

Frequently asked questions: The impact of the coronavirus (COVID-19) pandemic on the Current Population Survey/Housing Vacancy Survey (CPS/HVS)

The coronavirus pandemic affected data collection operations for the CPS/HVS during the first three quarters of 2020. Data users should understand and consider these changes in data collection operations when interpreting these CPS/HVS estimates and comparing with prior quarters and years.

How did the data collection procedures change for the CPS/HVS in response to the coronavirus pandemic?

The Census Bureau suspended in-person data collection for the CPS/HVS on March 20th, 2020. The suspension of in-person interviews—termed *personal visits* by CPS/HVS—continued through the entirety of data collection for the second quarter during April, May, and June. During this period, the Census Bureau continued to conduct the CPS/HVS by telephone, including efforts to collect telephone interviews for households and vacant units that would normally have been in-person interviews.

Beginning in July, the Census Bureau began to reinstitute personal visits. The reintroduction of in-person data collection started in limited areas of the country in July, in additional areas in August, and in all areas of the country by September. The table below shows the percentage of the CPS/HVS sample cases where personal visits were allowed for the third quarter 2020.

Table 1: Percent of sample cases where personal visits were allowed.

| | Region | | | | |
|--------------------|--------|-----------|---------|-------|------|
| | All | Northeast | Midwest | South | West |
| Q3 2020 All Months | 63% | 95% | 72% | 45% | 61% |
| July 2020 | 39% | 87% | 47% | 15% | 36% |
| August 2020 | 50% | 100% | 70% | 20% | 47% |
| September 2020 | 100% | 100% | 100% | 100% | 100% |

The CPS/HVS sample design seeks to collect data on sampled housing units for a total of 8 months, meaning that interviewers attempt to complete an interview in each of those 8 months. Once selected, a housing unit is in the sample for 4 consecutive months, out for 8 months, and then in the sample for 4 months. Under normal procedures, the first and fifth interviews are conducted entirely via in-person interviews. In other months, a field representative can conduct a telephone interview instead of an in-person interview if certain conditions are met. The suspension of in-person interviews replaced these procedures, substituting telephone contact attempts for all sample housing units regardless of their month in sample. The removal of the in-person visit suspensions reversed this change, returning to the previous procedures for determining when a telephone interview attempt is allowed.

During the period when personal visits were suspended, the telephone contact attempts relied on phone numbers identified through multiple sources. For housing units with a completed interview in a previous month, interviewers attempted to contact the occupant or knowledgeable proxy interviewed during the previous month. Additionally, interviewers were encouraged to use the resources available to them to identify contact information for sample housing units and/or knowledgeable proxy respondents. These resources included internal resources such as purchased third-party telephone lookup databases, as well as public records databases such as tax assessor records. They also included telephone contacts with knowledgeable local sources such as landlords, leasing offices, neighbors, and postal workers who might be able to identify vacant units, provide contact information for the property owner, and/or complete a proxy interview.

What was the response rate for the third quarter of 2020?

The overall response rate for the third quarter of 2020 was 71 percent. This is approximately 4 percentage points higher than the 67 percent response rate for the second quarter of 2020. The third quarter 2019 response rate was 83 percent.

The overall response rate for the third quarter of 2020 reflects three monthly data collection efforts in July, August, and September. The monthly response rates were 66 percent in July, 69 percent in August, and 79 percent in September. These monthly rates reflect the incremental reintroduction of personal visits during July, August, and September.

During the second quarter of 2020, the monthly response rates were 70 percent in April, 67 percent in May, and 65 percent in June. These rates reflect no in-person visits for data collection.

During the first quarter of 2020, the monthly response rates were 82 percent in January, 83 percent in February, and 73 percent in March. These rates reflect the use of normal data collection procedures during January and February and the suspension of in-person interviews midweek during the data collection operations for March. CPS/HVS data collection operations for each month begin at the start of the week containing the 19th and close out early the following week. The suspension of in-person interviews on March 20th, 2020 occurred on the Friday during the week of data collection. Interviewers were able to make at least one in-person visit attempt to most sample units before in-person visits were suspended.

The table below displays the monthly response rates for July, August, and September 2020 separately for each month in sample (MIS) group. For comparison, the table also displays similar estimates for each month and MIS in 2019.

Table 2: Response rate by month-in-sample (MIS) for each month in Q3 2020 and Q3 2019 (unweighted).

| Month in Sample | July 2020 | August 2020 | September 2020 | July 2019 | August 2019 | September 2019 |
|-----------------|-----------|-------------|----------------|-----------|-------------|----------------|
| Total | 67 | 70 | 79 | 82 | 84 | 83 |
| 1 | 54 | 60 | 73 | 80 | 82 | 80 |
| 2 | 61 | 65 | 77 | 83 | 84 | 84 |
| 3 | 64 | 67 | 78 | 83 | 85 | 84 |
| 4 | 67 | 69 | 79 | 83 | 85 | 84 |
| 5 | 70 | 73 | 79 | 82 | 83 | 81 |
| 6 | 72 | 75 | 81 | 82 | 84 | 83 |
| 7 | 74 | 76 | 81 | 82 | 84 | 84 |
| 8 | 75 | 77 | 83 | 84 | 83 | 84 |

Note: The unweighted response rates in the table may differ slightly from the weighted response rates cited in the text.

How does the CPS/HVS weighting and methodology account for non-response?

The CPS/HVS methodology assumes that the in-person visits and other data collection steps will allow interviewers to make a determination for every unit in the sample of whether the unit is an occupied unit with a completed CPS interview or a Type A (eligible but no data collected/refusal), Type B (eligible but unoccupied/vacant), or Type C (ineligible/not a residential unit) non-interview. In months when normal data collection procedures are in place, this process relies on in-person visits to allow the interviewer to observe the visible attributes of the unit and attempt to contact neighbors or other individuals who may have knowledge of the vacancy status of the unit in order to identify all potential HVS-eligible units. Following the suspension of in-person interviewing, the number of HVS eligible interviews (Type Bs) declined in April, May, and June relative to their historical averages, and the number of Type A units increased. Type A units continued to be elevated in July, August, and September, relative to their historical averages, and Type B units continued to be depressed. These changes may be due to the data collection changes resulting in more units with unresolved interview statuses or to a true decrease in the number of vacant units. The data collected for the third quarter does not distinguish between these possibilities.

The CPS/HVS weighting and estimation procedures are designed under the assumption that the data collection procedures will accurately determine the interview status (Type A, B, or C) of the units in the housing sample. The CPS/HVS weights adjust for changes over time in the overall response rate by adjusting the weights to ensure that the estimates total to the overall number of housing units in the United States and to several other control totals. However, the weighting methodology does not include a non-response component to adjust for differences in response rates between vacant versus occupied units, rental versus homeowner units, or other subgroups. If the suspension of in-person interviews disproportionately reduced the ability of interviewers to complete data collection for HVS-eligible vacant units compared to occupied units, the impact would be a lower estimate of the vacancy rate.

In addition to the implications for the overall level of the vacancy rate estimates, data users should also consider the potential for the changes in data collection procedures to disproportionately affect data collection among some groups more than others, along with the consequences of differential non-response for the CPS/HVS estimates. Because the CPS/HVS weights do not include a non-response component to adjust for differences in the response rates of different subgroups, the CPS/HVS estimates would reflect any differences in the relative response rates of specific subgroups. For example, if the changes in data collection procedures increased the difficulty of data collection for vacant units more than occupied units, the CPS/HVS estimates would reflect this impact on data collection by showing a lower vacancy rate. Similarly, if the changes in data collection procedures increased the difficulty of data collection for vacant rental units more than vacant homeowner units, the CPS/HVS estimates would reflect the impact on data collection by showing a relatively larger reduction in the rental vacancy rate than in the homeowner vacancy rate. A recent SEHSD working paper presents the results of nonresponse analyses that describe the extent of differential nonresponse in the CPS Annual Social and Economic Supplement ([Rothbaum and Bee 2020](#)).

Were there any changes to the methodology for processing the data or producing estimates?

No, there were no changes to the procedures used to process the data and produce estimates. The CPS/HVS methodology is described in Technical Paper #77, "[Design and Methodology: Current Population Survey—America’s Source for Labor Force Data](#)," published in October 2019.

Could the changes in data collection procedures affect the CPS/HVS estimates of vacancy?

The changes in data collection procedures could have affected the CPS/HVS estimates of vacancy for the third quarter of 2020. We have been investigating the potential impacts of the data collection changes, but given available resources and data we have not been able to precisely measure the effects of the data collection changes apart from the effects of the COVID-19 pandemic. Because the data collection changes occurred in response to the onset of the COVID-19 pandemic, it is difficult to separate the effects of the data collection changes from the effects of COVID-19. Data users should therefore exercise caution when comparing the third quarter estimates to previous quarters, interpreting the differences between quarters to reflect both the effects of the COVID-19 pandemic and the effects of changes in data collection procedures.

Could the changes in data collection procedures affect the CPS/HVS estimates of the homeownership rate?

The changes in data collection procedures could have affected the CPS/HVS estimates of the homeownership rate for the third quarter of 2020. In particular, data users should consider the potential for the suspension of in-person interviews to disproportionately affect the response rates of renters versus homeowners. For example, if response rates declined further among rental units

than homeowner units following the suspension of in-person interviews, the effects on the CPS/HVS estimates would be a lower estimate of the number of rental households, a higher estimate of the number of homeowner households, and a higher estimate of the homeownership rate. Data users should therefore exercise caution when comparing the third quarter estimates to previous quarters, interpreting the differences between quarters to reflect both the effects of the COVID-19 pandemic and the effects of changes in data collection procedures.

Could the changes in data collection procedures affect the CPS/HVS estimates of the housing inventory composition?

The changes in data collection procedures could have affected the CPS/HVS estimates of the components of the housing inventory. The CPS/HVS weights are controlled to the total number of housing units in the United States, so the estimated number of all housing units in the housing inventory is not affected by the data collection changes. However, the potential impacts of the data collection changes on the estimates of vacancy and tenure described in the previous sections could affect the estimated components of the housing inventory. Specifically, any change in the estimated vacancy rate will affect both the estimated number of vacant units and the estimated number of occupied units, because the sum of vacant and occupied units must equal the total number of housing units in the United States. Data users should therefore consider the CPS/HVS weighting methodology when interpreting the estimates of the components of the housing inventory.

Can Census release supplemental estimates for the time periods or geographies when in-person data collection was reinstated?

The table below contains supplemental estimates for two subsamples that are defined to reflect the time period and geographies where in-person data collection had been re-instituted. Panel A reports estimates based on the September round of data collection, excluding the sample cases collected in July and August. This subsample reflects the time period (September) when in-person data collection attempts were allowed for 100 percent of sample housing units. The first column displays estimates of the rental vacancy rate, homeowner vacancy rate, gross vacancy rate, and homeownership rate for the September sample. The second column then presents similar estimates for September 2019, and the third column reports the change in the estimates between September 2019 and September 2020. The fourth column presents estimates for the subsample of cases collected in February 2020—the last month prior to the data collection changes when in-person data collection attempts were allowed for 100 percent of sample cases.

Panel B of the table reports estimates when the third quarter 2020 sample is limited to the subset of geographies where in-person data collection was allowed during all three months of data collection (July, August, and September). The second and fourth columns present estimates for the third quarter of 2019 and the first quarter 2020, respectively, when the sample is limited to the same subset of geographies.

Panel C contains contains the publicly-released estimates in each quarter using the full sample of cases. These estimates are identical to the estimates published in the HVS press release and detailed tables for each quarter. They are included in the table below for ease of reference.

Table 3: Supplemental estimates time periods and geographies where personal visits were allowed.

| A. Supplemental estimates for September 2020 and comparison months | | | | | | | | | | |
|--|--------------------|------------------|--------------------|------|----------------------------|------|--------------------|------|----------------------------|------|
| | September 2020 | | September 2019 | | Change: 9/2019 to 9/2020 | | February 2020 | | Change: 2/2020 to 9/2020 | |
| | Rate | MOE ^a | Rate | MOE | Rate | MOE | Rate | MOE | Rate | MOE |
| Rental vacancy rate | 6.9% | 0.3% | 6.5% | 0.3% | +0.4% | 0.5% | 6.8% | 0.3% | +0.1% | 0.5% |
| Homeowner vacancy rate | 1.1% | 0.1% | 1.4% | 0.1% | -0.3% | 0.1% | 1.2% | 0.1% | -0.1% | 0.1% |
| Gross vacancy rate | 11.0% | 0.3% | 12.0% | 0.4% | -1.0% | 0.5% | 11.7% | 0.3% | -0.7% | 0.5% |
| Homeownership rate | 66.1% | 0.6% | 64.9% | 0.6% | +1.2% | 0.8% | 64.8% | 0.6% | +1.3% | 0.8% |
| Response rate | 79% | (X) | 83% | (X) | -4% | (X) | 83% | (X) | -3% | (X) |
| B. Supplemental estimates for the subset of geographies where personal visits were allowed in July, August, and September 2020 all three months of data collection for third quarter 2020 | | | | | | | | | | |
| | Third Quarter 2020 | | Third Quarter 2019 | | Change: Q3 2019 to Q3 2020 | | First Quarter 2020 | | Change: Q1 2020 to Q3 2020 | |
| | Rate | MOE | Rate | MOE | Rate | MOE | Rate | MOE | Rate | MOE |
| Rental vacancy rate | 6.6% | 0.3% | 6.1% | 0.3% | +0.5% | 0.4% | 5.9% | 0.4% | +0.7% | 0.5% |
| Homeowner vacancy rate | 1.1% | 0.1% | 1.4% | 0.2% | -0.3% | 0.1% | 1.0% | 0.1% | +0.1% | 0.1% |
| Gross vacancy rate | 10.5% | 0.4% | 11.1% | 0.6% | -0.6% | 0.5% | 10.5% | 0.5% | 0.0% | 0.6% |
| Homeownership rate | 65.5% | 0.7% | 63.6% | 0.9% | +1.9% | 1.0% | 63.6% | 0.6% | +1.9% | 1.1% |
| Response rate | 76% | (X) | 80% | (X) | -4% | (X) | 75% | (X) | +1% | (X) |
| C. CPS/HVS published estimates for the full sample | | | | | | | | | | |
| | Third Quarter 2020 | | Third Quarter 2019 | | Change: Q3 2019 to Q3 2020 | | First Quarter 2020 | | Change: Q1 2020 to Q3 2020 | |
| | Rate | MOE | Rate | MOE | Rate | MOE | Rate | MOE | Rate | MOE |
| Rental vacancy rate | 6.4% | 0.2% | 6.8% | 0.2% | -0.4% | 0.3% | 6.6% | 0.3% | -0.2% | 0.3% |
| Homeowner vacancy rate | 0.9% | 0.1% | 1.4% | 0.1% | -0.5% | 0.1% | 1.1% | 0.1% | -0.2% | 0.1% |
| Gross vacancy rate | 10.1% | 0.3% | 12.2% | 0.3% | -2.1% | 0.4% | 11.4% | 0.3% | -1.3% | 0.4% |
| Homeownership rate | 67.4% | 0.5% | 64.8% | 0.5% | +2.6% | 0.7% | 65.3% | 0.5% | +2.1% | 0.7% |
| Response rate | 71% | (X) | 83% | (X) | -12% | (X) | 79% | (X) | -8% | (X) |

^aA margin of error is a measure of an estimate's reliability. The larger the margin of error in relation to the size of the estimate, the less reliable the estimate. This number, when added to and subtracted from the estimate, forms the 90 percent confidence interval.

Will in-person data collection continue to be allowed in all areas in the fourth quarter of 2020?

We hope so, but this is uncertain. While the entire country was open for in-person interviewing in September, we do not know if the pandemic will require more data collection changes for the safety of our field representatives and respondents. Any changes in data collection procedures used in the fourth quarter of 2020 will be described in the release of the fourth quarter CPS/HVS estimates—which is scheduled for February 2, 2021.