Small Area Income and Poverty Estimates: 2018

Small Area Estimates

Current Population Reports

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INTRODUCTION

This report presents summary statistics of the 2018 data released by the Small Area Income and Poverty Estimates (SAIPE) program of the U.S. Census Bureau in December 2019. Each year, the SAIPE program provides timely, reliable estimates of income and poverty for the administration of federal programs and the allocation of federal funds to local jurisdictions and school districts. SAIPE is the only source of data on single-year, median household income and poverty statistics for all 3,141 counties and 13,197 school districts in the United States. Some state and local organizations also use SAIPE to distribute funds and manage programs.

The Census Bureau and other federal agencies created the SAIPE program to provide annual income and poverty statistics for states, counties, and school districts in the United States.³ The SAIPE program produces yearly poverty estimates for the total population (all ages) and by selected characteristics for counties and states. These estimates include the

Highlights

- Based on median household income estimates for the 3,141 counties, 13.6 percent (428 counties) had an increase in median household income between 2007—the year before the most recent recession—and 2018. In the same period, 5.5 percent (172 counties) had a decrease in median household income.
- Based on poverty rate estimates for the 3,141 counties for all ages, 6.0 percent of counties (187) had an increase in poverty between 2007 and 2018. Only 4.5 percent of counties (141) had a decrease in poverty.
- For all school districts, the median estimated poverty rate for school-age children was 14.9 percent in 2018.

number of children under age 5 in poverty (for states only), the number of related children aged 5 to 17 in families in poverty, the number of children under age 18 in poverty, and median household income.

The U.S. Department of Education uses SAIPE data to aid in determining annual Title I allocations of federal funds to states and school districts. At the school district level, estimates are generated for the total population, the number of children aged 5 to 17, and the



¹ The Census Bureau's Disclosure Review Board and Disclosure Avoidance Officers have reviewed this data product for unauthorized disclosure of confidential information and have approved the disclosure avoidance practices applied to this release. CBDRB-FY19-463

 $^{^2}$ There were 3,142 total counties in the United States. Kalawao County, HI, was omitted due to small sample size. There were also 13,206 school districts in the United States; however, nine school districts were excluded due to lack of school-age children.

³ For more information on the creation of the SAIPE program, visit <www.census.gov/programs-surveys/saipe/about/origins .html>.

number of related children aged 5 to 17 in families in poverty.

Due to the comprehensive geographic coverage and 1-year focus, SAIPE program estimates can be used to analyze geographic variation in poverty and income. The purpose of this report is to highlight several key aspects from such analyses.⁴ **Household income** includes income of the householder and all other people 15 years and older in the household, whether or not they are related to the householder.

Median is the point that divides the household income distributions into halves: one-half with income above the median, and the other with income below the median. The median is based on the income distribution of all households, including those with no income.

Children aged 5 to 17 in families are children who are related to householder by birth, marriage, or adoption. Foster children are not included in families.

School-age population refers to children aged 5 to 17 who live within the geographic boundaries of a school district and who are in an appropriate grade range. It is not a measure of school district enrollment.

COUNTY-LEVEL ESTIMATES

Median Household Income

The 2018 SAIPE program provides estimates of median household income for 3,141 counties in the

United States. At the county level, median household income ranged from \$25,385 to \$140,382, and half of the counties had values below \$50,568.5

Figure 1 highlights the range of median household income throughout the United States. Sixty counties had an estimated median household income within the highest range (\$92,311 to \$140,382). Of these high-income counties, 32 were located in the Northeast region, Maryland, and Virginia. About 78 percent of counties in the lowest income range (\$25,385 to \$41,298) were located in the South.

Figure 1a depicts the metropolitan statistical areas corridor that includes Boston, New York, Philadelphia, Baltimore, and Washington, DC. There were 30 high-income counties located within this corridor.

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program, December 2019.

⁴ All data shown are estimates containing uncertainty. Unless specifically noted in the text, apparent differences among the estimates may not be statistically significant. All direct comparisons cited in the text have been statistically tested at the 90 percent confidence level. Confidence intervals for all state and county estimates are available at <www.census.gov/data/datasets/2018/demo/saipe/2018-state-and-county.html>. Guidance on the uncertainty contained in the school district estimates is available at <www.census.gov/programs-surveys/saipe/guidance/district-estimates.html>.

Figure 1a. **Median Household Income of the Total Population From** Washington, DC, to Boston, MA: 2018 Boston New York Median household income by county (in dollars) 92,311 to 140,382 Philadelphia 71,587 to 92,310 U.S. 61,937 to 71,586 median 49,789 to 61,936 \$61.937 41,299 to 49,788 Baltimore 25,385 to 41,298 State Washington, DC Major U.S. cities

⁵ The median value of county-level median household income estimates (\$50,568) is not the same measure as the median household income in the United States. The legends in Figures 1 and 1a show the median household income for the nation, as estimated by the 2018 ACS (\$61,937).

Figure 2 shows the percent change in median household income between 2007 (the year before the most recent recession) and 2018. As displayed in the map, orange shades highlight counties with estimated increases compared to 2007, and purple shades highlight counties with estimated decreases. Of the counties in the darkest orange, the majority (40 counties) are located in the Great Plains states of Montana, Nebraska, North Dakota, Oklahoma, South Dakota, and Texas.

Comparing 2018 with 2007, 13.6 percent of all counties in the United States (428) had an increase in median household income, 5.5 percent (172 counties) had a decrease in median household income, and 80.9 percent (2,541 counties) did not have a statistically significant change.⁶

Figure 3 displays the number of statistically significant countylevel changes in median household income over the past 11 years, with 2007 as the base year of comparison for each year. In this figure, the bars represent how many counties had an increase or decrease in median household income for a particular year compared to 2007. Additionally, this graph tracks the net number of counties that had changes in median household income compared to 2007. If the net number of counties is negative, this means more counties had a decrease in median household income between 2007 and the respective year; and if it is positive, then more counties had an increase. The chart illustrates that, starting in 2008, the number of counties with declining median household income outweighed those that increased. This pattern grew annually, reaching a peak in 2011, and then reversed. In 2016, the number of increases and decreases was nearly equal, with 312 increases and 311 decreases. In 2018, there were 256 more counties with

increases than decreases, making 2018 the year with the most increases (428 counties) and net increases in county-level median household income since the start of the recession.

POVERTY

The SAIPE data also include poverty estimates for all counties in the United States. In 2018, county poverty rates for all ages ranged from 2.6 percent to 54.0 percent. Figure 4 shows 2018 county-level estimated poverty rates for all ages throughout the United States. Counties with higher estimated poverty rates are depicted in purple shades, while counties with lower estimated poverty rates are depicted in light blue shades.

Figure 5 shows the poverty rate by county for school-age (aged 5 to 17) children in families. In 2018, 29.5 percent (926) of counties had a poverty rate statistically greater than the national poverty rate of 17.0 percent for children aged 5 to 17 in families, while 24.0 percent (755) counties had a poverty rate

⁶ The National Bureau of Economic Research (NBER) <www.nber.org/cycles .html> is the official source for recession timing. The NBER pinpoints December 2007 and June 2009 as the beginning and end of the most recent recession.

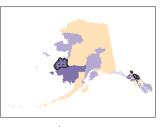
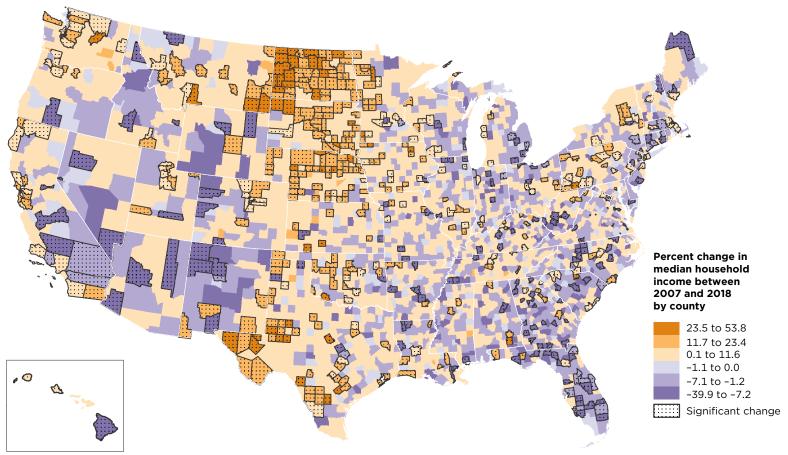


Figure 2.

Percent Change in Median Household Income of the Total Population by County: 2007 to 2018



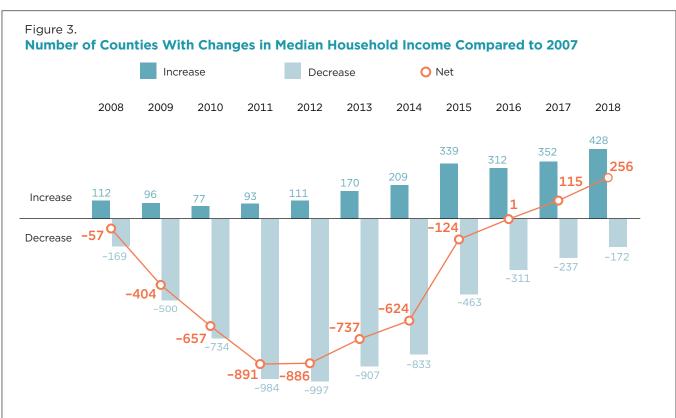
Note: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error. The percent change was adjusted for inflation using the national Consumer Price Index (CPI-U). All counties have been statistically tested at the 90 percent confidence level to determine significant change.

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program, December 2019.

Small Area Income and Poverty Estimates (SAIPE) are model-based enhancements of the American Community Survey (ACS) estimates created by integrating additional information from administrative records, intercensal population estimates, and decennial census data. SAIPE methodology employs statistical modeling techniques to combine this supplemental information with survey data to produce estimates with less uncertainty. SAIPE are broadly consistent with the direct ACS estimates, but with help from other data sources, SAIPE estimates are more precise than the ACS 1-year and 5-year survey estimates for most counties and school districts. ACS 1-year estimates are not available for most of these smaller geographic areas (approximately 800 counties with a population of 65,000 or more are included in the ACS 1-year estimates, and since 2015, supplemental 1-year estimates are available for populations as small as 20,000). A 2018 map of ACS 1-year published counties is available at <www.census.gov/library/visualizations/2019/demo/2018-state-county-maps.html>.

Additional detailed information on the various input data sources used in producing SAIPE is available at www.census.gov/programs-surveys/saipe/guidance/model-input-data.html.

SAIPE estimates are subject to several types of uncertainty. Details on SAIPE methodology are available at <www.census.gov/programs-surveys/saipe/technical-documentation/methodology.html>.



Note: Counties with a decrease in median household income are repesented by a negative bar. Counties with an increase in median household income are represented by a positive bar. Net number of counties with changes in median household income are plotted on the line. For this analysis, 2007 is used as the base year for comparison, and all values were adjusted for inflation using the national Consumer Price Index (CPI-U).

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program, December 2019.

statistically less than the national poverty rate.⁷

In Mississippi and New Mexico, 70 percent or more of the counties within each of these states had a school-age child poverty rate statistically higher than the national average. In five states, 70 percent or more of the counties within each state had a school-age child poverty rate statistically lower than the national average: Connecticut, Hawaii, Massachusetts, New Hampshire, and Rhode Island.

CHANGE IN COUNTY POVERTY RATES

Comparing poverty rates between 2007 and 2018, more counties had an increase in their poverty rates than a decrease. Figure 6 shows the change in county-level poverty rates for all ages between 2007 and 2018. Of all counties, 6.0 percent (187 counties) had an increase in their poverty rate for the 11-year period, while 4.5 percent (141 counties) had a decrease.

Figure 7 displays the number of counties with statistically significant changes in poverty rates for all ages between 2008 and 2018, with 2007 as the base year of comparison for each year. During this period, each year had more increases than decreases, as shown by the net number of

changes being positive for 2008 through 2018. Compared with 2007, the number of increases in poverty rates for all ages peaked at 1,029 counties in the year 2012. However, the number of decreases rose each year between 2013 and 2018, marking 2018 as the year with the highest number of decreases. By the end of the full 11-year period between 2007 and 2018, nearly 90 percent (2,813 counties) did not have a statistically significant change.

POVERTY BY REGION AND METRO STATUS

Figure 8 depicts poverty estimates for all ages by county, highlighting each region and the 25 largest metropolitan areas. The lighter shaded counties have estimated poverty rates less than the U.S.

How Is Poverty Measured?

Poverty status is determined by comparing total annual family before-tax income to a table of federal poverty thresholds that vary by family size, number of related children, and age of householder. If a family's income is less than the dollar value of the appropriate threshold, then that family and every individual in it are considered to be in poverty. For people not living in families, poverty status is determined by comparing the individual's total income to their threshold.

For more general information on poverty, please see <www.census.gov/topics/income-poverty/poverty .html>.

The table of federal poverty thresholds is updated annually by the U.S. Census Bureau to allow for changes in the cost of living based on the Consumer Price Index (CPI-U). The thresholds do not vary geographically.

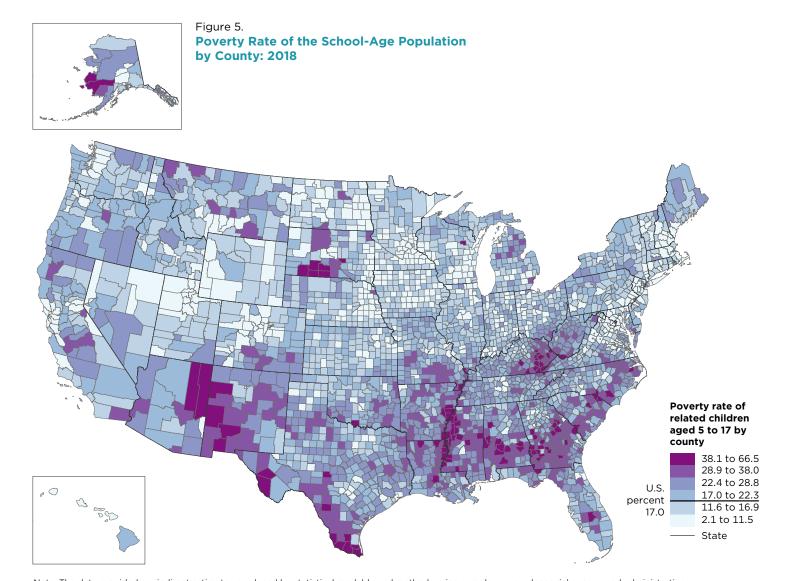
Small Area Income and Poverty Estimates' primary inputs are estimates of poverty from the American Community Survey (ACS), a monthly survey with people responding throughout the year. Since income is reported for the previous 12 months, the appropriate poverty threshold for each family is determined by multiplying the base-year poverty threshold (1982) by the average of the monthly CPI values for the 12 months preceding the survey.

For more information, see "How the Census Bureau Measures Poverty" at <www.census.gov/topics /income-poverty/poverty/guidance/poverty-measures.html>.

⁷ The national poverty rate for schoolage (aged 5 to 17) related children is derived from the 2018 ACS. While the Annual Social and Economic Supplement to the Current Population Survey (CPS ASEC) serves as the official national estimate of poverty, the primary input to the SAIPE model is the ACS, and therefore, an appropriate reference in this context.

Note: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data

sources. The estimates contain error stemming from model error, sampling error, and nonsampling error. Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program, December 2019.

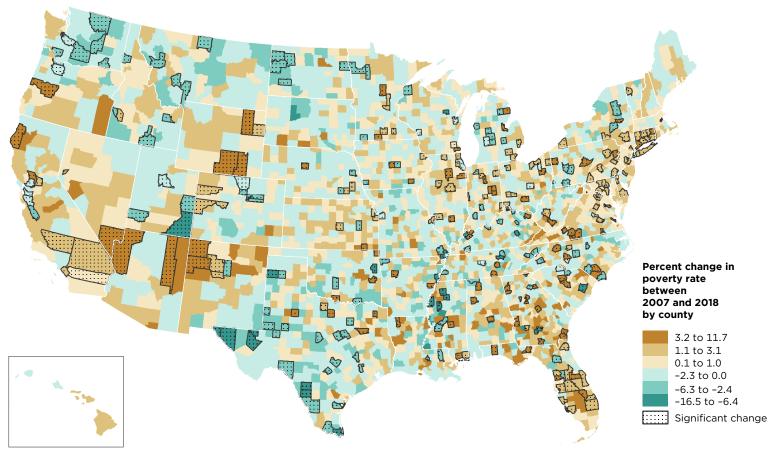


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Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program, December 2019.

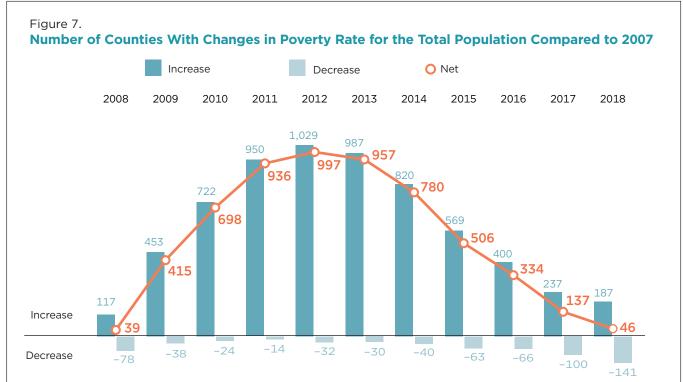
Figure 6.

Percent Change in the Poverty Rate of the Total Population by County: 2007 to 2018



Note: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error. All counties have been statistically tested at the 90 percent confidence level to determine significant change.

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program, December 2019.



Note: Counties with a decrease in poverty are repesented by a negative bar. Counties with an increase in poverty are represented by a positive bar. Net number of counties with changes in poverty are plotted on the line. For this analysis, 2007 is used as the base year for comparison.

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program, December 2019.

average rate of 13.1 percent, while the darker shaded counties have estimated poverty rates of 13.1 percent or more. Approximately 37 percent (1,148 counties) were statistically greater than the U.S. average rate, while 26.0 percent (818) were statistically less. In the Midwest, 38.2 percent (403 counties) had poverty rates above the U.S. average rate; in the Northeast, 32.3 percent (70 counties); in the South, 78.3 percent (1,114 counties); and in the West, 50.4 percent (226 counties).

SCHOOL DISTRICT LEVEL ESTIMATES

Boundary Updates

To estimate the number of children living in poverty within a school district, the SAIPE program uses the most recent school district boundary updates from the Census Bureau's School District Review Program (SDRP). The SDRP collects annual updates to school district boundaries, names, Local Education Agency ID numbers, grade ranges, and levels for which each school district is

financially responsible.8 The most recent school district boundary updates are effective as of January 1, 2019.

School district population estimates from the SAIPE program are not a measure of school district enrollment. Rather, they are reflective of children aged 5 to 17 who reside within the school district boundaries and are age-relevant to the grade ranges served by the school district. The SDRP collects three distinct school district levels: Elementary

⁸ For more information regarding the SDRP, please see <www.census.gov /programs-surveys/sdrp/about.html>.

U.S. Census Bureau

Why Are The Small Area Income And Poverty Estimates Important?

The Small Area Income and Poverty Estimates (SAIPE) data are designed primarily for use in the U.S. Department of Education's annual Title I allocations of federal funds to states and school districts. Most school districts in the United States, about 92 percent, have a total population less than 65,000 and so do not have American Community Survey (ACS) 1-year estimates available. The SAIPE program was designed specifically to provide estimates for school districts in the United States on a yearly basis.

For additional detailed information on the use of SAIPE estimates, please visit the FAQ Web page at www.census.gov/programs-surveys/saipe/about/faq.html.

The SAIPE main page is located at <www.census.gov/programs-surveys/saipe.html>.

Additional information is available by data release year from 2005 to 2018. For example, annual reports, datasets, maps, figures, and ranking tables can be downloaded from the SAIPE Web page at www.census.gov/programs-surveys/saipe/data.html or www.census.gov/programs-surveys/saipe/data.html or www.census.gov/programs-surveys/saipe/library.html.

The online SAIPE Interactive Data Tool provides detailed customized data tables by selected year(s) from 1989-2018, geography (states, counties, and school districts), poverty characteristics (all ages, under age 18, aged 5 to 17 in families, under age 5) and median household income. Data at the school district level are available by total population, number of school-age children (aged 5 to 17), and the number of school-age children (aged 5 to 17) in families in poverty. Maps showing school district boundaries are also available. These custom tables can be downloaded to a PDF or CSV file. The interactive data tool can be accessed from the SAIPE homepage or at <www.census.gov/programs-surveys/saipe/data/tools.html>.

For video tutorials on SAIPE methodology, see <www.census.gov/programs-surveys/saipe/library/video.html>.

(primarily serving children in grades K-8), Secondary (primarily serving children in grades 9-12), and Unified (serving children of all grade levels). Unified school districts comprised the majority with 10,862, or 82.3 percent, of the 13,206 total public school districts in the United States. Elementary school districts made up the second largest group of 1,943 elementary school districts (14.7 percent), followed by 401 secondary school districts (3.0 percent).

In the latest SDRP update, there are 13,206 U.S. public school districts, compared with 13,222 in the previous SDRP update. This net decrease of 16 school districts

reflects the deletion of 27 previously defined school districts and the creation of 11 school districts. Since 2007, there has been a net decrease of 547 school districts. Changes in the number of school districts are typically the result of school districts shifting, splitting, or consolidating boundaries, which are often driven by state or local policy changes.

POVERTY

The 2018 SAIPE data utilize the most recently updated school district boundaries from the 2019 SDRP. This accounts for all school

districts in the Title I universe.⁹ Since nine school districts did not have any school-age children, these districts were excluded from the analysis (13,206 school districts in the universe, but 13,197 school districts in the analysis).

Figure 9 shows the distribution of school districts, school-age children, and school-age children in families in poverty by school district resident population size. School-age children, including school-age children in families in poverty, often were concentrated

⁹ The Title I universe is the set of U.S. school districts to which Title I of the Elementary and Secondary Education Act pertains.

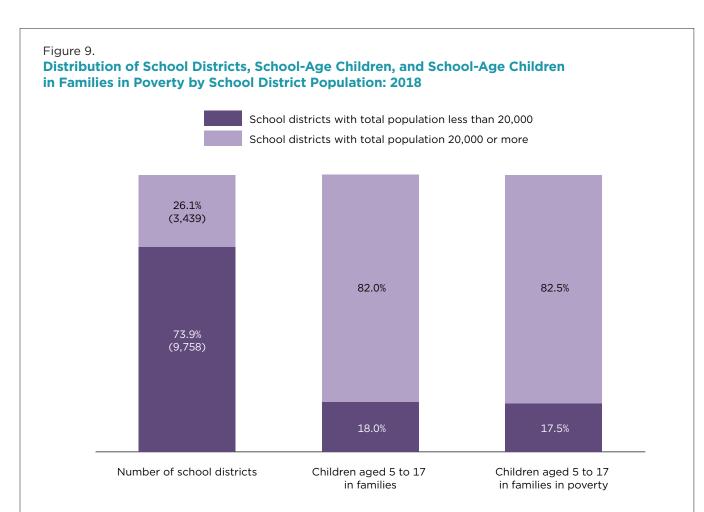
in school districts with a population of 20,000 or more. In 2018, an estimated 26.1 percent of school districts had a total population size of 20,000 or more. These school districts contained an estimated 82.0 percent of all school-age children in the nation and an estimated 82.5 percent of school-age children in poverty.

Figure 10 shows the distribution of school-age children (aged 5 to 17) living in families in poverty by school district. This map

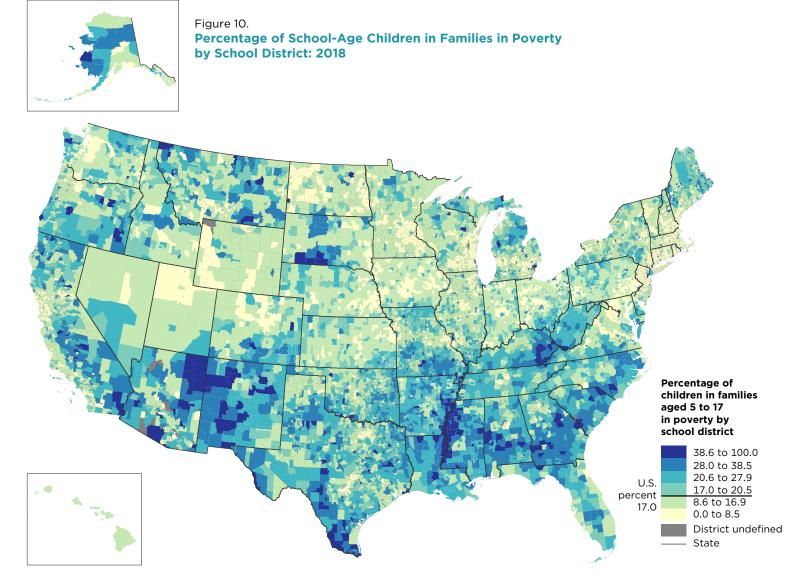
displays the range in poverty rates throughout the United States by school district. The lighter colors show school districts with lower poverty rates, and the darker colors show school districts with higher poverty rates. School districts with high and low poverty rates are scattered throughout the nation, with some clustering within regions. For all school districts, the median estimated poverty rate for school-age children was 14.9 percent.

Figure 11 shows the distribution of school district poverty rates by state, where categories consist of school districts with less than 10 percent, 10 to 20 percent, and more than 20 percent of schoolage children in poverty.¹⁰ There were 53.6 million school-age children in 13,197 school districts. Of

¹⁰ Each bar in the figure displays the percentage of school districts within individual states for the three poverty categories. This percentage is weighted by the population of school-age children within each district, so that the size of each colored segment is representative of the number of children.

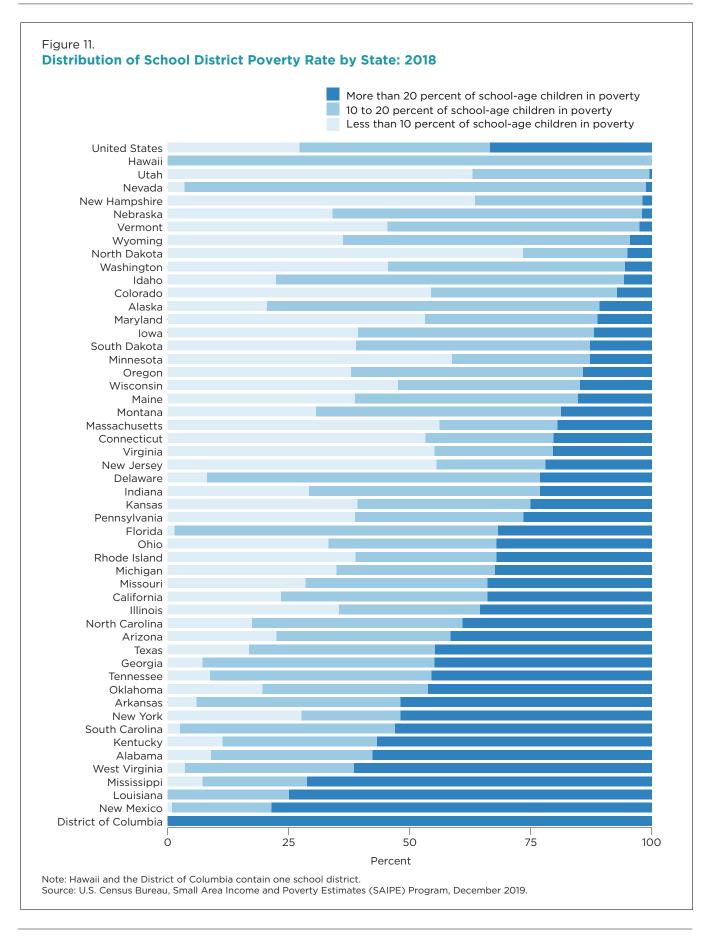


Notes: There are 13,197 Title I eligible school districts used in this graph (nine school districts were removed for having zero population). Of that total, 3,439 school districts have populations of 20,000 or more and 9,758 school districts have populations of less than 20,000. Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program, December 2019.



Note: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error. The map displays unified and elementary school district boundaries as of January 1, 2019.

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program, December 2019.



Income and Poverty Data Sources Available From the Census Bureau

Small Area Income and Poverty Estimates (SAIPE) is one of several sources of income and poverty data available from the Census Bureau. Other sources include the Annual Social and Economic Supplement to the Current Population Survey (CPS ASEC), the American Community Survey (ACS), the Survey of Income and Program Participation (SIPP), and the Census 2000 long form. Each of these sources differs from the others in various ways, such as the length and detail of its questionnaire, the number of households included (sample size), and the methodology used to collect and process the data.

With its detailed questionnaire, the CPS ASEC is the source of both the official national estimates of poverty rates and of widely used estimates of the distribution of household income and individual earnings. The CPS ASEC provides a consistent historical time series at the national level beginning in 1959 and can also be used to look at state-level trends and differences (through multiyear averages) beginning in 1980.

Since 2006, the ACS has released annual subnational estimates of income and poverty for places, counties, and metropolitan statistical areas with a population of at least 65,000, as well as for all states and the nation. The sample size of the ACS

is about 3.5 million addresses per year, making this survey exceptionally useful for subnational analyses. ACS 3-year estimates were made available for 2008 through 2013 for areas and subpopulations as small as 20,000. Since 2015, supplemental 1-year estimates are available for populations as small as 20,000. ACS 5-year estimates became available for census tracts/block groups and for small subgroups of the population starting in 2010. More information on the ACS is located at <www.census.gov/programs-surveys/acs/>.

The SIPP is useful for understanding the dynamics of income and poverty (changes in income and poverty rates for the same households over 3 or 4 years) and for examining the nature and frequency of poverty spells. The SIPP also permits researchers to look at monthly or quarterly changes in income and poverty.

Decennial Census long-form estimates offer the best measure of change between 1960 and 2000 for subnational areas and for subpopulations. Since the ACS replaced the long form, the 2010 Census does not provide income and poverty estimates. Since 2010, ACS 5-year estimates provide data at the census tract level that are comparable to earlier decennial census estimates.

these, 27.3 percent of school-age children reside in school districts with poverty estimates below 10 percent, 39.3 percent reside in districts with poverty estimates between 10 and 20 percent, and an estimated 33.5 percent reside in districts with poverty estimates greater than 20 percent. The figure also shows the distributions for individual states sorted by the percentage of school districts in each state with poverty estimates greater than 20 percent.

ACKNOWLEDGEMENTS

The Small Area Estimates Branch of the Census Bureau prepared this report.

CONTACT

For questions related to the contents of this document, including the SAIPE program's estimates and methodology, contact the Small Area Estimates Branch at 301-763-3193 or <sehsd.saipe @census.gov>.

For questions related to income and poverty definitions, the American Community Survey, or other Census Bureau surveys, contact the Census Bureau call center at 1-800-923-8282 (toll-free) or visit https://ask.census.gov for further information.

A related program to SAIPE is the Small Area Health Insurance Estimates (SAHIE) program, which produces estimates of health insurance coverage for all counties and states. Information about the SAHIE program is available at <www.census.gov/programs-surveys/sahie.html>.

SUGGESTED CITATION

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