The 2014 Small Area Income and Poverty Estimates (SAIPE): An Overview

Introduction

This document presents summary highlights of the 2014 data released by the Small Area Income and Poverty Estimates (SAIPE) program of the U.S. Census Bureau in December 2015. 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. In fact, SAIPE is the only source of data on single-year median household income and poverty statistics for the 3,141 counties and 13,471 school districts in the United States.[1] Some state and local programs also use SAIPE income and poverty estimates 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 counties and school districts in the United States. 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 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. At the school district level, estimates are generated for the total population, the number of children aged 5 to 17, and the number of related children aged 5 to 17 in families in poverty.

Due to the comprehensive geographic coverage and one-year focus, SAIPE data can be used to analyze geographic variation in poverty and income, as well as changes over time. The purpose of this document is to highlight several key aspects from such analysis.

Highlights:

- Median household income at the county level ranged from $21,658 to $125,635 with a median county level value of $45,229. [2,3]
- Based on poverty rate estimates for all 3,141 counties for all ages, 26 percent (820 counties), had a statistically significant increase in poverty between 2007 and 2014.[4] Only 1 percent of counties had a statistically significant decrease in poverty during that time period.

Small Area Income and Poverty Estimates (SAIPE) are model-based and improve upon the American Community Survey (ACS) 1-year survey estimates by incorporating 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 more reliable estimates. SAIPE estimates are broadly consistent with the direct ACS survey estimates, but with the help from other data sources, SAIPE estimates are more precise than the ACS 1-year and 5-year survey estimates alone for most counties and school districts. ACS 1-year estimates are not available for most of these smaller geographic areas (approximately only 800 counties with a population of 65,000 or more are included in the ACS 1-year estimates). A 2014 ACS map of unpublished counties is available at: http://www.census.gov/did/www/saipe/data/statecounty/maps/2014.html.

Nonetheless, SAIPE estimates are subject to several types of uncertainty. For more information on sources of uncertainty, see the text box on page 8. Additionally, a link to the SAIPE methodology is available at: http://www.census.gov/did/www/saipe/methods/index.html.

[1] There were 3,142 total counties in the United States. Kalawao County, HI was omitted due to small sample size. There were also 13,486 school districts in the United States; however 15 were excluded due to lack of school-age children.

[2] 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% significance level. See text box on page 8 for additional information on the sources of uncertainty.

[3] The median of county level values ($45,229) is not the same measure as the median household income in the United States. The legends in Figure 1 and 1a show the median household income for the nation ($53,657).

[4] The year 2007 was chosen in this time series because it was the year before the most recent recession. The National Bureau of Economic Research (NBER) 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 1.

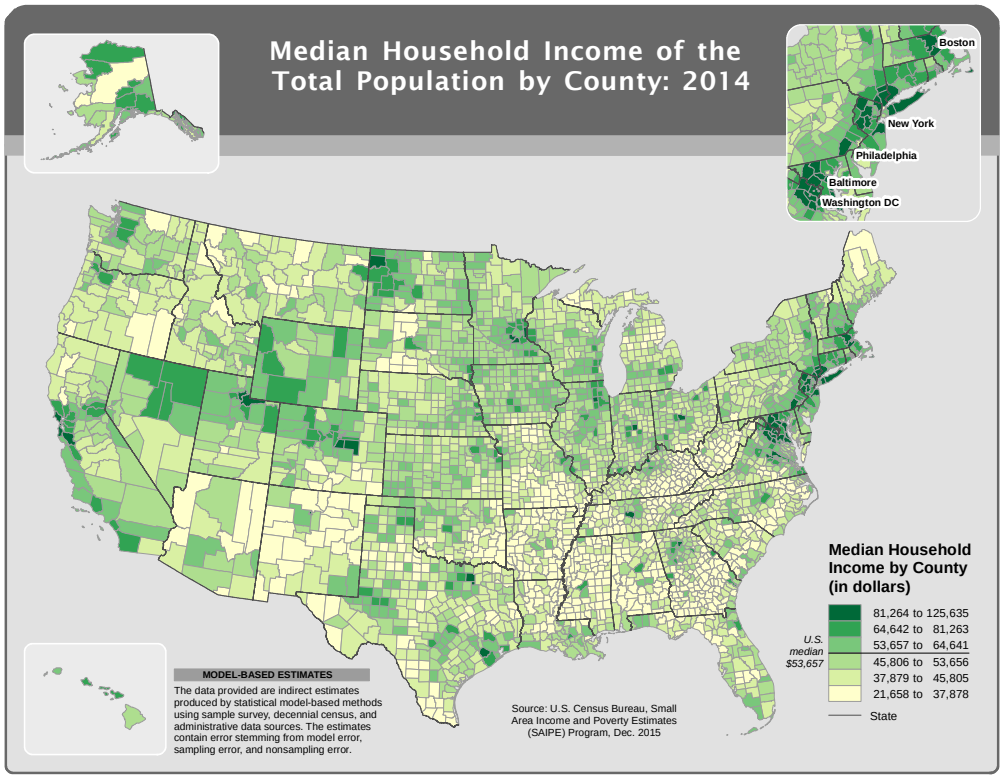
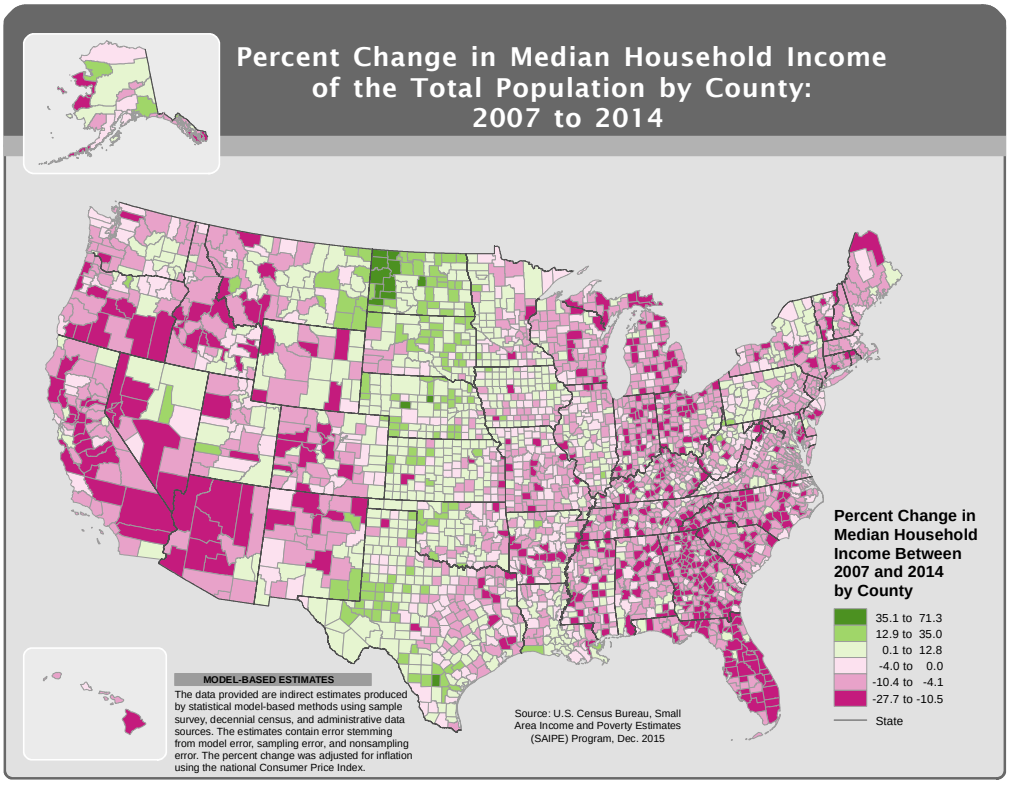


Figure 2.



County Level Estimates

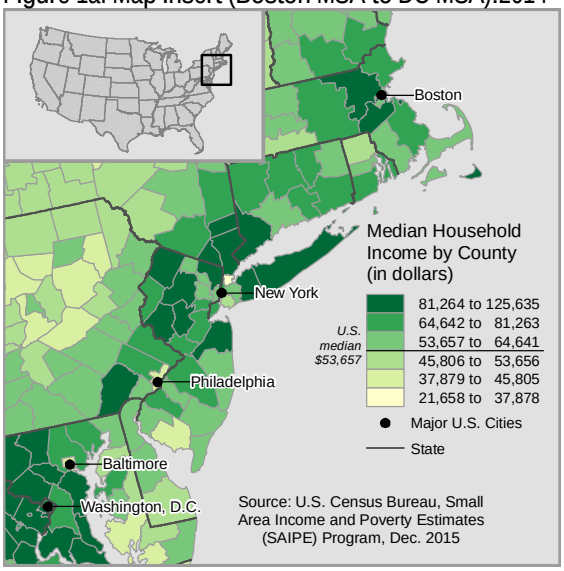
Median Household Income

The 2014 SAIPE release provides estimates for 3,141 counties in the United States. At the county level, median household income ranged from $21,658 to $125,635 with a median value of $45,229.[5]

Figure 1 highlights the range of median household income throughout the United States. Fifty-nine counties had a median income within the highest range ($81,264 to $125,635). Thirty-six of these high-income counties were located in the Northeast region, Maryland, and Virginia.

Figure 1a below depicts the metropolitan statistical areas (MSA) which includes Boston, New York, Philadelphia, Baltimore and Washington, D.C.[6] There were 32 high-income counties located within this corridor. Seventy-nine percent of counties in the lowest income range ($21,658 to $37,878) were located in the South.

Figure 1a. Map insert (Boston MSA to DC MSA):2014



[5] The median of county level values ($45,229) is not the same measure as the median household income in the United States. The legends in Figure 1 and 1a show the median household income for the nation ($53,657).

[6] A reference map on metro/micro area status is available at: http://www.census.gov/did/www/saipe/data/statecounty/maps/2014.html.

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: 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.

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

School-age population: also refers to children aged 5 to 17. An estimate of the number of children 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.

Figure 2 shows the percent change in median household income between 2007 and 2014. Seventy-two percent (2,246 counties) displayed a percent change in median household income ranging from -27.7 to 0.0 percent, with 54 percent, (1,703 counties) ranging from -10.4 to 0.0 percent between 2007 and 2014. Only 13 counties displayed a percent change in median household income in the top range of 35.1 percent or more, with 12 of these counties located in the Midwest. Of those, 10 counties were in North Dakota.

The change period reflects the median household income between 2007, the year before the most recent recession, and 2014. The recession ended in 2009. All changes were adjusted for inflation using the national Consumer Price Index (CPI-U) and are reported as calendar year 2014 dollars.

Of the 3,141 counties in the United States, 33 percent (1,043 counties) had a statistically significant change over the seven-year period. Of these, 80 percent (834 counties) had decreases in median household income. Clusters of counties with statistically significant

decreases in median household income exist throughout all regions and virtually all states. Only 20 percent (209 counties) had a statistically significant increase in median household income between 2007 and 2014. For example, North and South Dakota contained the highest proportions of counties with median household income gains: 72 percent (38 of counties) and 32 percent (21 counties), respectively. These two states represented 28 percent of all counties which showed a statistically significant increase in median household income.

Poverty

The SAIPE data also include poverty estimates for all counties in the United States. In 2014, county poverty rates for all ages ranged from 3 percent to 58 percent across counties.[7] Figure 3 shows how poverty rates varied among counties throughout the United States. Counties with higher poverty rates were concentrated predominately in the South. Twenty-one percent of counties within the South had poverty rates in the top ranges (24.6 to 31.8 and 31.9 to 58.1), while the other three regions (West, Midwest, and Northeast) had no more than 7 percent of their counties with poverty rates in the top ranges.

Figure 4 shows the poverty rate by county for school-age related children in families. Fifty-four percent (1,692 counties) had poverty rates for school-age children (aged 5 to 17) ranging between 20.4 and 58.1 percent in 2014, with 36 percent (1,126 counties) in the top two ranges between 24.6 and 58.1 percent. Of the 1,126 counties, 73 percent (827 counties) were located in the South. Six states in the South had 65 percent or more of their counties within the top two ranges: Alabama, Arkansas, Georgia, Louisiana, Mississippi, and South Carolina.

There were 1,847 counties with school-age poverty rates that were statistically significantly different from the national average, with 938 counties above and 909 counties below the national poverty rate.

A concentration of counties with poverty rates statistically significantly above the national average for school-age children was observed in some states. For example, Georgia, Mississippi, and South Carolina had 70 percent or more of their counties' poverty rates statistically significantly greater than the national average. Seventy percent or more of counties in eight states had poverty rates for school-age children statistically significantly lower than the national rate: Connecticut, Hawaii, Massachusetts, Minnesota, New Hampshire, North Dakota, Rhode Island, and Wyoming.

How is poverty measured?

Poverty status is determined by comparing total annual income to a set of dollar value thresholds that vary by family size, number of related children, and age of householder. If a family's before tax money income is less than the dollar value of their 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.

The poverty thresholds are updated annually to allow for changes in the cost of living using the Consumer Price Index (CPI-U). The thresholds do not vary geographically.

SAIPE's primary input is the 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 Poverty is Calculated in the American Community Survey" at: http://www.census.gov/hhes/www/poverty/about/overview/measure.html.

[7] Information on poverty, including how it is defined is located in the text box on page 4. Further information on poverty is available at: http://www.census.gov/hhes/www/poverty/poverty.html.

Figure 3.

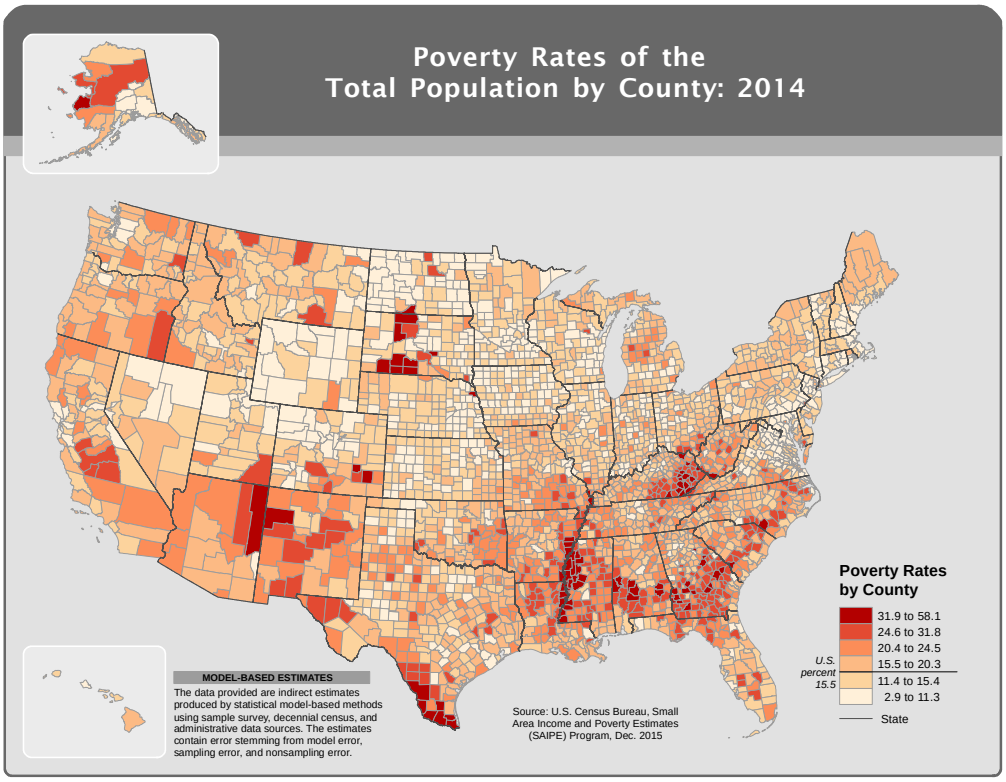
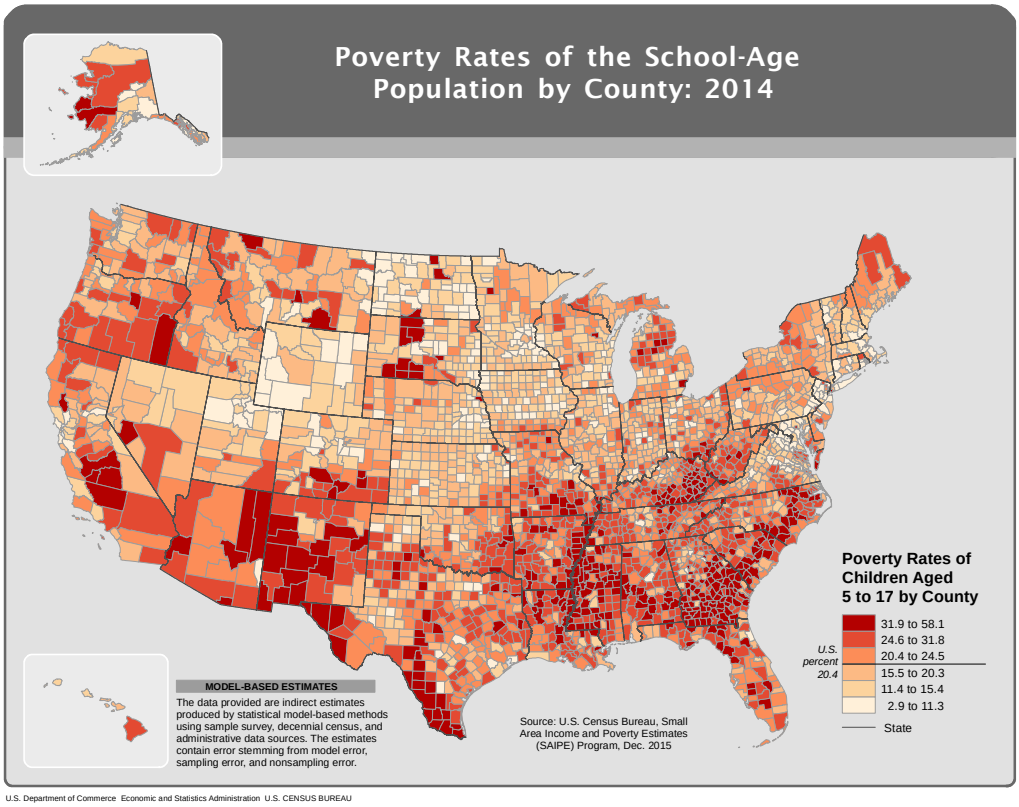


Figure 4.



Change in County Poverty Rates

Figure 5 shows the change in poverty rates at the county level for the total population between 2007 and 2014. Fifty-nine percent (1,861 counties) displayed changes in their poverty rate ranging between 0.1 and 3.4 percent. Twenty percent (637 counties) were within the top two ranges from 3.5 to 14.3. However, 21 percent (643 counties) displayed a change in their poverty rate ranging from -11.7 to 0.0 percent. There were only 165 counties in the top range between 5.7 and 14.3 percent. Of these, 73 percent (121 counties) were in the South. Of these 121 counties in the South, 46 counties were in Georgia.

Of the 3,141 counties in the United States, 27 percent (860 counties) had statistically significant changes in their poverty rates between 2007 and 2014. Of these counties, 95 percent (820 counties) showed a statistically significant increase in poverty rate during the seven-year period. Approximately 5 percent (40 counties) had a statistically significant decrease in poverty rate during this period.

Poverty by Region and Metro Status

Figure 6 compares each region's share of the total population and people in poverty, calculated as an aggregate of component counties. Figure 7 also makes the same comparison by metro status.

Forty-one percent of the people in poverty live in the South, 24 percent live in the West, 20 percent live in the Midwest, and 15 percent live in the Northeast.

Eighty-three percent of the people in poverty live in metropolitan areas, 10 percent live in micropolitan areas, and 7 percent live in non-metro/micro areas.

Figure 5.

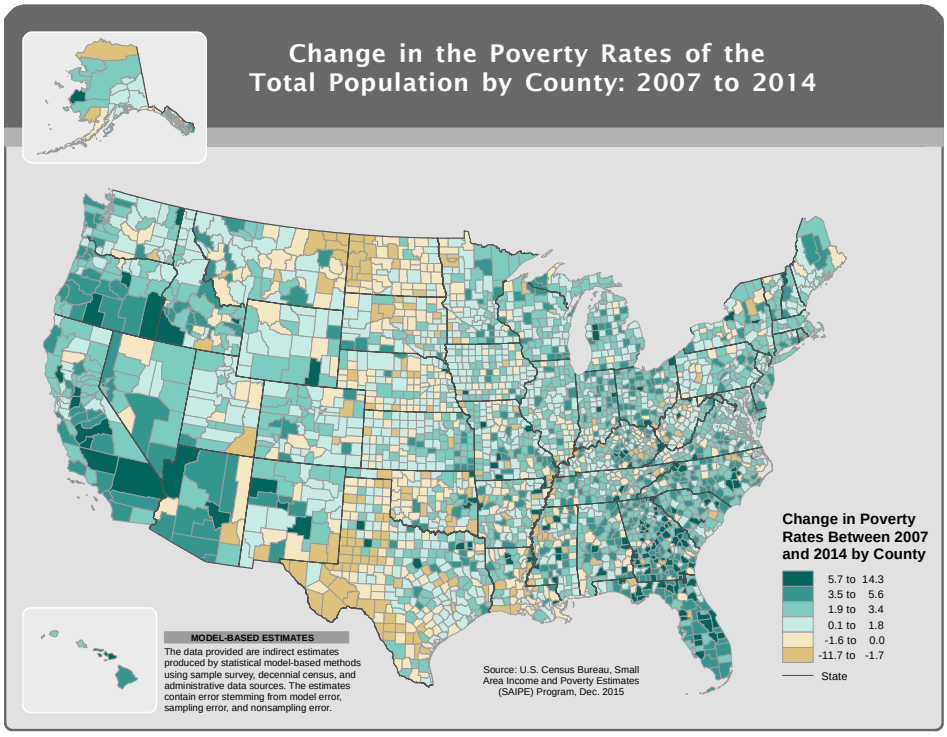
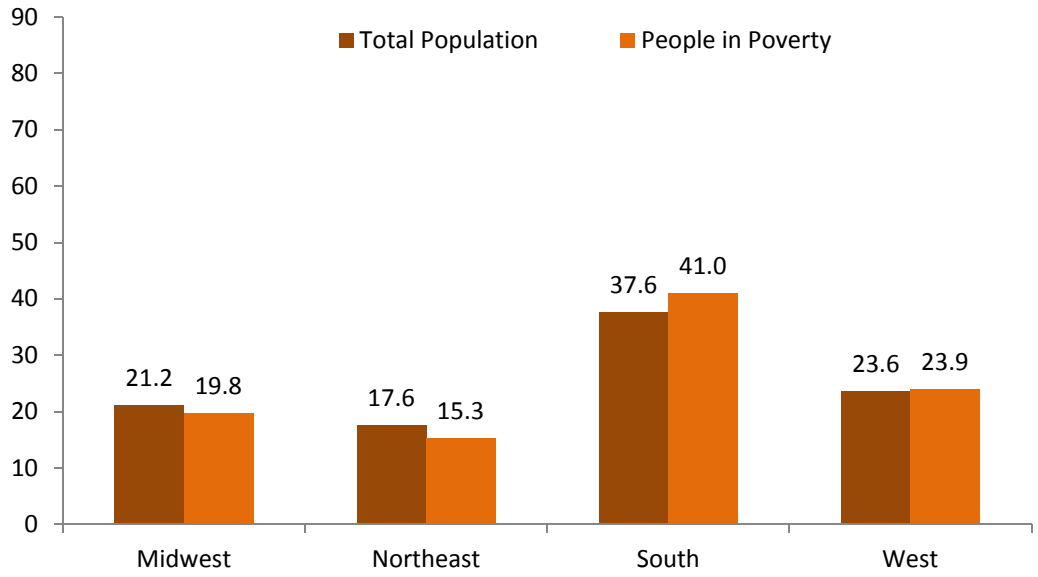


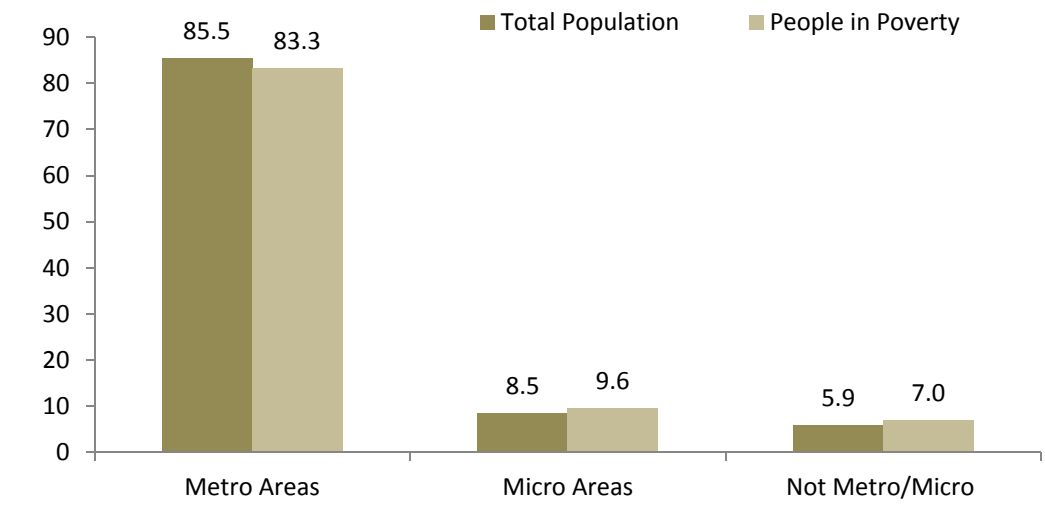
Figure 6. Share of the Total Population and People in Poverty by Region: 2014



Notes: The data shown are estimates containing uncertainty. Apparent differences among the estimates may not be statistically significant. The 'total population' in this figure refers to those people in the poverty universe. The poverty universe excludes children younger than 15 who are not related to the householder, people living in institutional group quarters, and those living in college dormitories or military barracks.

Source: U.S. Census Bureau, 2014 Small Area Income and Poverty Estimates.

Figure 7. Share of the Total Population and People in Poverty by Metro Status: 2014

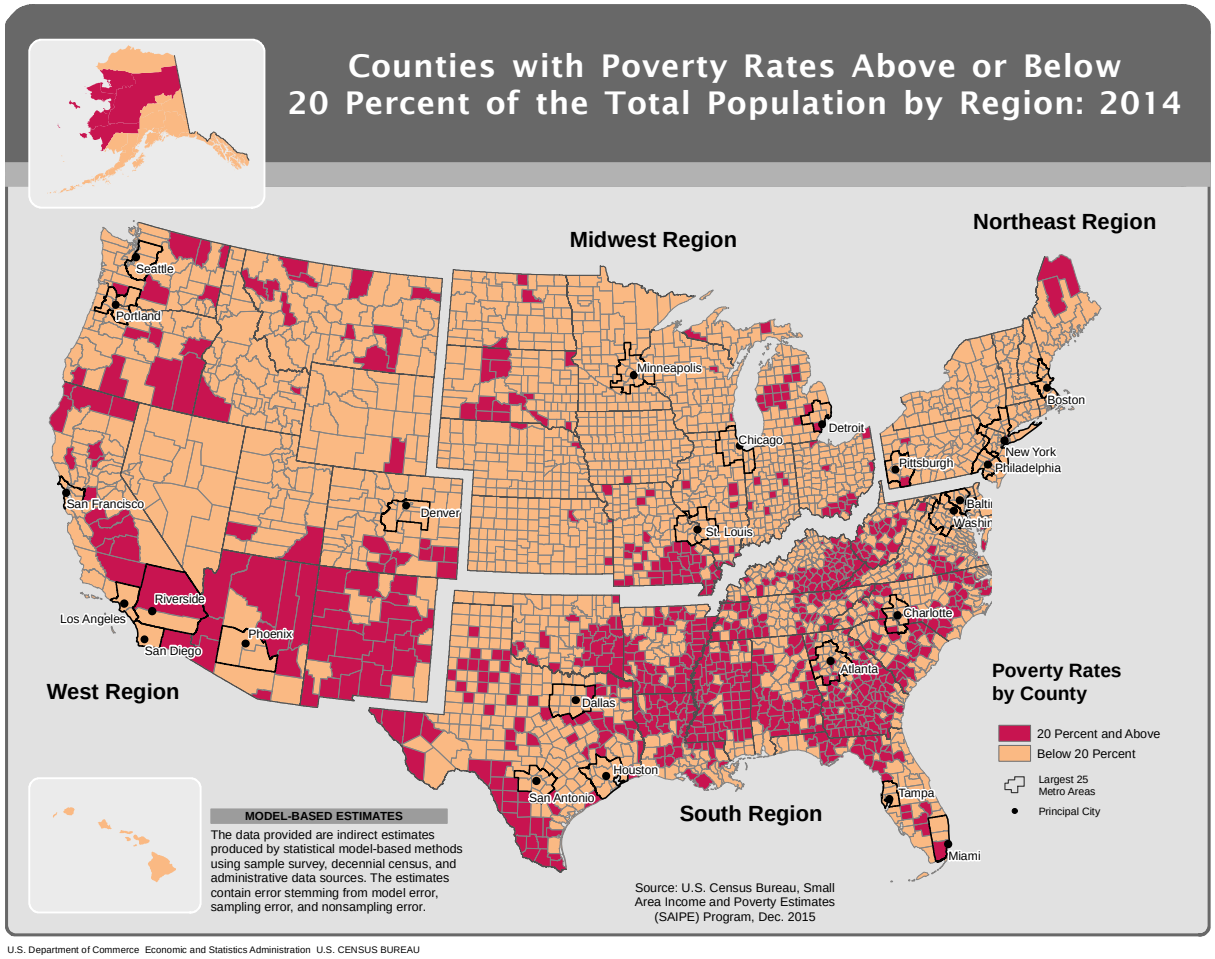


Notes: The data shown are estimates containing uncertainty. Apparent differences among the estimates may not be statistically significant. The 'total population' in this figure refers to those people in the poverty universe. The poverty universe excludes children younger than 15 who are not related to the householder, people living in institutional group quarters, and those living in college dormitories or military barracks.

Source: U.S. Census Bureau, 2014 Small Area Income and Poverty Estimates.

Figure 8 depicts county level poverty data for all ages by region and the largest 25 metropolitan areas. The lighter shaded counties have poverty rates less than 20 percent, while the darker shaded counties have poverty rates of 20 percent or more. In the Midwest, 10 percent of counties had poverty rates of 20 percent or more; in the Northeast, 4 percent; in the South, 45 percent; and in the West, 20 percent.

Figure 8.



What are the sources of statistical uncertainty?

All data shown are estimates containing uncertainty. Sources of uncertainty include model error, sampling error, and non-sampling error. Confidence intervals for all state and county estimates are available at http://www.census.gov/did/www/saipe/data/statecounty/index.html. Guidance on the uncertainty contained in the school district estimates is available at http://www.census.gov/did/www/saipe/methods/schooldistrictuncertainty.html. 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 significance level.

School District Level Estimates

Poverty

The 2014 SAIPE data contain estimates for all school districts in the Title I universe, which includes a total of 13,486 school districts in the United States.[8] However, of those, 15 school districts did not have any school-age children and were excluded from this analysis (13,471 school districts).[9]

Figure 9 shows the distribution of the number of school districts, the number of school-age children, and the number of school-age children in families in poverty by school district population size (school districts with populations less than 20,000 and 20,000 or more). School-age children, including school-age children in families in poverty, tended to be concentrated in school districts with a population of 20,000 or more. In 2014, an estimated 25 percent of school districts had a total population size of 20,000 or more. These school districts contained an estimated 81 percent of all school-age children in the nation and an estimated 83 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 provides an overview of the variation in poverty throughout the United States by school district.[10] The lightest green areas show the school districts with the lowest poverty rates (0.0 to 10.1 percent) and the dark blue highlights the school districts with the highest poverty rates (41.3 to 100.0 percent). School districts with both high and low poverty rates are scattered throughout the nation, with some areas of concentration.

Why are the Small Area Income and Poverty Estimates Important?

The 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 93 percent, have a total population less than 65,000 and so do not have ACS 1-year estimates available. The SAIPE program was designed specifically to provide estimates for 13,471 school districts in the United States on a yearly basis.

For additional detailed information on the use of SAIPE estimates, please visit the FAQ webpage at: http://www.census.gov/did/www/saipe/about/faq.html or

http://www.census.gov/did/www/saipe/about/index.html.

The U.S. Census Bureau SAIPE main webpage is located at: http://www.census.gov/did/www/saipe/index.html.

Additional information is available by data release year from 2005 to 2014. For example, annual highlights reports, datasets, maps, figures, and ranking tables can be downloaded from the SAIPE webpage at: http://www.census.gov/did/www/saipe/data/index.html or

http://www.census.gov/did/www/saipe/data/highlights/index.html.

The online SAIPE Interactive Data Tool provides detailed customized data tables by selected year(s) from 1989-2014, geography (state, county, and school districts), poverty characteristics (all ages, under age 18, aged 5-17 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 5-17), and the number of school-age children (aged 5-17) 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 online at: http://www.census.gov/did/www/saipe/data/index.html.

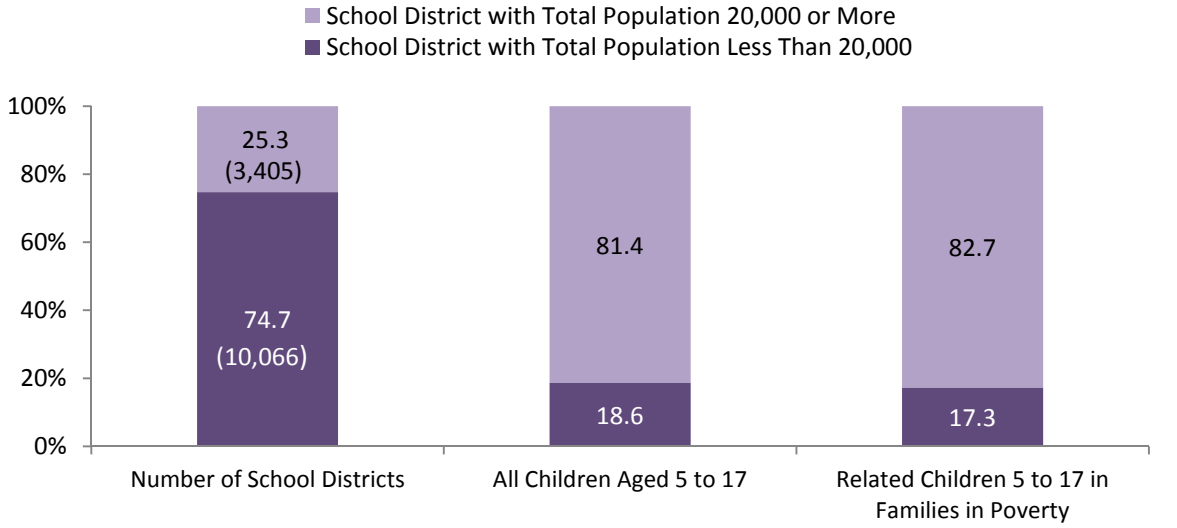
Two video tutorials on SAIPE methodology are available at: http://www.census.gov/did/www/saipe/methods/index.html.

[8] The Title I universe is the set of U.S. school districts for which Title I of the No Child Left Behind Act of 2001 pertains. There are 13,486 such school districts as of January 1, 2014.

[9] When interpreting the maps and other compilations of school district SAIPE estimates, additional sources of uncertainty exist, as compared to county-level estimates. For further information refer to the link below: http://www.census.gov/did/www/saipe/methods/schooldistrictuncertainty.html.

[10] For a large-scale view, refer to the following link: http://www.census.gov/did/www/saipe/data/statecounty/maps/2014.html.

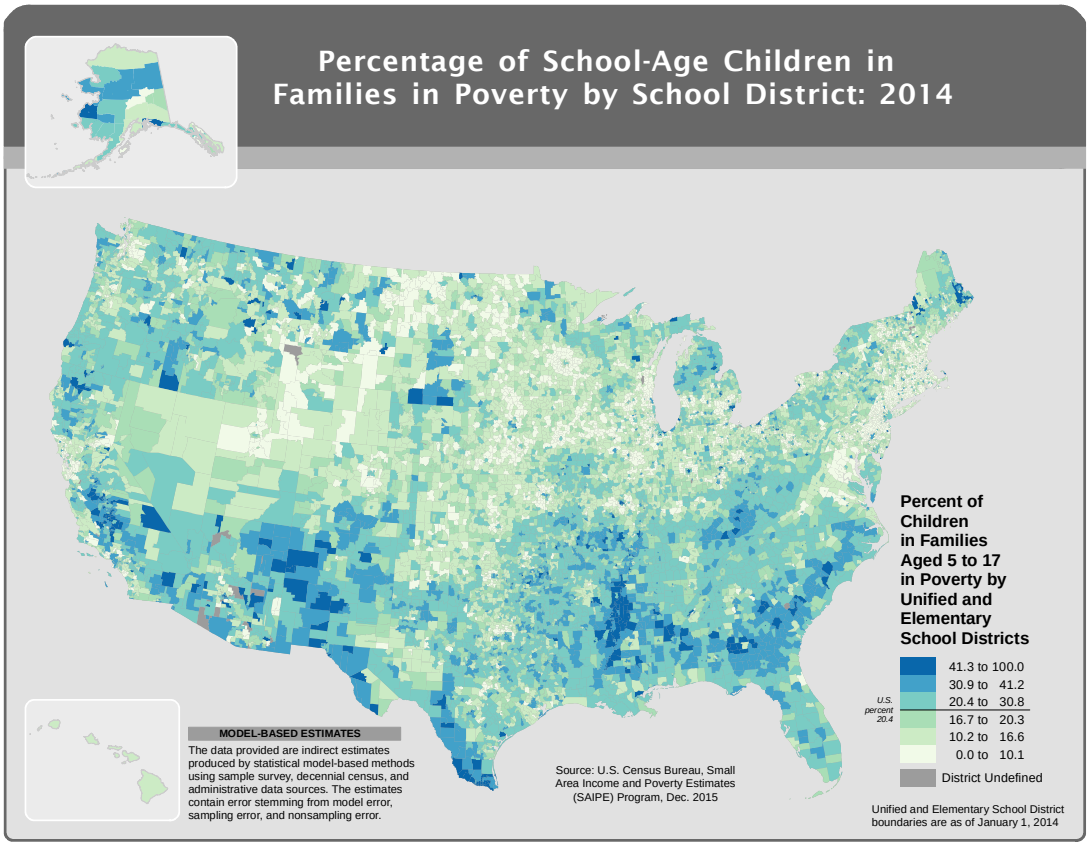
Figure 9. Distribution of School Districts, School-Age Children and School-Age Children in Families in Poverty by School District Population: 2014



Notes: There are 13,471 Title I eligible school districts used in this graph. Fifteen school districts were removed for having zero population of school-age children. Of that total, 3,405 school districts have populations of 20,000 or more and 10,066 school districts have populations of less than 20,000.

Source: U.S. Census Bureau, 2014 Small Area Income and Poverty Estimates.

Figure 10.



Acknowledgements

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

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 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: http://www.census.gov/did/www/sahie/index.html.

Income and Poverty Data Sources Available from the Census Bureau

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 multi-year averages) beginning in 1980.

Since 2006, the ACS has released annual subnational estimates of income and poverty for all places, counties, and metropolitan statistical areas with a population of at least 65,000 as well as for states and for the nation. The sample size of the ACS is about 3.5 million addresses per year, making this survey exceptionally useful for subnational analyses. Three-year ACS estimates were made available for 2008 through 2013 for areas and subpopulations as small as 20,000. Five-year ACS estimates became available for census tracts/block groups and for small subgroups of the population starting in 2010. More information on the American Community Survey is located at: http://www.census.gov/acs/www/.

The SIPP is useful for understanding the dynamics of income and poverty (changes in income and poverty rates for the same households over three or four 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 1990 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.