

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 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 and October. For November and December in-person data collection was suspended for some areas based on local guidance, though to a lesser extent than the past two quarters. Also, beginning in December, ‘drive-bys’ were allowed. Interviewers were allowed to drive by the sample unit, as another method to try to determine the vacancy status.

The table below shows the percentage of the CPS/HVS sample cases where personal visits were allowed for the fourth quarter 2020.

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

	All	Region			
		Northeast	Midwest	South	West
Q4 2020 All Months	94%	100%	90%	100%	84%
October 2020	100%	100%	100%	100%	100%
November 2020	98%	100%	100%	100%	93%
December 2020	84%	100%	71%	100%	60%
Q3 2020 All Months	63%	95%	72%	45%	61%
Q2 2020 All Months	0%	0%	0%	0%	0%

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 fourth quarter of 2020?

The overall response rate for the fourth quarter of 2020 was 79 percent. This is approximately 8 percentage points higher than the 71 percent response rate for the third quarter of 2020. It is approximately 4 percentage points lower than the 83 percent response rate for the fourth quarter of 2019. The overall response rate for the fourth quarter of 2020 reflects three monthly data collection efforts in October, November, and December. The monthly response rates were 81 percent in October, 80 percent in November, and 77 percent in December.

During the third quarter 2020, 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 October, November, and December 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 the Fourth Quarter 2020 and Fourth Quarter 2019 (unweighted).

Month in Sample	October 2020	November 2020	December 2020	October 2019	November 2019	December 2019
Total	80	79	77	83	83	82
1	76	73	69	80	80	79
2	78	77	75	84	84	83
3	80	79	77	85	85	84
4	80	80	78	84	85	84
5	80	78	74	81	80	80
6	82	81	78	83	83	81
7	83	82	80	83	84	83
8	84	84	82	85	85	85

Note: The overall unweighted response rates in the table may differ slightly from the weighted response rates cited in the text. Response rates are calculated as the ratio of completed interviews to the sum of completed interviews and Type A noninterviews excluding Type B vacants and Type C ineligible.

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 and August, relative to their historical averages, and Type B units continued to be depressed. But Type A units returned closer to their historical average in September, October, November, and December. 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 second, third, and fourth quarters do 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 weights adjust for changes over time in the incidence of Type A noninterviews relative to completed interviews for occupied units. However, the weighting methodology does not include a non-response component to adjust for changes in the response rate of vacant units. Instead, the methodology assumes that all HVS-eligible vacant units will be identified by the in-person data collection attempts. If the suspension of in-person interviews

reduced the ability of interviewers to complete data collection for HVS-eligible vacant 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 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.

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.

Census is conducting ongoing research to understand the extent to which the changes in data collection procedures were accompanied by changes in nonresponse and sample composition, along with the implications of such changes for the CPS/HVS estimates. We will be releasing a working paper in coming weeks that presents the results of nonresponse analyses and that examines the sensitivity of CPS/HVS estimates to the use of an alternative nonresponse weighting adjustment. A recent SEHSD working paper presents the results of similar analyses for the CPS Annual Social and Economic Supplement ([Rothbaum and Bee 2020](#)).

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 fourth quarter of 2020, as well as earlier quarters. The methodology for producing the CPS/HVS estimates of vacancy rates assumes that all HVS-eligible vacant units will be identified through the in-person data collection procedures. To the extent that the changes in data collection procedures resulted in some vacant units being classified as Type A nonresponses rather than HVS-eligible vacant units, the CPS/HVS estimates will underestimate the true vacancy rate. 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 fourth 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 fourth quarter of 2020, as well as earlier quarters. 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 second, third, and fourth 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 October round of data collection, excluding the sample cases collected in November and December. This subsample reflects the time period (October) 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 October sample. The second column then presents similar estimates for October 2019, and the third column reports the change in the estimates between October 2019 and October 2020. The fourth column presents estimates for the subsample of cases

collected in September 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 fourth quarter 2020 sample is limited to the subset of geographies where in-person data collection was allowed during all three months of data collection (October, November, and December). The second column present estimates for the fourth quarter of 2019, 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 October 2020 and comparison months						
	October 2020		October 2019		Change: 10/2019 to 10/2020	
	Rate	MOE ^a	Rate	MOE	Rate	MOE
Rental vacancy rate	6.5%	0.3%	6.5%	0.3%	0.0%	0.5%
Homeowner vacancy rate	1.0%	0.1%	1.4%	0.1%	-0.4%	0.1%
Gross vacancy rate	10.9%	0.3%	11.5%	0.4%	-0.6%	0.5%
Homeownership rate	65.8%	0.6%	65.0%	0.6%	+0.8%	0.8%
Response rate	79%	(X)	84%	(X)	-5%	(X)
B. Supplemental estimates for the subset of geographies where personal visits were allowed in all three months of data collection for Fourth Quarter 2020						
	Fourth Quarter 2020		Fourth Quarter 2019		Change: Q4 2019 to Q4 2020	
	Rate	MOE	Rate	MOE	Rate	MOE
Rental vacancy rate	6.6%	0.3%	6.6%	0.3%	0.0%	0.3%
Homeowner vacancy rate	1.0%	0.1%	1.3%	0.1%	-0.3%	0.1%
Gross vacancy rate	11.1%	0.3%	11.4%	0.3%	-0.3%	0.3%
Homeownership rate	66.1%	0.5%	65.7%	0.5%	+0.4%	0.6%
Response rate	79%	(X)	83%	(X)	-4%	(X)
C. CPS/HVS published estimates for the full sample						
	Fourth Quarter 2020		Fourth Quarter 2019		Change: Q4 2019 to Q4 2020	
	Rate	MOE	Rate	MOE	Rate	MOE
Rental vacancy rate	6.5%	0.2%	6.4%	0.2%	+0.1%	0.3%
Homeowner vacancy rate	1.0%	0.1%	1.4%	0.1%	-0.4%	0.1%
Gross vacancy rate	10.9%	0.3%	11.5%	0.3%	-0.6%	0.4%
Homeownership rate	65.8%	0.5	65.1%	0.5%	+0.7%	0.5%

^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 be allowed in all areas in the first quarter 2021?

The extent of in-person data collection in the first quarter of 2021 has not yet been determined. While the entire country was open for in-person interviewing in September and October, more areas were closed in November and December. At the time of this release, a small number of areas remained closed for in-person interviewing in January. 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 in January to March 2021 will be described in the release of the First Quarter 2021 CPS/HVS estimates—which is scheduled for April 27, 2021.