

The Current State of U.S. Workplace Retirement Plan Coverage

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Abstract

Despite widespread support for government policies aimed at improving workplace retirement plans, nearly half of wage and salary workers in the U.S. still lack coverage. The lack of employer-sponsored pensions or other workplace retirement saving plans has led to state-level government initiatives aimed at expanding coverage to workers whose employers do not offer such plans. Designing and implementing efforts to broaden workplace retirement plan coverage requires understanding what types of workers lack coverage, in terms of both demographic characteristics and across US states. However, available data on retirement plan coverage is limited, and developing an accurate picture of the current state of retirement plan coverage requires reconciling and benchmarking multiple data sources. This paper describes a method for estimating current workplace retirement plan coverage rates by age, race and ethnicity, education, gender, employer size, and earnings levels across U.S. states using data from the Current Population Survey, IRS Statistics of Income, and Survey of Consumer Finances.

Keywords: retirement plans, employer-sponsored pensions, coverage rates

JEL Codes: C83, J26, J32

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1. Introduction

In 2018, the last year for which IRS Statistics of Income (SOI) government data are available, form W2 filings showed that 52.8 percent of U.S. wage and salary workers had either (1) a checked-box indication of employer-sponsored retirement plan coverage or (2) had contributed to a workplace retirement plan.¹ Workplace retirement coverage has improved in the past decade, up from 49.4 percent in 2008 when the SOI data first became available. Still, nearly half of workers lack employer-sponsored workplace retirement coverage.²

Who are the uncovered workers? How does employer-sponsored retirement plan coverage vary with age, race and ethnicity, education, gender, employer size, and earnings? How does workplace retirement coverage vary across U.S. states? Answering these questions is key to designing good public policy, but unfortunately the state of knowledge about workplace retirement plan coverage is limited. The published SOI form W2 statistics can answer some questions—like how workplace retirement plan coverage varies with age and earnings—but there is no geographic detail or breakdowns across the other demographic characteristics.

There is also, unfortunately, no other available data set with accurate measures of workplace retirement plan coverage that also has the desired demographic and geographic detail. The Current Population Survey (CPS) has two questions about employer pension plan coverage and participation, and the survey has the desired demographic and geographic detail. However, the CPS workplace coverage rates are well below the official SOI statistics, and the gap grew much worse after the CPS was redesigned in 2014.³ The Survey of Consumer Finances (SCF) has an extensive module on retirement plan coverage and participation, and the overall coverage rates are close to the published SOI coverage rates.⁴ However, the SCF is a small data set and has no geographic detail, and the retirement plan questions are asked only of the survey respondents and their spouse/partners.

None of the three data sets—SOI, CPS, or SCF—has *everything* needed to assess the state of US workplace retirement plan coverage, but the three data sets each have important

¹ Based on Table 3A in SOI download 18inallw2, available at www.irs.gov/statistics/soi-tax-stats-individual-information-return-form-w2-statistics. See Pierce and Gober (2013) for a description of the W2 file.

² Concern about the lack of workplace retirement plan coverage in the retirement policy community is long-standing. See, for example, Mackenzie and Wu (2008), John and Koenig (2015), and Harvey (2017).

³ See Brady and Bogdan (2016), Brady and Bass (2019), and Copeland (2020).

⁴ See Bhutta, et. al., (2020) for a description of the most recent (2019) SCF.

pieces of the overall puzzle. The SOI data provides the key aggregate coverage benchmarks. That means the overall coverage rate in any data set with estimated retirement plan coverage should match the overall SOI coverage rate, and it should also match along the comparable dimensions, meaning age and earnings. The CPS provides the key demographic and geographic input variables, and in addition to the two survey questions on pension coverage and participation, it also has information about ownership of retirement accounts which indicate current or past coverage. The SCF has high-quality detailed information about workplace retirement plan coverage, participation, and retirement account ownership, which makes it possible to (statistically) map the CPS pension and retirement account ownership information into comprehensive workplace coverage statistics.

The approach here to estimating workplace retirement plan coverage builds on the strengths of all three data sets. The first step is to reconcile the worker populations in the SOI and CPS, and that is the focus of the next section. SOI publishes counts of workers by age and earnings for calendar years 2008 through 2020, and those counts are compared to CPS tabulations along the same dimensions for the same years. In general, the counts of workers by age are nearly identical, and both data series capture the key demographic shift (aging of the Baby Boom) taking place during this period. The CPS earnings distribution is systematically shifted down relative to the SOI, but that is in large part because the SOI population only covers workers who file income tax returns. Consistent with that, the CPS has 1 to 2 percent more workers over most of 2008 to 2018, with some widening towards the end of the sample period.

Given reconciled worker populations, the next step is estimating workplace retirement coverage in the CPS and benchmarking those estimates against SOI, and that is the focus of the next section. The CPS has a core set of questions about workplace retirement plan offerings and participation for current workers, but those questions do not capture all coverage, most likely because the word “pension” in the questions confuses respondents with Defined Contribution (DC) plans. However, the survey also has questions about whether the CPS family members own various types of financial accounts, including retirements accounts such as IRAs, 401(k)s, and 403(b)s. The existence of such accounts is possible evidence of current workplace retirement coverage, and in that sense provides important information about respondents who were likely confused by the pension coverage questions.

The expanded CPS workplace retirement coverage measure that includes both the survey pension questions and the existence of retirement accounts is expected to be systematically biased, however, because some CPS individuals reporting retirement accounts but *not* reporting current coverage acquired those retirement accounts through some previous workplace retirement plan coverage. Indeed, a direct comparison of SOI benchmark coverage and expanded CPS coverage shows that CPS coverage rates among current workers is several percentage points *higher* than the SOI. In addition, the bias in the expanded CPS coverage measure is exactly where one would expect. Low earners at any given age are more likely to lack current coverage *conditional on* retirement account ownership, and older workers at any given earnings level are also more likely to lack current coverage *conditional on* retirement account ownership. These expectations are validated in cross-tabulations of estimated coverage by age and earnings, as the estimated gaps between SOI and CPS current coverage rates is concentrated among low earners and older workers.

The systematic bias in the expanded CPS coverage measure is independently confirmed and reconciled using the SCF. The SCF has high-quality measures of both current workplace coverage and retirement account ownership, and thus it is possible to construct the complement of the bias in the expanded CPS measure. Specifically, we can ask, “what fraction of currently working retirement account holders lack coverage on their current jobs?” Consistent with the estimated gap in coverage between SOI and CPS, the SCF confirms that the coverage bias is dominated by low earners and older workers. Indeed, the SCF can be used to parameterize the relationship between current coverage *conditional on* retirement account ownership and demographics and earnings. The estimated SCF coverage equations are then used to adjust the expanded CPS coverage measures, which are (finally) benchmarked against the published SOI.

The payoff from reconciling and combining SOI, CPS, and SCF data sets is national and state level estimates by age, race and ethnicity, education, gender, employer size, and earnings. The fourth section of the paper presents national and (two selected) state level coverage estimates for prime-age workers by demographics, pooled across calendar years 2018 through 2020. These detailed tabulations of the expanded CPS workplace retirement coverage measures are the starting point for rethinking public policy towards workplace retirement coverage. Knowing *who* lacks coverage and *where* coverage is limited is the starting point for decisions about *whether* and *how* incremental policies are warranted.

2. Reconciling Worker Populations

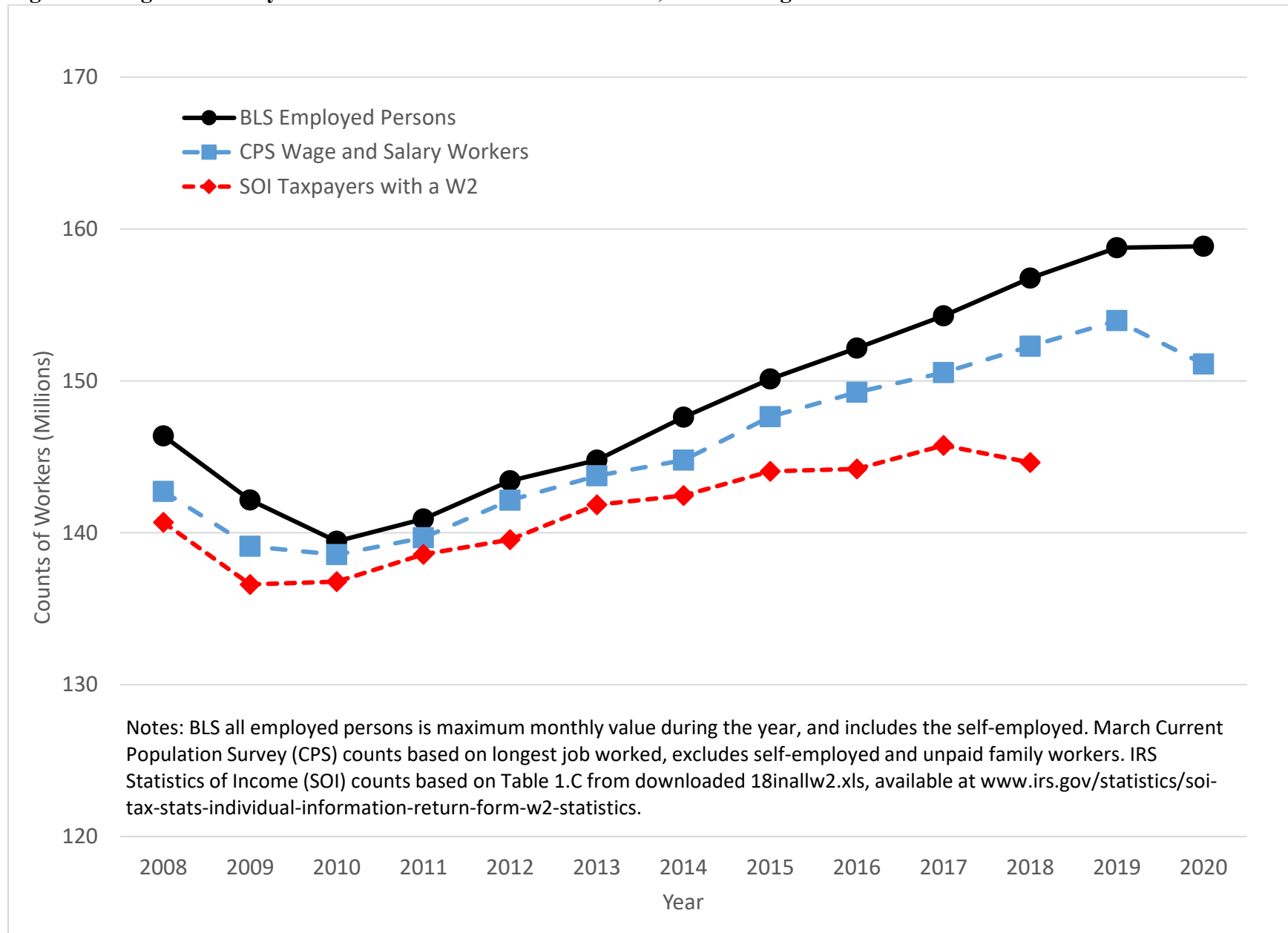
The goal of this research is to develop and validate methods for counting the number of private sector workers lacking workplace retirement plan coverage, by demographic characteristics and across U.S. states. As noted in the introduction, no single data set has the necessary workplace retirement plan coverage measures, desired demographic characteristics, and sufficient geographic detail and sample size. The approach combines information from multiple data sets, and the first step towards the goal is reconciling the worker populations across those data sets.

Counting the number of uncovered workers begins with counting the number of workers generally. The population of interest is wage and salary workers, thus excluding the self-employed. Also, in general, the tables ultimately produced for policy input (in the last section of the paper) are focused just on private sector workers between the ages of 25 and 64. However, limitations introduced by published control totals require reconciling the overall population of workers, and then working with the prime-age private sector subset when generating uncovered worker counts for policy purposes.

The two primary input data sets used to produce the estimates of uncovered workers arrive at similar populations using two very different strategies. The primary micro data file that is used to estimate counts of uncovered workers by demographics and across U.S. states is the March Supplement to the Current Population Survey. The CPS is a large-scale household survey and arrives at the worker population through a series of questions about labor market activity in the preceding year. All individuals aged 16 and older are asked if they worked in the preceding year, and if so, whether their primary jobs were through self-employment or working for someone else. If they worked for someone else, their employers are identified as either government or private sector.

The second primary input data set is tabulations of taxpayer Form W2 information returns, published by the Statistics of Income (SOI) division at the IRS. Form W2 filings are ideal for identifying the existence of employer-provided workplace retirement plan coverage, and thus provide a benchmark against which to compare other coverage estimates. In addition to reporting total wages and salaries paid to the employee, the W2 has a “retirement plan” box that employers check if they provide coverage. Employee contributions to workplace saving plans are also identified on the form. The key question for this study is whether the population of workers identified in the SOI data matches the CPS population.

Figure 1. Wage and Salary Worker Counts in Various Data Sets, 2008 through 2020



In principle, the CPS and SOI wage and salary worker populations are closely aligned, because both data sets begin with any individual who worked for wages and salaries in the reference year, and both have only minor exclusions. The CPS excludes wage and salary workers who report self-employment as their primary source of employment in the previous year. The SOI excludes workers who received a W2 but were not required to file an income tax return and are thus excluded from the SOI sample frame. Both of those exclusions tend to eliminate (some) low earners whose retirement plan coverage is generally known to be minimal.

Although the CPS and SOI worker populations are closely aligned in principle, the real question of comparability is empirical, because other forces affect what is captured in the two data sets. Some workers in the underground economy may be working for employers that do not issue W2s. Some CPS respondents may fail to report earnings from jobs that provided very little income. This leads to a series of questions. Do we find the same overall wage and salary worker counts in the two data sets? How do those counts compare to external worker benchmarks published by the Bureau of Labor Statistics (BLS)? Do the *distributions* of workers by age and earnings line up across the data sets?

The published SOI data on employer provided workplace retirement coverage is available for 2008 to 2018. The CPS and published BLS labor force statistics are available much further back in time and extend through 2020. Although there are some systematic differences between CPS and SOI worker populations, and both worker counts are below published BLS benchmarks in every year, the gaps are generally small and consistent with what we know about the underlying input data (Figure 1).

No published BLS worker counts provide precisely the desired benchmarks, and the BLS values in Figure 1 are above SOI and CPS tallies in all years. The BLS values include the self-employed, and the annual value in the chart is the maximum monthly value for the reference year. There are two offsetting biases, because the CPS and SOI populations include anyone who worked at any time during the year, but they do not include the self-employed. The contribution of the BLS data to Figure 1 is validating the growth of the CPS worker population over time. The BLS wage and salary worker count is 1 to 2 percent above the CPS worker count in most years, with a widening gap in 2020 driven (mostly) by the onset of Covid in March of that year.

The gap between CPS and SOI total wage and salary worker populations is also small, with the CPS worker population consistently 1 to 2 percent above the SOI worker population

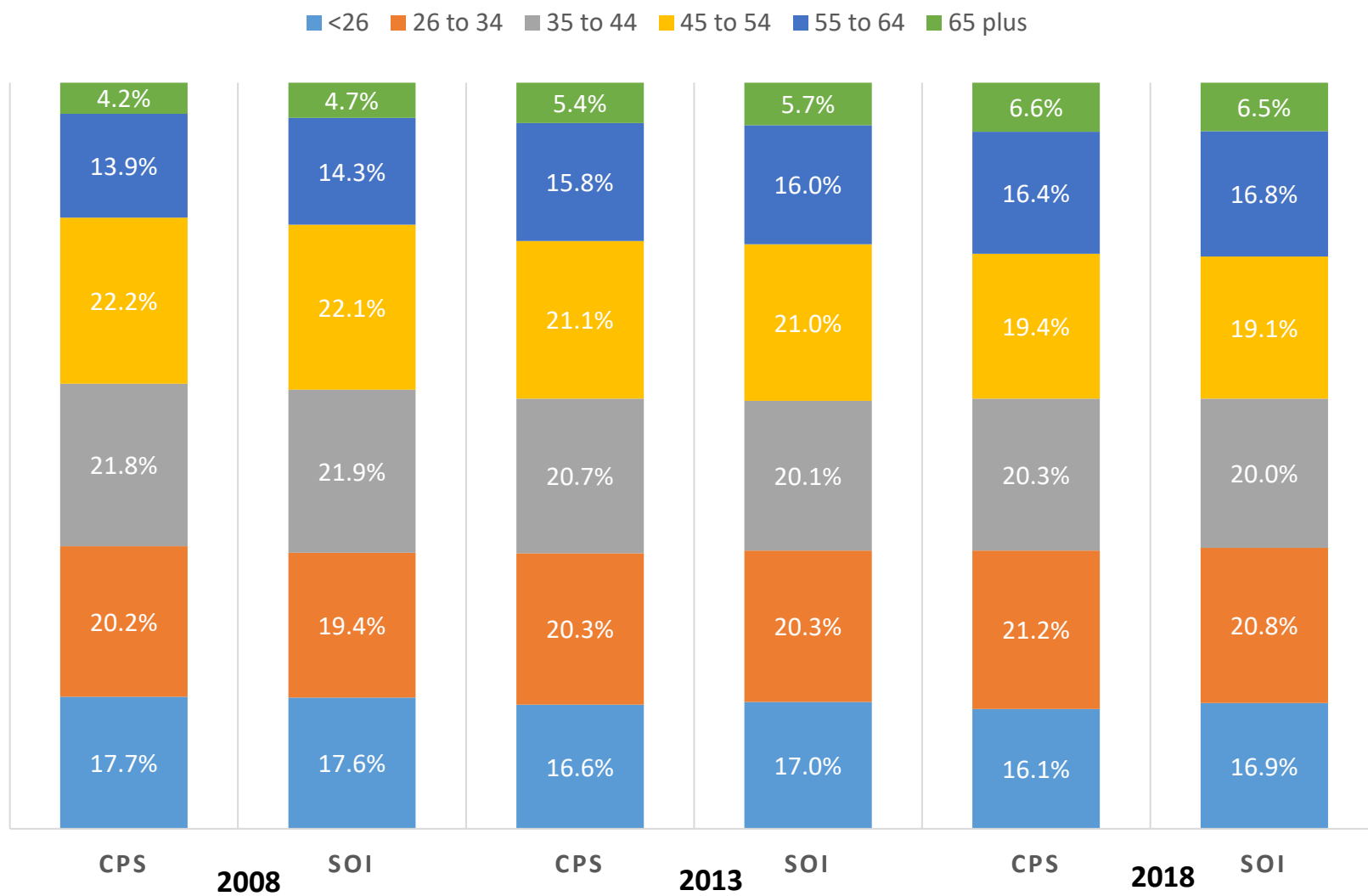
over most of the period 2008 to 2018. However, the gap is rising slightly in recent years, because the population of wage and salary employees both receiving W2s and required to file income tax returns is growing more slowly. In 2018, the gap between CPS and SOI worker populations was 5 percent, but that means there is still extensive (95 percent) overlap.

Why is the CPS worker population above the SOI worker population, and does it matter for benchmarking CPS workplace retirement plan coverage against the SOI? As noted, both the CPS and SOI exclude some wage and salary workers, so the fact that CPS worker population is slightly larger implies there are more exclusions on the SOI side. In terms of benchmarking, it is worth noting that workplace coverage *rates* may be slightly different in the two data sets, but the *counts* of workers covered by workplace retirement plans are still comparable, because the excluded workers are presumed to be uncovered in both data sets.

Two distributional checks on the CPS and SOI worker populations provide additional confidence in the benchmarking exercise. First, the distribution of wage and salary workers by age are nearly identical, and both data sets capture the same demographic shift over time (Figure 2). The share of workers in each CPS age group is within a percentage point of the SOI, and most age groups in most years are within a few tenths of a percent of each other. The fraction of workers ages 55 and older increases by 4 percentage points between 2008 and 2018 in both data sets, reflecting the aging of the Baby Boom cohort. The largest decrease is in the 45 to 54 age group, with smaller declines in the younger groups.

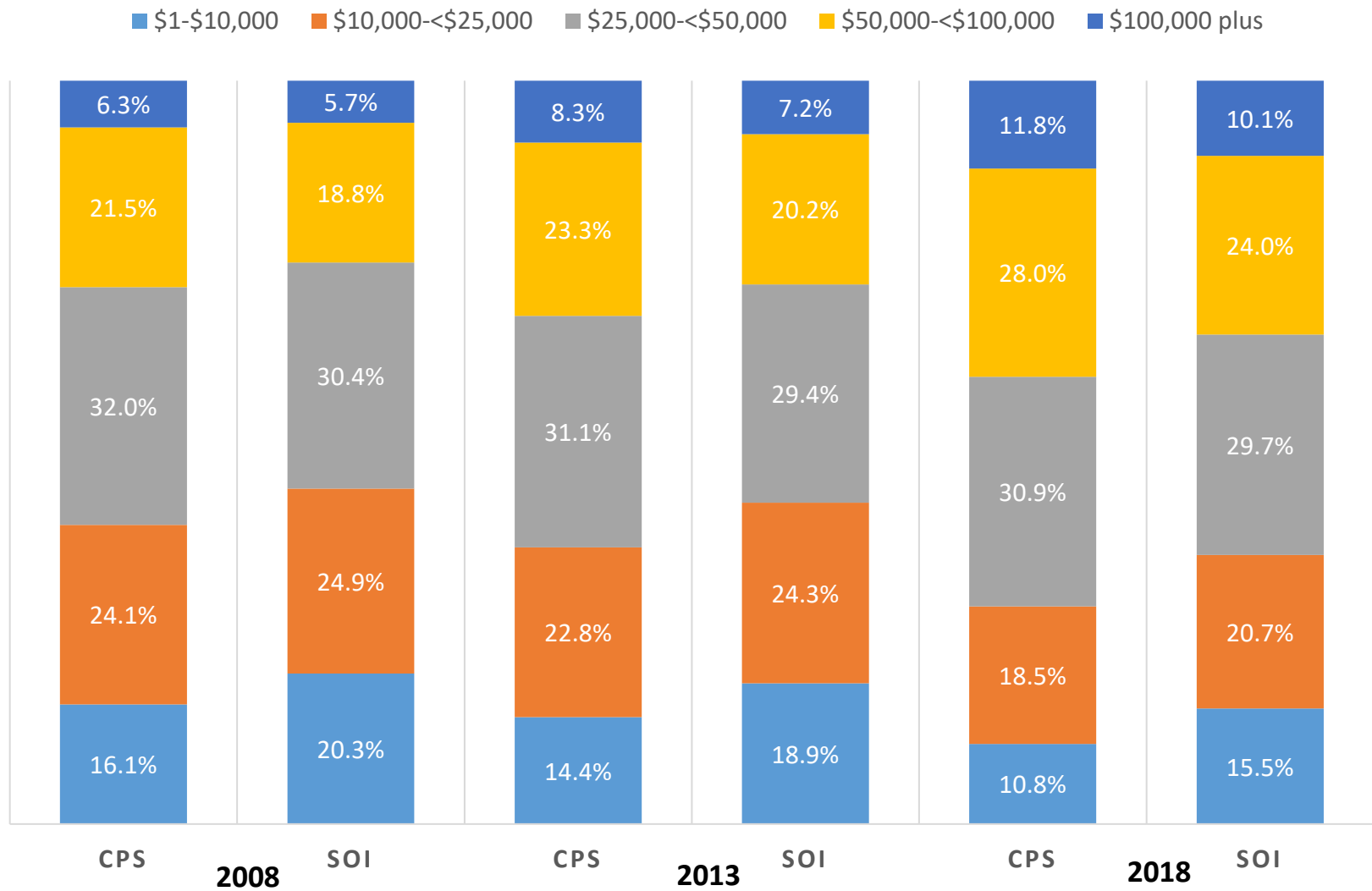
The second distributional comparison between CPS and SOI worker looks at annual earnings (Figure 3). As with the overall counts and age distributions, the overall conclusion is that the CPS and SOI wage and salary worker populations are similar, and any differences are stable over time. In every year, the SOI has 4 to 5 percent more workers in the lowest (\$1 to \$10,000) earnings group. This is not surprising, given that very low (calendar year) earnings are likely underreported in household surveys, while the SOI captures all W2 earnings. The gaps are reinforced by slightly higher SOI worker shares in the next (\$10,000 to \$25,000) earnings group. The combined excess fraction of SOI workers in the lower earnings groups is offset by more CPS workers at the top of the earnings distributions, with middle earner worker shares roughly equal in the two data sets. Most importantly for the purposes here, the dominant impression is one of consistency between the data sets over time, because the gaps between SOI and CPS across the earnings distributions do not change between 2013 and 2018.

Figure 2. Age Distribution of Wage and Salary Workers in the SOI and CPS, Selected Years



Notes: March Current Population Survey (CPS) counts based on longest job worked, excludes self-employed and unpaid family workers. IRS Statistics of Income (SOI) counts based on Table 1.C from downloaded 18inallw2.xls, available at www.irs.gov/statistics/soi-tax-stats-individual-information-return-form-w2-statistics.

Figure 3. Earnings Distribution of Wage and Salary Workers in the SOI and CPS, Selected Years



Notes: March Current Population Survey (CPS) counts based on longest job worked, excludes self-employed and unpaid family workers. IRS Statistics of Income (SOI) counts based on Table 1.C from downloaded 18inallw2.xls, available at www.irs.gov/statistics/soi-tax-stats-individual-information-return-form-w2-statistics.

Given the consistency in the univariate worker share distributions by age and earnings in Figures 2 and 3, our final check focuses on the joint distribution of workers by age and earnings in the SOI and CPS. It is important to show that the gaps in worker distributions by earnings are not concentrated by age, because the benchmark SOI data shows that employment-related workplace retirement plan coverage varies with both earnings and age. Showing the joint distribution of worker populations by age and earnings for every year is repetitive, because (as suggested by Figures 2 and 3) the (modest) differences between the data sets are stable over time. Thus, the focus here is on the last year of the available SOI data, and first CPS year to be used for disaggregating coverage by demographics and across U.S. states, which is 2018.

The joint distribution of worker populations by age and earnings in 2018 shows that there is no hidden information in the univariate distributions revealed by the joint distribution (Table 1). The row and column totals repeat the information in the last column of Figures 2 and 3, showing the almost perfect correspondence in the distributions by age in Figure 2, and the same systematic differentials by earnings in the CPS relative to SOI in Figure 3. The key takeaway from Table 1 is that the differences in worker share distributions by earnings are consistent across all age groups. That is, every CPS age group has too few earners in the bottom of the earnings distribution, and every CPS age group has too many earners at the top, relative to the SOI.

Looking ahead to reconciling coverage statistics, the key question is whether and how these small differences between the CPS and SOI worker populations by earnings will affect the benchmarking of CPS to SOI workplace retirement plan coverage. The answer, of course, depends on both the extent to which workplace retirement plan coverage varies across age and earnings groups, and the differences in the joint distribution of worker populations by age and earnings. This situation lends itself well to shift-share analysis, which involves (e.g.) reweighting SOI coverage rates by the CPS worker distribution to assess the impact on overall coverage rates. And, as mentioned earlier, the primary focus of this exercise is to identify *counts* of uncovered workers. Given that the CPS worker count exceeds the SOI worker count by a few percentage points in 2018, and the fact that the CPS has more workers in the highest earnings group, it is not clear whether there is any bias in the overall count of covered workers even if coverage rates are slightly different. In any case, the difference between CPS and SOI in overall workplace retirement plan coverage is an empirical question, to which we turn in the next section.

Table 1. Joint Distribution of Worker Populations by Age and Earnings, 2018

Age Group, Statistics of Income (SOI)							
Earnings Group	<26	26 to 34	35 to 44	45 to 54	55 to 64	65 plus	All
\$1-\$10k	6.5%	2.3%	1.7%	1.4%	1.7%	1.9%	15.5%
\$10k-<\$25k	6.0%	4.4%	3.1%	2.8%	2.8%	1.6%	20.7%
\$25k-<\$50k	3.5%	7.7%	6.2%	5.8%	5.1%	1.4%	29.7%
\$50k-<\$100k	0.8%	5.1%	6.2%	6.0%	4.9%	1.1%	24.0%
\$100k Plus	0.1%	1.2%	2.8%	3.1%	2.4%	0.6%	10.1%
All	16.9%	20.8%	20.0%	19.1%	16.8%	6.5%	100.0%

Age Group, Current Population Survey (CPS)							
Earnings Group	<26	26 to 34	35 to 44	45 to 54	55 to 64	65 plus	All
\$1-\$10k	5.3%	1.4%	1.0%	0.8%	1.0%	1.3%	10.8%
\$10k-<\$25k	5.2%	3.9%	3.0%	2.7%	2.4%	1.5%	18.5%
\$25k-<\$50k	4.1%	8.2%	6.3%	5.7%	5.0%	1.6%	30.9%
\$50k-<\$100k	1.3%	6.2%	6.9%	6.8%	5.4%	1.4%	28.0%
\$100k Plus	0.2%	1.6%	3.2%	3.4%	2.6%	0.8%	11.8%
All	16.1%	21.2%	20.3%	19.4%	16.4%	6.6%	100.0%

Age Group, SOI Minus CPS							
Earnings Group	<26	26 to 34	35 to 44	45 to 54	55 to 64	65 plus	All
\$1-\$10k	1.2%	0.9%	0.7%	0.6%	0.7%	0.6%	4.8%
\$10k-<\$25k	0.8%	0.6%	0.2%	0.1%	0.4%	0.1%	2.1%
\$25k-<\$50k	-0.5%	-0.4%	-0.1%	0.0%	0.1%	-0.3%	-1.2%
\$50k-<\$100k	-0.5%	-1.1%	-0.7%	-0.8%	-0.5%	-0.3%	-4.0%
\$100k Plus	-0.2%	-0.4%	-0.4%	-0.3%	-0.3%	-0.2%	-1.7%
All	0.8%	-0.4%	-0.4%	-0.4%	0.4%	-0.1%	

Notes: March Current Population Survey (CPS) counts based on longest job worked, excludes self-employed and unpaid family workers. IRS Statistics of Income (SOI) counts based on Table 3A from downloaded 18inallw2.xls, available at www.irs.gov/statistics/soi-tax-stats-individual-information-return-form-w2-statistics.

3. Estimating Workplace Retirement Plan Coverage

The primary reason for reconciling Statistics of Income (SOI) and Current Population Survey (CPS) worker populations by age and earnings in the previous section is to use the SOI as a benchmark for estimating CPS workplace retirement plan coverage. That is, after using the information from the pension coverage and retirement account ownership modules in the CPS and adjusting the estimated CPS coverage measures using imputations based on the Survey of Consumer Finances (SCF), do the adjusted CPS measures line up well with SOI along the observable dimensions, particularly by age and earnings?

CPS Pension Questions

The Current Population Survey (CPS) is the Census Bureau's long standing household survey for studying how outcomes like labor force participation and employment vary with demographics and over time. The CPS is conducted monthly and used to estimate key economic statistics such as labor force participation, employment, and unemployment. The March supplement to the CPS asks detailed questions about prior year labor force and earnings, including questions (for those reporting employment) about whether their employer (1) offered some type of workplace retirement plan, and (2), whether the individual participated in that plan.

The wording of the CPS workplace coverage questions is potentially problematic, and (at least empirically) misses some employees who are in fact covered by a workplace retirement plan. Specifically, for person X in the household who reports having worked in year Y, the question asks, "Other than social security did the employer or union that {person X} worked for in {year Y} have a pension or other type of retirement plan?" the follow-up question is then, "Was {person X} included in that plan?" The questions are comprehensive and should capture everyone with a plan, but the ordering of "pension" and "other type of retirement plan" may lead respondents to quickly say "no" if they hear "pension" and know they are not covered by a traditional (defined benefit) pension. Also, some respondents may not consider their specific plan (for example, a 401(k) or 403(b) plan) to constitute some "other type of retirement plan."

Doubts about the core CPS workplace retirement plan coverage questions are grounded in empirical comparisons. Prior to 2013, there were no published retirement plan coverage benchmarks, but at that time the IRS Statistics of Income (SOI) began publishing tabulations of form W2 filings. The new SOI indicators captured whether the employee's W2 had the employer

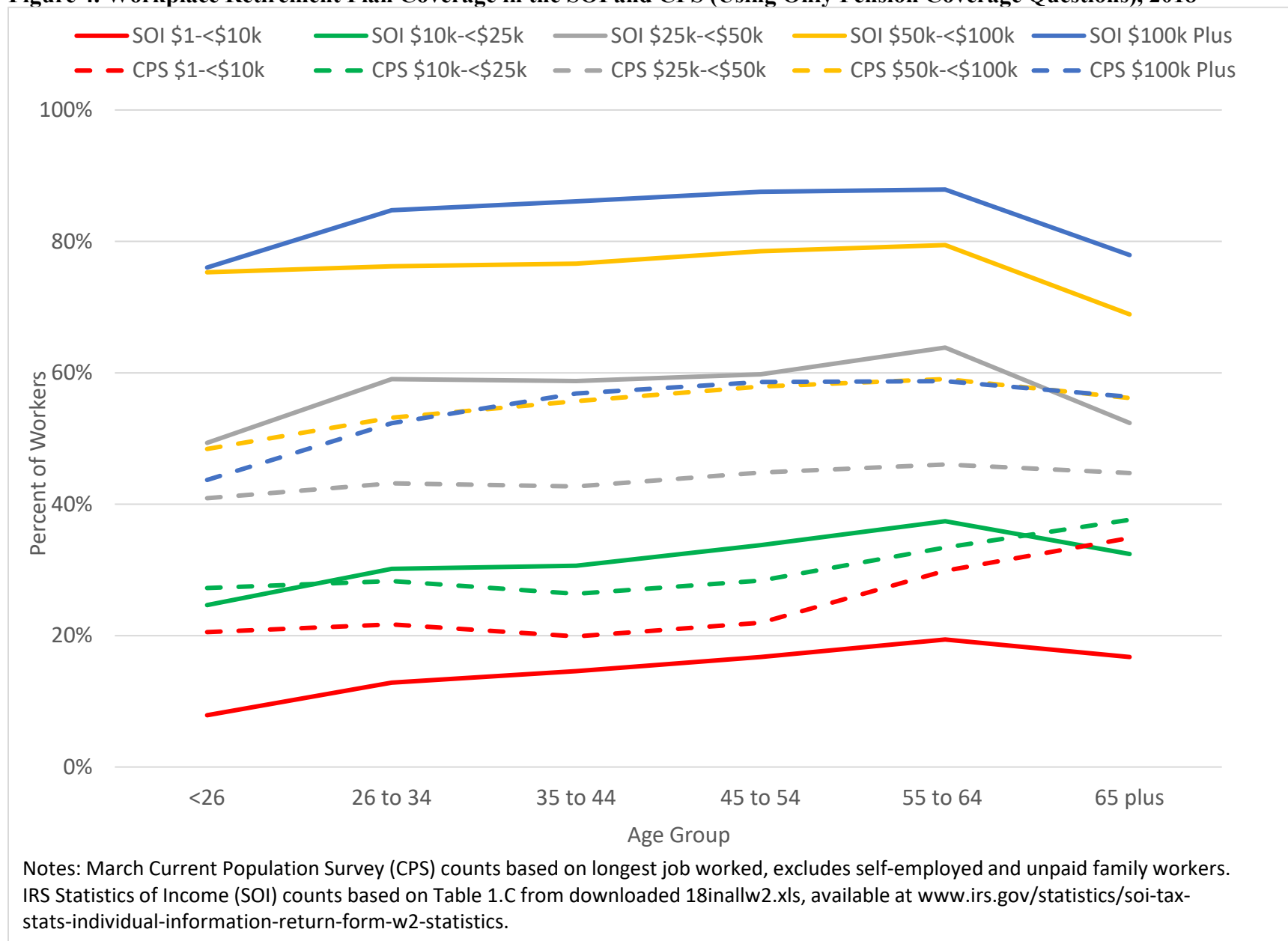
coverage box checked and/or the employee was contributing to an employer-sponsored plan (Pierce and Gober, 2013). Those new and publicly available SOI tabulations have become the benchmark against which to judge the quality of the CPS coverage questions.

Brady and Bass (2019) used the newly available SOI pension coverage measures to conduct an apples-to-apples analysis of CPS and SOI coverage rates. The comparable population they studied is all workers with W2s. Brady and Bass (2019) chose to limit the comparison to workers between ages 26 and 64, which has five of the eight tabulated age groups in the published SOI data on coverage by age. Brady and Bass (2019) showed that CPS coverage rates were below the SOI-based coverage estimates in all years 2008 through 2016, and the gap grew larger following the 2014 CPS questionnaire redesign.

The Brady and Bass (2019) analysis confirmed what other researchers had suspected based on the SCF and other data sets with measures of retirement plan coverage. Specifically, the CPS is missing a substantial fraction of pension coverage in all years, and this got much worse after 2013. There are a few reasons why a survey might not capture some phenomena, but the pension coverage questions are not obviously challenging. Why would workers not know (or not be willing to report) whether they have a pension or retirement plan at work? As noted above, question wording that seems clear to economists may well be problematic, and the specific CPS wording may be leading many covered individuals to answer no. In addition, because these types of questions tend to get many “don’t know” and “refused” responses, the specific Census Bureau imputation method used to override such responses with usable answer matters.

How do recent differences in coverage between SOI and CPS vary with age and earnings? In the population of all wage and salary workers in 2018 (described in the previous section), the overall coverage gap between SOI and CPS is 9 percentage points. As noted in the introduction, the SOI finds that 52.8 percent of wage and salary workers had coverage in 2018. The comparable statistic for the CPS using the two-question pension coverage battery is 43.8 percent. The 9-percentage point overall gap is the result of double-digit coverage gaps at higher earnings levels, offset to some extent by higher coverage in the CPS at the very lowest earnings levels (Figure 4). The differences in coverage for workers with earnings below \$10,000 are directly related to the differences in populations described in the previous section. The SOI has more workers in that group, because the administrative data captures low earnings that are not captured in the CPS, and those earners generally lack workplace retirement coverage.

Figure 4. Workplace Retirement Plan Coverage in the SOI and CPS (Using Only Pension Coverage Questions), 2018



Barring some future validation exercise in which individual CPS survey responses are matched to individual (and highly confidential) W2 filings, the explanations for why the CPS pension coverage questions underperform remains a subject of speculation. The trend deterioration in CPS relative to SOI coverage identified by Brady and Bass (2019) adds another layer of complexity. If the ability of the questions to effectively capture coverage in 401(k) and other types of contributory plans is part of the problem, then the shift away from traditional pensions could be part of the trend story. However, the drop in CPS coverage in 2014 is very sharp and pronounced, so other factors are clearly also at play.

What happened to the CPS in 2014 to cause the dramatic shift in estimated coverage using the two-question battery? Although the two-question CPS pension battery did not change when the survey was redesigned, the CPS questionnaire was changed in ways that may have inadvertently impacted the pension coverage questions. In addition, the Census Bureau changed the imputation methods used to fill in the “don’t know” and “refused” responses.

Specifically, beginning in 2014, respondents were asked to answer a new series of questions about retirement accounts, and those new questions occurred in the survey *before* the pension coverage questions. To improve CPS income measures, the redesigned CPS questionnaire asked about the existence of and withdrawals from retirement accounts. The question wording referred directly to several different types of accounts, including 401(k), 403(b), and various types of IRAs. Thus, when the existing pension questions were asked at a later point in the survey, it is possible that some respondents might have perceived that the pension coverage questions were asking about *additional* retirement plans. This is sometimes referred to as a “question ordering” effect. Again, it is impossible to know for sure, and the change in imputation strategy associated with the survey redesign may also be playing a role.

Expanding the CPS Coverage Measure to Include Retirement Account Information

Regardless of why the CPS pension coverage estimates are below and trending down relative to SOI, Copeland (2020) found that there may be a silver lining in the redesigned CPS survey. Copeland used just one year of CPS data (conducted in March 2019, for calendar year 2018) to show that an expanded measure of coverage that used the new CPS retirement account balances *combined with* the existing pension coverage question dramatically increased estimated overall coverage. Indeed, the expanded estimates of coverage were in the ballpark of what is

typically seen in other data sets, particularly those in the SOI W2 tabulations, as reported by Brady and Bass (2019).

The 2014 CPS redesign spanned several survey modules, but the changes most relevant for the purposes of studying retirement plan coverage occurred in the CPS earnings questions. (It is worth repeating that the pension questions themselves were completely unchanged.) The CPS survey instrument was modified to better account for how the shift from traditional pensions to contributory retirement accounts was impacting estimated household incomes. Previously, when asked about flows associated with retirement accounts—generally taken to mean periodic or one-time withdrawals from such accounts—respondents greatly underreported. In addition, the shift in composition of financial interest earned from traditional saving and other bank accounts towards retirement accounts meant those flows were increasingly being missed as well.

Building on knowledge gleaned from other surveys (including a SCF redesign that had occurred a decade earlier), the Census Bureau shifted to a two-step approach to better capture the flows associated with retirement accounts. The first step is to identify the existence of such accounts, questions that generally have low respondent burden and thus high-quality responses. The second step is to then condition the flow questions (withdrawals and interest earned) on the existence of the accounts. The key insight is that respondents are more focused and thus better able (or more willing) to report the flows associated with the accounts. Rather than ask generally about (say) withdrawals from retirement accounts, interviewers can ask about specific accounts.

The new CPS retirement account questions capture the types of accounts relevant to the goal here of estimating workplace retirement plan coverage. Specifically, the new CPS retirement account framing question refers to a “401k account, 403b account, Roth IRA, Regular IRA, KEOGH plan, SEP plan (Simplified Employee Pension), or Other type of retirement account.” Listing the specific types of accounts seems effective at eliciting ownership, because the combination of coverage based on the original two-question battery and the existence of retirement plans reverses the gap between SOI and CPS coverage for the total worker population.

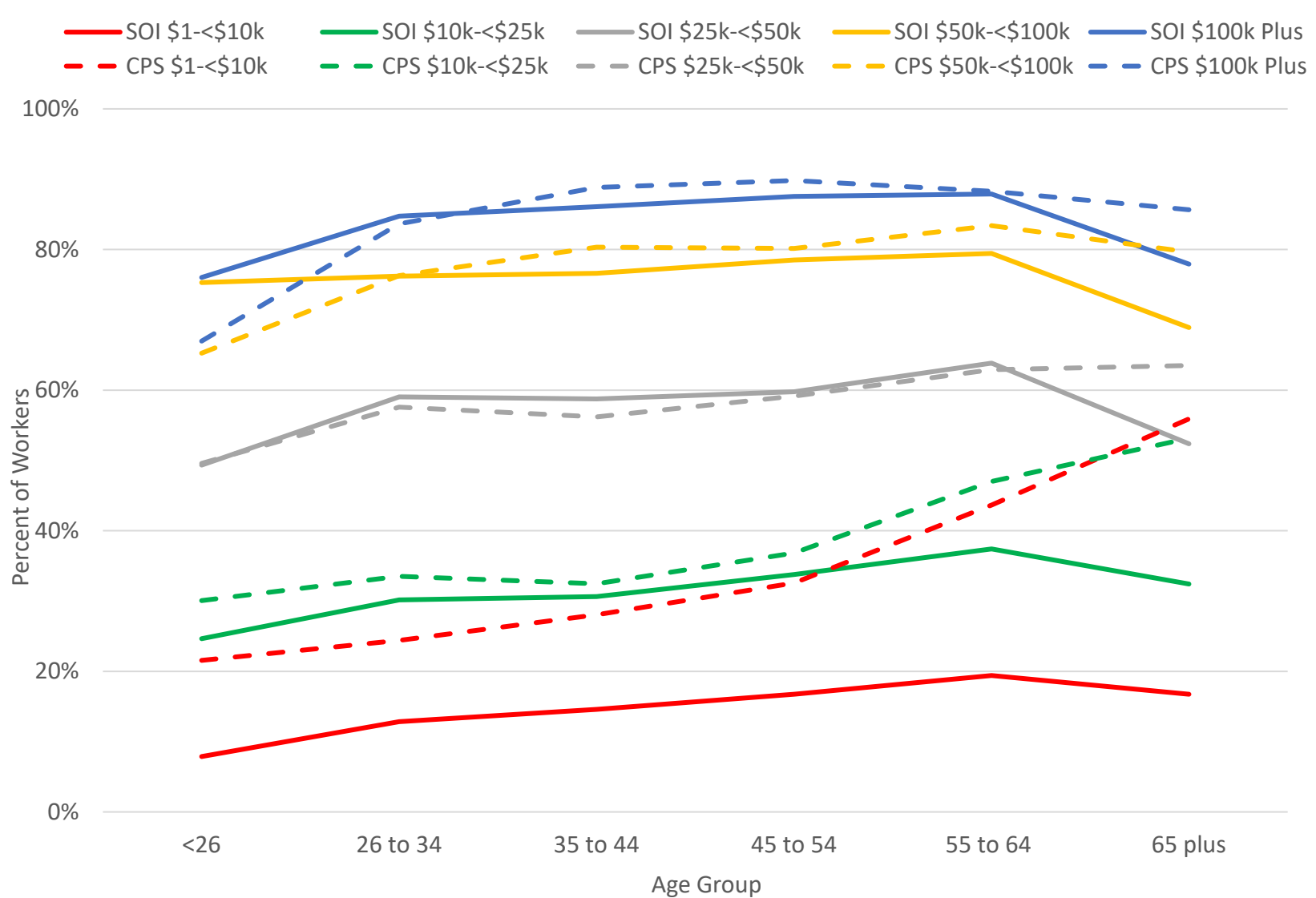
The Copeland (2020) insight comes through clearly when the comparison of SOI versus CPS coverage in 2018 is expanded to include retirement accounts (Figure 5). In particular, the large gaps between SOI and CPS coverage at higher earnings levels are eliminated when CPS coverage is defined using *either* positive responses to the long-standing pension questions or the observation of retirement account holdings. Indeed, expanding the coverage measure to include

observed retirement accounts *overcorrects* for problems with the CPS pension questions, as the overall CPS coverage rate rises to 60.2 percent, well above the SOI reported 52.8 percent. The CPS coverage estimates based on the expanded measure are generally above the SOI for all age and earnings groups, but most notably for low earners and older workers.

The pattern of gaps between the CPS expanded coverage measure and SOI coverage measures provides a key insight about the magnitude of the potential problem with using retirement accounts to identify which workers are currently covered by a workplace retirement plan, but for some reason did not report that coverage in the pension questions module. All the CPS respondents included in Figures 4 and 5 are currently working, and for most of those workers, the existence of a retirement account is evidence that their current coverage was not captured by the CPS pension questions. However, some of those respondents are likely reporting retirement accounts accumulated on some previous job. They have a retirement account but lack coverage in their current job.

What types of workers are most likely to lack current workplace retirement plan coverage *conditional* on having a retirement account? The intuitive answer is lower earners and older workers. Older workers are most likely to have transitioned from a career job in which they accumulated retirement account balances to a semi-retirement situation in which they lack coverage. Thus, the fact that the expanded CPS coverage measures are above SOI in the oldest age group across all earnings groups makes sense. Lower earners can be similarly explained. Again, conditional on having a retirement account, it seems intuitive that the account was associated with some previous job in which the worker had higher earnings. Indeed, the largest gaps in Figure 5 are for low earning older workers, which reinforces the idea that the mechanisms suggested above are the main sources of bias in the expanded CPS coverage measure.

Figure 5. Workplace Retirement Plan Coverage in the SOI and CPS (Using Pensions and Retirement Accounts), 2018



Notes: March Current Population Survey (CPS) counts based on longest job worked, excludes self-employed and unpaid family workers. Expanded coverage measure includes all workers with retirement accounts. IRS Statistics of Income (SOI) counts based on Table 1.C from downloaded 18inallw2.xls, available at www.irs.gov/statistics/soi-tax-stats-individual-information-return-form-w2-statistics.

Reconciling Retirement Account Ownership and Workplace Coverage Using the SCF

The systematic gaps between CPS and SOI in estimated workplace retirement coverage using the CPS expanded measure shown in Figure 5 are reasonable, and they also point towards the adjustments needed to adjust the CPS and bring the estimates into line with the SOI. Indeed, one could presume that the entire gap between CPS and SOI in any given age/earnings cell is due to some CPS respondents having accounts from previous jobs. The subtle differences in worker populations described in the previous section suggest that tying the solution to that proposition is a dubious approach, and in any case, there is no need to assume away the gap. Rather, it is possible to use the Survey of Consumer Finances (SCF) to directly estimate the three-way correlation between retirement account ownership, current work status, and current workplace retirement coverage.

The SCF is well-suited for answering the question implied in Figure 5. What types of current workers have retirement accounts but lack current workplace coverage? Is it the low earners and older workers that Figure 5 suggests? The SCF has high-quality measures of both current workplace coverage and retirement account ownership, and thus it is possible to construct the complement of the bias in the expanded CPS measure. The specific statistic of interest is the fraction of current workers with retirement accounts who lack current workplace coverage. Does that statistic computed using SCF confirm the intuition behind the gaps in Figure 5?

Before addressing the statistic of interest, it is important to acknowledge two key limitations of the SCF. First, the data set is small and lacks geographic detail. If the SCF sample was as large as the CPS sample and the data set had state-level identifiers, this exercise would be moot, because one could simply compute the workplace retirement plan coverage statistics of interest using the SCF. The second problem is in the sample composition. The SCF is a household-oriented survey, while the CPS focuses on individuals within households. As such, the SCF only collects details about earnings, workplace coverage, and account ownership for the primary respondent within the household, and for that person's spouse/partner if there is one. For the present purpose, then, the SCF misses all workers who are not either the head or spouse/partner, and those are, not surprisingly, at either end of the age distribution and have lower earnings. Roughly, the SCF has about 30 percent fewer workers than CPS or SOI. The missing individuals are living in someone else's household, either a relative or as a roommate.

Table 2. Retirement Account Ownership and Conditional Workplace Coverage, 2018

	Age Group						All
	<26	26 to 34	35 to 44	45 to 54	55 to 64	65 plus	
CPS							
Retirement Account Owners	11.9%	36.6%	44.6%	46.8%	50.4%	45.8%	39.1%
Coverage/Retirement Account	43.4%	43.1%	42.2%	40.7%	41.2%	45.2%	42.1%
SCF							
Retirement Account Owners	24.5%	48.2%	55.6%	60.1%	66.1%	54.6%	54.3%
Coverage/Retirement Account	90.4%	88.3%	89.0%	87.5%	82.9%	62.3%	85.7%

	Earnings Group					All
	\$1-\$10k	\$10k-<\$25k	\$25k-<\$50k	\$50k-<\$100k	\$100k Plus	
CPS						
Retirement Account Owners	10.9%	14.9%	33.0%	58.0%	73.8%	39.1%
Coverage/Retirement Account	56.7%	47.3%	42.6%	40.0%	41.7%	42.1%
SCF						
Retirement Account Owners	21.9%	22.9%	46.6%	71.0%	87.6%	54.3%
Coverage/Retirement Account	21.6%	62.9%	86.3%	89.8%	89.0%	85.7%

Notes: March Current Population Survey (CPS) counts based on longest job worked, excludes self-employed and unpaid family workers. SCF pooled over surveys years 2013 to 2019, earnings in 2018 dollars, includes only respondent and spouse within SCF households.

The differences between SCF and CPS worker populations are reflected in differences in estimated retirement account ownership (Table 2). SCF workers at any given age and earnings are more likely to own retirement accounts, and those differentials are largest among the worker groups less likely to be captured as household head or spouse/partner, especially the young and lower earning workers. For example, 24.5 percent of SCF workers under age 26 have retirement accounts, but only 11.9 percent of CPS workers in that age group do so. That is mostly driven by the fact that the CPS has many more workers in that age group, because there is no selection on whether they are a household head or spouse. Consistent with the selection issue, the *relative* gaps in retirement account coverage shrink dramatically for older age groups and among higher earners, but the SCF tally is always above that in the CPS.

The SCF selection issue precludes a head-to-head comparison of CPS and SCF coverage by age and earnings, but it does not rule out computing the statistics of interest, also shown in Table 2. The fraction of SCF workers in any given earnings or age group who *own retirement accounts and report current workplace coverage* is generally much higher in the SCF than in the CPS. The one exception is in the lowest earnings group, but that is the group for whom the selection effect is most pronounced. There are very few SCF household heads who are currently

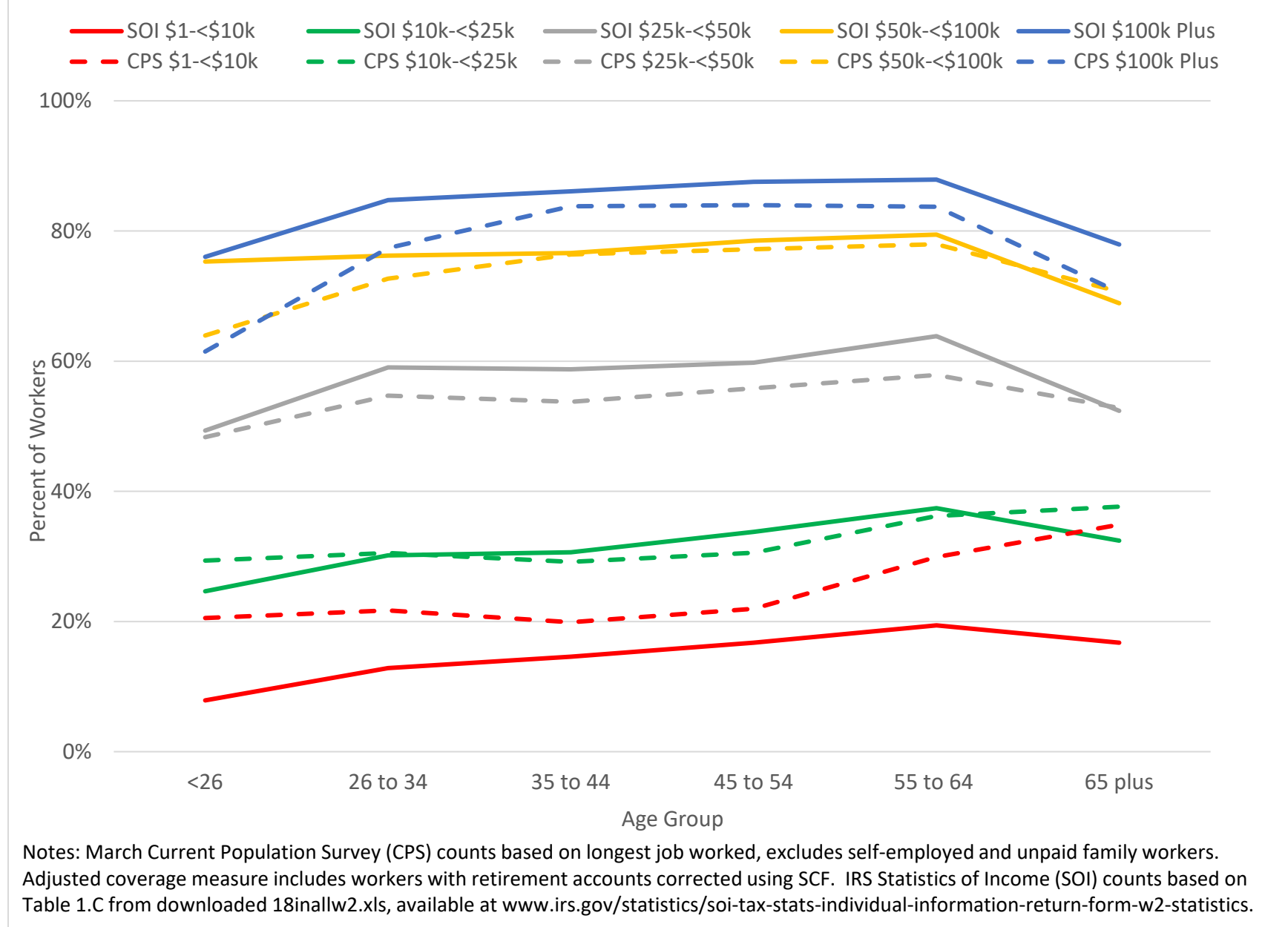
working, own retirement accounts, and earn less than \$10,000 per year. For the other groups, especially high earners in prime age groups likely to be household heads or spouses, the gaps in conditional coverage revealed in Table 2 confirm our views about the shortcomings of the CPS questions, and the overcorrection introduced when using the expanded coverage measure (Figure 5). That is, about 80 percent of SCF respondents in most age and earnings groups have coverage conditional on retirement account ownership, but the percentages are lower in the bottom two earnings groups and in the oldest age group.

Benchmarking Adjusted CPS and SOI Workplace Coverage

The SCF analysis makes it possible to statistically recover an unbiased coverage measure using the CPS. Although it is impossible to know specifically which CPS workers reporting retirement accounts lack current workplace retirement plan coverage, it is possible to construct the *probability* workers lack coverage based on their age and earnings. Specifically, the probability is computed using the gap between SCF and CPS coverage given retirement account ownership ratios in each age/earnings cell, then dividing those gaps by the CPS coverage given retirement account measure. This increases the CPS coverage given retirement account ratio up to match the SCF. Referring to Table 2, the approach effectively increases a typical CPS coverage given retirement account ownership statistic from about 40 or 45 percent (based on just the pension questions) to about 80 or 90 percent (based on the SCF). For emphasis, Figure 5 sets all CPS coverage given retirement account statistics to 100 percent.

The SCF-based adjustment dials back the expanded CPS coverage measure and brings the CPS results into solid alignment with SOI (Figure 6). The overall coverage rate in the adjusted CPS falls from 60.2 percent in the simple expanded measure to 55.8 percent, much closer to the SOI coverage of 52.8 percent. Figure 6 (relative to Figure 5) shows that most of the reduction in coverage is in the low earning and older worker groups, confirming the hypothesis about bias in using retirement accounts to assign coverage without any adjustments (Figure 5). The remaining differences between CPS and SOI coverage are primarily in the lowest (and problematic) earnings group, where the CPS and SOI populations are known to be different. The fact that CPS coverage is above SOI coverage for this group (again) confirms that the typical SOI worker earning less than \$10,000 is less likely to be covered, because there are more SOI workers in that group, and the additional SOI workers are less likely to have coverage.

Figure 6. Workplace Retirement Plan Coverage in the SOI and CPS (Using Pensions and Adjusted Accounts), 2018



4. National and State-Level Retirement Plan Coverage, 2018-2020

The payoff from reconciling and combining SOI, CPS, and SCF data sets is the ability to generate national and state level estimates of workplace retirement coverage by age, race and ethnicity, education, gender, employer size, and earnings. These sorts of estimates have historically been produced by the AARP Public Policy Institute for use by policymakers in discussions about identifying shortcomings in workplace retirement coverage and developing solutions to those shortcomings.⁵ The AARP State Fact Sheets are a good example of how the adjusted CPS coverage measures developed in this research can be used to inform policymakers about the current state of U.S. workplace retirement coverage, and thus the analysis here is focused on the sub-populations that AARP has traditionally included in those Fact Sheets.

The groups on which AARP focuses for the State Fact Sheet release starts with the population of wage and salary workers studied here, but with two exclusions. First, the AARP excludes very young (16-17) and older workers (65 and older) because the focus is on the ability to accumulate retirement savings during prime working years. The analysis above confirms that the older worker group is indeed very different from other prime age workers. The second exclusion is for public sector workers, whose coverage is generally much higher than private sector workers. The CPS versus SOI benchmarking exercise in the previous section was based on public and private sector workers because the SOI data are not divided between public and private. The implicit assumption when moving to the private sector subpopulation is that the expanded and adjusted CPS coverage principles are equally valid for the two subpopulations.

The other step in generating state-level estimates involves pooling across CPS years. Even though the CPS is a relatively large data set, the AARP state-level analysis has historically used the three most recent years of CPS to make it possible to look at both large and small states. The most recent Fact Sheet release was in 2015, using March CPS surveys conducted in 2014, 2013, and 2012, before the CPS redesign led to the substantial drop in CPS workplace retirement plan coverage (based on just the pension module questions). As of this writing, the three most recent March CPS surveys were conducted in 2021, 2020, and 2019, covering calendar years 2020, 2019, and 2018. The AARP Fact Sheets present both counts and percentages of *uncovered*

⁵ See <https://www.aarp.org/ppi/state-retirement-plans/retirement-savings-gap/>.

workers across states, and within each state, by age, race/ethnicity, education, gender, employer size, and earnings quintile.

The updated AARP State Fact Sheets confirm the patterns in terms of demographics and across states seen in the earlier releases, while showing the modest improvement over time revealed in the SOI data, as well as some possible bias in the earlier numbers (the CPS pension questions always had problems, and those problems grew up after 2013). For the entire U.S., the fraction of workers lacking workplace retirement coverage is 47.7 percent (Table 3). That ratio is down from 51.3 percent in the 2015 release, so coverage rose 3.7 percentage points. That change is accounted for by both real increases in coverage (the SOI coverage rate rose between 2 and 3 percentage points over this period) and the use of CPS retirement account holdings to improve the coverage estimates. It is unfortunately not possible to compute how much is due to the retirement account adjustments, because the retirement account questions were not asked in the earlier CPS surveys.

Despite the changes in how the CPS workplace retirement coverage statistics are computed, the patterns of coverage by demographics are consistent with the 2015 AARP State Fact Sheet release. The fraction of uncovered workers declines with age, is higher for Hispanic and Black workers, declines with education, is slightly higher for women, declines with employer size, and declines with earnings. These patterns are understandable for both demand and supply reasons. Workers with higher earnings and closer to retirement are much more interested in supplementing Social Security with additional workplace retirement savings, and they demand such plans as part of their employment packages. On the supply side, small firms face bigger challenges in providing workplace retirement plans and are (all else equal) less likely to make such plans available.

The AARP State Fact Sheet approach also makes it possible to ask whether differences in coverage across states can be explained by differences in demographics and earnings, as opposed to specific (for example) historical differences in the types of industries operating in the state. Two example (but contrasting) states (Florida and Pennsylvania) are shown in Tables 4 and 5. Florida has a much higher uncovered rate at 58.7 percent, while the uncovered rate in Pennsylvania is 41.3 percent. The patterns by demographics are largely the same across the two states, meaning most uncovered rates in Florida are dramatically higher *within* any given age, race/ethnicity, education, gender, employer size, or earnings quintile group.

Table 3. Who is NOT Covered by a Workplace Retirement Plan? (U.S. Total)

Item	Group	%	Number
ALL	ALL	47.7%	56,524,216
Age	18 - 34 years	56.6%	27,294,838
	35 - 44 years	43.0%	11,231,652
	45 - 54 years	40.9%	9,746,448
	55 - 64 years	40.4%	8,251,278
Race & Ethnicity	Hispanic	63.6%	14,651,726
	Asian (Non-Hispanic)	45.2%	4,067,976
	Black (Non-Hispanic)	53.2%	7,522,518
	White (Non-Hispanic)	41.6%	29,328,441
Education	Less than High School	76.0%	7,027,748
	High School	57.4%	18,763,860
	Some College	50.2%	17,155,903
	Bachelor's or Higher	31.9%	13,576,705
Gender	Male	46.3%	29,067,620
	Female	49.2%	27,456,596
Employer Size	Under 10	78.1%	12,021,556
	10 - 24	64.8%	13,179,897
	25 - 99	52.2%	5,096,411
	100 - 499	42.3%	6,721,551
	500 - 999	37.4%	2,512,893
	1,000 +	33.7%	16,991,909
Earnings Quintile	\$18,000 or less	78.6%	19,005,648
	\$18,001 to \$31,000	64.3%	14,845,050
	\$31,001 to \$50,000	44.1%	11,936,024
	\$50,001 to \$78,000	29.4%	6,062,466
	Over \$78,000	19.8%	4,675,029

Notes: Estimates based on expanded CPS workplace coverage measures pooled over calendar years 2018, 2019, and 2020, statistically adjusted using SCF coverage conditional on retirement account ownership, and benchmarked against published administrative SOI control totals based on form W2 filings.

Table 4. Who is NOT Covered by a Workplace Retirement Plan? (Florida)

Item	Group	%	Number
ALL	ALL	58.7%	4,316,312
Age	18 - 34 years	65.3%	1,848,716
	35 - 44 years	54.9%	852,311
	45 - 54 years	54.1%	832,238
	55 - 64 years	54.7%	783,047
Race & Ethnicity	Hispanic	68.7%	1,520,115
	Asian (Non-Hispanic)	54.8%	157,071
	Black (Non-Hispanic)	61.3%	707,583
	White (Non-Hispanic)	52.1%	1,881,776
Education	Less than High School	82.9%	330,617
	High School	68.7%	1,522,150
	Some College	59.0%	1,318,841
	Bachelor's or Higher	45.8%	1,144,705
Gender	Male	58.5%	2,217,926
	Female	58.9%	2,098,387
Employer Size	Under 10	85.2%	1,085,626
	10 - 24	73.8%	980,941
	25 - 99	68.1%	417,866
	100 - 499	56.4%	430,552
	500 - 999	43.0%	133,467
	1,000 +	41.4%	1,267,861
Earnings Quintile	\$18,000 or less	82.7%	1,272,389
	\$18,001 to \$31,000	71.6%	1,224,826
	\$31,001 to \$50,000	55.4%	1,021,429
	\$50,001 to \$78,000	42.0%	476,815
	Over \$78,000	28.6%	320,854

Notes: Estimates based on expanded CPS workplace coverage measures pooled over calendar years 2018, 2019, and 2020, statistically adjusted using SCF coverage conditional on retirement account ownership, and benchmarked against published administrative SOI control totals based on form W2 filings.

Table 5. Who is NOT Covered by a Workplace Retirement Plan? (Pennsylvania)

Item	Group	%	Number
ALL	ALL	41.3%	2,034,051
Age	18 - 34 years	52.6%	1,053,170
	35 - 44 years	34.7%	349,605
	45 - 54 years	34.6%	323,251
	55 - 64 years	31.2%	308,025
Race & Ethnicity	Hispanic	55.4%	207,048
	Asian (Non-Hispanic)	39.9%	85,257
	Black (Non-Hispanic)	54.4%	273,276
	White (Non-Hispanic)	37.9%	1,427,496
Education	Less than High School	74.6%	215,414
	High School	48.6%	735,967
	Some College	44.5%	544,988
	Bachelor's or Higher	28.3%	537,683
Gender	Male	39.8%	1,000,819
	Female	42.8%	1,033,232
Employer Size	Under 10	75.6%	401,559
	10 - 24	57.1%	415,117
	25 - 99	44.0%	186,295
	100 - 499	37.4%	261,961
	500 - 999	34.3%	106,533
	1,000 +	29.6%	662,585
Earnings Quintile	\$18,000 or less	74.0%	779,008
	\$18,001 to \$31,000	55.2%	488,020
	\$31,001 to \$50,000	35.4%	389,552
	\$50,001 to \$78,000	23.0%	206,366
	Over \$78,000	17.2%	171,104

Notes: Estimates based on expanded CPS workplace coverage measures pooled over calendar years 2018, 2019, and 2020, statistically adjusted using SCF coverage conditional on retirement account ownership, and benchmarked against published administrative SOI control totals based on form W2 filings.

5. Conclusions

Good public policy begins with good data, and when it comes to workplace retirement plan coverage, the current state of knowledge has been a limiting factor. Published administrative data tabulations based on form W2 from the IRS Statistics of Income (SOI) provide national benchmarks, but the demographic detail is limited. Publicly available micro data from the Census Bureau's Current Population Survey include two sets of indicators that together bracket whether individuals have coverage in their current jobs, and the data set has the desired demographic and geographic detail, but there is no direct way using CPS to generate point estimates within the bracketed range. The Federal Reserve Board's Survey of Consumer Finances (SCF) has high quality estimates of retirement account ownership and current coverage that make it possible to (statistically) assign point estimates for the bracketed CPS responses.

Thus, although it remains true that no single data set has everything policy makers need to know about the current state of US retirement workplace coverage, the three data sets together provide a complete picture. Here we first showed that CPS and SOI worker populations are well aligned, over time, and by age and earnings. Second, we constructed measures of CPS retirement plan coverage using the direct questions, and an expanded coverage measure using the existence of retirement accounts. Third, we used the SCF to parameterize current workplace coverage *conditional* on retirement account ownership and demographics, then using that estimated relationship to (statistically) assign a coverage point estimate for each CPS respondent. Finally, we showed that the expanded and adjusted CPS coverage estimates line up well with SOI benchmarks along observable dimensions.

The payoff from using the three data sets together is an enhanced CPS data file that benchmarks well against national aggregates, and also has the desired demographic and geographic detail. The overall estimated CPS coverage rates differ slightly from SOI benchmarks, but only because of the small differences in the distributions of worker populations. Having matched national coverage estimates in the SOI, the distribution of workplace retirement plan coverage in the enhanced CPS file is the key incremental information. Using the enhanced CPS files, policymakers can evaluate how coverage varies with age, race and ethnicity, education, gender, employer size, earnings, as well as across US states. The patterns observed in coverage by demographics and geography are the starting point for studying potential shortcomings in current policy towards workplace retirement plan coverage.

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