



Choosing Between Federal Surveys That Measure Rent Affordability

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INTRODUCTION

Research shows that housing stability, quality, safety, and affordability is strongly associated with health outcomes.¹ Housing affordability is also directly connected to equity, particularly for renters, because households that rent are over three times as likely to be below poverty than households that own their homes. Government agencies such as the Department of Housing and Urban Development (HUD) and the United States Department of Agriculture (USDA) define “unaffordable rents” as spending 30 percent or more of pretax income on housing costs. Nationally, rental households with incomes below \$25,000 are six times more likely to have unaffordable rents than rental households with incomes of \$50,000 or more.² In addition, a recent study has shown an association between rent burden in nonmetropolitan areas and homelessness.³ As housing characteristics continue to be correlated with health outcomes, it is important to be able to produce timely and accurate estimates regarding individuals and populations living with unaffordable rents.

This brief compares four surveys that can be used to measure unaffordable rents:

ACS

The American
Community
Survey

SIPP

The Survey of
Income and
Program Participation

AHS

The American
Housing
Survey

BRFSS

The Behavioral
Risk Factor
Surveillance System

From each survey, we present national estimates of rental rates and unaffordable rents along with available state-level estimates. We also discuss the potential reasons for variation in the estimates across surveys, and conclude with key questions for researchers to consider when selecting a survey to measure unaffordable rents.

Defining Unaffordable Rents: Two Approaches

There are two high-level approaches to measuring rent affordability:

- 1) Rental households paying more than 30 percent of their income on rent, which we refer to as the “30 percent affordability rule” throughout this brief.
- 2) Adults reporting that they are worried/stressed about paying rent or are unable to pay rent, which we refer to as “perceived affordability of rent” throughout this brief.

The first approach compares gross rent (which includes utilities) to household income. If the gross rent exceeds 30 percent of household income, then it is considered unaffordable. Three of the four surveys—the ACS, SIPP, and AHS—support this measure. In the second approach, the respondent is asked if they are worried/stressed about their rent or unable to pay their rent. Measures of this type are included in both the BRFSS and SIPP. Both approaches to measuring rent affordability have important strengths and limitations, which are summarized in Table 1.

SUMMARY

Housing affordability continues to be a challenge in many states, especially those with rising housing costs and large low-income populations. Federal surveys are essential resources that provide a wealth of information about how unaffordable rents vary by population characteristics among the states. In this brief, we compare four surveys that measure unaffordable rents using a variety of methods.

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Table 1. Two Approaches to Measuring Rent Affordability: Strengths and Limitations

Measure Type	Strengths	Limitations
30 percent affordability rule	<ul style="list-style-type: none"> • Policy relevance: used to determine eligibility for key federal housing programs • Used to define housing burden by the U.S. Census Bureau 	<ul style="list-style-type: none"> • Does not assess other costs (transportation, food, etc.) in determining affordability • Does not assess overall income in determining affordability
Perceived affordability of rent	<ul style="list-style-type: none"> • More direct assessment of perceived burden • Available in BRFSS, which allows for combining perceived affordability of rent with key health behaviors and outcomes 	<ul style="list-style-type: none"> • No direct tie to housing policy • Variation in how users report/assess worry and stress related to rent affordability

One key advantage of the 30 percent affordability rule is that it is directly relevant to current policy for rental assistance, vouchers, and public housing. Both HUD and the USDA use this rule in the rental programs they administer,⁴ including the Section 8 voucher program, public housing, and assistance for rural and elderly residents. The U.S. Census Bureau also uses the 30 percent rule to define their measure of “housing-cost burden.”⁵ However, one limitation of using this rule is that it does not take into account potential trade-offs with housing cost (such as transportation costs or safety), the average age or size of a household, or differences in general ability to pay. For example, two individuals who are both paying 35 percent of their income in rent may have very different housing-cost burdens because one lives in a high-crime area far away from their work and the other lives in a safe neighborhood close to work; one lives alone and the other has a large family; or one has a very high income and the other does not. A 2018 study by the Joint Center for Housing Studies of Harvard University assessing the 30 percent affordability rule cautioned users about its employment to evaluate “affordability challenges among different income levels or household types,” but also acknowledged that “it remains a reliable indicator of affordability both over time and across markets.”⁶

The perceived affordability of rent approach, on the other hand, is able to address the ability to pay limitation. For example, high-income individuals who spend over 30 percent of their income on rent can indicate that they do not feel financially burdened by doing so. Another advantage to this approach is that the BRFSS includes a “perceived affordability of rent” question to respondents—the only one of the four surveys discussed here that also collects information about health outcomes and health behaviors, allowing for cross-comparative analysis. One disadvantage of the perceived affordability of rent measures is that they are not directly tied to housing policy, such as whether or not renters would qualify for federal housing subsidies. In addition, wording differences across questions could potentially impact responses and result in large differences in estimates. Finally, the measurement of a respondent’s “worry/stress” over ability to pay rent is less concrete than the 30 percent affordability rule.

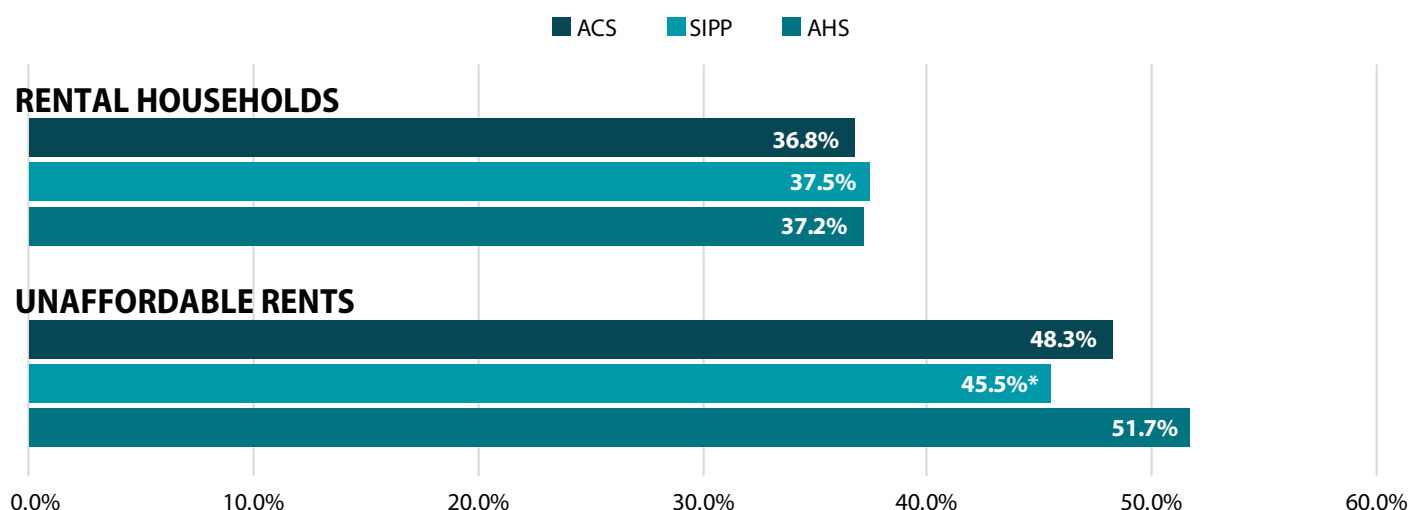
RESULTS

National-level Estimates

Unaffordable rents using the 30 percent affordability rule

Figure 1 shows the 2015 estimates of the percent of households that rent in the ACS, SIPP, and AHS, as well as the percent of these households that pay more than 30 percent of their income on rent. Although the percent of households that rent is very close to 37.0 in all three surveys, the percent that pay more than 30 percent of their income on rent differs by 2.8 percentage points between the SIPP and the ACS (48.3 and 45.5 percent, respectively) and by 3.4 percentage points between the AHS and the ACS. The SIPP estimate is statistically significantly different from the ACS; however, the AHS does not include standard errors so it cannot be tested against the ACS. Despite these differences, all three surveys estimate roughly half of all rental households pay rent that is unaffordable as a share of their income.⁷

Figure 1. Percent of U.S. Households That Rent & U.S. Households That Pay at least 30 percent of Income in Rent, 2015



Notes: * Statistically significant difference from the ACS estimate at the 95% level. No testing was done between the ACS and AHS estimates because of the unavailability of standard errors.

Source: SHADAC analysis of the American Community Survey (ACS) Public Use Microdata Sample (PUMS) files, the Survey of Income and Program Participation (SIPP) Public Use Microdata Sample (PUMS) files, and the American Housing Survey (AHS) Table Creator.

Perceived affordability of rent

Table 2 provides information about the three perceived affordability of rent measures. The first measure is from the BRFSS and indicates how often in the last 12 months adult renters were “always,” “usually,” or “sometimes” worried or stressed about paying rent. The second measure, also from the BRFSS, reports the share of adult renters who were unable to pay rent in the last 12 months. Both of these BRFSS measures are from optional modules, which are questions on specific topics that states can choose to include in their surveys. The first measure (worried or stressed about rent at some point last year) was included in the Social Context optional module in 2015. As shown in Table 2, eleven states and D.C. chose to include the questions in this module in their surveys, and 55 percent of adult renters across these areas reported being worried about paying their rent at some point in the past year. The other BRFSS measure, “unable to pay rent,” was included in the Social Determinants optional module in 2017. Twelve states chose to include this question, and 17.6 percent of respondents across these states reported being unable to pay rent at some point in the past year.

Table 2 also provides information about the SIPP measure, which asks about the ability to pay rent in each month (in this case the month used was December). In addition to having a different reference period (the 2017 BRFSS measure that is most similar asks about the last 12 months), the SIPP does not include utilities in its definition of rent. Overall, 8.6 percent of adult renters in 2015 reported being unable to pay rent in December of the previous year.

Table 2. Perceived Affordability of Rent (Adults 19+)

Survey	Year	Measure	Yes Response Categories	States	Percent of all Adult Renters
BRFSS	2015	Worried about rent at some point last year	(1) Always, (2) Usually, (3) Sometimes	AL, AR, DC, DE, GA, LA, MN, MS, MO, RI, TN, UT	55.0%
BRFSS	2017	Unable to pay rent at some point last year	Yes	FL, GA, IA, MA, MN, MS, NH, PA, UT, WV, WI, WY	17.6%
SIPP	2015	Unable to pay rent in December	Yes	All 50 States and DC	8.6%

Source: SHADAC analysis of the 2015 and 2017 Behavioral Risk Factor Surveillance System (BRFSS) surveys and the 2015 Survey of Income and Program Participation (SIPP) survey of civilian non-institutional population (adults 19+).

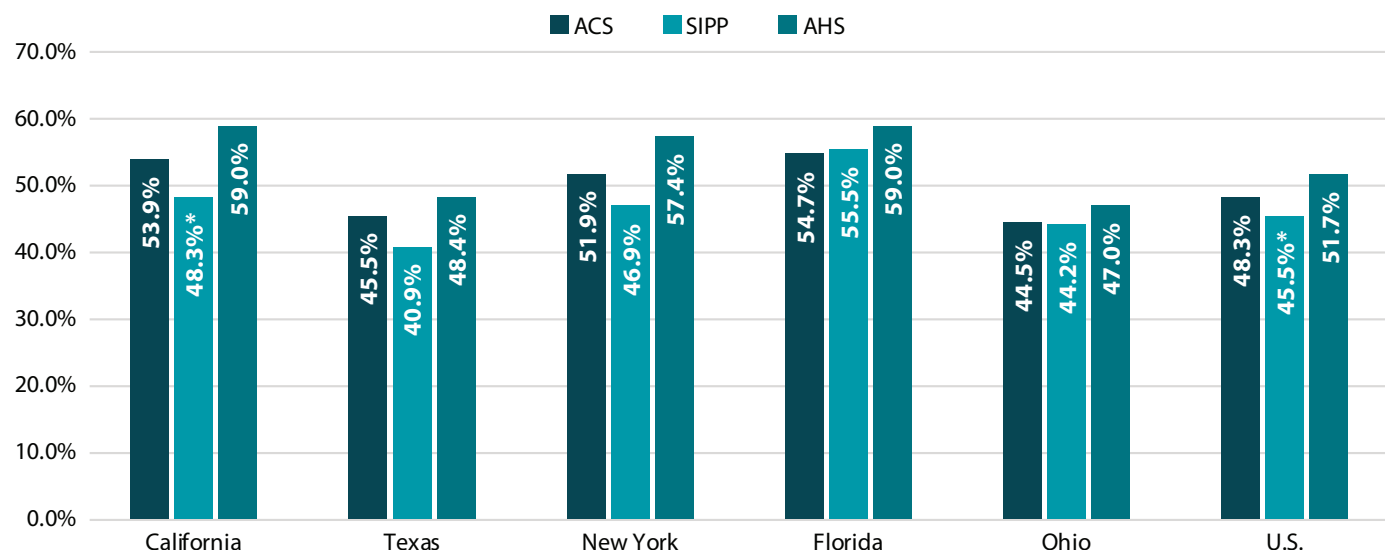
State-level Estimates

The availability of state-level estimates of unaffordable rents varies across surveys and measure types. The ACS, with its very large sample (over 370,000 rental households), is designed to produce state-level estimates for all 50 states and the District of Columbia. The SIPP includes a state identifier in its public use file but because its sample is relatively small (around 7,000 rental households), some estimates are suppressed due to their lack of statistical reliability. The AHS provides estimates for just seven states for unaffordable rents on their table creator. As discussed above, the optional modules in the BRFSS including measures of unaffordable rents were only implemented by a varying subset of states per survey year. We compare the resulting available state estimates for relevant measures below.

Rental households paying more than 30 percent of income in rent

Figure 2 presents 2015 estimates of the share of rental households paying more than 30 percent of income on rent for the five largest states from the ACS, SIPP, and AHS. Although there are differences in the point estimates across the surveys, the overall patterns are similar. For example, California and Florida have the largest share of renters spending more than 30 percent of income on rent, while rates in Texas and Ohio are lower. The only statistically significant difference between the SIPP and the ACS was for California, where the difference between the two surveys was 5.6 percentage points (we are unable to compare the AHS to the other surveys because standard errors are not available). Appendix A contains information for all available states across the three surveys.

Figure 2. Percent of U.S. Rental Households That Pay at least 30 percent of Income in Rent, 2015



Note: * Statistically significant difference from the ACS estimate at the 95% level. No testing was done between the ACS and AHS estimates because of the unavailability of standard errors.

Source: SHADAC analysis of the American Community Survey (ACS) Public Use Microdata Sample (PUMS) files, the Survey of Income and Program Participation (SIPP) Public Use Microdata Sample (PUMS) files, and the American Housing Survey (AHS) Table Creator.

Adult renters worried about or unable to pay rent

The BRFSS includes two different measures of housing burden: those who are worried/stressed about paying rent and those who were unable to pay rent at some point in the year. Table 3 shows results for the percent of rental households reporting that they were worried or stressed about paying rent in the last 12 months in 2015. Available state estimates varied from 46.6 percent in Minnesota and D.C. to 62.2 percent in Arkansas. Arkansas and Louisiana have estimates that are statistically significantly higher than the average of 55 percent for all adult renters in the select states, and Minnesota and D.C are significantly lower.

Table 4 shows available state estimates for the percent of rental households reporting that they were unable to pay rent in the last 12 months, and compares each estimate to the percentage across the 12 states. Estimates vary from 13.2 percent in Iowa to 28.6 percent in Mississippi. Four states (Georgia, Mississippi, New Hampshire, and West Virginia) have estimates that are statistically significantly higher than the overall percentage of 17.6 percent and three are statistically significantly lower (Iowa, Minnesota, and Pennsylvania).

One important question for researchers to consider is how the different surveys and approaches to measuring affordable rents impact how states compare to one another and to the nation as a whole. Table 5 on the following page ranks the five largest states in terms of how they compare to the national average in the ACS and SIPP on two different measures. It shows considerable differences in ranking across surveys and measures. For example, when comparing states in terms of percentage-point difference with the U.S., both the ACS and the SIPP rank Florida as having the largest share of renters paying more than 30 percent of income on rent. However, when comparing the same states on the share of people who report that they are unable to pay rent in December of the prior year, Florida is 0.5 percentage points lower than the national average, and Ohio emerges as the state with the largest affordability problem compared to the national average. This shift in rankings is consistent with what we find when we compare across all available states in the SIPP (see Table 2A and 4A in Appendix A).

Table 3. Percent of Renters (Adults 19+) Worried or Stressed about Paying Rent in the Last Year, 2015

State	Percent of Adult Renters Worried about Rent
Alabama	56.3%
Arkansas	62.2%*
Delaware	51.5%
District of Columbia	46.6%*
Georgia	54.1%
Louisiana	60.8%*
Minnesota	46.6%*
Mississippi	59.5%
Missouri	54.1%
Rhode Island	57.2%
Tennessee	56.8%
Utah	53.5%
All 12 States	55.0%

Note: * Statistically significant difference from the combined 12 state estimates at the 95% level. Source: SHADAC analysis of the 2015 Behavioral Risk Factor Surveillance System (BRFSS) survey microdata for the civilian non-institutional population (adults 19+).

Table 4. Percent of Renters (Adults 19+) Unable to Pay Rent in the Last 12 Months, 2015

State	Percent of Adult Renters Unable to Pay Rent
Florida	17.3%
Georgia	20.5%*
Iowa	13.2%*
Massachusetts	15.8%
Minnesota	14.2%*
Mississippi	28.6%*
New Hampshire	23.3%*
Pennsylvania	15.2%*
Utah	15.5%
West Virginia	22.6%*
Wisconsin	19.7%
Wyoming	18.1%
All 12 States	17.6%

Note: * Statistically significant difference with the 12 state estimates at the 95% level. Source: SHADAC analysis of the 2017 Behavioral Risk Factor Surveillance System (BRFSS) survey microdata for the civilian non-institutional population.

Table 5. Rates of Unaffordable Rents in the Five Largest States Compared with the U.S., 2015

Top 5 States	30 Percent Affordability Rule		Unable to Pay Rent
	ACS	SIPP	SIPP
California	5.6%*	2.8%	-1.4%
Florida	6.5%*	10.0%*	-0.5%
New York	3.6%*	1.4%	1.9%
Ohio	-3.8%*	-1.3%	4.5%*
Texas	-2.8%*	-4.6%	1.7%

Note: * Statistically significant difference from the U.S. estimate at the 95% level.

Source: SHADAC analysis of the American Community Survey (ACS) microdata files and the Survey of Income and Program Participation (SIPP) microdata files.

Key Considerations for Selecting a Measure of Rental Affordability

When choosing a survey source from which to use data, health policy analysts must decide which estimates best fits their specific needs among the multiple options available. No single survey provides the “best” estimates overall; rather, selecting the most pertinent estimates will depend on the specific policy or research question being examined. Additional key considerations for estimate selection include timeliness, geographies for which estimates are available, whether the survey is cross-sectional or longitudinal, and the demographic or socioeconomic characteristics that are included. For example, those interested in following the same rental households over time may want to use the SIPP. On the other hand, if sub-state estimates are of interest, the ACS will likely be the best choice due to its large sample size that allows for this type of geographically refined level of analyses.

Every research question will require a consideration of various survey characteristics—including how often data are updated, when they are updated, what portions of the population are surveyed, and are desired breakdowns (such as race/ethnicity, economic status, education level, etc.) available at a national and/or state level—in relation to analytic requirements. In the following section we discuss some of the reasons that estimates across surveys may differ, along with additional considerations for researchers who wish to use survey data to understand rental affordability.

Sources of Variation across Surveys and Measures of Rental Affordability

There are many reasons estimates vary across surveys, from divergent conceptual purposes (i.e., fulfilling different goals) to systemic/technical differences (e.g., using different questions, statistical designs, and data collection and processing methods, etc.). Each of these factors likely contributes to differences in unaffordable rent estimates across surveys. We summarize these differences below, and provide a more detailed review in Appendix B.

Conceptual differences in measures of unaffordable rents

As noted earlier, some surveys collect information about how much rental households paid in rent relative to how much they earned in household income, and others, like the BRFSS, include questions on whether an adult reported that they were stressed or worried about rent (BRFSS 2015) or whether they were unable to pay rent (BRFSS 2017). Only the SIPP includes both a question on whether renters are able to pay their rent and enough information to estimate unaffordable rents using the 30 percent affordability rule. This conceptual difference is very important because states rank differently depending on which measure within the SIPP is used for estimates of rent affordability (see Table 5 above and Appendix Tables 2A and 4A).

Reference period

Differences in reference periods across surveys and measures also contribute to differences in estimates of unaffordable rents. For example, the reference period for the SIPP for rental payment is the month of December in the year prior to the survey year. The SIPP is fielded from February through May, so there could be potential issues with respondents being able to accurately recall the rent amount in December of the previous year. The ACS asks about monthly rent continuously throughout the year, so respondents are able to provide information about their rent in the month in which they receive the survey. The AHS is conducted from May through September, and estimates are then converted to monthly rents. The reference period for the unable to pay rent measure is the entire previous year in the BRFSS, and for each month in the previous year for the SIPP.

Other Considerations for Selecting a Measure of Rental Affordability

Differences in availability of state estimates

The ACS is the only survey where it is possible to use publicly available information to produce statistically reliable estimates of unaffordable rents for all 50 states. The AHS only includes estimates for seven states for unaffordable rents (California, Colorado, Florida, New York, Ohio, Pennsylvania, and Texas), and reliable estimates are available in the SIPP for just 32 states. Both of the BRFSS measures come from optional state topical modules, in which the states choosing to field these modules can vary between years. The 2015 BRFSS worried/stressed about paying rent measure comes from the Social Context module, and 11 states and D.C. chose to use the module (Alabama, Arkansas, Delaware, Georgia, Louisiana, Minnesota, Mississippi, Missouri, Rhode Island, Tennessee, and Utah) and the 2017 BRFSS measure regarding inability to pay rent comes from the Social Determinants module, which 12 states chose to use (Florida, Georgia, Iowa, Massachusetts, Minnesota, Mississippi, New Hampshire, Pennsylvania, Utah, West Virginia, Wisconsin, and Wyoming).

Within-Survey Changes over Time: Questions and Methodology

In the same way that estimates across different surveys may not be comparable, estimates within the same survey may not always be comparable over time. This incomparability can be due to either changes in survey questions and/or changes in survey methodology. These are also important issues for researchers to consider when selecting a survey estimate, particularly if the research question is tied to tracking changes over time.

Changes in the BRFSS

In 2011, the BRFSS began using a new sampling frame, adding cell phones to the landlines it had historically sampled. The purpose of this revision was to capture the growing segment of the U.S. population that exclusively uses cell phones so that the survey estimates would more closely reflect the overall population. Because of this methodological change, the CDC advises against comparing BRFSS estimates from 2011 and onward against those from 2010 and earlier.⁸

Changes in the SIPP

In 2014 (for the 2013 data year), the administrators for the SIPP began using a new, re-engineered approach to their survey. Major changes included a recall period of 12 months instead of 4 months, the addition of an event history calendar, and the integration of a select number of former topical modules into the core.⁹ Because of these 2014 SIPP revisions, analysts should be cautious when making interpretations of trend data that begin prior to 2013.¹⁰

CONCLUSION

Federal surveys are essential resources for estimating housing affordability. Each survey provides a unique view of the issue of affordability, and together the surveys provide a wealth of information about how unaffordable rents vary by population characteristics. No single survey provides the “best” estimates overall; rather, the most appropriate estimates will depend on the specific policy or research question being examined.

ABOUT SHADAC

SHADAC is a multidisciplinary health policy research center located at the University of Minnesota, School of Public Health. SHADAC is a resource for helping states collect and use data for health policy. For more information, please visit us at www.shadac.org, or contact us at shadac@umn.edu.

ENDNOTES

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APPENDIX A

Table 1A. Percent of U.S. Rental Households that Pay at least 30 Percent of Their Income in Rent, ACS 2015

State	Rental Households		Unaffordable Rents		
	Number	Percent	Number	Percent	Percentage Point difference from U.S.
Alabama	586,663	31.8%	259,908	44.3%	-4.0%*
Alaska	87,067	35.7%	37,038	42.5%	-5.7%
Arizona	930,460	37.9%	438,730	47.2%	-1.1%
Arkansas	394,464	34.5%	176,086	44.6%	-3.6%*
California	5,941,838	46.2%	3,203,974	53.9%	5.6%*
Colorado	743,033	36.0%	364,445	49.1%	0.8%
Connecticut	452,765	33.7%	232,465	51.3%	3.1%*
Delaware	101,545	28.9%	47,028	46.3%	-2.0%
District of Columbia	167,321	59.7%	77,338	46.2%	-2.1%
Florida	2,689,122	36.1%	1,471,698	54.7%	6.5%*
Georgia	1,381,093	37.9%	669,222	48.5%	0.2%
Hawaii	181,135	41.8%	93,992	51.9%	3.6%*
Idaho	182,354	30.7%	81,806	44.9%	-3.4%
Illinois	1,660,970	34.7%	802,755	48.3%	0.1%
Indiana	795,790	31.7%	363,410	45.7%	-2.6%*
Iowa	366,546	29.4%	149,274	40.7%	-7.6%*
Kansas	367,546	33.3%	144,116	39.2%	-9.1%*
Kentucky	571,665	33.3%	238,146	41.7%	-6.6%*
Louisiana	609,200	35.2%	302,072	49.6%	1.3%
Maine	154,745	28.4%	69,130	44.7%	-3.6%
Maryland	733,758	33.8%	352,417	48.0%	-0.3%
Massachusetts	983,340	38.4%	476,629	48.5%	0.2%
Michigan	1,134,485	29.4%	541,643	47.7%	-0.5%
Minnesota	622,815	29.0%	278,338	44.7%	-3.6%*
Mississippi	359,287	32.6%	169,111	47.1%	-1.2%
Missouri	795,717	33.6%	347,288	43.6%	-4.6%*
Montana	136,592	33.0%	57,412	42.0%	-6.3%*
Nebraska	252,309	34.0%	105,992	42.0%	-6.3%*
Nevada	476,670	45.9%	236,127	49.5%	1.3%
New Hampshire	152,153	29.4%	65,882	43.3%	-5.0%*
New Jersey	1,173,813	36.9%	605,475	51.6%	3.3%*
New Mexico	241,078	31.8%	111,873	46.4%	-1.9%
New York	3,386,328	46.9%	1,756,025	51.9%	3.6%*
North Carolina	1,367,458	35.8%	631,586	46.2%	-2.1%*
North Dakota	117,749	37.7%	44,940	38.2%	-10.1%*
Ohio	1,588,467	34.5%	707,105	44.5%	-3.8%*
Oklahoma	500,006	34.2%	206,135	41.2%	-7.1%*
Oregon	600,194	38.7%	294,516	49.1%	0.8%
Pennsylvania	1,548,518	31.3%	725,557	46.9%	-1.4%*
Rhode Island	165,482	40.7%	78,972	47.7%	-0.6%
South Carolina	585,109	31.6%	265,683	45.4%	-2.9%*
South Dakota	106,862	31.6%	40,693	38.1%	-10.2%*
Tennessee	856,272	34.0%	392,271	45.8%	-2.5%*
Texas	3,638,791	38.8%	1,656,892	45.5%	-2.8%*
Utah	289,199	31.1%	121,353	42.0%	-6.3%*
Vermont	74,467	29.2%	33,035	44.4%	-3.9%
Virginia	1,057,399	34.4%	495,818	46.9%	-1.4%*
Washington	1,013,264	37.3%	470,706	46.5%	-1.8%*
West Virginia	203,634	27.7%	85,813	42.1%	-6.1%*
Wisconsin	755,216	32.6%	332,537	44.0%	-4.3%*
Wyoming	73,225	32.1%	23,065	31.5%	-16.8%*
U.S.	43,354,979	36.8%	20,933,522	48.3%	0.0%

Note: * Statistically significant difference from the U.S. estimate at the 95% level. ACS estimates of unaffordable rent can differ slightly from those on State Health Compare (SHC) because in this brief all rental households that do not pay cash rent are included as not having unaffordable rent, but on SHC they are only included in this category if the household is a "specified rental unit." We did this to make the estimates as comparable as possible between surveys.

Source: SHADAC analysis of the American Community Survey (ACS) microdata files.

Table 2A. Percent of U.S. Rental Households that Pay at least 30 Percent of Their Income in Rent, SIPP 2015

State	Rental Households		Unaffordable Rents		
	Number	Percent	Number	Percent	Percentage Point difference from U.S.
Alabama	624,949	29.9%	281,176	45.0%	-0.5%
Arizona	1,053,549	38.2%	479,073	45.5%	0.0%
Arkansas	449,968	35.7%	183,580	40.8%	-4.7%
California	6,604,059	45.9%	3,187,999	48.3%	2.8%
Colorado	677,317	30.0%	256,537	37.9%	-7.6%
Florida	3,183,189	37.4%	1,766,254	55.5%	10.0%*
Georgia	1,517,097	37.8%	753,758	49.7%	4.2%
Illinois	1,598,353	31.9%	811,694	50.8%	5.3%
Indiana	927,923	33.8%	406,732	43.8%	-1.7%
Iowa	502,553	35.3%	227,307	45.2%	-0.3%
Kentucky	576,940	31.7%	262,591	45.5%	0.0%
Louisiana	682,496	35.9%	332,516	48.7%	3.2%
Maryland	830,215	35.8%	341,458	41.1%	-4.4%
Massachusetts	1,239,299	44.7%	492,696	39.8%	-5.7%
Michigan	1,302,920	31.5%	581,260	44.6%	-0.9%
Minnesota	668,002	28.1%	262,206	39.3%	-6.3%
Mississippi	378,980	31.8%	163,833	43.2%	-2.3%
Missouri	840,486	34.4%	322,407	38.4%	-7.1%
New Jersey	1,093,484	34.2%	625,278	57.2%	11.7%*
New Mexico	294,397	35.5%	131,940	44.8%	-0.7%
New York	4,231,079	51.0%	1,983,289	46.9%	1.4%
North Carolina	1,569,750	37.3%	680,368	43.3%	-2.2%
Ohio	1,797,522	36.7%	795,193	44.2%	-1.3%
Oklahoma	498,908	32.7%	179,041	35.9%	-9.6%
Oregon	812,507	44.9%	386,582	47.6%	2.1%
Pennsylvania	1,677,732	31.5%	832,515	49.6%	4.1%
South Carolina	551,038	27.8%	268,181	48.7%	3.2%
Tennessee	991,235	34.9%	416,859	42.1%	-3.5%
Texas	4,076,464	39.8%	1,666,093	40.9%	-4.6%
Virginia	1,188,434	36.1%	521,817	43.9%	-1.6%
Washington	948,149	32.9%	432,516	45.6%	0.1%
Wisconsin	788,556	33.1%	299,466	38.0%	-7.5%
U.S.	48,315,108	37.5%	21,983,302	45.5%	0.0%

Note: * Statistically significant difference from the U.S. estimate at the 95% level.
Source: SHADAC analysis of the Survey of Income and Program Participation (SIPP) microdata files.

Table 3A. Percent of U.S. Rental Households that Pay at Least 30 Percent of Their Income in Rent, AHS 2015

State	Rental Households		Unaffordable Rents		
	Number	Percent	Number	Percent	Percentage Point difference from U.S.
California	6,077,800	47.0%	3,584,000	59.0%	7.3%
Colorado	709,400	34.1%	342,000	48.2%	-3.5%
Florida	2,698,400	37.6%	1,592,100	59.0%	7.3%
New York	3,627,600	48.5%	2,081,400	57.4%	5.7%
Ohio	1,579,900	34.5%	742,800	47.0%	-4.7%
Pennsylvania	1,522,800	30.6%	713,700	46.9%	-4.8%
Texas	3,588,300	38.4%	1,735,400	48.4%	-3.3%
U.S.	43,990,000	37.2%	22,724,000	51.7%	0.0%

Note: No standard errors were available for these measures so no statistical testing was possible.
Source: SHADAC analysis of the American Housing Survey (AHS) Table Creator.

Table 4A. Percent of Adult Renters who are Unable to Pay Their Rent, SIPP 2015

State	Rental Households		Unaffordable Rents		
	Number	Percent	Number	Percent	Percentage Point difference from U.S.
Alabama	942,175	25.2%	125,496	13.3%	4.7%*
Arizona	1,678,183	32.8%	145,768	8.7%	0.1%
Arkansas	665,005	30.7%	57,454	8.6%	0.0%
California	12,475,858	42.6%	895,059	7.2%	-1.4%
Florida	5,098,193	32.7%	412,749	8.1%	-0.5%
Georgia	2,562,818	34.6%	175,933	6.9%	-1.7%
Illinois	2,503,849	26.2%	276,401	11.0%	2.4%
Indiana	1,317,906	26.9%	160,610	12.2%	3.6%
Kentucky	894,421	27.0%	54,005	6.0%	-2.6%
Louisiana	1,098,677	32.4%	51,547	4.7%	-3.9%*
Maryland	1,490,202	32.5%	103,050	6.9%	-1.7%
Michigan	1,923,297	25.6%	222,263	11.6%	3.0%
Minnesota	869,982	21.2%	130,154	15.0%	6.4%
Mississippi	615,749	28.0%	70,769	11.5%	2.9%
Missouri	1,375,051	29.9%	124,784	9.1%	0.5%
New Jersey	1,968,013	28.8%	328,607	16.7%	8.1%*
New Mexico	463,576	30.1%	34,277	7.4%	-1.2%
New York	6,904,357	45.1%	725,194	10.5%	1.9%
North Carolina	2,478,120	33.2%	158,779	6.4%	-2.2%
Ohio	2,767,888	31.8%	362,845	13.1%	4.5%*
Oregon	1,261,291	40.0%	96,789	7.7%	-0.9%
Pennsylvania	2,509,540	25.4%	214,263	8.5%	-0.1%
South Carolina	835,042	22.9%	95,303	11.4%	2.8%
Tennessee	1,452,155	28.8%	150,505	10.4%	1.8%
Texas	6,608,419	33.7%	681,030	10.3%	1.7%
Virginia	1,845,440	29.7%	151,808	8.2%	-0.4%
Washington	1,497,728	28.0%	113,489	7.6%	-1.0%
U.S.	78,496,284	32.6%	6,749,038	8.6%	0.0%

APPENDIX B

Table 1B. Survey Characteristics

Survey Characteristic	ACS	SIPP	AHS	BRFSS
Sponsor	Census	HUD	Census	CDC
Conducted by	Census	Census	Census	States
Main Focus	General	Housing	Public Program Participation	Health
Target Population	Entire Population	Housing Units	Civilian Noninstitutionalized Population	Adult Civilian Noninstitutionalized Population
Survey Type	Cross-sectional	Cross-sectional	Longitudinal	Cross-sectional
Collection Mode	Mail, in-person, internet	In-person	In-person, phone	Phone
Measure of Unaffordable Rent	Rent/Utilities	Rent/Utilities	Rent/Utilities and Unable to Pay Rent	Worried about Rent and Unable to pay rent
Reference Period	Average over Year	Average over Year	December	Sometime in last year
Survey Period	Monthly	May-September	February-May	Monthly
Latest Year Available	2017	2017	2016	2017 and 2015
Number of States Unaffordable Rent Measure	All	7	All	12
Sample Size of Rental Households	370,000 in 2015	23,000 in 2017	7,000 in 2015	22,000 in 2017 and 15,000 in 2015
State Identifier Included in PUMS File	Yes	No	Yes	Yes
Affordable Rent Questions Included in Core	Yes	Yes	Yes	Optional Modules Social Context 20.1 in 2015 and Social Determinants 25.1 in 2017

Table 2B. Questions/Variables for Unaffordable Rents

Question Type	Variable	Question
ACS 2015 Microdata		
Housing Tenure	ten	Is this house, apartment, or mobile home - (1) Owned by you or someone in this household with a mortgage or loan? Include home equity loans. (2) Owned by you or someone in this household free and clear (without mortgage or loan)? (3) Rented? (4) Occupied without payment of rent?
Affordable Rent	grntp	Recoded variable for the monthly rent for this house, apartment, or mobile home including utility cost.
	hincp	ACS total household annual income variable: includes income of householder and all other people 15 years and older in the household
AHS Table Creator Tool 2015		
Housing Tenure	Renter	Is this (House Type) (1) Owned or being bought by someone in your household? (2) Rented? (3) Occupied without payment of rent?
Affordable Rent	Monthly Housing Cost as Percentage of Income	Multiple rent questions that include utilities AHS total household income: sum of the income of all people 16 years and older living in the household
SIPP 2015 Microdata		
Housing Tenure	etenure	Are ... Living quarters owned, rented, or occupied without payment of rent? (1) Owned or being bought by someone in the household (2) Rented (3) Occupied without payment of rent
Affordable Rent	trentmort	Amount the household paid for rent or mortgage in December of the reference year [this is household-level data, therefore this value is copied to every member of the household].
	thtotinc	Sum of all income received by a household, from all household members age 15 and older for December 2015
	eawbmort	Was ... unable to pay rent or mortgage? All interviewed households (asked of reference person) (1) Yes (2) No
BRFSS 2015 and 2017 Microdata		
Housing Tenure (2015 & 2017)	renthom1	Do you own or rent your home? (Home is defined as the place where you live most of the time/the majority of the year.) (1) Own (2) Rent (3) Other arrangement (7) Don't know/Not Sure (9) Refused
Affordable Rent (2017)	sdhbills	During the last 12 months, was there a time when you were not able to pay your mortgage, rent or utility bills? (1) Yes (2) No (7) Don't know/Not Sure (9) refused
Affordable Rent (2015)	scntmny1	How often in the past 12 months would you say you were worried or stressed about having enough money to pay your rent/mortgage? Would you say (1) Always (2) Usually (3) Sometimes (4) Rarely (5) Never (7) Don't know/Not Sure (8) Not applicable (9) Refused



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