.6	2.7	4.6
CPS-ASEC RAF							
SSDI-only beneficiaries	0.8	0.2	59.5	26.4	1.8	6.7	4.7
SSI beneficiaries	46.2	1.5	19.8	25.0	0.8	2.9	3.8
Non-beneficiaries	0.7	0.5	4.1	85.0	2.6	2.6	4.5
SIPP PUF							
SSDI-only beneficiaries	0.9	0.5	50.1	30.4	1.3	10.8	6.1
SSI beneficiaries	40.0	2.1	23.8	24.6	0.5	5.2	3.9
Non-beneficiaries	0.7	0.6	3.5	85.3	1.7	3.4	4.9
SIPP RAF							
SSDI-only beneficiaries	1.4	0.4	57.1	24.9	1.0	10.2	5.1
SSI beneficiaries	46.9	2.0	20.8	22.8	0.4	3.8	3.4
Non-beneficiaries	0.8	0.6	4.0	84.6	1.7	3.4	4.9

Source: Authors' calculations using the 2010 CPS-ASEC 2010, CY 2009 SIPP from the 2008 SIPP panel, and 2010 NBS. The RAF versions of the CPS-ASEC and SIPP use SSA administrative data on SSDI and SSI benefit receipt in the place of self-reports for all records matched to SSA data.

The distribution of income across data sources among non-beneficiaries is quite similar across the CPS-ASEC and SIPP versions. A slightly higher share of income reported in the CPS-ASEC is from assets and property, consistent with other evidence (Czajka and Denmead 2008). Among non-beneficiaries, about 85 percent of family income comes from earnings, a share that is three to four times higher than for disability beneficiaries. Public benefits represent a small share of non-beneficiary family income because most families do not have beneficiaries in them and the amount of income from benefits may be low relative to earnings.

The share of SSDI beneficiaries' family incomes from OASDI benefits is relatively consistent in the CPS-ASEC PUF and RAF and the SIPP RAF: about 57 to 59 percent of family

income comes from OASDI benefits (Table IV.3).[17] In contrast, the SIPP PUF reports about 50 percent of family income on average from OASDI. This lower share in the SIPP PUF is somewhat puzzling given earlier evidence that OASDI benefit amounts are slightly overreported by SIPP respondents. One possible reason is misclassification of disability benefits. In the SIPP PUF, slightly more than 10 percent of the household income among SSDI-only beneficiaries is reported as coming from private disability and pension benefits, about double the rate in the CPS-ASEC, though the same as in the SIPP RAF. The SIPP PUF has a slightly higher share of SSDI-only beneficiaries' income reported from earnings than the other sources (30 percent compared with 25 to 29 percent in the other sources). We know of an explanation for that difference.

There is more variation in the share of family income from SSI benefits among SSI recipients across data sources than there is for OASDI income for SSDI-only beneficiaries. We again found that the SIPP PUF reported the lowest share of family income from SSI benefits (40 percent) among the data sources. Unlike SSDI-only beneficiaries, we found more variability across the other data sources in the share of income from SSI benefits, from a low of 46 percent in the CPS-ASEC RAF to a high of 53 percent in the CPS-ASEC PUF. Income from OASDI among SSI recipients is slightly higher in the SIPP PUF than in other sources, so it may be that respondents were misreporting SSI as SSDI.

The previous table shows that on average, income from benefits represent a substantial share—if not a majority—of family income for most beneficiaries. Yet, that may vary substantially based on the other family income, particularly for SSDI-only beneficiaries, who

[17] Note that for families with older members, some of this income is coming from OASI, or Social Security retirement. If the age distribution of beneficiary families is about the same as that of non-beneficiary families, this would represent about 4 percent of family income.

tend to have substantial work experience and to have spouses with similar backgrounds. Presumably, policies that change benefit amounts have disproportionately large effects on those whose incomes are substantially drawn from benefits. In Table VI.2, we show the distribution of respondents based on the share of total family income received from SSI and OASDI combined. As with the last table, each row sums to 100 percent.

Among non-beneficiary respondents, about 85 percent in each survey received no family income from OASDI or SSI, meaning that most non-beneficiaries are in households with other non-beneficiaries only. The remaining 15 percent of non-beneficiaries who did have some family income from OASDI or SSI benefits tended to be concentrated in the groups with less than 50 percent of family income from those sources.[18] SIPP non-beneficiary respondents who did report income from OASDI and SSI were slightly more concentrated in the group with the lowest share of family income from benefits (1 to 24 percent) than CPS non-beneficiary respondents.

The share of beneficiaries reporting that their entire family income consists of Social Security benefits is about twice as high in the CPS-ASEC as in the SIPP. For SSDI-only beneficiaries, this share is 27 to 28 percent in the CPS-ASEC and 12 to 14 percent in the SIPP; for SSI recipients, the shares are 40 percent in the CPS-ASEC and 23 to 27 percent in the SIPP (Table IV.4). These magnitudes are about the same whether using the RAF or PUF. Much of the difference is offset by a higher share of beneficiaries in the SIPP reporting that Social Security benefits represent 75 to 99 percent of their income. The share is about 1.5 times higher in the SIPP for SSDI-only beneficiaries and about twice as high for SSI recipients relative to the share in the CPS-ASEC. Thus, beneficiaries' income based on the SIPP is still predominantly—though

[18] Non-beneficiaries can have income from benefits if they are receiving OASI benefits (the majority of cases) or if they reported income from SSI or SSDI sources that we did not include in our beneficiary definition (this includes adults reporting receiving SSI benefits on behalf of children; in that case, we included the income for the family but did not identify the adult as an SSI recipient).

not entirely—composed of OASDI and SSI. This suggests that SIPP's ability to collect information about income received from transfers and other forms of public assistance on a monthly basis may lead respondents to recall small amounts of income from other sources that CPS-ASEC respondents do not recall when asked about fewer categories of income and income over the past year. It is also consistent with the Czajka and Denmead (2008) finding that, based on the SIPP, fewer beneficiaries are in poverty but many more are slightly above poverty when compared with estimates from other sources. It seems likely that SIPP structure encourages the report of small amount of income in sources that are not otherwise reported with a longer recall period.

Table IV.4. Share of family income in 2009 from SSI and OASDI, by beneficiary status

	Share of family income from SSI and OASDI (row sums to 100 percent)					
	0%	1–24%	25–49%	50–74%	75–99%	100%
CPS-ASEC PUF						
SSDI-only beneficiaries	0.0	23.7	21.8	13.8	13.4	27.2
SSI beneficiaries	0.0	19.4	16.0	11.6	12.9	40.1
Non-beneficiaries	85.6	5.9	3.2	1.3	0.8	0.8
CPS-ASEC RAF						
SSDI-only beneficiaries	0.0	20.5	24.0	15.4	13.3	26.9
SSI beneficiaries	0.0	21.5	15.3	11.0	12.7	39.5
Non-beneficiaries	85.7	7.2	3.9	1.5	0.8	0.9
SIPP PUF						
SSDI-only beneficiaries	0.0	28.4	26.5	16.3	17.0	11.9
SSI beneficiaries	0.0	18.6	18.8	16.9	23.1	22.6
Non-beneficiaries	85.0	8.6	4.1	1.3	0.7	0.3
SIPP RAF						
SSDI-only beneficiaries	0.0	19.1	25.1	20.7	20.8	14.4
SSI beneficiaries	0.0	15.7	17.6	15.3	24.8	26.7
Non-beneficiaries	84.2	8.3	4.5	1.7	0.9	0.4

Source: Authors' calculations using the 2010 CPS-ASEC 2010 and CY 2009 SIPP.

D. Sources of individual income

We end with a discussion that mirrors that in the last section, but with a focus on individual income shares rather than on family income shares. Individual income provides an incomplete picture of the financial resources that an individual may be able to access, but allows for a more direct comparison of statistics from the NBS to the other sources. It is important to keep in mind,

however, that the NBS asks individuals about their own income from the previous month, whereas the SIPP and CPS-ASEC ask about income received over the past calendar year.

Despite differences in the reporting period, all of the data sources show that the majority of beneficiaries' own incomes come from benefits, with about four-fifths of SSDI-only beneficiaries' income from OASDI (Table IV.5). The share of individual income from benefits is relatively consistent across data sources, though slightly lower among SSDI-only beneficiaries in the SIPP PUF (70 percent), consistent with what we observed for family income in Table VI.1. The share of individual income from OASDI is highest among SSDI-only beneficiaries in the NBS, where 85 percent of income is reported to be from benefits.

Table IV.5. Distribution of individual income across sources, by beneficiary status

	Share of family income, by source (row sums to 100 percent)						
	SSI	Other public	OASDI	Earnings	Assets/ property	Private disability and pensions	Other
CPS-ASEC PUF							
SSDI-only beneficiaries	0.1	0.3	80.9	8.7	1.6	4.7	3.7
SSI beneficiaries	76.5	1.2	12.0	4.7	0.7	2.4	2.5
CPS-ASEC RAF							
SSDI-only beneficiaries	0.0	0.1	82.8	5.0	1.5	6.4	4.2
SSI beneficiaries	70.1	1.3	18.5	5.3	0.4	2.1	2.4
SIPP PUF							
SSDI-only beneficiaries	0.1	0.6	71.0	11.6	1.3	9.3	6.0
SSI beneficiaries	57.0	2.2	25.7	7.7	0.3	4.2	3.0
SIPP RAF							
SSDI-only beneficiaries	0.6	0.3	78.5	5.1	0.9	9.4	5.3
SSI beneficiaries	67.5	2.0	20.8	5.3	0.1	2.9	1.3
NBS							
SSDI-only beneficiaries	0.1	1.6	85.6	2.4	--	5.6	4.6
SSI beneficiaries	61.6	4.5	28.8	2.6	--	0.4	2.1

Source: Authors' calculations using the 2010 CPS-ASEC 2010 and CY2009 SIPP.

The share of SSI recipients' income from SSI and OASDI is generally close to 90 percent across all of the data sources (Table IV.5). The share from SSI, however, is as low as 57 percent in the SIPP PUF and as high as 76 percent in the CPS-ASEC PUF. This variation might be due to

the confounding of SSI and OASDI, which may be particularly challenging for concurrent beneficiaries. It also reflects the differences in the shares of each survey's respondents that reported being concurrent beneficiaries, as we discussed in Chapter II.

V. CONCLUSIONS AND RECOMMENDATIONS

Our analysis was designed to help SSA select a data source that would be most appropriate for developing a routine chart book of statistics, and to highlight how the results from that data source differ from similar statistics developed from other commonly cited data sources. Based on the differences documented in the last chapter, we conclude that the NBS, despite its advantages for understanding work activity of beneficiaries, is not well suited for a chart book. Its income questions are incomplete when compared with those in the CPS-ASEC and SIPP, and as a result, it has income and poverty statistics that are dramatically different than those from the other sources. For reasons we describe next, we believe that recent changes in survey collection make the CPS-ASEC the best choice for developing a chart book based on historical and future data. If SSA were to develop a chart book, the findings in this report will provide the information necessary to understand how the results would vary if the other source were to be used instead.

With the NBS ruled out, the choice is between the CPS-ASEC and the SIPP, each of which has been used by SSA for other recurring publications and can be linked to SSA administrative data. Our findings provide some assurance that regardless of which of the two sources is used, the characteristics of beneficiaries are not substantially different, and that differences in income and poverty can generally be explained based on differences in the survey structure. We believe that if the surveys remained the same as the time period of our analysis, the SIPP would be the dominant choice, but a more recent change makes us suggest that the CPS-ASEC may be better suited for this purpose.

The SIPP has been found to be better at capturing income from lower income groups such as disability beneficiaries, which alone may make it the best source for a chart book of beneficiaries' financial status. It is important to note that its longitudinal structure poses analytic

challenges, including attrition and changes in periodicity over the years, and these considerations may make the upfront costs of analysis over time higher relative to working with the CPS-ASEC. In 2014, however, the SIPP was redesigned because of funding constraints and moved to an annual interview structure. Although respondents still provide data monthly, results comparing the old and new SIPP revealed substantial differences in income (U.S. Census Bureau 2013). Moreover, that work found that even though the redesigned SIPP may be different, but not necessarily less accurate than the old SIPP format, that is not the case for SSI participation and income. Thus, using the SIPP in a longitudinal fashion at this point would cause significant challenges for purposes of a chart book.

Given the challenges with the SIPP, we suggest the CPS-ASEC may be better for a chart book at the current time. It is worth highlighting the strengths and limitations of the CPS-ASEC for the purpose of a chart book. Overall, the average income statistics we produced using the CPS-ASEC were largely consistent with those from the SIPP, in terms of both the means and medians the source of income. Relative to the SIPP, poverty statistics in the CPS-ASEC were lower, likely reflecting its annual recall period, asking about income over a full year, and asking about fewer sources of income. On the positive side, however, the CPS is the source of national statistics on poverty, so poverty statistics from this source would be directly comparable to other information familiar to policymakers. The CPS-ASEC has also been more consistent in its schedule, structure, and sample size over the years than the SIPP, so it would offer the ability to develop an annual publication relatively easily.

One caveat is that like the SIPP, the CPS-ASEC underwent a revision to its survey instrument in 2014, though the changes were confined to the income section (Sennega and Welniak 2013). The Census Bureau found that incomes under the new scheme were about 3

percent higher than under the old scheme, but that the share of individuals in various poverty groups did not statistically change over this period. It seems likely that any break in the time series would be expected to have a small and one-time effect. The agency also offers guidance for how to deal with the changes in cross-sectional analysis (Census Bureau 2014).

When working with the CPS-ASEC (or the SIPP), it is important to keep in mind that misreporting of beneficiary status in the survey appears to be quite high. Most respondents in the CPS-ASEC, in particular, appear to get their status during the year wrong. This may be less surprising in light of other recent work, which has documented that the CPS-ASEC may be significantly underestimating the income of older adults (Bee and Mitchell 2017), and potential widespread misreporting of the use of public assistance and transfers across several nationally representative data sources (Meyer and Mittag 2015; Meyer et al. 2009 and 2015). Although the misreporting does not seem to have substantial effects on mean and median income among beneficiary subgroups, it has a slightly more notable effect on the share of income received from various sources, particularly benefits. To the extent that misreporting rates are high, replacing the PUF data with the RAF affects a higher share of records, and even though SSDI and SSI status and income may be more accurate, the substitution of income using the RAF can bias income estimates in unknown directions. Thus, even if the RAF is more accurate for one source of benefits, mixing it with otherwise self-reported data seems problematic.

Until SSA completes more work to understand how survey responses are in error—for disability benefits and for other public programs, and how misreporting may have changed over time with technology such as caller ID and cell phones—it might be unwise to begin a new chart book. That work appears to be underway already; on the site devoted to the *Income of the Population 55 and Older*, SSA notes: “We are currently evaluating the adequacy of the March

Supplement of the Current Population Survey (CPS), which is the data source for these publications. Recent research suggests that there may be some issues with the measurement of certain sources of income reported in the CPS. We are dedicated to publishing the most accurate statistics possible so we are conducting a thorough review of available data sources for this publication. ORES will publish findings from this review." We advise that the review currently being undertaken by the agency include not just those in older ages, but the working-age population as well.

REFERENCES

Bailey, Michelle Stegman, and Jeffrey Hemmeter. "Characteristics of Noninstitutionalized DI and SSI Program Participants, 2010 Update." Research and statistics note no. 2014-02, 2014.

Bailey, Michelle Stegman and Jeffrey Hemmeter. "Characteristics of Noninstitutionalized DI and SSI Participants, 2013 Update." Research and statistics note no. 2015-02. 2015.

Bee, Adam and Joshua Mitchell. "Do Older Americans Have More Income Than We Think?" SESHD Working paper no. 2017-39. 2017. Available at https://www.census.gov/content/dam/Census/library/working-papers/2017/demo/SEHSD-WP2017-39.pdf. Accessed May 1, 2018.

Census Bureau. "Survey of Income and Program Participation: SIPP Introduction and History," 2015. Available at http://www.census.gov/programs-surveys/sipp/about/sipp-introduction-history.html. Accessed May 1, 2018.

Czajka, John L., and Gabrielle Denmead. "Income Data for Policy Analysis: A Comparative Assessment of Eight Surveys." Washington, DC: Mathematica Policy Research, 2008. Available at https://aspe.hhs.gov/system/files/pdf/75721/report.pdf on February 13, 2018. Accessed May 1, 2018.

Czajka, John L., and Gabrielle Denmead. "Income Measurement for the 21st Century: Updating the Current Population Survey." Washington, DC: Mathematica Policy Research, 2012. Available at http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.422.5196&rep=rep1&type=pdf on February 13, 2018. Accessed May 1, 2018.

Czajka, John L., James Mabli, and Scott Cody. "Sample Loss and Survey Bias in Estimates of Social Security Beneficiaries: A Tale of Two Surveys." Washington, DC: Mathematica Policy Research, 2008.

Davies, Paul S., and T. Lynn Fisher. "Measurement Issues Associated with Using Survey Data Matched with Administrative Data from the Social Security Administration." *Social Security Bulletin,* vol. 69, no. 2, 2009, pp. 1–12.

DeCesaro, Anne, and Jeffrey Hemmeter. "Characteristics of Noninstitutionalized DI and SSI Program Participants." Research and statistics note no. 2008-02, 2008. Available at http://www.socialsecurity.gov/policy/docs/rsnotes/rsn2008-02.html. Accessed May 1, 2018.

DeNavas-Walt, Carmen, Bernadette D. Proctor, and Jessica C. Smith, "U.S. Census Bureau, Current Population Reports, P60-238, Income, Poverty, and Health Insurance Coverage in the United States." Washington, DC: U.S. Government Printing Office, 2009.

Fisher, T. Lynn. "The Impact of Survey Choice on Measuring the Relative Importance of Social Security Benefits to the Elderly." *Social Security Bulletin,* vol. 67, no. 2, 2008, pp. 55–64.

Huynh, Minh, Kalman Rupp, and James Sears. "The Assessment of Survey of Income and Program Participation Benefit Data Using Longitudinal Administrative Records." *Survey of Income and Program Participation Report No. 238.* Washington, DC: Census Bureau, 2002.

Iams, Howard M., and Patrick J. Purcell. "Social Security Income Measurement in Two Surveys." *Social Security Bulletin*, vol. 73, no. 3, 2013, pp. 1–10.

Koenig, Melissa. "An Assessment of the Current Population Survey and the Survey of Income and Program Participation Using Social Security Administrative Data." 2003. Available at http://www.oecd.org/std/36232612.pdf on February 13, 2018. Accessed May 1, 2018.

Livermore, Gina, and Maura Bardos. "Why Are Some SSDI-Only Beneficiaries Poor? Insights from the National Beneficiary Survey." Disability Research Consortium Data Brief. Washington, DC: Mathematica Policy Research, 2013. Available at https://www.mathematica-mpr.com/our-publications-and-findings/publications/why-are-some-ssdionly-beneficiaries-poor-insights-from-the-national-beneficiary-survey. Accessed May 1, 2018.

Livermore, Gina, Denise Whalen, Sarah Prenovitz, Raina Aggarwal, and Maura Bardos. "Disability Data in National Surveys." Washington, DC: Mathematica Policy Research, 2011. Available at https://aspe.hhs.gov/system/files/pdf/76346/DDNatlSur.pdf, 2011. Accessed May 1, 2018.

Meyer, Bruce D. and Nikolas Mittag. "Using Linked Survey and Administrative Data to Better Measure Income: Implications for Poverty, Program Effectiveness and Holes in the Safety Net." NBER working paper no. 21676. Cambridge, MA: National Bureau of Economic Research, 2015.

Meyer, Bruce D., Wallace W.K.C. Mok, and James X. Sullivan. "The Under-Reporting of Transfers in Household Surveys: Its Nature and Consequences." NBER working paper no. 15181. Cambridge, MA: National Bureau of Economic Research, 2009.

Meyer, Bruce D., Wallace W.K.C. Mok, and James X. Sullivan. "Household Surveys in Crisis." NBER working paper no. 21399. Cambridge, MA: National Bureau of Economic Research, 2015.

Moore, Jeffrey C. "Seam Bias in the 2004 SIPP Panel: Much Improved, but Much Bias Still Remains." U.S. Census Bureau Research Report Series, Survey Methodology no. 2008-3, 2008. Available at https://www.census.gov/srd/papers/pdf/rsm2008-03.pdf. Accessed May 1, 2018.

Olson, Janice A. "Social Security Benefit Reporting in the Survey of Income and Program Participation and in Social Security Administrative Records." ORES Working Paper Series no. 96. Washington, DC: Social Security Administration, 2002.

Semega, Jessica L., and Edward Welniak Jr. "Evaluating the 2013 CPS ASEC Income Redesign Content Test." Proceedings of the 2013 Federal Committee on Statistical Methodology (FCSM) Research Conference, 2013. Available at https://census.gov/content/dam/Census/library/working-papers/2013/demo/semega-01.pdf. Accessed May 1, 2018.

SSA. "Income of the Population 55 and Older." Baltimore, MD: Social Security Administration. 2014. Available at https://www.ssa.gov/policy/docs/statcomps/income_pop55/. Accessed May 1, 2018.

SSA. "Income of Disabled-Worker Beneficiaries," 2001. Available at https://www.ssa.gov/policy/docs/chartbooks/income_workers/index.html. Accessed May 1, 2018.

SSA. "Annual Statistical Supplement 2017." May 2018. Available at https://www.ssa.gov/policy/docs/statcomps/supplement/2017/supplement17.pdf. Accessed May 1, 2018.

U.S. Census Bureau. "SIPP-EHC. 2011 and 2012 Field Test Evaluation." 2013. Available at https://www2.census.gov/programs-surveys/sipp/2015/2013_SIPP-EHC_Evaluation_Report.pdf. Accessed May 1, 2018.

U.S. Census Bureau. "Description of the Split Panel Test of the Current Population Survey Annual Social and Economic Supplement (CPS ASEC) Income Redesign and Time Series Guidance." 2014. Available at https://www.census.gov/content/dam/Census/library/publications/2014/demo/ p60-249description.pdf. Accessed May 1, 2018.

Williams, R "Measuring Poverty with the SIPP and CPS." Working paper no. 45. Washington, DC: United States Census Bureau. Available at: https://www.census.gov/sipp/workpapr/wp45.pdf. Accessed May 1, 2018.

Wright, Debra, Kirsten Barrett, Eric Grau, Yuhong Zheng, and Sara Skidmore. "National Beneficiary Survey Round 4: User's Guide for Restricted and Public Use Files." 2012. Available at https://www.ssa.gov/disabilityresearch/documents/NBS%20R4%20Users%20Guide(508).pdf. Accessed May 1, 2018.

This page has been left blank for double-sided copying.

APPENDIX A

TECHNICAL ISSUES IN THE DEVELOPMENT OF MEASURES IN CPS-ASEC, SIPP, AND NBS

This page has been left blank for double-sided copying.

A. Survey descriptions and sampling

The CPS is a point-in-time monthly survey that collects detailed information about employment status and income from nearly 60,000 households in the United States, providing official statistics related to poverty and unemployment. The unit of sampling is the household; one adult in the household provides information on everyone who resides at the residence. The CPS-ASEC, which is collected once per year, usually in March, collects more detailed information on income and work than is collected in the monthly survey. In the ASEC, questions pertaining to income and earnings cover the calendar year prior to the interview, though many of the other questions including those related to living arrangements, household structure, and socioeconomic characteristics such as education are obtained based on one's status at interview.

In contrast, SIPP respondents are interviewed several times over a period that spans years. Because the SIPP is longitudinal, it interviews fewer households at each point in time than the CPS; depending on the SIPP panel, in the past this has included 14,000 to 37,000 households. Our analysis draws on the 2008 panel, which began interviewing panel members as early as 2008; interviews continued as late as 2013. Within the panel, households are assigned to one of four "rotation groups" which determine the timing of interviews. Each rotation group in the 2008 panel was interviewed every four months (each four-month period is called a "wave" in SIPP terminology), and interviewees provided monthly information from the previous four months. The SIPP recall period is also shorter than the CPS (four months versus one year). Yet, there are known challenges with "seam" bias in the SIPP, where information reported about circumstances during the interview month differ from those reported about the other three months in the wave (Moore 2008).

An implication of SIPP's panel structure is that the longer the time from the initial SIPP interview, the greater likelihood that attrition from the survey can affect its representativeness.

To span calendar year 2009 for all rotation groups, our analysis draws upon information from the second through fifth waves of the SIPP 2008 panel, using only data collected for months that were in the calendar year. As we describe in more detail below, we use sampling weights provided by the Census Bureau for respondents with a full year in the SIPP sample, effectively reducing our sample size by about one-quarter from the full number of respondents in the first wave. We do not attempt to correct for any bias in the survey population resulting from attrition; Czajka et al. (2008) fully investigated SIPP attrition bias for an earlier SIPP panel.

Round 4 of the NBS was designed to collect information about beneficiary use of the Ticket to Work program that was not otherwise available from administrative data. We used the representative beneficiary sample of the survey, which collected cross-sectional data from beneficiaries between ages 18 and 65 (Wright et al. 2012). The target population for the survey was beneficiaries in all 50 states and the District of Columbia who were in an active pay status as of June 30, 2009; interviews occurred in 2010.

B. Accounting for complex sampling in each survey

To identify working-age beneficiaries and their non-beneficiary counterparts, we defined age in the CPS-ASEC at the time of the survey. The ASEC used to be referred to as the "March supplement," as it is usually fielded in March, though interviews may occur in February or April. For the SIPP, we calculated the age of each respondent as of December 31, 2009, selecting a single point in time regardless of the SIPP rotation group or last interview provided during the year.

All results reported account for the complex design of each survey by using sampling weights (and replicate weights to estimate standard errors) the Census Bureau provided. In the case of the CPS-ASEC, we used the March supplement weight. In the SIPP, we used the 2009 calendar year weights; these identify survey respondents who were present for all the months that

they were part of the panel. These weights represent the U.S. population alive at the start of 2009; we selected this weighting scheme to account for those who were beneficiaries during part of the year before they died.[19] We relied on the weights the Census Bureau provided for the relevant survey and did not make any adjustments to account for the lack of institutionalized beneficiaries or to correct for bias resulting from the subsequent match to SSA's administrative data (the latter issue is described in detail in Czajka et al. 2008, who suggest a recalibration procedure). We used the representative sample weights provided in the NBS to account for initial selection and nonresponse, as described in Wright et al. (2012).

C. Differences in the CPS-ASEC and SIPP samples

There were three notable differences in the profiles of respondents overall in the CPS-ASEC and SIPP, despite both being nationally representative (not shown).[20] The first is the distribution of educational attainment. A higher share of CPS-ASEC sample respondents reported a high school diploma or GED as their highest educational attainment compared with SIPP sample respondents (29.6 versus 24.5 percent among non-beneficiaries, respectively; Table III.2). Conversely, a higher share of SIPP respondents reported some college relative to CPS-ASEC respondents (36.6 versus 29.7 percent among non-beneficiaries, respectively). This difference may be due to the explicit inclusion in the SIPP—but not in the CPS—of an educational category of a "diploma or certificate from a vocational, technical, trade, or business school beyond high school," which was reported by 12.8 percent of SIPP respondents in the 2008 panel.

[19] An alternative would have been to use the CY 2010 weights that are based on those who are still alive and participating as of January 2010. This change led to an approximate 10 percent decrease in the unweighted number of beneficiaries (4 percent weighted), with a smaller decline for non-beneficiaries. We would not expect the substantive pattern of findings to change, and in future versions of any chart book of statistics, this decision could be easily changed.

[20] For presentation purposes, we excluded non-beneficiaries from Table II.2; these statistics are available in the companion Excel tables.

The second difference between the surveys is that we find differences in health insurance coverage across the CPS-ASEC and SIPP that have been previously documented. Earlier work has shown that health insurance coverage is underreported in the CPS-ASEC (DeNavas-Walt et al. 2010) and that as a result, uninsurance rates are much higher in the CPS-ASEC than in the SIPP. We found that 25.4 percent of the non-beneficiary CPS-ASEC sample lacked insurance coverage for all of 2009,[21] compared with 14.2 percent of non-beneficiaries in the SIPP. The likely explanation for this difference is the period of recall; SIPP respondents provide monthly information about coverage over the previous four months, while CPS-ASEC respondents provided information for the previous calendar year.

The final difference we found across the surveys is that a smaller share of CPS-ASEC respondents reported using housing, energy, or food assistance during the calendar year than in the SIPP (Table III.2). For example, 12.9 percent of non-beneficiary SIPP sample respondents reported using food assistance (Supplemental Nutrition Assistance Program [SNAP] or food stamps) in 2009 compared with 8.3 percent of non-beneficiary CPS-ASEC sample respondents. Like other measures, this difference is likely explained by the shorter recall period of the SIPP and more opportunities to recall using one of these forms of assistance over the course of the year.

D. Differences in the income data collected by the CPS-ASEC and SIPP

The CPS-ASEC asks respondents about income from 35 enumerated sources; SIPP asks about income from about 70 (Fisher 2008). In addition, the CPS-ASEC asks respondents to recall income they received during the previous year, as far back as 14 to 16 months, depending on the

[21] Published statistics from the CPS-ASEC show a slightly lower uninsurance rate in 2009: 22.7 percent (DeNavas-Walt et al. 2010). This is likely because that statistic took into account a question asking CPS respondents to verify that they were in fact uninsured for the full year. We did not use this question in our analysis because no similar question was available in the SIPP.

date of the interview, compared with the 4-month recall (and monthly reporting of values) the SIPP uses. The longitudinal nature of the SIPP means that for individuals who exit the sample during the year, researchers must impute income for the months not in the survey.

Earlier studies have found that despite asking about fewer types of income, the CPS-ASEC captures the highest share of total national income overall when compared with other federal surveys of the general population (Czajka and Denmead 2008; Czajka et al. 2008). Yet, those studies have documented that the CPS-ASEC is not uniformly better than the SIPP. Czajka and Denmead (2012) concluded that CPS-ASEC performs better than the SIPP in capturing income from assets and transfers from other households, and respondents typically report higher earnings than SIPP respondents, except at the lower end of the income distribution.[22] They also conclude that the SIPP is more effective than the CPS-ASEC in capturing retirement income, entitlements, and government transfers. The SIPP has also been found to be better suited than the CPS-ASEC to collect income data from low-income households (Czajka et al. 2008).[23] Because SIPP captures more income at lower levels, the survey tends to report fewer people in poverty—though more near poverty—than the CPS and other nationally representative sources (Czajka and Denmead 2008).

Although it is not something we account for, it is important to note that the surveys also differ in how they handle top-coding of income amounts to protect respondent's privacy. In particular, Czajka et al. (2008, p. 187) note that "In the CPS, the topcodes that appear on the public use file are the means of the values that were replaced by topcodes, so that the sum of the

[22] Czajka and Denmead also discuss differences across the surveys in top-coding of income amounts, which could affect mean income values; we return to this when we discuss our use of SSA linked data.

[23] Among the lowest income quintile, the 2008 panel of the SIPP captures 14 percent more earned income, 12 percent less Social Security, and 15 percent more all non-Social Security unearned income than the CPS-ASEC over the same calendar year (Czajka and Denmead 2012).

topcoded values equals the sum of the values on the Census Bureau's internal file—that is, prior to topcoding. In the SIPP, all topcoded amounts are simply truncated; thus the sum of topcoded amounts understates the sum of the corresponding reported amounts." Because a chart book of income-related statistics would make comparisons across groups using the same survey, top-coding is unlikely to affect the qualitative direction of the findings, but this type of difference might explain differences in magnitudes when comparing across surveys.

E. Measuring Social Security income in the CPS-ASEC and SIPP

Other authors (for example, Koenig [2003] and Iams and Purcell [2013]) have noted that the CPS-ASEC and SIPP differ in the amount of income reported from OASDI, which is important when comparing beneficiary incomes across subgroups. Focusing on individuals age 60 and older, Iams and Purcell (2013) concluded that even though both the SIPP and the CPS-ASEC query respondents about the full amount of Social Security benefit amounts, the values SIPP respondents reported suggest that individual respondents report the amount of their check, which nets out payments made by Social Security to cover their Medicare premium.

F. Constructing individual-level summary measures of income

We constructed individual income for each person in each survey for calendar year 2009, both for overall income and income in each of the categories shown in Table III.1. To ultimately create an accurate measure of family income, we first constructed individual income for all respondents, even those outside of our selected age range. For the CPS-ASEC, this aggregation process was relatively straightforward as respondents reported income for the previous calendar year.

Measuring annual income is more involved when using the SIPP than when using the CPS-ASEC. In the SIPP, respondents who do not meet the sample criteria in every month (for reasons that can include birth, death, marriage, divorce, or one member of the household moving away)

provide less than a full year of income data. The SIPP contains only partial-year income data for these respondents. In these cases, we annualized income by assuming their average monthly earnings across the months for which data were not collected was the same as for the months in which they were collected. In other words, we take monthly average income across the months it was recorded, then multiply by 12 to get an annualized measure; this approximation likely holds on average, but does not hold in each individual case. Our adjustment is separate from imputations the Census Bureau performed for months during the calendar year in which the person was part of the SIPP panel but did not provide data.[24]

G. Considering family structure in developing family income measures

It is important to recognize that the family structure measure we used to construct income adjusted for family size and poverty status may not align with the family that existed during the full calendar year. In other words, if the person resided with a family that changed over the course of a year, a single point-in-time measure of family composition can be misleading. In the CPS-ASEC, respondents provide information on family and household composition at the time of the interview (early spring 2010) though the income they report was received during calendar year 2009 (Koenig 2003). We used that information to adjust annual income for family size, and the Census Bureau used it for defining the relevant poverty threshold.

We account for family composition differently using the SIPP, as the information is collected in each month the respondent is in the sample. A study using the SIPP found that that longer gaps between the measurement of income and reporting of family size lead to higher poverty rates (Czajka and Denmead 2008). For constructing income adjusted for family size, we used the composition reported during the last month during the calendar year that the respondent

[24] The Census Bureau imputes data in both the CPS-ASEC and the SIPP; Czajka et al. (2008) provide a description of the types of imputations in each case.

was interviewed. For poverty, we were better able to account for the monthly reports of family income and poverty thresholds. We summed each across all months that the data was available, meaning that our measure of poverty in the SIPP is less than a full year and pertains only to the months the person was interviewed.

APPENDIX B

ISSUES RELATED TO REPLACING SELF-REPORTS WITH ADMINISTRATIVE MEASURES OF BENEFICIARY STATUS IN THE CPS-ASEC AND SIPP

This page has been left blank for double-sided copying.

Even though national surveys such as the CPS-ASEC and SIPP ask respondents about a carefully curated list of income sources, there are reasons to believe beneficiaries might not always report income sources correctly. Misreporting could occur because respondents do not remember exactly which months or years they received payment, or because they confuse various Social Security programs. It could also be because a single member of the household is reporting on income received by other members, and might not be well informed. It is also possible that beneficiaries, whose benefit checks depend on other income, may intentionally misreport income.

Because of concerns with self-reported beneficiary status, we matched the CPS-ASEC and SIPP data to SSA administrative data, using a linkage approved by the U.S. Census Bureau. Mathematica provided code to SSA staff who had access to the linked administrative data. Other work by SSA staff using the linked administrative data to the CPS-ASEC and SIPP have assessed data quality (for example, see Koenig 2003; Hyunh et al. 2003; Fisher 2008; Davies and Fisher 2009). Our intent in using the administrative linkage was not to contribute to the literature on survey misreporting, but to provide SSA statistics based on administrative data. In interpreting the observed differences, we draw on earlier study findings.

In this appendix, we document how we measured beneficiary status in the PUF and RAF versions of the SIPP and CPS, the share of respondents in our survey with matched administrative records, and the overlap between survey and administrative beneficiary reporting at the aggregate and individual levels.

A. Matching to the linked administrative records of the SIPP and CPS

After receiving permission from the Census Bureau to link the CPS and SIPP PUF files to SSA administrative records, Matt Messel linked to the Supplemental Security Record (SSR), the Master Beneficiary Record (MBR), and Payment History Update System (PHUS). Before

linking records using the Social Security Number (SSN), he used established SSA processes for verifying the SSN. This involved linking to the Numident and checking for a birth date match.

The verification process revealed that 86.7 percent of the 2010 CPS-ASEC sample overall, and 86.4 percent of our CPS-ASEC age-eligible sample matched to SSA records. In the SIPP, the analogous match rates were 87.6 and 90.9 percent. These match rates align with those reported in an earlier study (Iams and Purcell 2013). We did not explore reasons for unmatched cases, nor did we reweight the sample to account for non-matching. As we describe in the next section, we instead used the PUF report of beneficiary status for those whose records were not matched to SSA administrative records.

B. Defining beneficiary status in the PUF and RAF

We identified beneficiaries in the PUF based on self-report of the receipt of positive income from SSDI or SSI. In both the CPS-ASEC and SIPP, the categories of OASDI income made it difficult to discern for certain whether the benefits were retirement or disability specific, particularly for households with adults over age 62. We cast a wide net, recognizing that individuals may misstate the reason for benefit receipt. In particular, if respondents indicated that they received OASDI for any reason other than retirement or on behalf of a child, we categorized them (and their reported income from benefits) as SSDI beneficiaries. For those reporting income but not in one of those categories, we categorized them as OASI beneficiaries and the associated income as retirement income.

Both surveys allow for the possibility that individuals receive both OASI and SSDI during the year. In the SIPP, the respondent can report two OASDI income amounts, each with a separate source. In the case of the CPS-ASEC, a single amount of OASDI income was available, but respondents may provide two sources for that income. In the case that multiple sources were provided and one was disability-related, we categorized the reported income as being from SSDI.

If a person moved from SSDI to OASI in a given year, the PUF estimate tends to overstate SSDI income, though that would usually only affect respondents who reached the FRA. In the case of SSI, both sources separated out income for an adult on SSI and on behalf of a child. Because our sample was working-age, we identified SSI beneficiaries as those receiving adult benefits, but also included SSI income attributed to children as part of family income.

When we linked the CPS-ASEC and SIPP to the RAF data, we used SSA administrative data when it was available to identify whether an individual received SSDI or SSI during 2009, consistent with each survey's period of reference. We identified SSDI beneficiaries using a combination of the MBR and PHUS, looking for a month in which the person received SSDI (TOB=2, 7, 8), was in current pay status, and had a non-zero benefit payment amount reported in the PHUS.[25] Similar to the method we used for the PUF files, when income was reported in the PHUS but corresponded to OASI benefits (TOB=1,5,6), we tracked that as retirement income. If the administrative record identified at least one month during the year with positive income from SSI or SSDI, the individual was classified as a beneficiary in the relevant program.[26] We summed income across all months meeting the criteria to generate annual income from SSDI.

We used the sum of the cash payment and Medicare Part B premiums from the PHUS for SSDI beneficiaries. This is consistent with the intent of the questions included in the CPS-ASEC and SIPP, though Iams and Purcell (2013) documented that reports in the SIPP tend to exclude the amount paid by SSA for Part B premiums; CPS-ASEC reported amounts tend to include this amount.

[25] If the individual was an OASI beneficiary, we tracked this amount separately, using it in place of self-reported OASI income in the survey, where applicable.

[26] In the case of SIPP, we limited months that were considered for beneficiary status to those in which survey data was provided.

To identify SSI receipt in the administrative data, we used the SSR to find months in which an individual was in current pay status (based on Ledger Account File, or LAF, code) and had a non-zero federal payment amount. We classified SSI beneficiaries as those who received SSI in at least one month. To construct income from SSI, we summed the federal SSI payment and the state supplement in the cases where SSA administered the supplement, in each month the person was in current pay status. Most states in 2009 did not have an SSA-administered supplement; in states that offered a supplement, the administrative data would therefore understate the full amount that beneficiaries received. Yet, our review of SSA publications suggests that there are not reliable estimates about the average SSI state supplement (so we opted to not incorporate one in those cases).

In cases where the administrative record was not available (because the survey respondent had not consented to the match or did not provide the information necessary to match), we continued to rely on the self-reported data. By utilizing all of the records from the survey, we were able to use the same Census-provided sampling weights to generate nationally representative statistics.

APPENDIX C

VARIABLE DEFINITIONS AND CONCORDANCE BETWEEN KEY MEASURES IN THE CPS-ASEC PUF, SIPP PUF, AND NBS

This page has been left blank for double-sided copying.

Measure (Constructed variable name, when used in constructing other variables)	CPS-ASEC PUF	SIPP PUF	NBS
Sample selection and weights			
Adjustment for complex survey design	MARSUPWT, replicate weights	LGTCY1WT, replicate weights (calendar year 2009)	Strata, PSU, weights (R4_WTR4_BEN, R4_a_psu, R4_a_strata)
Beneficiary status1			
SSDI (DIBEN)	SS-YN=1 and (RESNSS1 in 2, 3, 4, 5, 6, 8 or RESNSS2=2, 3, 4, 5, 6, 8 *Note that this includes widows and surviving children	(ER01A = 1) **AND** (ERESNSS1 = 2, 3, 4, 5 OR ERESNSS2 = 2 , 3, 4, 5) *Note that this includes widows and surviving children	R4_ORGSAMPINFO_BSTATUS in (1,3)
SSI (SSIBEN)	SSI-YN=1 and (RESNSSI1=1,2,5 or RESNSSI2=1,2,5)	ER03A = 1	R4_ORGSAMPINFO_BSTATUS in (2,3)
SSDI only	DIBEN=1, SSIBEN=0	DIBEN=1, SSIBEN=0	R4_ORGSAMPINFO_BSTATUS in (1)
SSI only	DIBEN=0, SSIBEN=1	DIBEN=0, SSIBEN=1	R4_ORGSAMPINFO_BSTATUS in (2)
Concurrent	DIBEN=1, SSIBEN=1	DIBEN=1, SSIBEN=1	R4_ORGSAMPINFO_BSTATUS in (3)
Demographics			
Sex (SEX)	**A-SEX**	**ESEX**	**R4_ORGSAMPINFO_SEX**
Male	A-SEX=1	ESEX=1	R4_ORGSAMPINFO_SEX = 1
Female	A-SEX=2	ESEX=2	R4_ORGSAMPINFO_SEX = 0
Race (RACE)	**PRDTRACE**	**ERACE**	**R4_C_Race_I**
White only	PRDTRACE=1	ERACE=1	R4_C_Race_I = 5
Black only	PRDTRACE=2	ERACE=2	R4_C_Race_I = 3
Other	PRDTRACE>=3, PRDTRACE<=21	ERACE=3, 4	R4_C_Race_I in (1,2,4,6)
Ethnicity (ORIGIN)	**PEHSPNON**	**EORIGIN**	**R4_L1_i**
Hispanic	PEHSPNON=1	EORIGIN=1	R4_L1_i = 1
Non-Hispanic	PEHSPNON=2	EORIGIN=2	R4_L1_i = 2
Age (AGEDEC)	A-AGE	Age as of December 2009 based on TBYEAR (year of birth) and EBMonth (month of birth) as reported in LASTMO (the last month interviewed in 2009).	Calculate age in Dec 2009 using (R4_ORGSAMPINFO_DOB - Int_DATE)/365.25
18–24	if A-AGE in (18:24)	if AGEDEC2009 in (18:24)	if AGEDEC2009 in (18:24)
25–34	if A-AGE in (25:34)	if AGEDEC2009 in (25:34)	if AGEDEC2009 in (25:34)
35–44	if A-AGE in (35:44)	if AGEDEC2009 in (35:44)	if AGEDEC2009 in (35:44)
45–54	if A-AGE in (45:54)	if AGEDEC2009 in (45:54)	if AGEDEC2009 in (45:54)
55–65	if A-AGE in (55:64)	if AGEDEC2009 in (55:65)	if AGEDEC2009 in (55:65)
55–59	if A-AGE in (55:59)	if AGEDEC2009 in (55:59)	if AGEDEC2009 in (55:59)
60–61	if A-AGE in (60:61)	if AGEDEC2009 in (60:61)	if AGEDEC2009 in (60:61)

Measure (Constructed variable name, when used in constructing other variables)	CPS-ASEC PUF	SIPP PUF	NBS
62–65	if A-AGE in (62:65)	if AGEDEC2009 in (62:65)	if AGEDEC2009 in (62:65)
Marital Status			
Married (MARR)	A-MARITL=1,2,3	EMS=1,2	R4_l8_i = 1
Widowed (WIDOW)	A-MARITL=4	EMS=3	R4_l8_i = 2
Never married (NEVMAR)	A-MARITL=7	EMS=6	R4_l8_i = 5
Divorced/separated (DIVSEP)	A-MARITL=5,6	EMS=4,5	R4_l8_i in (3,4)
Educational attainment			
Less than high school (LTHS)	A-HGA>=31, A-HGA<=38	EEDUCATE>=31, EEDUCATE<=38	R4_L3_i in (1,4, 10, 11)
High school graduate/GED (HSGED)	A-HGA=39	EEDUCATE=39	R4_L3_i in (2,3)
Some college (SOMECOL)	A-HGA>=40, A-HGA<=42	EEDUCATE>=40, EEDUCATE<=43	R4_L3_i in (5,6)
College graduate (COLLEGE)	A-HGA>=43, A-HGA<=46	EEDUCATE>=44, EEDUCATE<=47	R4_L3_i in (7,8,9)
Family and household characteristics			
Living arrangement			
Lives alone (LIVALONE)	HHSTATUS=2	EHHNUMPP=1	R4_l11_i = 1
Lives with relatives (LIVREL)	HHSTATUS=1	EHHNUMPP>1 AND ERRP in (1,3,4,5,6,7,8,9)	R4_l11_i = 2
Lives only with nonrelatives (LIVNONREL)	HHSTATUS=3	EHHNUMPP>1 and ERRP in (2,10,11,12,13)	R4_l11_i in (3,4,5)
Household type			
Family (FAMCP=1)			-----
Married couple (FAMMALE)	H-TYPE=1, 2	RHTYPE=1	-----
Male householder (FAMFEM)	H-TYPE=3	RHTYPE=2	-----
Female householder (HHNONFAM)	H-TYPE=4	RHTYPE=3	-----
Nonfamily (FAMCP=0)	H-TYPE in (5,6,7,8,9)	RHTYPE=4,5,6	-----
Homeownership status			
Owned (HOMEOWN)	H-TENURE=1	ETENURE=1	-----
Not owned (HOMERENT)	H-TENURE=2, 3	ETENURE = 2,3	-----
Public housing (PUBHOUS)	and HPUBLIC=1	and EPUBHSE=1	-----
Other (NONPUBH)	and HPUBLIC=2	and EPUBHSE=2	-----
Number of family members			-----
1	FPERSONS=1	EFNP=1	-----
2	FPERSONS=2	EFNP=2	-----
3–4	FPERSONS=3,4	EFNP=3,4	-----
5 or more	FPERSONS>=5	EFNP>=5	-----
Household size (FAMSZ)			
1	H-NUMPER=1	EHHNUMPP=1	R4_c_hhsize_i = 1
2	H-NUMPER=2	EHHNUMPP=2	R4_c_hhsize_i = 2
3–4	H-NUMPER=3,4	EHHNUMPP=3,4	R4_c_hhsize_i in (3,4)

Measure (Constructed variable name, when used in constructing other variables)	CPS-ASEC PUF	SIPP PUF	NBS
5 or more	H-NUMPER>=5	EHHNUMPP>=5	R4_c_hhsize_i >= 5
Non-SSA benefit receipt			
Health Insurance			
Medicaid (MEDICAID)	CAID=1 or if (OTHSTPER=1 & (OTHSTYP1=2 or OTHSTYP2=2 or OTHSTYP3=2 or OTHSTYP4=2 or OTHSTYP5= 2))	ECDMTH = 1	R4_J11_1 = 1
Medicare (MEDICARE)	CARE=1 or if (OTHSTPER=1 & (OTHSTYP1=1 or OTHSTYP2=1 or OTHSTYP3=1 or OTHSTYP4=1 or OTHSTYP5= 1))	ECRMTH = 1	R4_J11_2 = 2
Private (PRIVATE)	HI=1 or DEPHI=1 or PRIV=1 or DEPRIV=1 or (OTHSTPER=1 & (OTHSTYP1 in(10 11 12 13 14) or OTHSTYP2 in (10 11 12 13 14) or OTHSTYP3 in (10 11 12 13 14) or OTHSTYP4 in (10 11 12 13 14) or OTHSTYP5 in (10 11 12 13 14)	EHIMTH =1	R4_J11_5 = 5 or R4_J11_7 = 7 or R4_J11_8 = 8 or R4_J11_9 = 9 or R4_J11_11 = 11
Other public coverage (OTHPUB)	OTH=1 or (OTHSTPER=1 & OTHSTYP1 in (3 4 5 6 7 8 9 15) or OTHSTYP2 in (3 4 5 6 7 8 9 15) or OTHSTYP3 in (3 4 5 6 7 8 9 15) or OTHSTYP4 in (3 4 5 6 7 8 9 15) or OTHSTYP5 in(3 4 5 6 7 8 9 15)	EMCOCOV = 2, 3 or RCHAMPM=1	R4_J11_3 = 3 or R4_J11_4 = 4 or R4_J11_6 = 6
Other coverage (OTHCOV)			OTHERCOV = 1 if R4_J11_10 = 10
None (uninsured) (UNINS)	If not covered by Medicaid, Medicare, private or other public coverage		If not covered by Medicaid, Medicare, private, other public coverage, or other coverage
Veteran status (VETERAN)	**PEAFEVER**	**EAFEVER**	-----
Veteran	PEAFEVER=1	EAFEVER=1	-----
Non-veteran	PEAFEVER=2	EAFEVER=2	-----
Household receipt of assistance			
Energy (ASSTEN)	HENGAST=1	EEGYAST=1	R4_K14_2 = 2
Housing (ASSTHS)	HPUBLIC=1 or HLORENT=1 or FHOUSSUB>0	EGVTRNT=1 or EPUBHSE=1 or EWRSECT8=1	R4_K14_1 = 1
Food (SNAP) (ASSTFD)	HFOODSP=1	THFDSTP>0	R4_K11 or R4_K14_3 = 3

Measure (Constructed variable name, when used in constructing other variables)	CPS-ASEC PUF	SIPP PUF	NBS
Sources of income			
Public assistance	Sum of income from SSI and other public assistance		
SSI (INCSSI)	SSI-VAL	T03AMTA T03AMTK T04AMT	R4_N_SSILastMnth (SSI BENEFIT PAID month before interview. This is the value of PAYSyymm (SSI Benefit Paid) in the month before interview.)
Other public assistance (INCOTHPUB)	PAW-VAL OI-VAL if OI-OFF=3,4	T20AMT T21AMT T24AMT T61AMT T62AMT T64AMT	R4_C_AmtPubAssis_I (Amount Recvd from Pub Assist or welfare payments Last Month, Imputed) R4_C_AmtOthgov (Amount received from anyother government program, such as housing or energy assistance)
Social Security (INCSS)	SS-VAL OI-VAL if OI-OFF=1	T01AMTA T01AMTK	R4_N_SSDILastMnth (FEDERAL SSDI BENEFIT PAID month before interview. PAYDyymm (PHUS SSDI Benefit Paid) value in the month before interview--imputed to account for outlier values.) R4_N_DEPENLASTMNTH (DEPENDENT PAYMENT AMOUNT month before interview. PAYOyymm (PHUS SSDI Dependent Benefit Paid) value in the month before interview--imputed to account for outlier values.)
Earnings (INCEARN)	PEARNVAL OI-VAL if OI-OFF=16,17,18	TPEARN T55AMT	R4_C_LstMnthPay (Last Month Pay (pre-tax))
Assets/property (INCASSET)	INT-VAL RNT-VAL DIV-VAL SUR-VAL1 if SUR-SC1=8 SUR-VAL2 if SUR-SC2=8 OI-VAL if OI-OFF=5,6,7,8	TPPRPINC	-----
Non-SS disability, retirement, or pension (INCDISPEN)	SUR-VAL1 if SUR-SC1= 1,2,3,4,5,7,9 SUR-VAL2 if SUR-SC2= 1,2,3,4,5,7,9 DIS-VAL1 DIS-VAL2 RET-VAL1 RET-VAL2 OI-VAL if OI-OFF=2,9,10,13	T02AMT T32AMT T31 AMT T34AMT T35AMT T30AMT T36AMT T13AMT	R4_C_AmtPrivDis_I (Amount Recvd from Priv Dis Last Month, Imputed) R4_C_AmtPrivPen_I (Amount received from Private Pensions or government pensions last month, imputed)

Measure (Constructed variable name, when used in constructing other variables)	CPS-ASEC PUF	SIPP PUF	NBS
		T14AMT T38AMT	
Other (INCOTH)	UC-VAL WC-VAL VET-VAL SUR-VAL1 if SUR-SC1=6,10 SUR-VAL2 if SUR-SC2=6,10 CSP-VAL ALM-VAL FIN-VAL OI-VAL if OI-OFF=11,12, 15, 19	T08AMT T05AMT T10AMT T28 AMT T29 AMT T51AMT T06AMT T15AMT T23AMT T56AMT T75AMT	R4_C_AmtWorkComp_I (Amount Recvd from Workers Comp Last Month, Imputed) R4_C_AmtVetBen_I (Amount Recvd from Vet Ben Last Month, Imputed) R4_C_AmtUnemply_I (Amount Recvd from Unemp Last Month, Imputed) R4_C_AmtOthReg_I (Other income received on a regular basis, excluding earnings or social security. The questionnaire probes for child support, interest from savings or checking accounts, or dividends) R4_C_AmtOthNonReg (Other income received not on a regular basis)

Note: We provide the variables that we used in our analysis so that interested users can benchmark against their own work. This is not the code we used to develop the measures, and in some cases, we go beyond what is shown here. For example, in the SIPP, we later sum monthly values to get an annual measure. We break out SSI income into adult and child values for purposes of attributing to beneficiaries, and we limit income from benefits to individuals that we identified as beneficiaries. Our code is available upon request.

[1] The variables shown are for the PUF versions of the CPS-ASEC and SIPP. Using the RAF version of those sources changed only the definitions of beneficiary status and income from benefits, all other variable definitions remained unchanged.

This page has been left blank for double-sided copying.

www.mathematica-mpr.com

Improving public well-being by conducting high quality, objective research and data collection

PRINCETON, NJ ■ ANN ARBOR, MI ■ CAMBRIDGE, MA ■ CHICAGO, IL ■ OAKLAND, CA ■ SEATTLE, WA ■ TUCSON, AZ ■ WASHINGTON, DC ■ WOODLAWN, MD