The Influence of COVID-19-Related Data Collection Changes on Measuring Health Insurance Coverage in the 2020 CPS ASEC

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The Current Population Survey Annual Social and Economic Supplement (CPS ASEC) is a critical source for national estimates of health insurance coverage in the United States. This year, data collection for the CPS ASEC (which provides estimates of coverage for calendar year 2019) largely occurred during the unprecedented COVID-19 pandemic. In this paper, we consider how COVID-related changes to data collection may have influenced CPS ASEC health insurance coverage estimates. The key findings are:

- Given the circumstances during CPS ASEC data collection, we cannot disentangle real changes in health insurance coverage between 2018 and 2019 from changes due to operational adaptations due to the pandemic.
- The uninsured rate decreased between 2018 and 2019 according to the CPS ASEC, and the uninsured rate increased according to the American Community Survey (ACS).[2] Despite the apparent contradiction in top-level results, the two surveys are broadly and substantively consistent for types of coverage. In fact, estimates of the direction of 2018-2019 change do not diverge for *any* of the six subtypes of coverage.[3]
- The difference between surveys in overall change in health insurance coverage is likely driven by the difference in the magnitude of change in estimates for employer-sponsored insurance (ESI). The CPS ASEC estimate of change in ESI in 2018-2019 was larger than in the ACS. Evidence from

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[2] See Keisler-Starkey and Bunch for detailed estimates for health insurance coverage in 2019 using both the CPS ASEC and ACS.

[3] Throughout this paper, we use "diverge" to mean statistically significant changes in opposite directions. We are not commenting on whether the differences are (or are not) statistically different from one another.

Whenever statistical significance is mentioned in the text, a 90 percent confidence level is used.

additional analyses suggests that the CPS ASEC overestimates the magnitude of change for this subtype of coverage.

- Noninterviews in the CPS ASEC (related to the pandemic and associated changes in data collection) may have contributed to observed ESI changes.
- Differential noninterview means that the 2020 CPS ASEC sample differs from the 2019 CPS ASEC with respect to a number of characteristics that are correlated with health insurance coverage. For example, the 2020 CPS ASEC sample is older, more educated, and more likely to have a disability than the 2019 sample.
- The nature of nonresponse in the 2020 CPS ASEC and the characteristics affected likely render routine tools to adjust for nonresponse inadequate. This finding builds on the analyses of Rothbaum and Bee (2020), who examine the implications of nonresponse bias in the 2020 CPS ASEC primarily for income and poverty estimates.

This paper provides perspective and context as to potential impacts from collecting data during the pandemic and examines the elements of surveys and operations that led to the results presented in the official report. We first provide background on the CPS ASEC sample and data collection in 2020 (Section 1). We describe the operational changes implemented due to the COVID-19 pandemic and explore the effects on health insurance coverage estimates. In Section 2, we benchmark CPS ASEC estimates of coverage in 2019 with American Community Survey (ACS) estimates of coverage in 2019. Data for the ACS were collected in 2019, prior to the pandemic. Section 3 takes a deeper look at the CPS ASEC sample. Lower response rates in 2020 reported elsewhere tell only part of the story. We examine differences in sample composition across months and between survey years. Together, these findings suggest that estimates of 2018-2019 change in health insurance coverage in the 2020 CPS ASEC should be used only with caution.

1. Data Collection in the 2020 CPS ASEC

1.1. Overview of Data Collection

The CPS ASEC, as the name indicates, is an annual supplement to the basic monthly Current Population Survey (CPS). The sample for ASEC is derived from the CPS basic sample, which consists of approximately 72,000 assigned housing units. The CPS basic follows a 4-8-4 design: households are contacted for interviews each month for four consecutive months, followed by eight months without any contact, and finally four additional monthly interview attempts for a total of up to eight months of interviews.[4] In addition, this 4-8-4 design is staggered, meaning that in a given month, eight different sample groups are represented. These groups are often differentiated by their month-in-sample (or, MIS).[5] Respondents in their first interview month are MIS-1, respondents in their second interview month are MIS-2, and so on. The first interview (MIS-1) and fifth interview (MIS-5, the first after the eight-month noninterview period) usually consist of an in-person visit. In other MIS months, the interviewers may

[4] The CPS sample is a multistage stratified sample of housing units from 852 sample areas with a sample rotation scheme.

[5] The housing unit is sampled, not the occupants. If the people living at an in-sample address move out and new occupants moves in, the new residents finish the remainder of CPS interviews.

conduct either a telephone or in-person interview.[6] Although the CPS ASEC selects its sample from basic monthly CPS, not all MIS groups are eligible in each ASEC interview month. For example, in February only respondents in outgoing groups (MIS-4 and MIS-8) are eligible for ASEC. All regular March sample units (MIS 1- through MIS-8) are eligible for ASEC. In April, only respondents who are in their first or fifth interview (MIS-1 or MIS-5) are eligible for ASEC. [7]

1.2. Data Collection and the COVID-19 Pandemic

CPS ASEC data collection in 2020 was disrupted by the COVID-19 pandemic. Although the Bureau of Labor Statistics has discussed the impact of COVID on the monthly CPS basic operations (see Bureau of Labor Statistics, 2020) it is important to consider the impacts of COVID on the CPS ASEC specifically and on estimates derived from this supplement. While some CPS ASEC interviews are completed in February, the collection period for the majority of interviews officially began on March 15, 2020, four days after the World Health Organization declared COVID-19 a pandemic.[8] Four days later (March 19), the first state (California) instituted a stay-at-home order, and Census Bureau field staff formally suspended in-person interviewing on the following day (March 20).[9] In response, field representatives attempted to replace in-person interviews with telephone interviews as the primary means of data collection.[10] If a telephone number had been provided by respondents from an earlier contact, field representatives could attempt a phone interview. If no telephone number was available for a sampled housing unit (true for all MIS-1 cases), the Census Bureau attempted to identify a telephone number associated with the address using a variety of sources, including lists purchased from third-party vendors.

In addition to usual sources of nonresponse bias, the 2020 CPS ASEC includes additional noninterview bias introduced by an increased reliance on telephone interviews for data collection that was necessitated by the COVID-19 pandemic. Prior research (e.g., Czajka and Beyler, 2016; Fowler et al., 2019) has found bias in telephone interviewing for health (and health insurance) surveys, including in ways that standard nonresponse corrections may not (or cannot) completely address. People who have a valid telephone number or who were willing to share it in a previous interview are likely to be systematically different in terms of their individual and household characteristics from those who have not in ways that the CPS ASEC cannot always measure. People who are willing to answer a call from an unknown number are likely to be different from those unwilling to answer such a call.

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[6] In 2019, 5.6 percent of CPS ASEC interviews were completed via computer-assisted telephone interview (CATI).

[7] Due to oversampling, some CPS ASEC respondents participate in nine interviews rather than the eight implied by the 4-8-4 design. Details for this oversample (often called MIS-9) can be found in the Current Population Survey, Technical Document 77: <https://www2.census.gov/programs-surveys/cps/methodology/CPS-Tech-Paper-77.pdf>. For more information on survey design, confidentiality protection, sampling error, nonsampling error, and definitions, see <www2.census.gov/programs-surveys/cps/techdocs/cpsmar20.pdf>.

[8] CPS ASEC interviewing begins in February. In 2019, 75 percent of the approximately 95,000 housing units sampled for the CPS ASEC were from the March basic CPS sample. For more information, see Rothbaum and Bee (2020).

[9] Telephone call centers used for computer-assisted telephone interview (CATI) cases were also closed. As a result, interviewers could not follow up on any cases that had completed basic monthly CPS but not CPS ASEC.

[10] Because the housing sample is selected from a list of residential addresses, the first and fifth interviews usually require an in-person visit. Field representatives (FR) visit the location to identify the residents for an interview. This way, the FRs can also verify that the address is actually a residential property eligible for the CPS.

Whether a 2020 CPS ASEC interview was completed, therefore, was a function of whether there was a valid telephone number for the sampled unit, whether a potential respondent answered the phone, and whether the person agreed to an over-the-phone interview. Mode effects may also affect the information that people provide, as well as the amount of missing data (e.g., Gooch and Vavreck, 2019).

In other words, prior research on sample selection suggests that COVID-19 and related data collection changes may have influenced 2020 CPS ASEC sample composition and collected information. If selection into the sample is differential, then estimates of health insurance coverage could disproportionately capture the most advantaged types of coverage (i.e. ESI).

In the next section, we turn to a discussion of how the CPS ASEC compares with the ACS. Following that, Section 3 returns to a focused examination of the CPS ASEC sample and considers what sample differences mean for estimates of health insurance coverage.

2. Benchmarking and Cross-Survey Comparisons

One way to get a sense of whether 2020 CPS ASEC health insurance estimates may have been influenced by the data collection changes necessitated by the COVID-19 pandemic is to compare with estimates from other surveys. At the time of writing, the only other sources of nationally representative 2019 health insurance estimates available were the American Community Survey (ACS) and the National Health Interview Survey (NHIS) Early Release Estimates. However, due to changes in sample and in questionnaire design, the 2019 NHIS estimates are not comparable to estimates from previous years, and cannot provide evidence for year-to-year change. Therefore, we use the ACS to benchmark 2020 CPS ASEC health insurance estimates.

2.1. Comparison with the American Community Survey (ACS)

Measurement of health insurance differs between the CPS ASEC and the ACS in a few notable ways (see U.S. Census Bureau, 2019a for a more detailed overview). Two key dissimilarities warrant explicit mention here:

(1) The health insurance concept and reference period differ. The primary measure of health insurance coverage in the CPS ASEC is calendar-year coverage; that is, whether a person had any coverage (or a particular type of coverage) at any point during the previous calendar year. The ACS (which collects data throughout the year) measures whether a person had coverage at the time of interview.
(2) The timing and mode of interviews differ between surveys. The CPS ASEC is conducted in person and over the phone during February through April after the reference year, while the ACS uses a sequential mixed mode design (internet then mail then in-person) throughout the entire calendar year (see U.S. Census Bureau, 2019b). As ACS data collection occurred before the start of the pandemic, the ACS was not affected by it.

Comparing the calendar-year estimates from the CPS ASEC with the point-in-time estimates from ACS shows that the uninsured rate in the ACS was higher than in the CPS ASEC in both 2017 and 2018. This difference is consistent with expectations: a year-long average measure of whether someone currently

lacks coverage would be expected to be higher than a measure that asks if they were uninsured for each and every month during the year.

While the two surveys measure coverage differently, the estimates of year-to-year change have been generally consistent in the CPS ASEC and ACS. Figure 1 shows several noteworthy points. First, the CPS ASEC has a longer time series. Second, the CPS ASEC questionnaire redesign in 2014 (see U.S. Census Bureau, 2015; Pascale et al., 2016) and processing system update in 2019 (see Berchick and Jackson, 2019) means that comparisons between the most recent estimates and estimates from prior years is not appropriate. Third, the figure also shows that between 2008 and 2018, the direction of year-to-year change in the uninsured rate did not diverge for the two surveys. Either (i) both surveys show statistically significant change in the same direction or (ii) the larger ACS showed a statistical change while the CPS ASEC did not. Results from the latest data are the first to include statistically significant estimates of change in opposite directions.

[Figure 1 about here]

Looking at overall coverage, the ACS and CPS ASEC paint different portraits of change between 2018 and 2019 in the uninsured rate in the United States. According to the CPS ASEC, the uninsured rate decreased between 2018 and 2019, and, according to the ACS, the uninsured rate increased (Keisler-Starkey & Bunch, 2020).

[Figure 2 about here]

This difference in the top-level coverage estimates obscures the large substantive agreement between the two surveys. Below these top-level estimates, ACS and CPS ASEC estimates for types of coverage are broadly consistent (Figure 2). Indeed, estimates of the direction of change between 2018 and 2019 do not diverge for *any* of the six subtypes of coverage. Both surveys show statistical increases in Medicare, statistical decreases for Medicaid and direct-purchase coverage, and no statistical change for TRICARE. The much larger (and, therefore, more statistically powered) ACS detected a decrease in VA coverage between the two years, while the smaller CPS ASEC did not show a statistical difference.[11]

Both surveys also showed an increase in the percentage of the population covered by employer-sponsored insurance (ESI). Despite this agreement in direction of change, a key difference stands out: The increase in ESI coverage was significantly larger in the CPS ASEC (1.3 percentage points) than in the ACS (0.2 percent points).

In both absolute and relative terms, this difference is substantively meaningful. Additionally, while ESI is only one subtype of coverage, it is the most prevalent type of health insurance in the United States. It covers over half of the U.S. population. Therefore, even a smaller change in the ESI rate can drive change in the overall rate of health insurance coverage. Indeed, excluding ESI, both surveys show a significant decrease in having at least one of the other types of coverage between 2018 and 2019, and the magnitude of decrease (0.9 percentage points for the CPS ASEC and 0.6 percentage points for the ACS) does not statistically differ.

[11] In addition to the larger sample size of the ACS giving it additional statistical power to detect a change, a minor change in question wording for the VA item in the ACS may also explain the decrease. The 2018 ACS asked respondents to report if they were *ever* enrolled in VA health care, whereas the 2019 ACS asked if they were *currently* enrolled.

2.2. Explaining Differences Between the CPS ASEC and ACS

So, then, is the CPS ASEC estimate of the change in the ESI rate an overestimate, or is the ACS estimate an underestimate? A few pieces of evidence suggest that the former is a more likely explanation.

First, no policy, demographic, or economic shift likely can account for the 1.3 percentage-point increase in ESI coverage. While more people were employed in 2019 than in 2018 (Bureau of Labor Statistics, 2019), this change in employment likely does not explain the magnitude of the increase in ESI. The CPS ASEC estimates correspond to 4.6 million additional people covered by ESI, which would imply a fairly high ESI take-up rate and that these new workers would not have been already covered by a family member's plan. Moreover, significant increases in ESI coverage were observed for all work status groups. If the shift to employment (with job-dependent) benefits were the driver, then we would expect to see significant increases concentrated among full-time, year-round workers, not people who work less than full-time, year-round or nonworkers.[12]

Examining (unweighted) coverage for people who were interviewed for both the 2019 CPS ASEC and 2020 CPS ASEC provides evidence that the 2020 CPS ASEC overestimates the change in ESI. About 33.3 percent of people present in both samples did not have ESI during either year, and about 46.6 percent had ESI in both years. Notably, 10.0 percent had ESI in 2018 but not 2019, and 10.2 percent had ESI in 2019 but not 2018.[13] These estimates do not suggest that the 1.3 percentage-point increase in ESI coverage between years was primarily driven by people without this type of coverage gaining it.[14]

Looking at employer-based data on ESI enrollees using the Medical Expenditure Panel Survey - Insurance Component (MEPS-IC) reveals no significant increase in the number of enrollees between years. In 2019, there were 66.2 million enrollees in the private sector, and 66.0 in 2018.[15] The National Compensation Survey also did not find any statistical change in the percentage of civilian workers with access to health insurance (Bureau of Labor Statistics, 2019). Between 2017 and 2018, however, the surveys painted a consistent picture. The National Compensation Survey did not show change in access to ESI, and CPS ASEC estimates did not show a statistically significant change in ESI. Therefore, unlike in the previous year, employment and enrollment do not appear to be consistent with an increase on the scale observed in the 2020 CPS ASEC.

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[12] People—including those who do not work or cannot obtain health insurance through their employer (either because they are not eligible or because their employer does not offer it)—can still have ESI if it is through a spouse or (if they are under age 26) a parent. We would still expect to see a decrease in ESI rates for nonworkers due to increased group selection.

[13] As noted in the text, these estimates are unweighted. Using the 2019 CPS ASEC base weight does not change the substantive conclusion.
At the national level, CPS ASEC estimates show no statistical change in ESI between 2017 and 2018 (with a -0.3 percentage-point insignificant point estimate on the year-to-year difference). Linking the 2018 CPS ASEC Bridge File and 2019 CPS ASEC shows that 10.2 percent of people had ESI in 2017 but not in 2018, and 9.9 percent of people had ESI in 2018 but not 2017.

[14] Selective attrition could play a role here. Specifically, if less advantaged people in sample are less likely to respond in both waves/years (due to refusal, mortality, etc.), then we would expect the subpopulation in these analyses to be more advantaged than the general population.

[15] Estimates of the number of people covered are larger in the CPS ASEC and ACS because the MEPS-IC measures enrollees in the private sector, which is a narrower universe than the number of people covered in the overall civilian noninstitutionalized population.

2.3 Evidence from Subannual Data

As noted above, the CPS ASEC measure of insurance indicates whether a person had coverage in any month during the previous calendar year. A person who held coverage for one week in the entire year, therefore, would *not* be counted as uninsured in the CPS ASEC. The ACS, on the other hand, measures whether a person was insured at the time of interview. If—and only if—they were interviewed during the week in which they held coverage would they be counted as having insurance. If they were interviewed during one of the other fifty-one weeks (in which they did not have any coverage), however, they would be measured as uninsured.

The CPS ASEC includes a measure of subannual coverage, which shows whether a person was covered for all, part, or none of a year. In 2019, 92.0 percent of people were estimated to have health insurance coverage at some point in the year; of this group of about 298.4 million people, 96.3 percent were estimated to have coverage for all 12 months. The remaining 3.7 percent of the insured population had coverage for 1-11 months in 2019. This distribution was not statistically different from the distribution in 2018.

We also examine subannual dynamics for ESI. Of the 183.0 million people with ESI in 2019, most (94.4 percent) were covered all 12 months and the remaining 5.6 percent were covered 1-11 months. This distribution was not statistically different from the previous year.

For differences in conceptual definitions to be a reasonable explanation for why coverage moved in opposite directions between the two surveys, we would expect people to have coverage in January or any month (or combination of months) after a respondent's interview and before the end of the calendar year. That is, we would observe an increase in the percentage of people with coverage for part (but not all) of the calendar year. However, we did not see this shift in the CPS ASEC data for either any coverage or for ESI, providing additional evidence of bias in CPS ASEC health insurance coverage estimates.

We also examined restricted-use variables to look at monthly-level coverage (overall and by type) in both the CPS ASEC and the ACS. Given that neither survey includes month-level weights and that the sampling designs of the surveys do not take into account subannual change, these analyses do not offer any substantive claims about subannual health insurance coverage. As a result, we do not present specific estimates in this paper. They nonetheless provide some measurement insight.

In general, the CPS ASEC and ACS show different pictures of within-year health insurance overall coverage. A simple linear fit of the data suggests that coverage increased during the course of the year in the CPS ASEC (i.e. the uninsured rate decreased), whereas the ACS suggests that coverage decreased (i.e. the uninsured rate increased). This result is consistent with the CPS ASEC having a sample that is more advantaged at the time of interview. It is also consistent with some of the conceptual difference in the CPS ASEC and ACS, as individuals who were insured in the beginning of the year and not later in the year, would be considered insured in the CPS ASEC. Completing a similar exercise for ESI coverage in particular shows that, in the ACS, ESI estimates remain relatively unchanged from March onwards.

In other words, the observed decrease in the uninsured rate in the CPS ASEC is not consistent with data for which collection was not affected by COVID-19 or with other evidence. This decrease is driven by a large increase in ESI that is also not consistent with other empirical evidence or economic, demographic,

or policy explanations. To help explain the observed changes in health insurance coverage, overall and by type, we take a closer look at the CPS ASEC sample. As a person with ESI is employed (or the spouse/child of someone who is employed) and likely does not have a disability that qualifies them for public coverage, then, all else equal, we would expect a person with ESI to be socially and socioeconomically advantaged.

2.4 Estimates in Health Insurance Coverage in the United States: 2019

As in previous years, this year's report, *Health Insurance Coverage in the United States: 2019,* shows estimates from both the CPS ASEC and ACS. The ACS began collecting data on health insurance coverage in 2008 and provides comparable estimates of health insurance coverage and changes in health insurance coverage over a longer period than the redesigned CPS ASEC. This year's report, however, primarily uses ACS data to measure year-to-year changes in coverage by selected characteristics. ACS data for 2019 were collected prior to the COVID-19 pandemic; and, therefore, were not influenced by changes in survey operations and/or sample composition due to the pandemic.

3. Evidence from the CPS ASEC Sample

The observed decrease in the uninsured rate and the magnitude of the increase in the ESI rate in the CPS ASEC are not consistent with the ACS--data for which collection was not affected by COVID-19--or with other evidence. This decrease in the uninsured rate is driven by a large increase in ESI that is also not consistent with other empirical evidence or economic, demographic, or policy explanations. To help explain the observed changes in health insurance coverage, overall and by type, we take a closer look at the CPS ASEC sample. As a person with ESI is employed (or the spouse/child of someone who is employed) and likely does not have a disability that qualifies them for public coverage, then, all else equal, we would expect a person with ESI to be socially and socioeconomically advantaged.

3.1 CPS Response Rates

Over the last several years, response rates for basic monthly CPS have been declining. This decrease is not unique to the CPS; response rates have been decreasing for many (federal and non-federal) surveys during this period (Czajka and Beyler, 2016). As a result, even absent a change in data collection procedures to address COVID-19 concerns, the unweighted response rates for the March 2020 basic CPS would, ceteris paribus, be expected to be lower than response rates for earlier years.[16]

Even against this backdrop of declining response rates, the decrease in March and April 2020 response rates from prior years is appreciable. Figure 3 shows each month's basic CPS response rate from February 2014 forward. There is a 9.3 percentage-point (or, 11.3 percent) drop in the response rate between February 2020 and March 2020. This drop is larger than the change between February and March 2019 and represents about an 8.4 percentage-point (or, 10.4 percent) decrease in the response rate from March 2019.

[16] Throughout this paper, all discussions of response rates use the unweighted response rates for the basic monthly CPS.

[Figure 3 about here]

To the extent that this increase in nonresponse was not uniform across the population, it could help to explain some of the year-to-year changes in health insurance coverage. Our earlier discussion highlighted that some of the bias introduced by COVID-19-necessitated changes to data collection may not have affected all (sampled, potential) respondents equally. Variation in bias could depend on a potential respondent's rotation group (MIS-1 through MIS-8) or be based on (non)respondent characteristics. We consider each in turn.

3.1.1 Differences across Rotation Groups

As noted earlier, the CPS employs a sample rotation scheme. This design balances a longitudinal sample component (from which a high response rate would be difficult to maintain) and a completely new sample each month (which results in more variable estimates of change). In any given month, three-quarters of the sample has continued from previous months (U.S. Census Bureau, 2020).

Two rotation groups—MIS-1 and MIS-5—are targeted for nearly-all in-person interviews; the other rotation groups include a combination of in-person and telephone interviews. As a result, we expect MIS-1 and MIS-5 cases to be most likely affected by changes in data collection. First, the interviewer might not have a valid phone number for the household for a number of reasons: there was no previous interview (MIS-1), a new household moved into the housing unit, and/or the phone number changed during the eight-month noninterview period (MIS-5). Conversely, persons who were interviewed in the previous month (MIS-2 through MIS-4 and MIS-6 through MIS-8) may be more likely to have a valid phone number on file. Second, the interviewer would not have had an opportunity to establish a rapport through (recent) prior interviews with a potential respondent at the sampled household. Respondents who participated in the survey in the previous month may have been more likely to answer the phone if they recognized the caller as the field representative who spoke to them during the previous month and, therefore, to respond to the interview.

In other words, the decrease in the response rate may also vary across the different rotation groups.[17] To consider such variation, Table 1 shows the unweighted basic CPS response rate by month of interview and by CPS rotation group.

[Table 1 about here]

The light gray shaded cells in the table highlight the first interview for MIS-1 and MIS-5 rotation groups after the start of the pandemic. These two groups, which are entering the CPS sample for the first time (MIS-1) or re-entering the CPS sample for the first time after an eight-month break (MIS-5) experienced precipitous drops in their response rate compared with prior months. Response rates fell by 23.7 percentage points and 11.4 percentage points, respectively. Although not as large in magnitude as the declines in response for MIS-1 and MIS-5 housing units, response rates fell by 4.3-9.6 percentage points for the other groups (mean: 6.6 percentage points).

[17] Here, we focus on the response rate for the basic, monthly component of the CPS. We do not examine whether MIS-1 (or MIS-5) interviewees have higher drop-off rates before they get to the CPS ASEC supplement (and/or have higher full-supplement imputation rates). Future analyses can consider this possibility.

To the extent that nonresponse is completely random, then these lower response rates would not affect estimates. But previous research cited above indicates that such randomness is quite unlikely.

[Figure 4 about here]

What does this mean for the CPS ASEC sample? Figure 4 shows the composition of the CPS ASEC sample based on an individual's interview and rotation group. About half of sampled housing units were slated for March interviews. In turn, 73.1 percent of completed 2020 CPS ASEC interviews (measured at the person level) were from March, and 11.2 percent were interviewed in April. These April interviewees also include the MIS-1 and MIS-5 rotation groups, for which lower response rates would be expected with the shift to telephone interviewing. Of the March interviews, 19.8 percent were from MIS-1 and MIS-5.

In other words, the sample likely faced increased bias due to the shift in telephone operations. In turn, this could affect estimates. Evidence from longitudinal surveys and experimental methods documents selective attrition of socioeconomically and health disadvantaged people (Chin, Couper, and Beckett, 2020; Fitzgerald, Gottschalk, and Moffitt, 1998; Gustavson et al., 2012; Young, Powers, and Bell, 2006). Applied to the CPS context, these findings mean that bias in MIS-1 (12.4 percent of the unweighted sample) due to coverage error in telephone interviews could lead to a more socioeconomically and health advantaged sample in the 2020 CPS ASEC. Such advantage would be consistent with the observed change in ESI rates between 2018 and 2019. Similarly, to the extent that MIS-5 (10.6 percent of the sample) is affected, estimates could be biased away from recent movers. Prior research has shown that families most likely to move are socioeconomically disadvantaged (Gasper, DeLuca, and Estacion, 2010) and that moving is associated with disruption of health insurance coverage (Busacker and Kasehagen, 2012). The observed change in the CPS ASEC ESI rate is consistent with this research.

3.1.2 Differences by Observed Characteristics

As noted above, the decrease in the CPS response rate may reflect differential participation by rotation group, yet it may also highlight differential participation by social, economic, and demographic groups. For example, persons who are less advantaged may be less likely to have a valid phone number listed in the vendor-provided database. They may also have been less likely to answer their phone to complete an interview (Blumberg and Luke, 2007). If this is the case, then respondents will be disproportionally higher income.

We explore respondent selection by estimating linear probability regression models to examine whether there were significant differences in the characteristics of those who responded to the survey across years. Consistent with Rothbaum and Bee (2020), we pool two consecutive CPS ASEC survey years and regress survey year onto a set of individual and household characteristics. In these analyses, we compare: (1) the 2020 CPS ASEC v. the 2019 CPS ASEC; and (2) the 2019 CPS ASEC v. the 2018 CPS ASEC. By examining the pairs of years and calculating the difference, we separate some of the secular trends in response from the changes related to challenges arising from data collection during the COVID-19 pandemic.

Notably, the regression coefficients presented here are not identical to those in Rothbaum and Bee (2020), as we include a different set of characteristics and use different parameterizations of variables in order to tailor our analyses specifically to considerations of health insurance coverage.

[Table 2 about here]

The first three columns of Table 2 present unweighted coefficients from the models described above and compare the difference between these models. The first column of Table 2 compares the sample composition for the 2020 CPS ASEC and 2019 CPS ASEC. As shown, the 2020 CPS ASEC sample was more likely to be aged 65 or older, be female, have higher educational attainment (e.g., less likely to have less than a high school diploma and more likely to hold a bachelor's degree) than the 2019 CPS ASEC sample. The 2020 sample was also less likely to be Hispanic, less likely to be unemployed during the prior year, more likely to have worked less than full-time, year round, and more likely to be a citizen. Perhaps counterintuitively, the 2020 CPS ASEC sample was also more likely to report a disability but less likely to report being in "poor" or "fair" health. In general, though, the 2020 sample was more advantaged than the 2019 sample.

Notably, these characteristics are associated with whether a person has any health insurance coverage, and, if so, the type of coverage that they have (e.g., Berchick, Barnett, and Upton, 2019; Hall et al, 2017; Sanchez et al., 2017; Sohn, 2019; Stimpson et al., 2019). For example, persons with a bachelor's degree are more likely to have any coverage and more likely to have private coverage than those with less than a high school diploma (Berchick, Barnett, and Upton, 2019; Keisler-Starkey and Bunch, 2020).

Some of these differences in characteristics of the sample between the two years do not necessarily result from changes in data collection necessitated by the COVID-19 pandemic. Instead, some of these differences could reflect general shifts in the population, such as secular trends in higher educational attainment. Other changes could result from increasing survey nonresponse over the last few years. Thus, even absent COVID-19, we might expect to see some differences in sample composition over time. As a crude accounting exercise, we then compare the 2018 and 2019 CPS ASEC (column 2), so we can subtract out the previous change (column 3: column 1 – column 2).

Net of other characteristics and the trend observed in 2018-2019, there were notable differences in the sample composition consistent with the 2020 CPS ASEC sample appearing more advantaged than prior samples. For example, the significant differences between the 2019-2020 changes and 2018-2019 changes include differences by age (those aged 65 and older), race and Hispanic origin, health status, education (less than high school), disability, work status (less than full-time year-round), and citizenship status.

As discussed in the next section, several of these characteristics are accounted for in the survey weights used to make the CPS ASEC sample representative of the noninstitutionalized U.S. population. Other attributes are not, but may (or may not) be addressed through weighting if they are correlated with the characteristics that are included.

3.2 Weighting

Survey weights may account for some of the sample selection. For example, the weighting procedure takes into account age, sex, race, Hispanic origin, and geography to ensure national representativeness on these characteristics. However, there may still be variation within these groups. In a given year, for example, the distribution of educational attainment within race may skew towards the more advantaged portion of the population in different ways for different race and Hispanic origin groups.

Health insurance estimates are based on the universe of people who were alive during the previous year; infants born after the calendar year (but present in the data because they were born before the interview date) are excluded. In the 2020 CPS ASEC, each individual in the health insurance universe represented between 94.4 and 14,008.6 people in the civilian noninstitutionalized U.S. population (mean: 2,058.3; median: 1,971.4). Because of lower response rates in the 2020 CPS ASEC compared with the 2019 CPS ASEC, these person weights are larger than those from last year. In the 2019 file, each person in the CPS ASEC data represented 89.5 to 11,599.4 people in the population (mean: 1,800.5; median: 1,738.9).

The size of these weights also varied by demographic characteristics. For example, in the 2020 CPS ASEC, the mean weight was 2,052.3 people for non-Hispanic White respondents and 2,348.7 people for non-Hispanic Black respondents. This variation helps to account for differences in response rates (and sampling, etc.) to ensure that the sample represents the U.S. population with respect to the characteristics listed above.

To evaluate the extent to which weighting could have addressed some of these differences described in the unweighted analyses, the next three columns in Table 2 also shows the results from additional regressions. While the results above were unweighted; these estimates reflect the use of person weights for adjusting the point estimates and replicate weights to adjust variance (standard error) estimates.

Using the person (and replicate) weights, we observed several significant differences between the 2019 and 2020 CPS ASEC. Some of these differences reflect true change in the population. For example, the U.S. population is aging and is becoming less white (U.S. Census Bureau, 2020a; Frey, 2020). In fact, these characteristics are included in the weights and the total for the CPS ASEC sample matches external totals (from the Census Bureau Population Estimates program).[18]

However, turning to other characteristics not included in the weights, the weighted differences in Table 2 further signal a more advantaged 2020 CPS ASEC sample compared with the 2019 CPS ASEC sample. For example, this can be observed with the coefficients on fair/poor health status, citizenship status, and college degree. The sample is also less likely to be unemployed. However, it is important to note this change could capture sample selection, real economic change, or a combination of the two. Some decrease in the unemployment would be expected given broader economic patterns (Bureau of Labor Statistics, 2020).

We attempt to parcel out these changes from longer-term changes using the same differencing approach as above. Through this approach, we see that many differences persist and, in some cases, the 2019-2020 change stands out from prior years, even if the year-to-year change is not statistically significant. Importantly, some of these differences may be because our linear probability models are considering characteristics net of each other, even for characteristics included in the survey weights.

These regression results consider the overall population. However, for reasons we discussed above, the effect of differential nonresponse may vary across demographic groups. To assess this possibility, we re-

[18] However, as we only estimate one linear probability model for each year-to-year comparison, our regression coefficients represent age, sex, race, Hispanic origin—and all other characteristics—net of each other.

estimate the previous regression stratified by age (0-18, 19-64, 65+),[19] sex (male, female), and race/Hispanic origin (non-Hispanic White, non-Hispanic Black, and Hispanic). For the sake of space, we only discuss the results by race and Hispanic origin here, but present the other results in the Appendix.

[Table 3 about here]

Table 3 presents results stratified by race and Hispanic origin. We estimate the same regressions as above for non-Hispanic White, non-Hispanic Black, and Hispanic respondents. The final race/ethnicity category included in earlier analyses (and in sample weights), non-Hispanic other race, is excluded due to the heterogeneity of the population.

From these results, we see that selection did not occur uniformly across groups. Taking a wide perspective (i.e. taking the difference between 2018-2019 and 2019-2020 change), we see potential evidence of selection by educational attainment (less than a high school diploma) for non-Hispanic Black individuals, but not for non-Hispanic White individuals. Comparing these two groups, we also see potential selection by householder status and citizenship for non-Hispanic Black persons, in addition to differences by employment status and age 65 or older. All of these characteristics are associated with health insurance coverage (Berchick, Barnett, and Upton, 2019).

As with earlier models, these race-stratified models are not direct evidence of selection per se. But they highlight that it is difficult—if not impossible—to disentangle whether certain differences in the CPS ASEC are due to substantive change or due to COVID-related changes in data collection.

4. Conclusions

The Census Bureau administers the CPS ASEC each year between February and April. This year, data collection faced extraordinary and unprecedented circumstances due to the COVID-19 pandemic. To assess the implications of these circumstances for health insurance coverage estimates, we reviewed COVID-19 related changes to CPS ASEC operations (including an increased reliance on telephone interviews), benchmarked key estimates, and examined variation in response rates and sample composition.

To evaluate health insurance coverage data, we made a number of empirical contributions. First, the paper benchmarked CPS ASEC estimates of coverage in 2019 and changes in coverage between 2018 and 2019 with those from the ACS. ACS data collection took place in 2019, and, therefore, was not impacted by the pandemic. Although the surveys differ in how health insurance is conceptualized and measured, estimates of year-to-year change have not diverged between the two surveys since the ACS started collecting health insurance data in 2008. However, this year, the CPS ASEC shows a 0.4 percentage-point *decrease* in the uninsured rate between 2018 and 2019, while the ACS shows a 0.3 percentage-point *increase* in the uninsured rate. This difference in the top-level estimates masks consistency in the direction of year-to-year change for most types of health insurance coverage,

[19] These age categories were chosen for their importance for health insurance coverage. See Starkey-Keisler and Bunch (2020) for more information.

including ESI, Direct-purchase, Medicare and Medicaid. Indeed, there was no divergence in estimates for any of the six subtypes.

The divergence in 2018-2019 change in the uninsured rate between the CPS ASEC and ACS is largely driven by the differences in the magnitude of change of ESI in the CPS ASEC (+1.3 percentage points) compared with the ACS (+0.2 percentage points). Indeed, absent ESI, the uninsured rate increased in both the CPS ASEC and the ACS when considering only the other five subtypes of health coverage. For the reasons we present in Sections 2 and Sections 3, we believe that the 2020 CPS ASEC likely overstates the magnitude of the increase in ESI.

As the magnitude of increase in the ESI (and consequent decline in the uninsured rate) cannot be explained by economic, demographic or policy changes and in light of the sample selectivity suggested by monthly coverage data, this paper explored the potential role of nonresponse and non-interview bias in explaining health insurance estimates in the CPS ASEC in Section 3.

Against a backdrop of falling survey response rates more generally, we saw declines in response to the CPS basic interview between February and March 2020 during the COVID-19 pandemic. Further, the drop in response was substantially larger for MIS-1 and MIS-5, for whom valid telephone numbers were less likely to be available and who, in the absence of rapport with a field representative (interviewer) established through previous interviews, may have been less likely to answer a telephone survey. In addition, prior research has shown that telephone interviews are selective of higher-income groups.

Additional exploratory analyses through a series of linear probability models suggest that the change in survey operations necessitated by the COVID-19 pandemic resulted in differential response by sociodemographic characteristics. Specifically, our findings suggest the respondent sample in 2020 was more advantaged – older, more likely to be employed, more likely to hold a college degree, less likely to be Hispanic or a non-citizen – than in 2019. As these characteristics – employment, college education, age -- are all associated with a greater likelihood of holding ESI coverage, sample selection resulting from changes to data collection in 2020 may have impacted CPS ASEC estimates of ESI and health insurance coverage more generally for 2019. Further, the nature of nonresponse in the 2020 CPS ASEC and the characteristics affected likely render routine tools to adjust for nonresponse inadequate.

Given the circumstances during CPS ASEC data collection, we cannot disentangle real changes in health insurance coverage in the CPS ASEC between 2018 and 2019 from changes due to operational adaptations due to the pandemic.

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Table 1. Monthly Basic Current Population Survey Response Rate, Unweighted, by Rotation Group, January 2019-June 2020

Month	MIS 1	MIS 2	MIS 3	MIS 4	MIS 5	MIS 6	MIS 7	MIS 8	Total
Jan-19	80.44	83.81	84.17	84.92	81.10	81.66	83.54	85.49	83.14
Feb-19	81.10	83.05	84.60	82.89	80.83	82.91	82.58	83.99	82.75
Mar-19	79.15	82.56	82.77	83.26	79.16	81.23	81.80	81.96	81.48
Apr-19	80.86	83.27	84.21	83.75	83.36	82.00	82.74	83.44	82.96
May-19	79.97	82.88	83.15	83.17	79.58	83.01	81.24	82.94	81.99
Jun-19	79.86	82.91	83.15	83.78	81.15	82.17	83.63	82.30	82.37
Jul-19	80.05	82.65	83.05	83.28	81.52	82.32	81.72	84.08	82.33
Aug-19	81.60	83.74	84.83	84.55	82.55	84.30	83.61	83.36	83.56
Sep-19	80.44	83.59	83.71	84.49	80.75	83.31	83.91	84.11	83.03
Oct-19	80.29	83.58	84.50	84.32	80.92	83.19	83.34	85.33	83.18
Nov-19	79.79	83.65	84.59	84.89	79.78	82.77	83.57	84.64	82.95
Dec-19	79.31	82.26	83.94	84.13	80.43	81.29	82.58	84.65	82.32
Jan-20	81.66	79.96	82.27	82.34	83.49	79.11	81.83	80.80	83.53
Feb-20	80.47	83.80	84.02	82.87	80.07	81.60	83.08	82.90	82.34
Mar-20	**56.82**	74.17	77.31	77.53	**68.64**	75.16	76.05	78.58	73.04
Apr-20	46.71	63.51	75.66	78.21	68.56	72.69	76.19	78.07	69.92
May-20	47.75	56.37	67.72	76.52	68.29	71.35	73.67	77.67	67.36
Jun-20	48.42	55.81	60.67	68.94	68.35	70.91	72.03	74.28	64.88

MIS = Month-in-Sample

Source: Bureau of Labor Statistics, Office of Survey Methods Research

Table 2. Coefficients (and Standard Errors) for Social, Demographic, and Housing Characteristics on CPS ASEC Survey Year

	Unweighted			Weighted		
	(1)	(2)	(3)	(4)	(5)	(6)
	2020 (vs. 2019)	2019 (vs. 2018)	Diff. ((1)-(2))	2020 (vs. 2019)	2019 (vs. 2018)	Diff. ((4)-(5))
Age						
<19	-.001 (.007)	.004 (.006)	-.005 (.009)	-.003 (.008)	.007 (.007)	-.010 (.010)
19-64	(ref.)	(ref.)	---	(ref.)	(ref.)	---
65+	.034 (.006)***	.015 (.005)***	.018 (.008)*	.018 (.004)***	.016 (.005)***	.003 (.007)
Female	-.003 (.002)†	.001 (.002)	-.004 (.002)†	<.001 (.001)	.001 (0)*	-.001 (<.001)**
Race and Hispanic Origin						
White, Non-Hispanic	(ref.)	(ref.)	---	(ref.)	(ref.)	---
Black, Non-Hispanic	-.005 (.003)	-.014 (.003)***	.009 (.004)*	.007 (.001)***	.002 (.001)*	.004 (.002)***
Other, Non-Hispanic	.004 (.003)	-.005 (.003)	.009 (.004)*	.006 (.002)***	.008 (.002)***	-.003 (.003)
Hispanic	-.008 (.002)***	.001 (.002)	-.009 (.003)**	.011 (.001)***	.007 (.001)***	.004 (.002)†
Educational Attainment						
< High school (HS)	-.009 (.003)***	.003 (.003)	-.011 (.004)***	-.004 (.003)	.005 (.003)	-.009 (.004)†
HS or some college	(ref.)	(ref.)	---	(ref.)	(ref.)	---
College+	.012 (.003)***	.010 (.003)***	.002 (.004)	.012 (.003)***	.012 (.004)***	<.001 (.005)
Fair/Poor health	-.028 (.003)***	-.001 (.003)	-.026 (.004)***	-.024 (.004)***	-.003 (.004)	-.021 (.006)***
Any disability	.012 (.004)***	-.001 (.004)	.013 (.006)*	.007 (.005)	.002 (.005)	.005 (.007)
Work experience						
Out of universe	.001 (.005)	-.012 (.005)**	.013 (.007)†	-.002 (.004)	-.011 (.004)***	.009 (.006)
Full-time, year-round	(ref.)	(ref.)	---	(ref.)	(ref.)	---
<Full-time, year-round	.005 (.003)†	-.012 (.003)***	.017 (.004)***	.006 (.003)†	-.013 (.004)***	.020 (.005)***
Not employed	-.006 (.003)*	-.008 (.003)***	.001 (.004)	-.009 (.004)**	-.010 (.003)***	.001 (.005)
Foreign-born	.001 (.004)	<.001 (.004)	.001 (.005)	-.001 (.004)	-.001 (.004)	-.001 (.006)
Married	-.002 (.002)	-.006 (.002)**	.003 (.003)	-.006 (.003)*	-.004 (.003)	-.002 (.004)
Householder	-.003 (.002)	-.003 (.002)	<.001 (.003)	-.002 (.001)	-.002 (.001)	<.001 (.002)
Has children < 18	<.001 (.007)	-.004 (.007)	.005 (.01)	.003 (.009)	-.003 (.008)	.006 (.012)
Has children <6	-.005 (.004)	.004 (.004)	-.008 (.005)	-.002 (.001)†	-.002 (.001)	-.001 (.002)
U.S. citizen	.022 (.005)***	.001 (.005)	.021 (.007)***	.018 (.006)***	.004 (.006)	.015 (.008)†
Intercept	.453 (.006)***	.504 (.006)***	-.051 (.008)***	.484 (.007)***	.496 (.007)***	-.011 (.009)

Notes: (ref.) denotes reference group; hyphens indicate not applicable

Source: U.S. Census Bureau, 2018 to 2020 Current Population Survey, Annual Social and Economic Supplement (CPS ASEC) †p < .10, *p<.05, **p <.01, ***p<.001

Table 3. Coefficients (and Standard Errors) or Statistical Significance for Social, Demographic, and Housing Characteristics on CPS ASEC Survey Year, by Race and Hispanic Origin (Weighted)

	2020 CPS ASEC (vs. 2019 CPS ASEC)			2020 CPS ASEC (vs. 2019 CPS ASEC) vs. Non-Hispanic White		2020-2019 CPS ASEC – 2019-2018 CPS ASEC (vs. Non-Hispanic White)	
	Non-Hispanic White	Non-Hispanic Black	Hispanic	Non-Hispanic Black	Hispanic	Non-Hispanic Black	Hispanic
Age							
<19	-.002 (.011)	-.011 (.020)	-.001 (.015)				
19-64	(ref.)	(ref.)	(ref.)	---	---	---	---
65+	.022 (.006)***	-0.008 (0.012)	.022 (.007)***	*		**	
Female	-.001 (.001)	-0.001 (0.001)	.001 (.001)				
Educational Attainment							
< High school (HS)	-0.008 (.004)*	.019 (0.009)*	-.011 (.007)	***		*	
HS or some college	(ref.)	(ref.)	(ref.)	---	---	---	---
College+	.005 (.004)	.031 (.011)***	.015 (.010)	*			
Fair/Poor health	-.027 (.005)***	-.015 (0.010)	-.012 (.009)				
Any disability	.002 (.007)	.007 (0.013)	.018 (.013)				
Work Experience							
Out of universe	-.006 (.005)	.024 (.012)*	-.011 (.008)	*		***	
Full-time, year-round (FTYR)	(ref.)	(ref.)	(ref.)	---	---	---	---
<FTYR	.005 (.004)	.016 (.009)†	.009 (.007)				
Not employed	-.008 (.005)†	.005 (0.009)	-.014 (.007)*			†	
Foreign-born	-.005 (.009)	.010 (0.014)	-.002 (.007)				
Married	-.007 (.004)†	.002 (0.010)	-.011 (.007)†				
Householder	<.001 (.002)	.001 (.004)	-.008 (.003)**		*	**	
Has children < 18	.008 (.013)	-.010 (.024)	-.002 (.018)				
Has children <6	.002 (.001)	-.009 (.007)	-.002 (.002)				
U.S. citizen	.015 (.015)	.031 (.026)	.024 (.009)***			*	
Intercept	.492 (0.015)***	.452 (.028)***	.501 (.011)***	---	---	---	---

Notes: (ref.) denotes reference group; hyphens indicate not applicable

Source: U.S. Census Bureau, 2018 to 2020 Current Population Survey, Annual Social and Economic Supplement (CPS ASEC) †p < .10, *p<.05, **p <.01, ***p<.001

Table A1. Coefficients (and Standard Errors) or Statistical Significance for Social, Demographic, and Housing Characteristics on CPS ASEC Survey Year, by Sex (Weighted)

	2020 CPS ASEC (vs. 2019 CPS ASEC)		Male-Female Difference	2020-2019 CPS ASEC – 2019-2018 CPS ASEC (Male vs. Female)
	Male	Female		
Age				
<19	-.005 (.009)	-.002 (.011)		
19-64	(ref.)	(ref.)		
65+	.011 (.007)	.024 (.005)***		
Race and Hispanic Origin				
White, Non-Hispanic	(ref.)	(ref.)		
Black, Non-Hispanic	.007 (.001)***	.006 (.001)***		
Other, Non-Hispanic	.005 (.003)†	.006 (.002)***		
Hispanic	.011 (.002)***	.011 (.001)***		
Educational Attainment				
< High school (HS)	-.003 (.004)	-.005 (.004)		
HS or some college	(ref.)	(ref.)		
College+	.012 (.005)***	.011 (.004)***		
Fair/Poor health	-.020(.005)***	-.027 (.005)***		
Any disability	.008 (.007)	.005 (.007)		
Work experience	<.001 (<.001)	<.001 (<.001)		
Out of universe	.006 (.006)	-.011 (.005)*	*	
Full-time, year-round	(ref.)	(ref.)		
<Full-time, year-round	.016 (.004)***	-.002 (.005)	***	*
Not employed	-.003 (.006)	-.014 (.004)***		
Foreign-born	-.004 (.005)	.001 (.005)		
Married	-.007 (.004)†	-.005 (.003)		
Householder	.002 (.003)	-.005 (.003)†	†	
Has children < 18	-.001 (.011)	.007 (.012)		
Has children <6	-.003 (.002)	-.002 (.002)		
U.S. citizen	.018 (.007)**	.017 (.007)**		
Intercept	.480 (.008)***	.490 (.008)***		

Notes: (ref.) denotes reference group; hyphens indicate not applicable

Source: U.S. Census Bureau, 2018 to 2020 Current Population Survey, Annual Social and Economic Supplement (CPS ASEC)

†p < .10, *p<.05, **p <.01, ***p<.001

Table A2. Coefficients (and Standard Errors) or Statistical Significance for Social, Demographic, and Housing Characteristics on CPS ASEC Survey Year, by Age Range (Weighted)

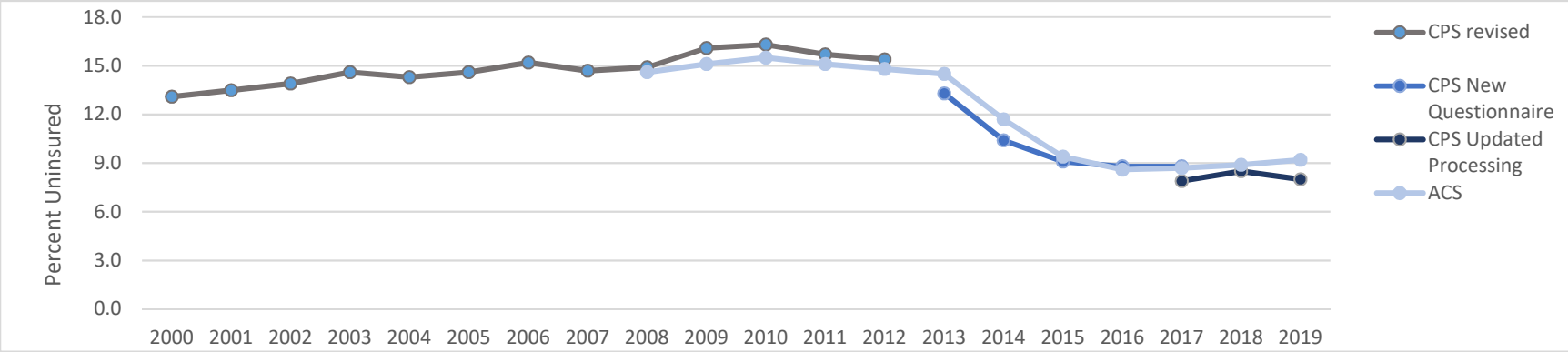
	2020 CPS ASEC (vs. 2019 CPS ASEC)			2020 CPS ASEC (vs. 2019 CPS ASEC) vs. Ages 19-64		2020-2019 CPS ASEC – 2019-2018 CPS ASEC (vs. Ages 19-64)	
	Ages 0-18	Ages 19-64	Ages 65+	Ages 0-18	Ages 65+	Ages 0-18	Ages 65+
Female	-.001 (.001)	<.001 (.001)	.001 (.002)			***	
Race and Hispanic Origin							
White, Non-Hispanic	(ref.)	(ref.)	(ref.)	---	---	---	---
Black, Non-Hispanic	-.002 (.002)	-.009 (.002)***	-.010 (.003)***	***		*	
Other, Non-Hispanic	<.001 (.003)	-.008 (.003)***	-.007 (.006)	*			
Hispanic	-.003 (.001)**	-.016 (.002)***	-.017 (.004)***	***		†	
Educational attainment							
< High school (HS)	---	.004 (.003)	.007 (0.005)	---		---	***
HS or some college	---	(ref.)	(ref.)	---	---	---	---
College+	---	-.012 (.003)***	-.014 (.006)**	***		---	
Fair/Poor health	.018 (.020)	.025 (.005)***	.021 (.007)***				
Any disability	-.019 (.020)	-.006 (.005)	---		---		---
Work Experience							
Out of universe	-.003 (.026)	---	---	---	---	---	---
Full-time, year-round (FTYR)	(ref.)	(ref.)	(ref.)	---	---	---	---
<FTYR	-.024 (.027)	-.005 (.003)	.011 (.009)		†		***
Not employed	.007 (.027)	.007 (.004)†	-.004 (.007)				
Foreign-born	.012 (.023)	.005 (.005)	-.004 (.009)				
Married	---	.006 (.003)†	---	---	---	---	---
Householder	.009 (.034)	.003 (.002)†	<.001 (.003)				
Has children < 18	-.005 (.009)	---	---	---	---	---	---
Has children <6	.002 (.001)	---	---	---	---	---	---
U.S. citizen	-.004 (.026)	-.016 (.006)**	-.038 (.014)***				
Intercept	.513 (.04)***	.514 (.008)***	.529 (.016)***	---	---	---	---

Notes: (ref.) denotes reference group; hyphens indicate not applicable

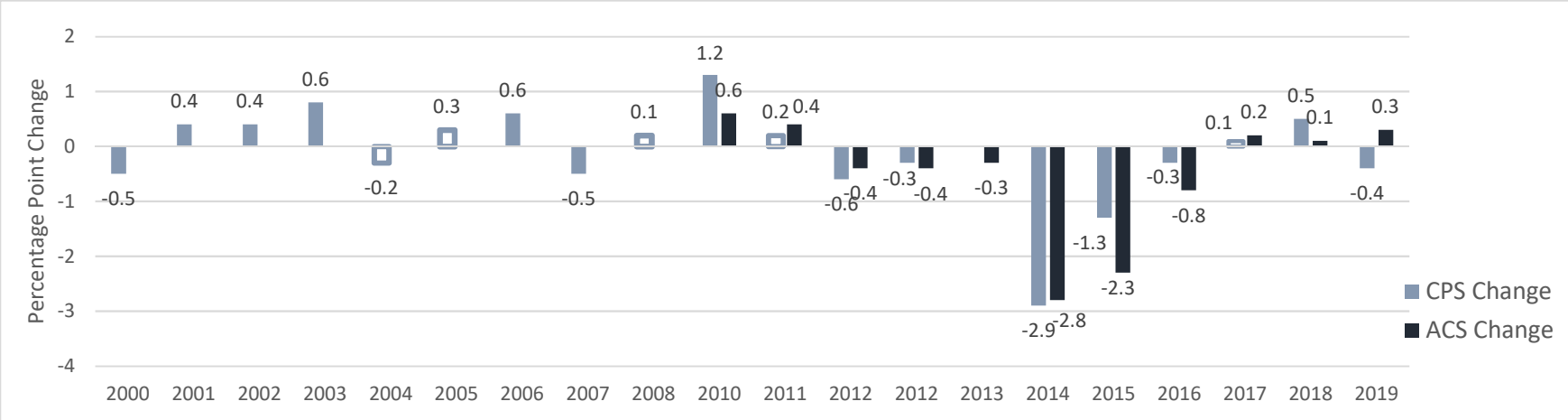
Source: U.S. Census Bureau, 2018 to 2020 Current Population Survey, Annual Social and Economic Supplement (CPS ASEC) †p < .10, *p<.05, **p <.01, ***p<.001

Figure 1. Uninsured Rates in the CPS ASEC and ACS: 2000 to 2019

Panel (A) Uninsured Rates



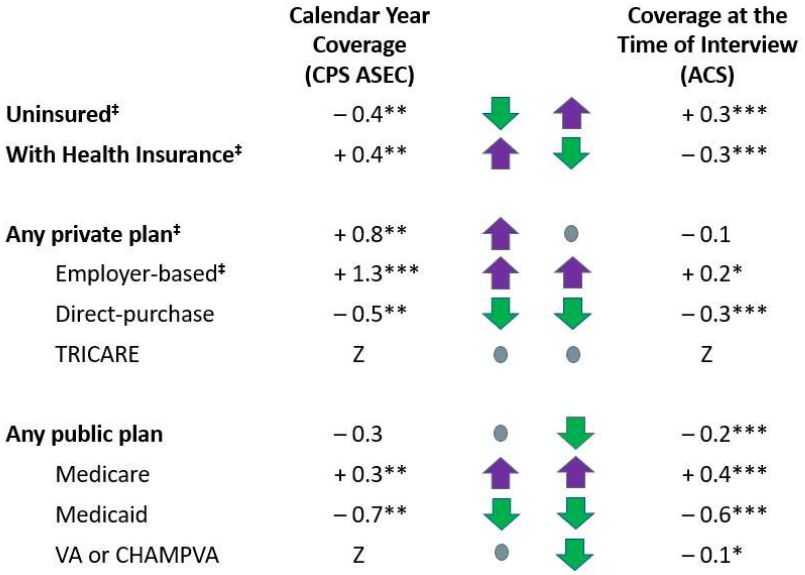
Panel (B) Year-to-Year Change in the CPS ASEC and the ACS



Note: Solid bars denote that year-to-year change is statistically different from zero at the 90% confidence level. The rates and year-to-year changes in this figure were determined using revised estimates for insurance (HIB series) for 2000-2011. Therefore, rates and year-to-year changes in this figure for years 2000-2010 will not match previously published estimates. Details may not sum to totals due to rounding.

Source: U.S. Census Bureau, 2001 to 2020 Current Population Survey Annual Social and Economic Supplements (CPS ASEC); 2008 to 2019 American Community Survey (ACS)

Figure 2. Comparison of 2018 to 2019 Change in Health Insurance Coverage, by Type and Survey
(Percentage point difference shown)



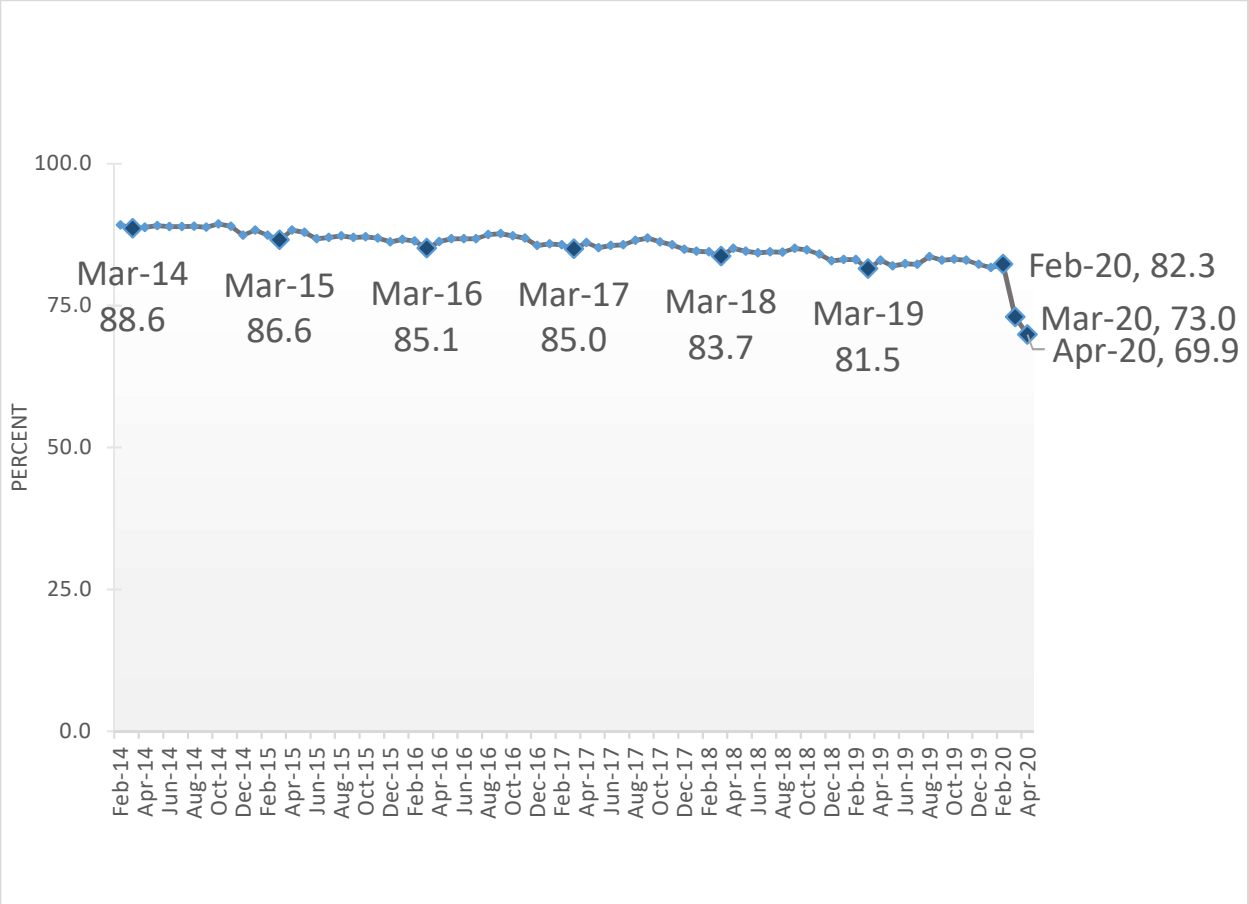
Z = rounds to zero

†p < .10, *p<.05, **p <.01, ***p<.001

‡Indicates that the p-value for the difference between the CPS ASEC and ACS estimates is less than .10.

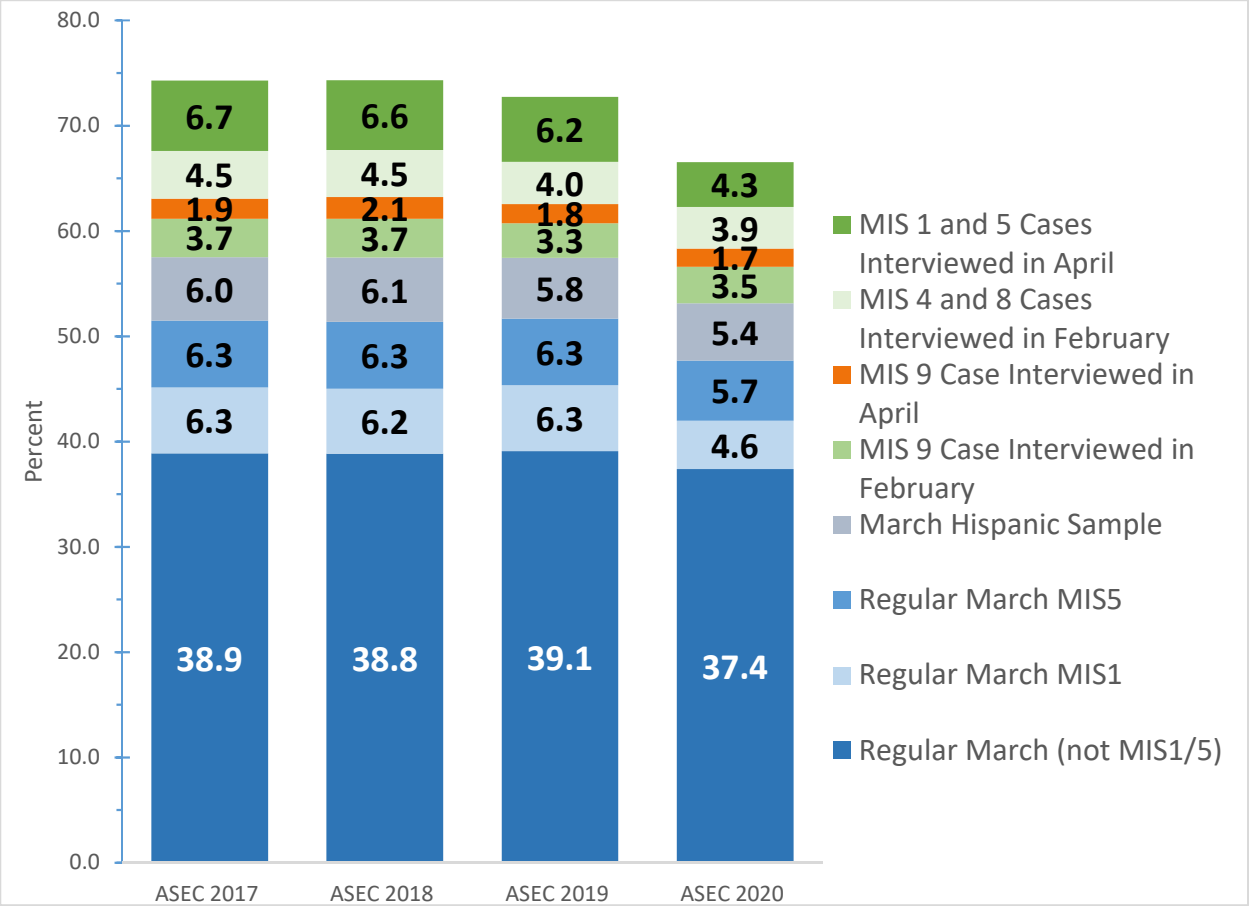
Source: U.S. Census Bureau, 2019 and 2020 Current Population Survey Annual Social and Economic Supplements (CPS ASEC); 2018 and 2019 American Community Survey (ACS)

Figure 3. Basic Monthly Current Population Survey (CPS) Unweighted Response Rate, by Month



Source: Bureau of Labor Statistics, Office of Survey Methods Research

Figure 4. Composition of CPS ASEC Sample, by Interview Month and Rotation Group



MIS = Month-in-Sample

Source: U.S. Census Bureau, 2017 to 2020 Current Population Survey, Annual Social and Economic Supplement (CPS ASEC)