Small Area Income and Poverty Estimates (SAIPE):

2010 Highlights

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Small Area Income and Poverty Estimates (SAIPE): 2010 Highlights

Introduction

This document presents 2010 data from the Small Area Income and Poverty Estimates (SAIPE) program of the U.S. Census Bureau. The SAIPE program produces poverty estimates for the total population and median household income estimates annually for all counties and states. SAIPE data also produces single-year poverty estimates for the school-age population (age 5-17) for all school districts in the U.S.

The main objective of the SAIPE program is to provide timely, reliable estimates of income and poverty statistics for the administration of federal programs and the allocation of federal funds to local jurisdictions. Some state and local programs also use SAIPE income and poverty estimates to distribute funds and manage programs.

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 of such analysis.

Highlights

- County-level median household income ranged from $20,577 to $119,075 with a middle value of $41,256.[1] [2]
- The 2010 data showed that 1,011 counties had a school-age poverty rate significantly above and 851 significantly below the national poverty rate of 19.8 percent.
- Based on poverty rate estimates for all ages, 722 counties, or 23.0 percent of all counties, had a statistically significant increase in poverty between 2007 and 2010.[3] Less than one percent of counties had a decrease in poverty between the three years.
- In 2010, there were 54.0 million school-age children in 13,619 school districts. Of these, 45.3 percent of all school-age children resided in districts with poverty rates greater than 20 percent.

Small Area Income and Poverty Estimates (SAIPE) Program

The SAIPE estimates improve upon survey estimates by borrowing strength from administrative records, postcensal population estimates, and decennial census data. Modeling techniques allow SAIPE to annually publish single-year estimates for all school districts and counties. The SAIPE estimates are broadly consistent with the direct survey estimates, but with help of other timely information, the SAIPE estimates are more precise than the one-year survey estimates for most counties and school districts. One-year American Community Survey (ACS) estimates are not available for most of these areas. Nonetheless, SAIPE estimates are subject to several types of uncertainty. Further information on SAIPE methodology is available at: http://www.census.gov/did/www/saipe/methods/index.html.

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.

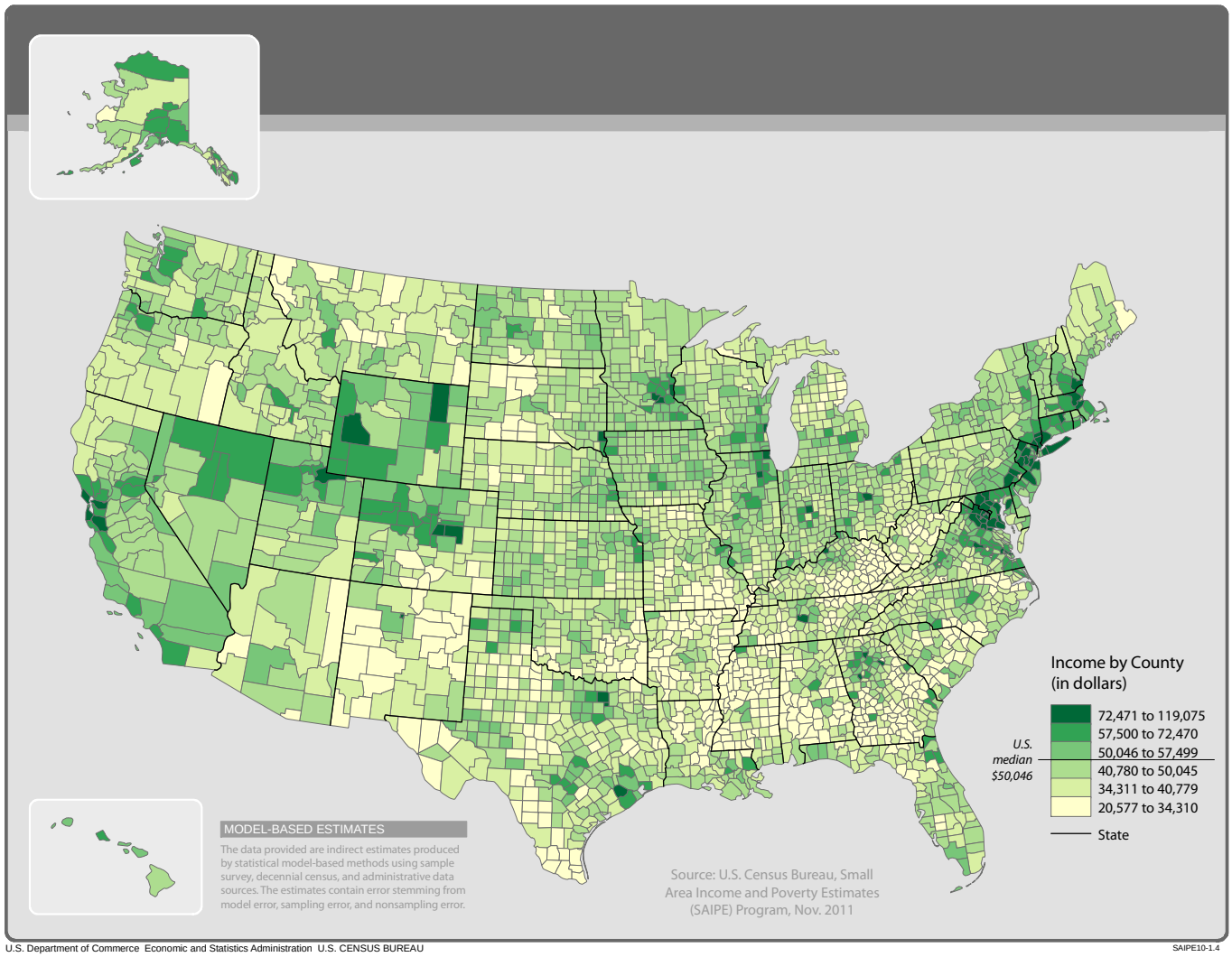
[1] All data shown are estimates containing uncertainty. Apparent differences among the estimates may not be statistically significant, unless specifically noted. All direct comparisons cited in the text have been statistically tested at the 90% significance level.
[2] $41,256 is the middle value among the distribution of counties, not the U.S. median. The legend in Figure 1 shows the U.S. median ($50,046) which is the median household income for the nation.
[3] 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 with the most recent recession beginning in December 2007 and ending in June 2009.

County-Level Median Household Income

The 2010 SAIPE data provide estimates for nearly all counties in the U.S (3,142 counties).[4] According to the data, the median household income estimates ranged from $20,577 to $119,075 with a middle value of $41,256.

Figure 1 is a county-level map highlighting the range of median household income throughout the U.S.[5] Counties with estimates within the highest range marked on the map ($72,471 to $119,075) were mostly located in the Northeast as well as in Wyoming, Colorado, and the California coastline. Counties with estimates within the lowest range marked on the map ($20,577 to $34,310) were mostly located in the South as well as Missouri, New Mexico, Arizona, and Montana.

Figure 1. **Median Household Income: 2010**



[4] Kalawao County, Hawaii was omitted from the estimates due to a lack of children ages 5 to 17.

[5] Geographic distribution of economic concepts, like income and poverty, were limited by the geographic unit of analysis. All maps and distributional charts in this document use legal entities, such as counties and school districts, which display a wide range of total population, population density, and other demographic characteristics. Thus, caution is advised when interpreting the results.

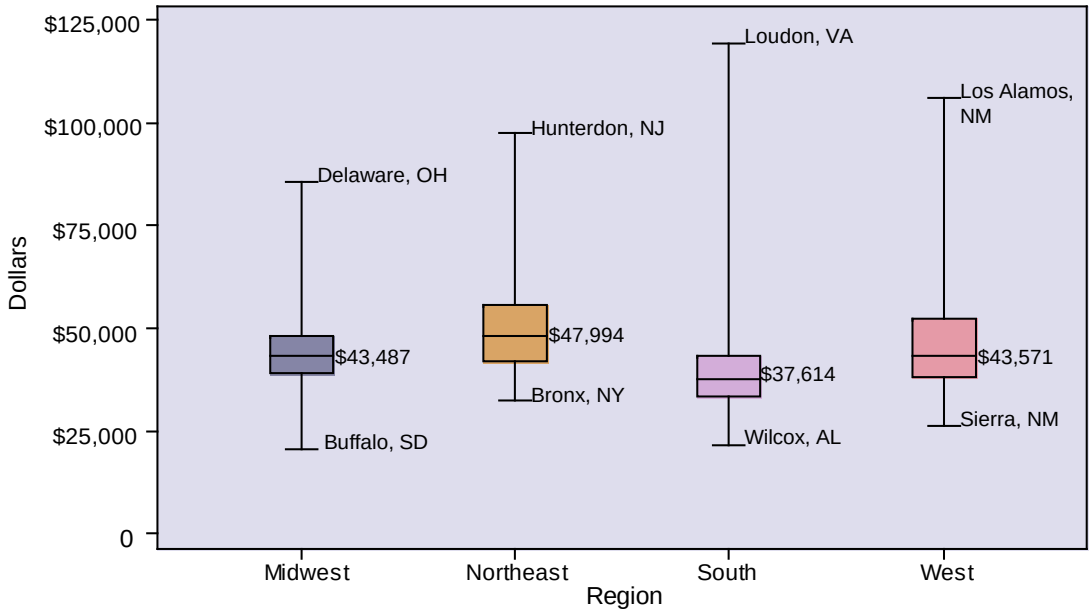
Metropolitan and Micropolitan Statistical Areas

Metropolitan and micropolitan statistical areas are geographical entities defined by the U.S. Office of Management and Budget (OMB) for use by federal statistical agencies in collecting, tabulating, and publishing federal statistics. They are the result of the application of published OMB standards to Census Bureau data. A metropolitan area contains an urban core population of 50,000 or more, and a micropolitan area contains an urban core population of at least 10,000 (but less than 50,000). Each metropolitan and micropolitan area consists of one or more counties and includes the counties containing the urban core area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core.

Appendix 2 is a map depicting metropolitan and micropolitan are status by county. Information about metropolitan and micropolitan areas, which are also known as "Core Based Statistical Areas", is available at: http://www.census.gov/population/www/metroareas/metroarea.html.

Highlighting the range of income throughout the U.S., Figure 2 displays some of the highest and lowest county estimates by region.[6] The box and whisker graph shows the range with the box representing the 25th quartile, the 50th quartile (middle or median value), and the 75th quartile. The lines extending from the box represent the minimum and maximum values. Looking at the range of median household income throughout the regions, ordered alphabetically, the Midwest had a middle estimate of $43,487, the Northeast a middle value of $47,994, the South a middle value of $37,614, and the West a middle estimate of $43,571.

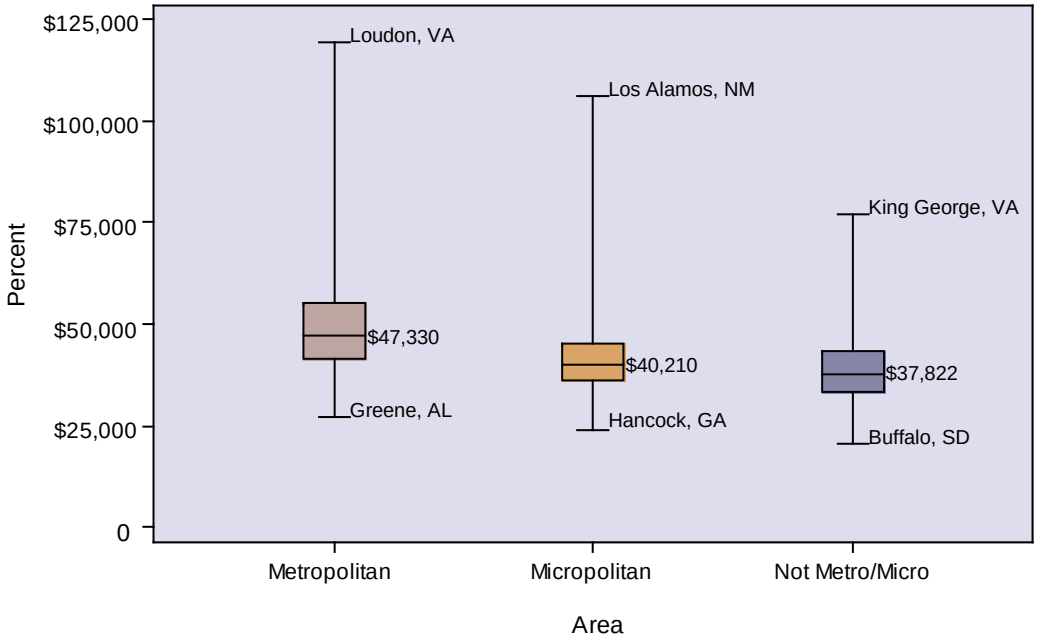
Figure 2. **Range and Middle Value of County-Level Median Household Income by Region: 2010**



Notes: The data shown are estimates containing uncertainty. Apparent differences among the estimates may not be statistically significant. In particular, counties identified as minimum and maximum may have several other counties that are statistically indistinguishable. The box and whisker plot shows the distribution of median household income by county. The whiskers indicate the minimum and maximum values, while the lower and upper borders of the box represent the interquartile range (25th and 75th percentile). The line inside the box indicates the location of 50th percentile (middle value).
Source: U.S. Census Bureau, 2010 Small Area Income and Poverty Estimate

[6] Census regions are defined as Midwest, Northeast, South, and West. For a map of the regions, see Appendix 1.

Figure 3. **Range and Middle Value of County-Level Median Household Income Estimates by Place of Residence: 2010**



Notes: The data shown are estimates containing uncertainty. Apparent differences among the estimates may not be statistically significant. In particular, counties identified as minimum and maximum may have several other counties that are statistically indistinguishable. The box and whisker plot shows the distribution of median household income by county. The whiskers indicate the minimum and maximum values, while the lower and upper borders of the box represent the interquartile range (25th and 75th percentile). The line inside the box indicates the location of 50th percentile (middle value).
Source: U.S. Census Bureau, 2010 Small Area Income and Poverty Estimates

It is also possible to view median household income by place of residence, as shown in Figure 3.[7] The estimates for median household incomes in metropolitan area counties ranged from $27,117 to $119,075, with a midpoint of $47,330. The estimates for median household incomes in micropolitan area counties ranged from $23,887 to $105,987, with a midpoint of $40,210. The median household incomes in the non-metropolitan areas ranged from $20,577 to $77,200, with a midpoint of $37,822.

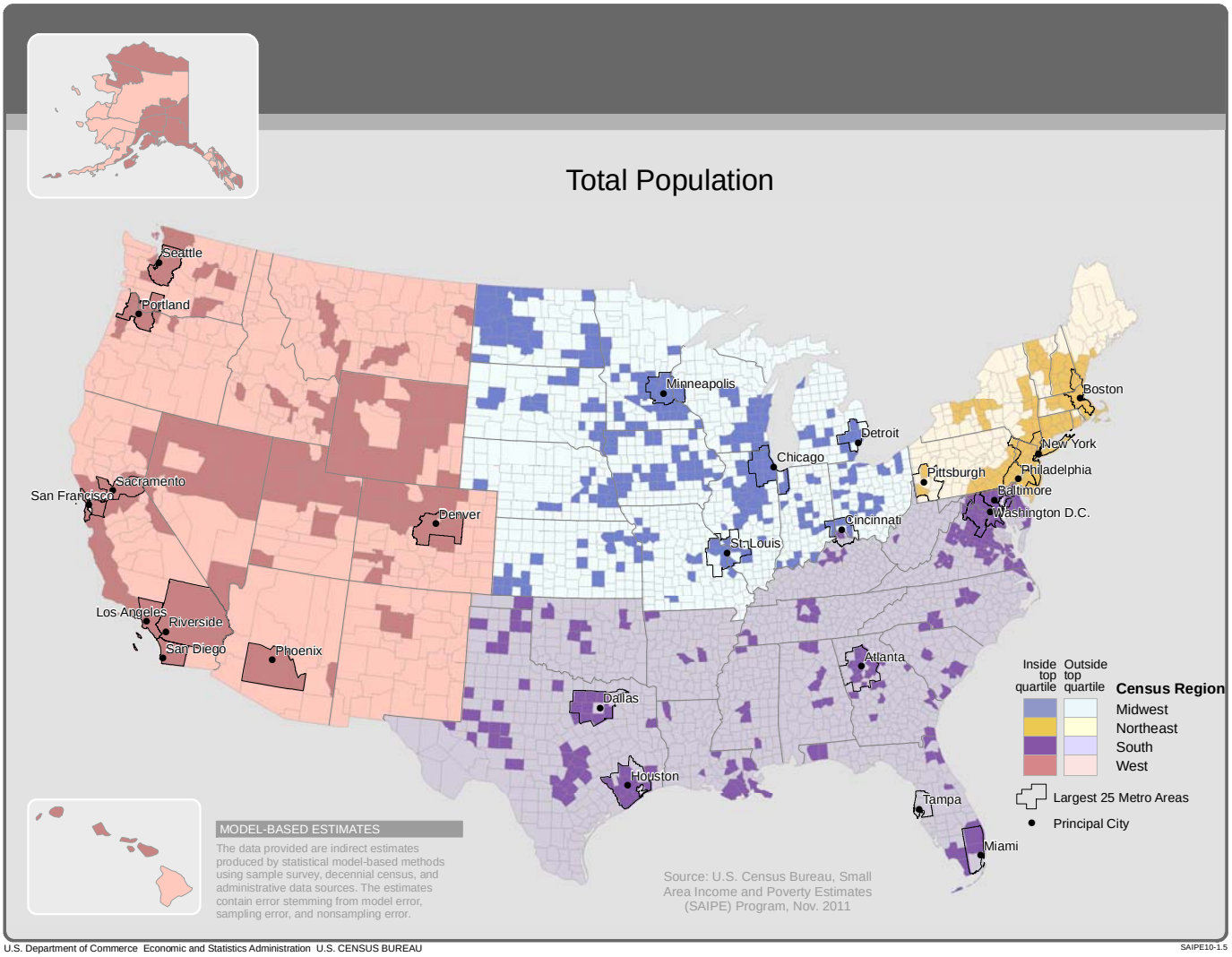
National Top Quartile

Figure 4 presents the 786 counties above the 75th percentile (top quartile) by county median household income. The top quartile had median household income of more than $47,724. Sixty-eight percent of the counties (533 counties) in the national top quartile were located in metropolitan areas. This was also where the population was most concentrated: 165,776,692 of the 173,051,734 people (95.8 percent) living in counties in the top national quartile lived in metropolitan areas.[8]

Median household incomes in 181 of the 227 counties (79.7 percent) in the country's 25 largest metropolitan areas were above the national 75th percentile. In eight of the 25 largest Metropolitan areas (Phoenix, Arizona; Los Angeles, California; Riverside-San Bernadino, California; Sacramento, California; San Francisco, California; Minneapolis-St. Paul, Minnesota; Portland-Vancouver, Oregon; Seattle, Washington) all counties that comprised the metropolitan areas were in the national top quartile.

[7] For place of residence, we use metropolitan and micropolitan statistical areas for county-level data. Metropolitan and micropolitan area status is described in the text box on page 6 and is shown by map in Appendix 2.
[8] Many of the other counties in the top quartile were located around smaller metropolitan and micropolitan areas.

Figure 4. **Counties in the Top National Quartile Based on Median Household Income: 2010**



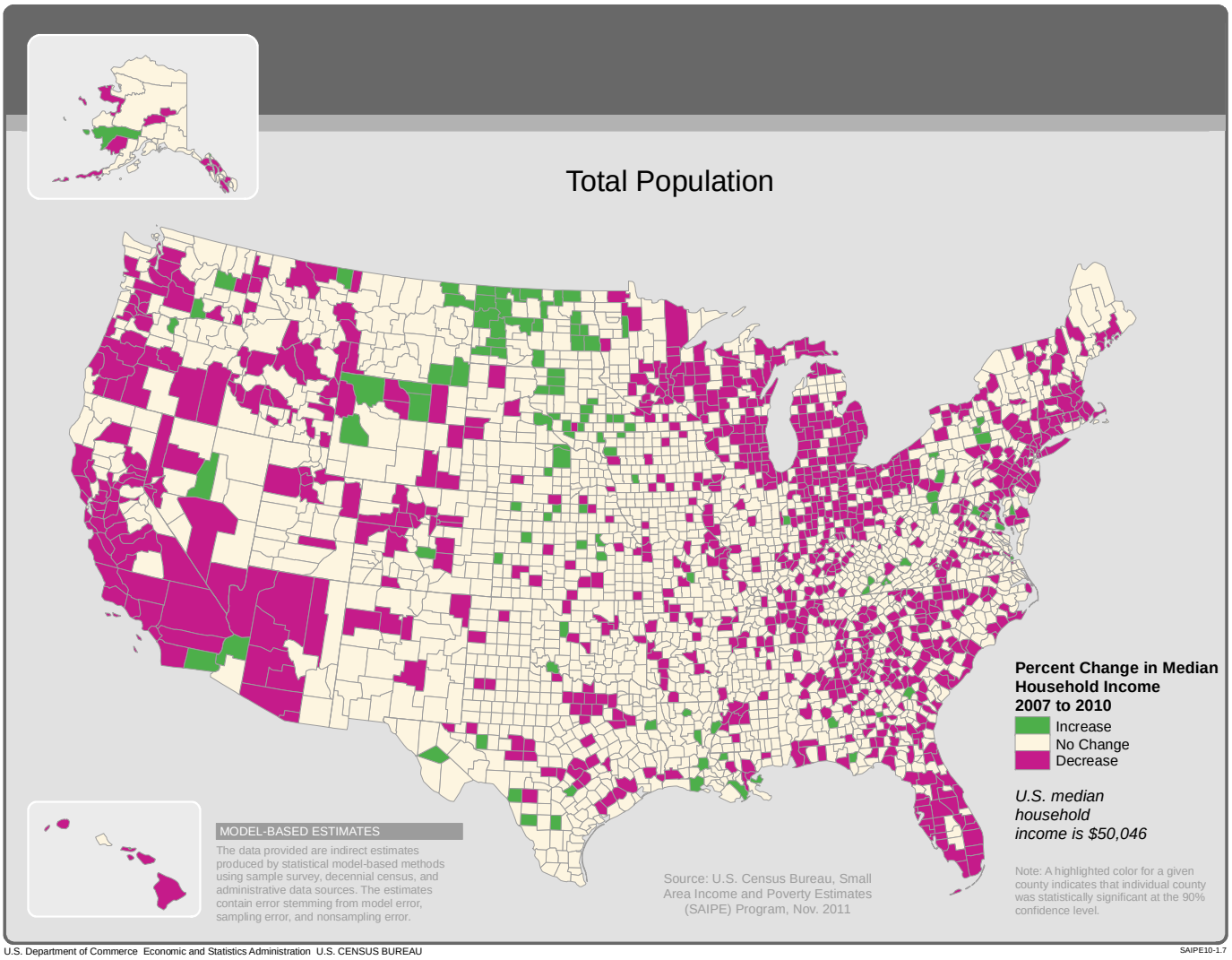
Change in Median Household Income

Recently developed methodology has allowed the analysis and statistical testing of SAIPE county trends at the 90 percent significance level.[9] Figure 5 shows the statistically significant county-level change in median household income rates for the total population for the period between 2007, the year before the most recent recession, and 2010, the year after the recession ended. The changes were adjusted for inflation using the national Consumer Price Index before testing. Of the 3,142 counties in the U.S., 812 counties, or 25.8 percent, had a statistically significant change over the three-year period. Of the counties with statistically significant changes, 735 counties had decreases in median household income. Areas with clusters of significant decreases in median household income include the Southwest and Northwest, parts of the

[9] A methodology for counties has been developed for use in analyzing trends in median household income and poverty over time. These methods cannot be applied directly to published estimates since changes to survey coverage, geographic definitions, and SAIPE methodology create breaks in the published time series. For more information, see the SAIPE methodology page at: http://www.census.gov/did/www/saipe/methods/index.html. Additionally, there is a published paper available on the comparisons methodology: Basel, Wesley, Sam Hawala, and David Powers. "Serial Comparisons in Small Domain Models: A Residual-Based Approach," 2010. *JSM Proceedings, Section on Government Statistics.* Alexandria, VA: American Statistical Association. The paper is located at: http://www.census.gov/did/www/saipe/publications/files/BaselHawalaPowers2010asa.pdf.

Northeast, Florida, and many of the states surrounding the Great Lakes. In contrast, only 77 or 10.5 percent of the counties with significant change, had an increase in median household income between 2007 and 2010.

Figure 5. **County Changes in Median Household Income: 2007 to 2010**

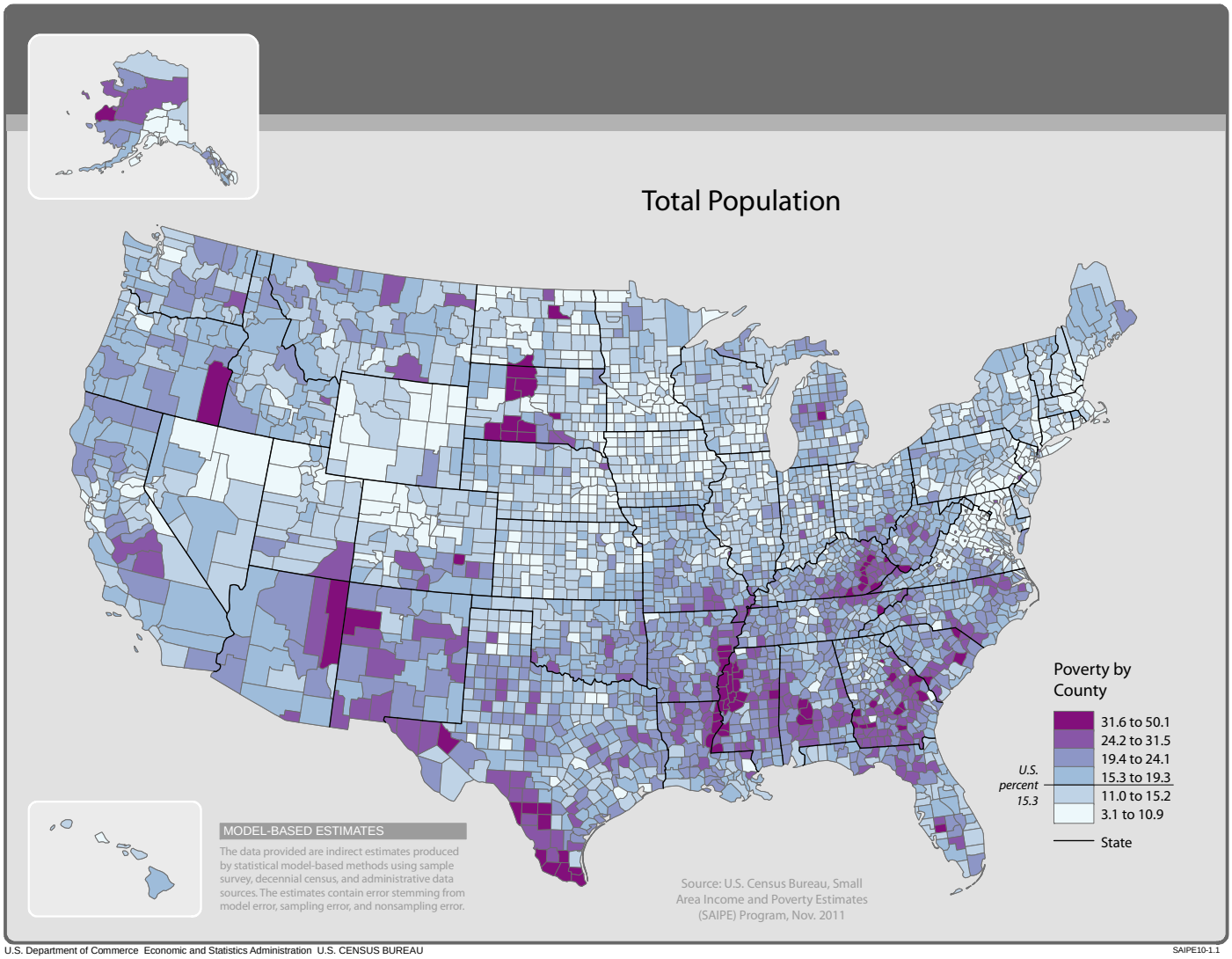


County-Level Poverty

The 2010 SAIPE provides poverty estimates for all counties. According to these estimates, county poverty rates for all ages ranged from 3.1 percent to 50.1 percent.[10] Figure 6 indicates how poverty rates varied among counties throughout the U.S. Counties with higher poverty estimates were concentrated mostly in the South, predominately in Louisiana, Mississippi, Arkansas, Kentucky, and South Texas; and Eastern Arizona and New Mexico in the West. Conversely, counties with lower poverty rate were mostly located in the Northeast, Midwest, and portions of the West.

[10] Information on poverty, including how it is defined is located in the text box on page 10. Further information on poverty is available at: http://www.census.gov/hhes/www/poverty/poverty.html.

Figure 6. **Percentage of People in Poverty by County: 2010**



How Poverty is Measured

Poverty status is determined by comparing total annual income to a set of dollar values called 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 thresholds, 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 his or her threshold.

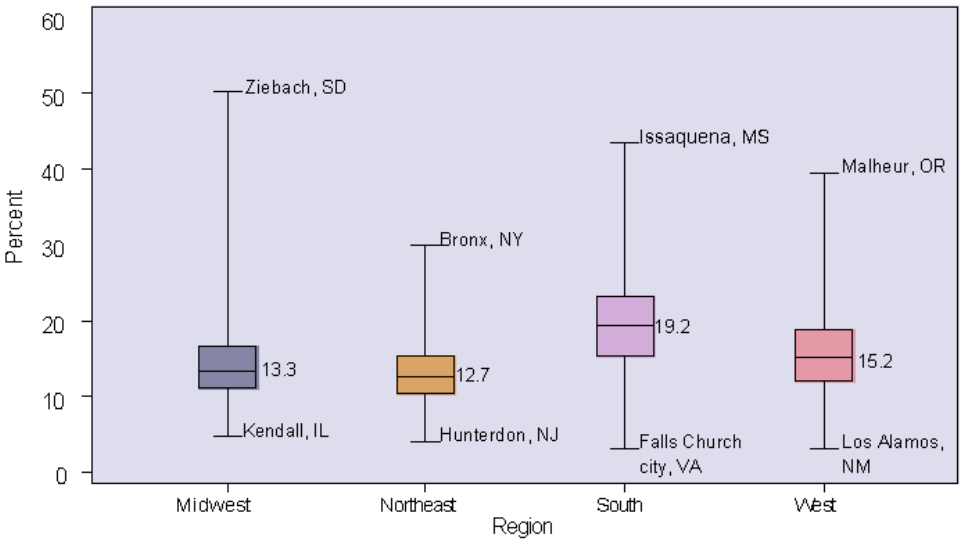
The poverty thresholds are updated annually to allow for changes in the cost of living using the Consumer Price Index (CPI-U). They do not vary geographically.

SAIPE's dependent variable is the estimates of poverty from the American Community Survey (ACS), a continuous 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 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.

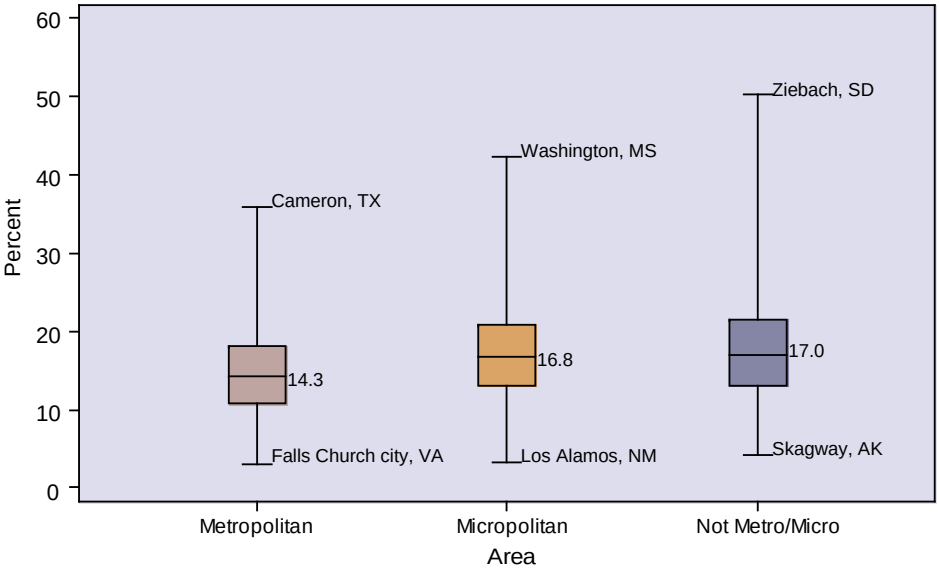
Figures 7 and 8 show the distribution of county poverty rates by region and place of residence. According to Figure 7, the median estimates for county-level poverty rates in the four regions were 13.3 percent (Midwest), 12.7 percent (Northeast), 19.2 percent (South), and 15.2 percent (West). Among place of residence, counties in metropolitan areas had a median estimated poverty rate of 14.3 percent, 16.8 percent in micropolitan areas, and 17.0 percent in counties that were neither metropolitan nor micropolitan areas (Figure 8).

Figure 7. **Range and Median Value of County-Level Poverty Rates for All Ages by Region: 2010**



Notes: The data shown are estimates containing uncertainty. Apparent differences among the estimates may not be statistically significant. In particular, counties identified as minimum and maximum may have several other counties that are statistically indistinguishable. The box and whisker plot shows the distribution of poverty by county. The whiskers indicate the minimum and maximum values, while the lower and upper borders of the box represent the interquartile range (25th and 75th percentile). The line inside the box indicates the location of 50th percentile (median value).
Source: U.S. Census Bureau, 2010 Small Area Income and Poverty Estimates

Figure 8. **Range and Median Value of County-Level Poverty Rates for All Ages by Place of Residence: 2010**

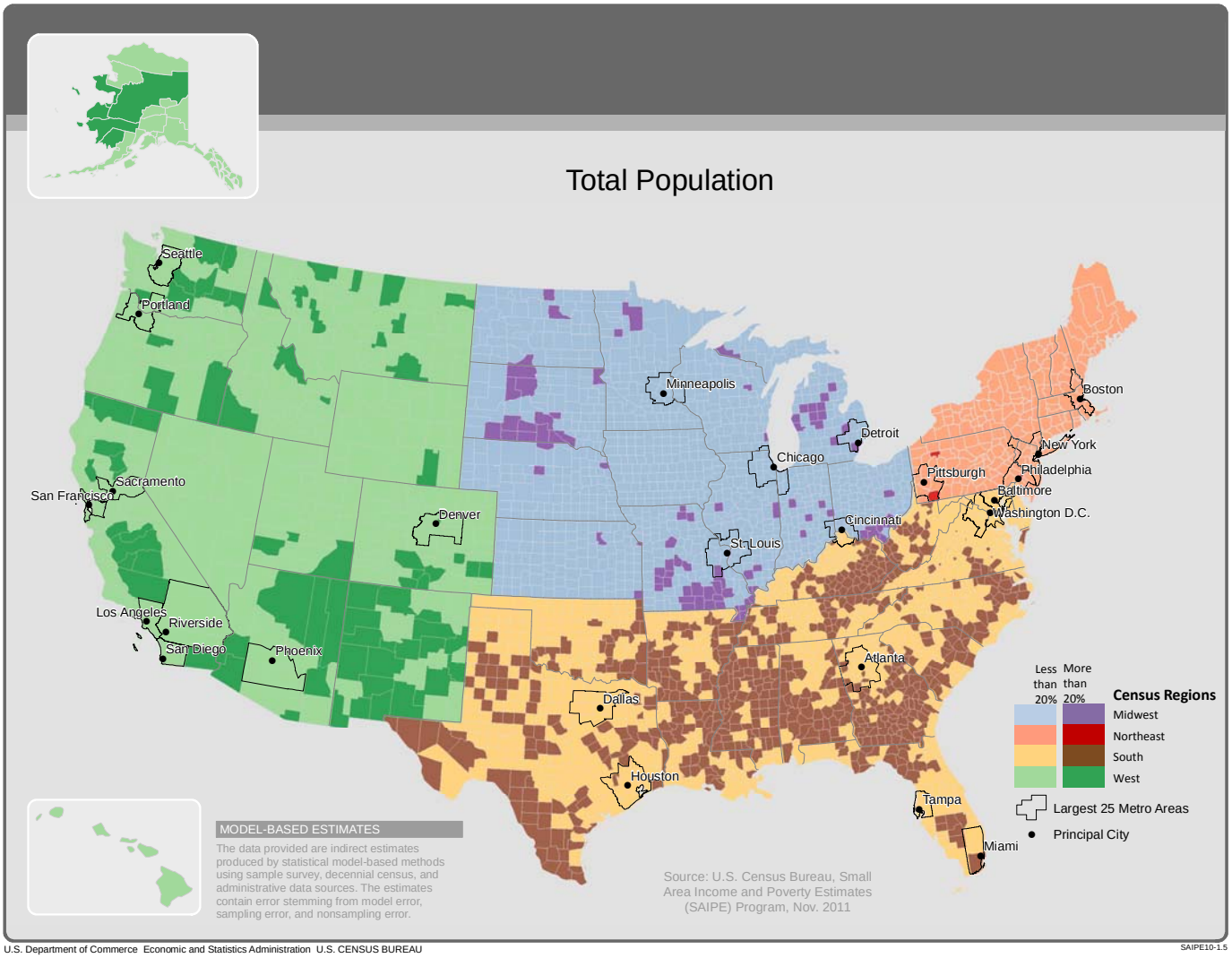


Notes: The data shown are estimates containing uncertainty. Apparent differences among the estimates may not be statistically significant. In particular, counties identified as minimum and maximum may have several other counties that are statistically indistinguishable. The box and whisker plot shows the distribution of poverty by county. The whiskers indicate the minimum and maximum values, while the lower and upper borders of the box represent the interquartile range (25th and 75th percentile). The line inside the box indicates the location of 50th percentile (median value).
Source: U.S. Census Bureau, 2010 Small Area Income and Poverty Estimates

Concentration of Poverty

In addition to the percent of people in poverty, it is possible to analyze the concentration of poverty at the county-level. Figure 9 depicts county poverty data for all ages by region and the largest 25 metropolitan areas. According to this figure, counties with a poverty rate less than 20 percent were concentrated in the South. The Northeast and Midwest regions had fewer counties with poverty rates 20 percent or higher. This map also shows few counties in the largest 25 metropolitan area had poverty rates for 20 percent or higher.

Figure 9. **Counties with Poverty Rates 20 Percent or Above by Region: 2010**



Share of People in Poverty

Table 1 shows the numbers and percentages of counties, total population, and people in poverty by region and place of residence. Among the regions, 33.6 percent of all counties were located in the Midwest, 6.9 percent in the Northeast, 45.3 percent in the South, and 14.2 percent in the West. By place of residence, 35.0 percent of all counties were located in metropolitan areas, 21.9 percent in micropolitan areas, and 43.1 percent of the counties were in neither metropolitan nor micropolitan.

Of the 301.5 million people, approximately 21.7 percent reside in the Midwest, while 17.9 percent reside in the Northeast, 37.1 percent reside in the South, and 23.3 percent reside in the West region. Among place of

residence, 83.7 percent of the population lived in metropolitan areas, 10.0 percent in micropolitan areas, and 6.3 percent in counties that were neither in metropolitan nor micropolitan areas.

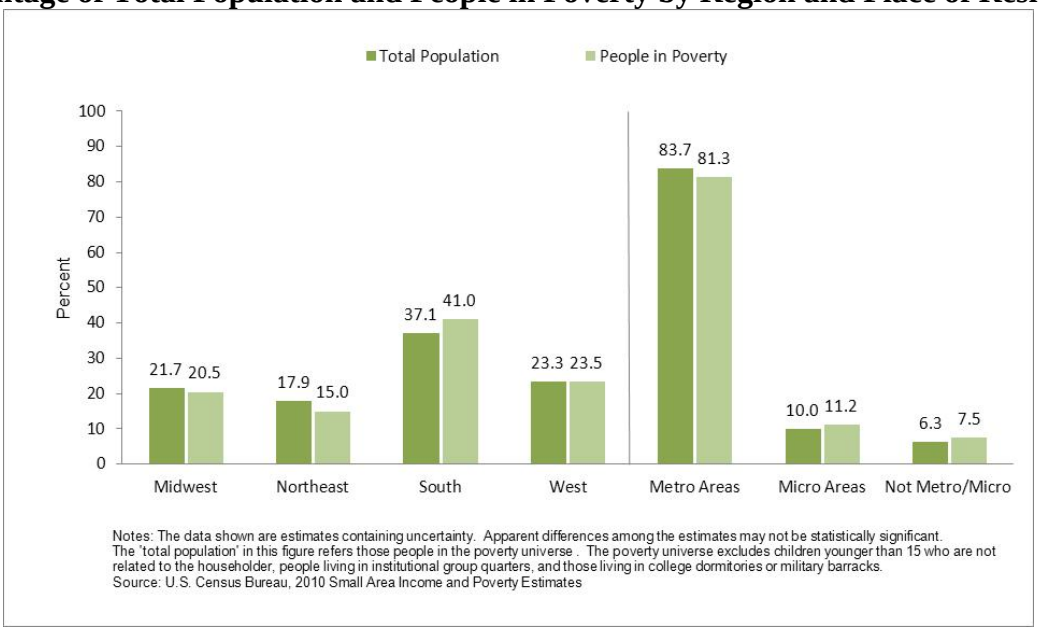
Table 1. **County Summary, by Region and Place of Residence**

Category	Counties	Total Population	Persons in Poverty	Counties	Total Population	Persons in Poverty
	Number			Percent of Total		
Total Counties	3,142	301,535,016	46,215,935	100.0	100.0	100.0
Midwest	1,055	65,203,395	9,457,708	33.6	21.7	20.5
Northeast	217	53,788,448	6,457,708	6.9	17.9	15.0
South	1,423	111,858,719	18,955,682	45.3	37.1	41.0
West	447	70,684,454	10,862,495	14.2	23.3	23.5
Metropolitan Areas	1,100	252,938,282	37,561,601	35.0	83.7	81.3
Micropolitan Areas	688	29,819,289	5,196,936	21.9	10.0	11.2
Not in Metro or Micro Areas	1,354	18,777,445	3,457,398	43.1	6.3	7.5

Notes: The data shown are estimates containing uncertainty. Apparent differences among the estimates may not be statistically significant. The poverty universe is a subset of the total population. Specifically, poverty status excludes children younger than 15 who are not related to the householder, people living in institutional group homes, and those living in college dormitories or military barracks. Estimates are rounded and do not add to 100 percent.
Source: U.S. Census Bureau, 2010 Small Area Income and Poverty Estimates

Figure 10 shows a comparative picture of the share of the total population with the proportion of people in poverty by region and place of residence. According to this figure, the South region was the only region with higher proportion of people in poverty (41.0 percent) as compared with its share of total population (37.1 percent). Among place of residence, micropolitan areas and areas in neither metropolitan nor micropolitan had higher share of people in poverty compared with their respective share of the total population. The distribution of people in poverty were 20.5 percent in the Midwest, 15.0 percent in the Northeast, 41.0 percent in the South, and 23.5 percent in the West. Approximately, 81.3 percent of those in poverty lived in metropolitan areas, while 10.0 percent in micropolitan areas, and 6.3 percent in neither metropolitan nor micropolitan areas.

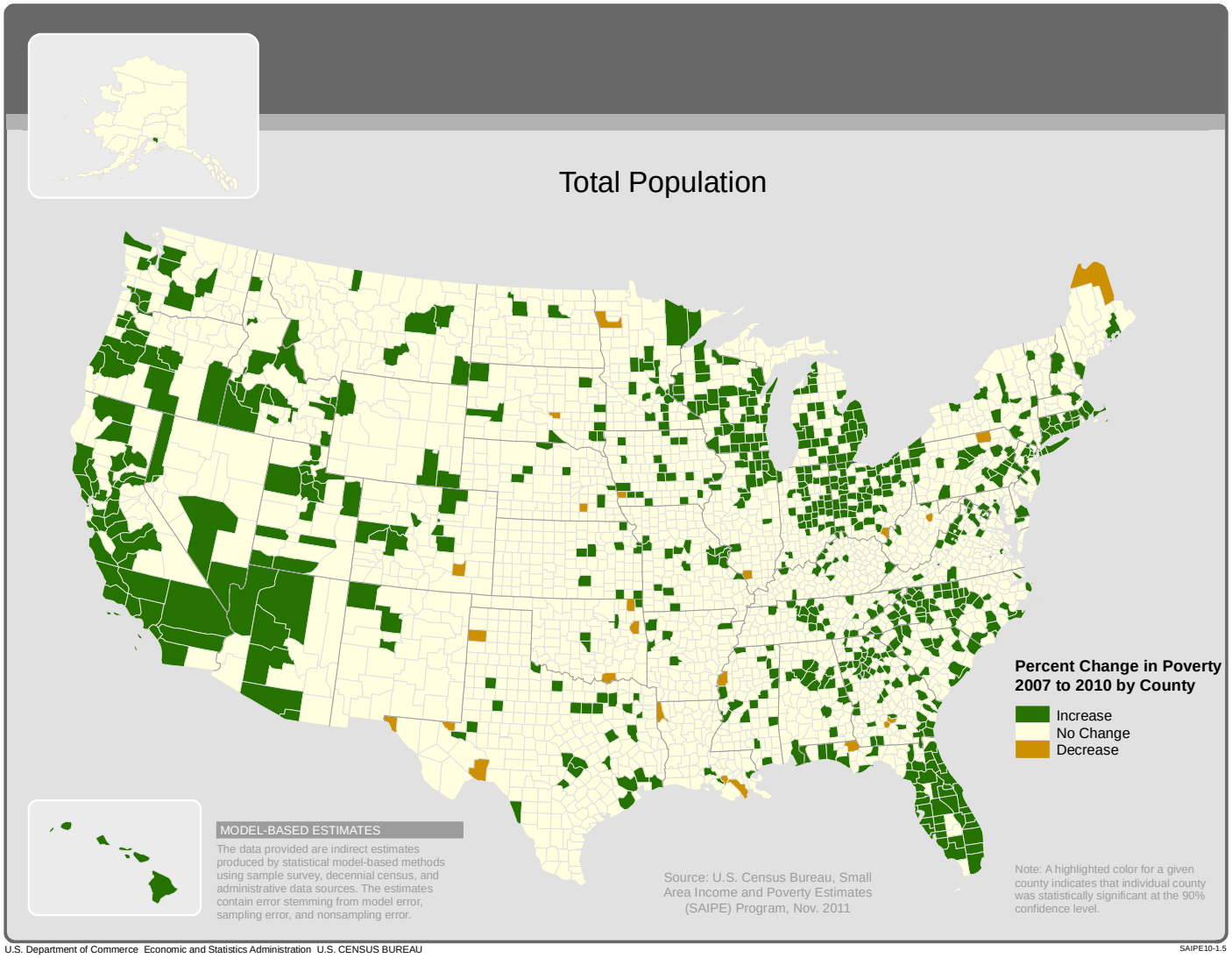
Figure 10. **Percentage of Total Population and People in Poverty by Region and Place of Residence: 2010**



Change in Poverty Rates

In four of the last five recessions, the poverty rate increased in the first calendar year following the end of the recession (DeNavas-Walt, Proctor and Smith, 2011). Figure 11 shows the county-level change in poverty rates for the total population for the period between 2007 and 2010. Of the 3,142 counties in the U.S., 746 counties, or 23.7 percent, had a statistically significant difference between the 3 years. Of the counties with statistically significant changes, 722 counties had an increase in poverty rate. While, only 24 of the counties with significant change, or less than one percent, had a decrease in poverty rate between 2007 and 2010. Areas with significant increases in poverty include Florida, Southern California, Hawaii, Arizona and many of the states surrounding the Great Lakes.

Figure 11. **County Changes in Poverty Rates: 2007 to 2010**

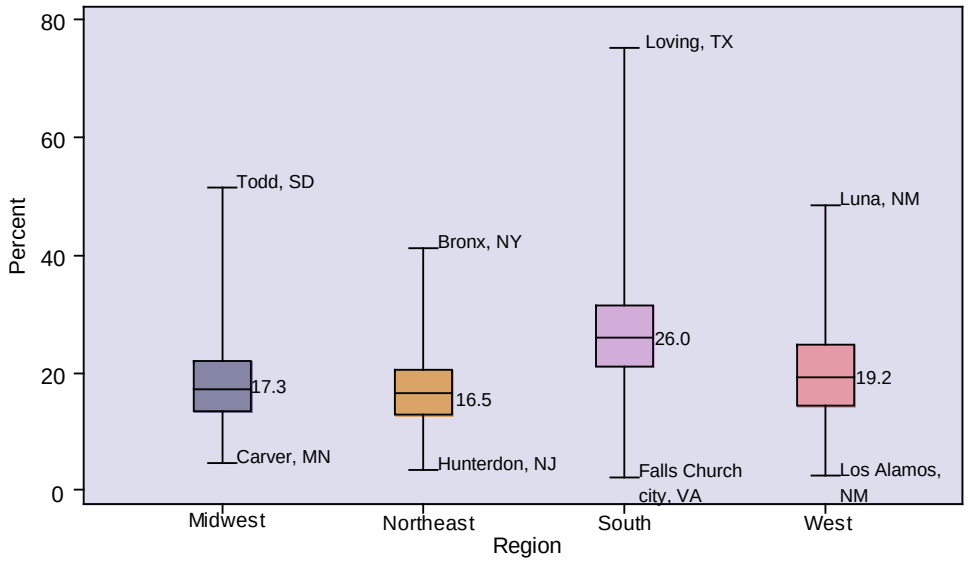


County-Level Poverty of School-Age Children

SAIPE publishes annual poverty estimates for school-age children in families for all counties. 'School-age children' refers to the population of children ages 5 to 17. By region (Figure 12), the school-age median poverty rate was 17.3 percent in the Midwest, 16.5 percent in the Northeast, 26.0 percent in the South, and

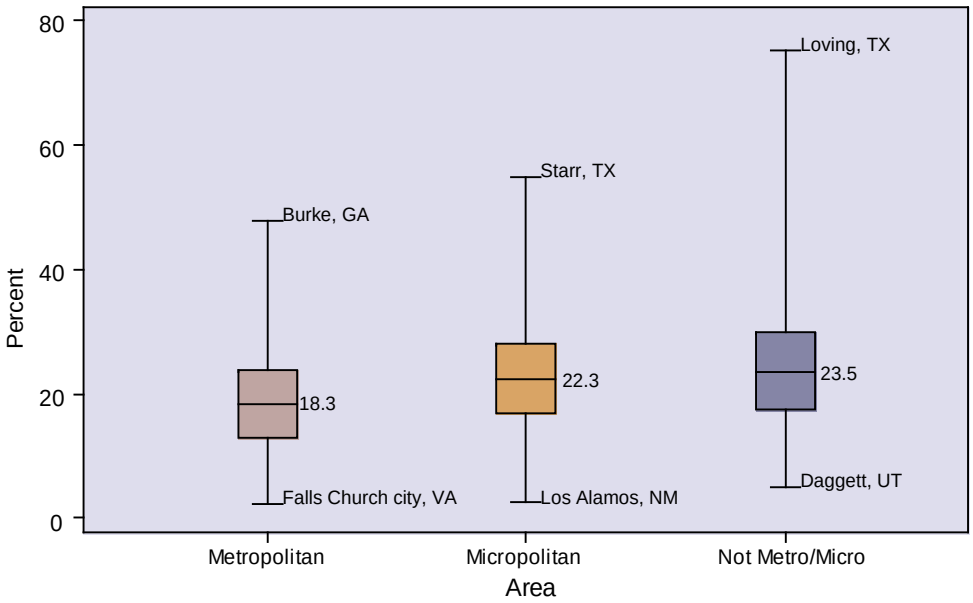
19.2 percent in the West. Among place of residence (Figure 13), the median poverty rate in metropolitan areas was 18.3 percent, 22.3 percent in micropolitan areas, and 23.5 percent in areas that are neither metropolitan nor micropolitan.

Figure 12. **Range and Median Value of School-Age County-Level Poverty Rates by Region: 2010**



Notes: The data shown are estimates containing uncertainty. Apparent differences among the estimates may not be statistically significant. In particular, counties identified as minimum and maximum may have several other counties that are statistically indistinguishable. The box and whisker plot shows the distribution of poverty by county. The whiskers indicate the minimum and maximum values, while the lower and upper borders of the box represent the interquartile range (25th and 75th percentile). The line inside the box indicates the location of 50th percentile (median value).
Source: U.S. Census Bureau, 2010 Small Area Income and Poverty Estimates

Figure 13. **Range and Median Value of School-Age County-Level Poverty Rates by Place of Residence: 2010**



Notes: The data shown are estimates containing uncertainty. Apparent differences among the estimates may not be statistically significant. In particular, counties identified as minimum and maximum may have several other counties that are statistically indistinguishable. The box and whisker plot shows the distribution of poverty by county. The whiskers indicate the minimum and maximum values, while the lower and upper borders of the box represent the interquartile range (25th and 75th percentile). The line inside the box indicates the location of 50th percentile (median value).
Source: U.S. Census Bureau, 2010 Small Area Income and Poverty Estimates

Poverty Comparisons by School-Age Population

Figure 14 shows the variation of county poverty rates for the school-age population with respect to the national average rate. In this map, the blue shade identifies counties with poverty rates for school-age children higher than the national average (19.8 percent), while the orange shaded area identifies those counties with school-age child poverty rates below the national average. Overall, there were 1,862 counties with rates that were significantly different from the national average with 1,011 counties above and 851 counties below the national poverty rate.

Large concentration of counties with poverty rates significantly above the national average for school-age children were observed in the South including Louisiana, Alabama, Mississippi, Arkansas, West Virginia, Kentucky, Georgia, South Carolina, Florida, and Texas. In the West region, Arizona, New Mexico, and Oregon had poverty rates higher than the national average. Large numbers of counties in the Northeast and Midwest regions, as well as counties in Nevada, Utah, Colorado and Wyoming in the West had poverty rates for school-age children lower than the national average.

Figure 14. **County Poverty Rates Above and Below the U.S. Poverty Rate: 2010**

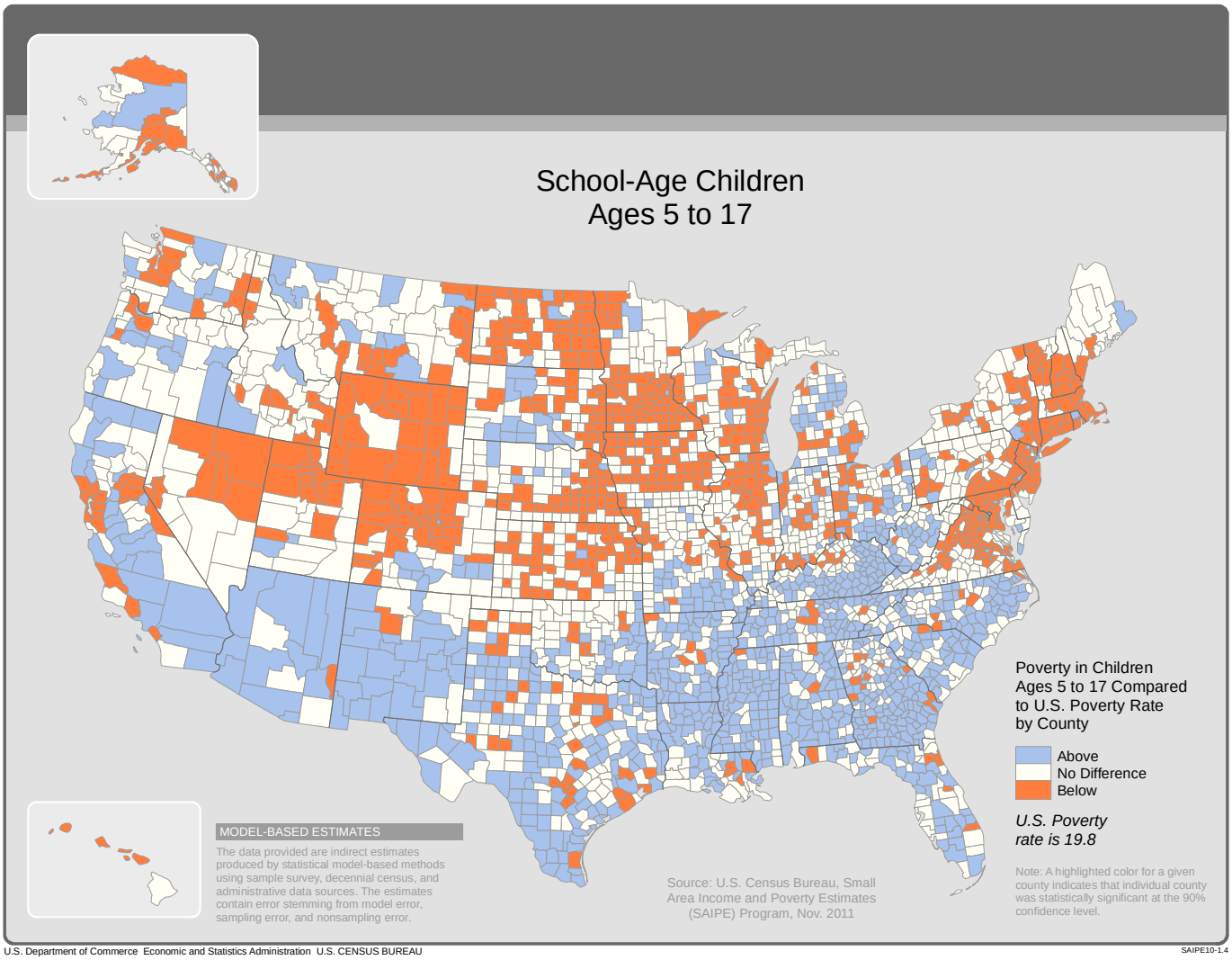


Figure 15. **County Changes in Poverty Rates: 2007 to 2010**

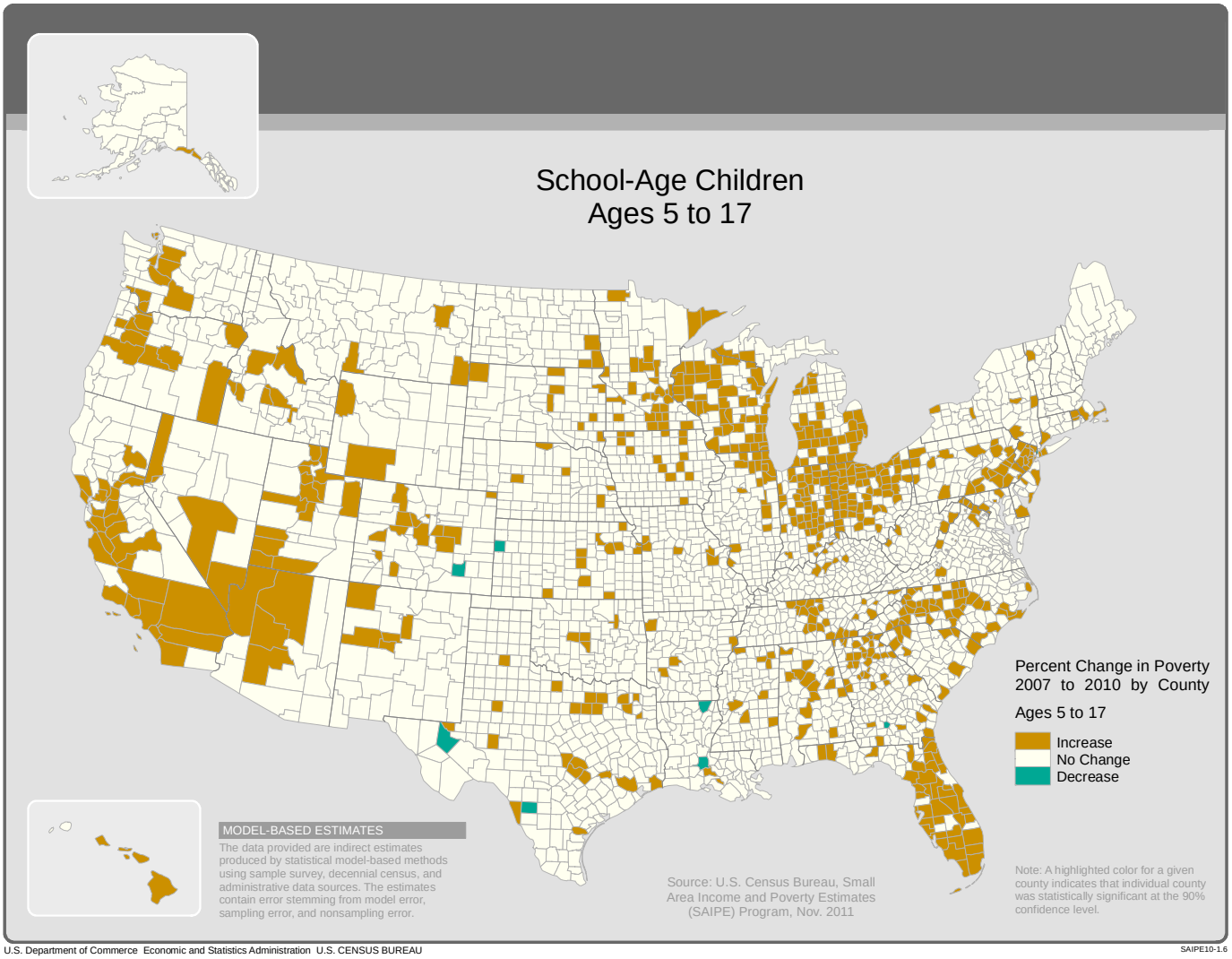
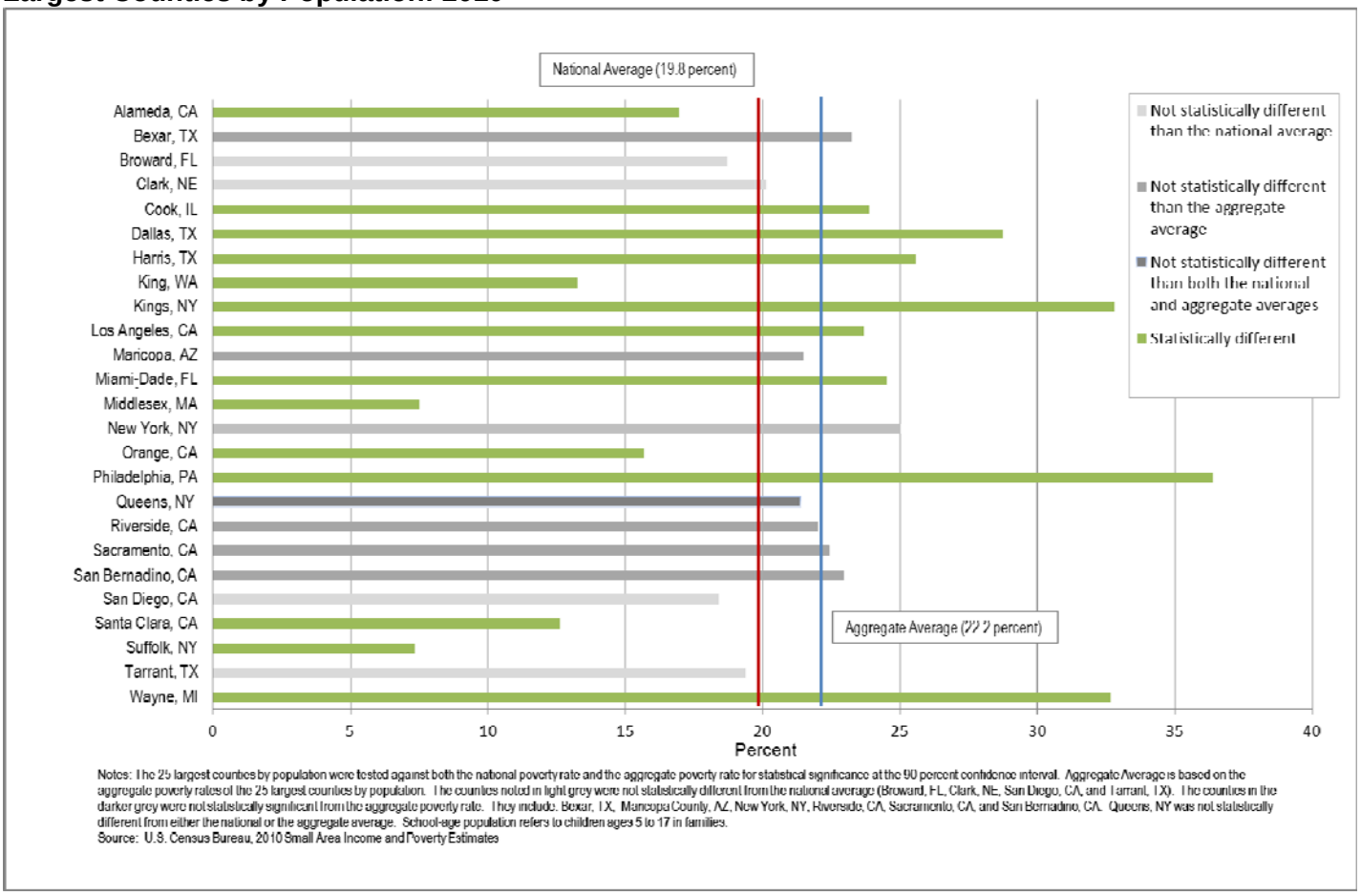


Figure 15 shows the change in county poverty rates for school-age population, between 2007 and 2010; highlighting the areas where poverty increased or decreased during the three year period. According to the figure, most of the counties in the U.S. did not experience significant change in the poverty rate for school-age children during the same time period. Counties with an increase in poverty were clustered around Southern California, Southern Nevada, Minnesota, Wisconsin, Iowa, Michigan, and parts of Arizona and Illinois.

Figure 16 and 17 show school-age children in poverty rates for the 25 largest and the 25 smallest counties in the nation and compare them with the national average and the aggregate average.[11] Figure 16 shows school-age poverty rates for the largest 25 counties. The aggregate average for these counties was 22.2 percent (+/-0.4) with a national average of 19.8 percent (+/-0.1).[12] Among the 25 largest counties, school-age poverty rate ranged from 7.3 percent in Suffolk County, New York to 36.4 percent in Philadelphia County, Pennsylvania. Fourteen of the 25 counties had a statistically significant difference from the aggregate average, with six counties below and eight counties above both rates.

Conversely, among the smallest counties, Figure 17 displays poverty rates for those counties that had a statistically significant difference from the aggregate of the 25 smallest counties (21.1 percent, +/- 1.1) and the national average.[13] Poverty rates for these counties ranged from 11.3 percent in Hooker County, Nebraska to 33.1 percent for McPherson County, Nebraska.[14] Nine counties had poverty rates that were significantly different from the aggregate poverty rate of the 25 smallest counties. Of these counties, 5 counties, Borden County, Texas; Hooker County, Nebraska; Kenedy County, Texas; Kent County, Texas; and King County, Texas had a poverty rate below both the aggregate average and the national average.

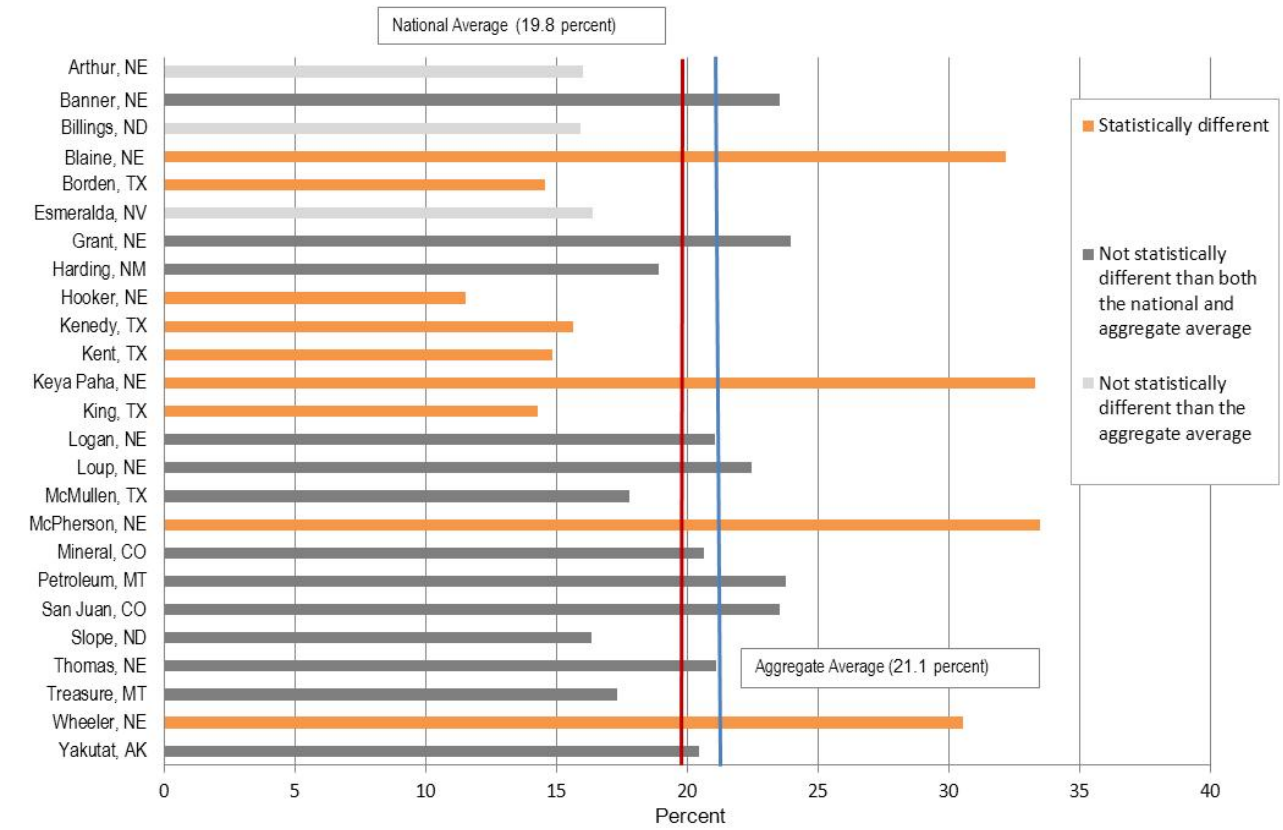
Figure 16. **Counties Above and Below the School-Age National and Aggregate Poverty Rate for the 25 Largest Counties by Population: 2010**



Notes: The 25 largest counties by population were tested against both the national poverty rate and the aggregate poverty rate for statistical significance at the 90 percent confidence interval. Aggregate Average is based on the aggregate poverty rates of the 25 largest counties by population. The counties noted in light grey were not statistically different from the national average (Broward, FL, Clark, NE, San Diego, CA, and Tarrant, TX). The counties in the darker grey were not statistically significant from the aggregate poverty rate. They include: Bexar, TX, Maricopa County, AZ, New York, NY, Riverside, CA, Sacramento, CA, and San Bernadino, CA. Queens, NY was not statistically different from either the national or the aggregate average. School-age population refers to children ages 5 to 17 in families.
Source: U.S. Census Bureau, 2010 Small Area Income and Poverty Estimates

[11] The aggregate poverty rate is based on the aggregate average of the 25 largest or smallest counties by weighed proportionately to their school-age population. Each of the individual counties has been tested against the aggregate for statistical significance at the 90 percent confidence level.
[12] The school-age aggregate poverty rate for the largest counties is statistically different than the national poverty rate.
[13] For the smaller counties, fewer counties are different from the aggregate average due to higher uncertainty in their estimated poverty rates.
[14] There is no statistical difference between the school-age aggregate poverty rate for the smallest 25 counties and the national poverty rate (19.8 percent).

Figure 17. **Counties Above and Below the School-Age National and Aggregate Poverty Rate for the 25 Smallest Counties by Population: 2010**



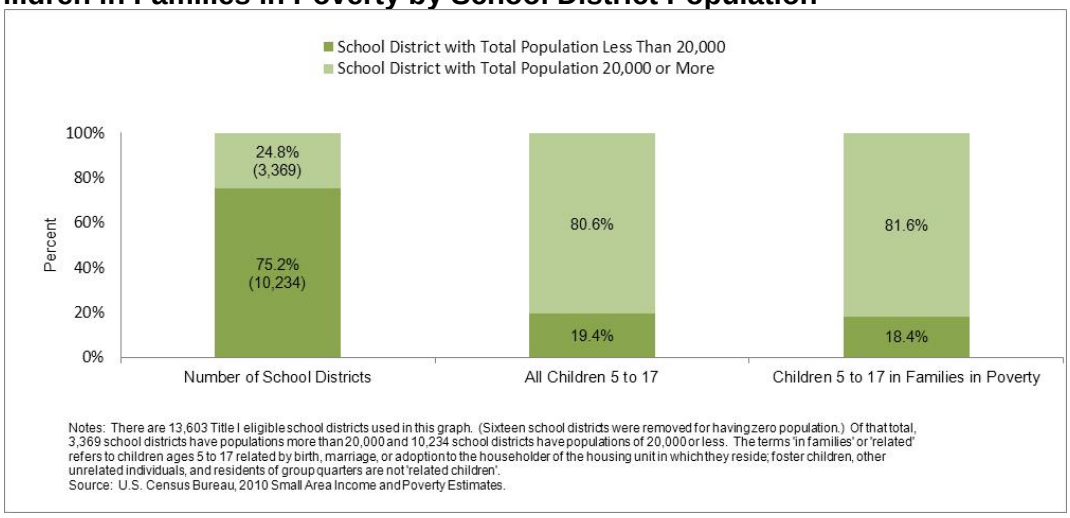
Notes: The 25 smallest counties by population were tested against both the national poverty rate and the aggregate poverty rate for statistical significance at the 90 percent confidence interval. Aggregate average is based on the aggregate poverty rates of the 25 smallest counties by populaiton. Loving County, TX and Kalawao, HI were omitted. School-age population refers to children ages 5 to 17 in families.
Source: U.S. Census Bureau, 2010 Small Area Income and Poverty Estimates

School District Poverty

The 2010 SAIPE data contain estimates for all school districts in the Title I universe (13,619 school districts).[15] [16] Figure 18 shows the number of school districts by population size (with school district populations less than 20,000 and populations with 20,000 or more). According to this figure, school-age children, as well as school-age children in families in poverty, tend to be concentrated in school districts with a population of 20,000 or more.[17] [18] In 2010, an estimated 24.8 percent of school districts have a total population size of 20,000 or more. These school districts contain an estimated 80.6 percent of all school-age children in the nation and an estimated 81.6 percent of school-age children in poverty.

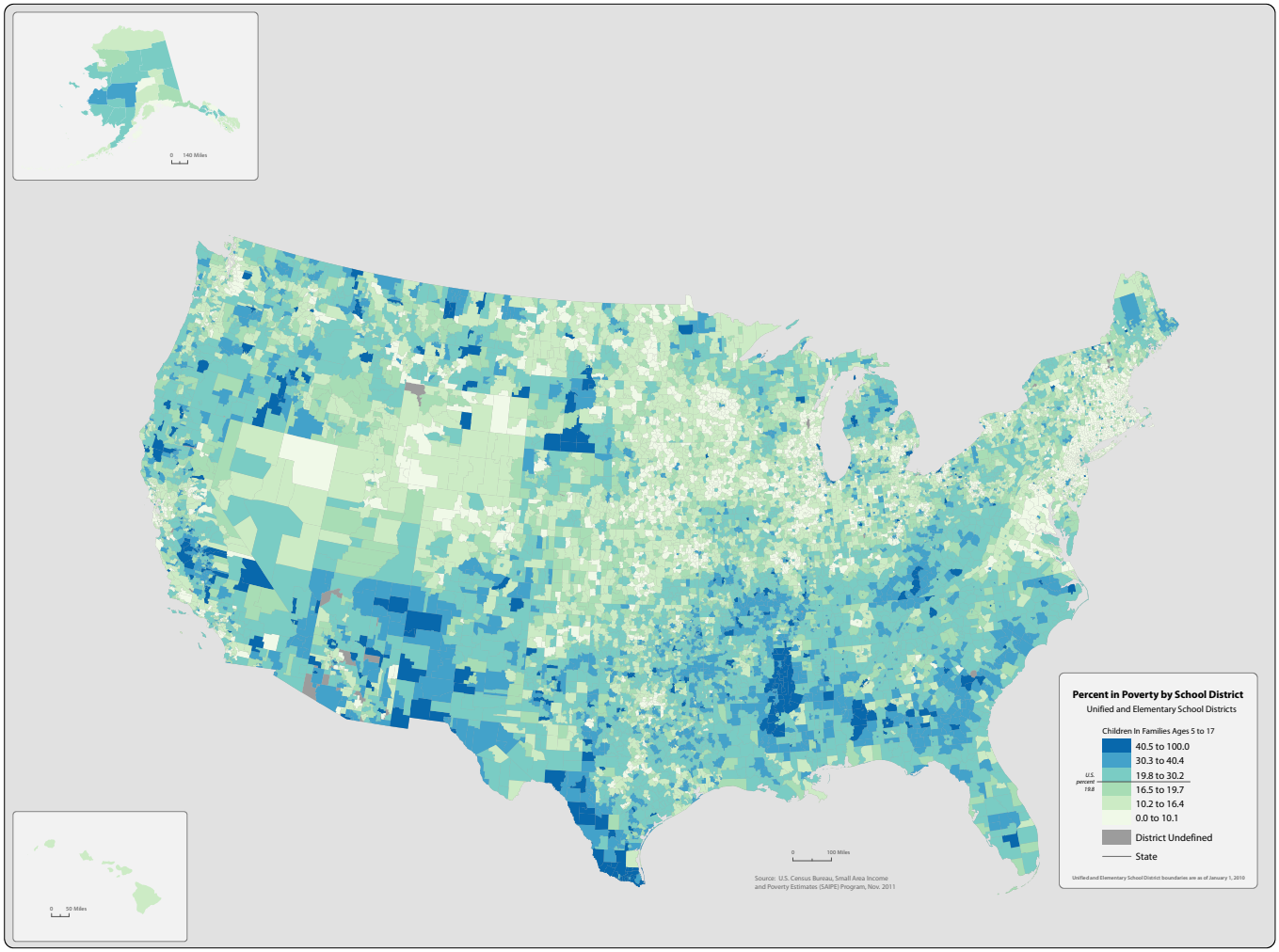
[15] When interpreting the maps and other compilations of school district SAIPE estimates, additional sources of uncertainty exist, as compared to county-level estimates. For further information see http://www.census.gov/did/www/saipe/methods/schooldistrictuncertainty.html.
[16] The Title I universe is the set of U.S. school districts for which Title I of the No Child Left Behind Act of 2001 pertains. There are 13,619 such school districts as of January 1, 2011.
[17] Supplemental information for school district administrators is available in Appendix 3.
[18] The term 'children in families' denotes children who are related to the household by birth, marriage or adoption. Foster children are not included in families.

Figure 18. **Distribution of Numbers of School Districts, Number of School-Age Children and Number of School-Age Children in Families in Poverty by School District Population**



Notes: There are 13,603 Title I eligible school districts used in this graph. (Sixteen school districts were removed for having zero population.) Of that total, 3,369 school districts have populations more than 20,000 and 10,234 school districts have populations of 20,000 or less. The terms 'in families' or 'related' refers to children ages 5 to 17 related by birth, marriage, or adoption to the householder of the housing unit in which they reside; foster children, other unrelated individuals, and residents of group quarters are not 'related children'.
Source: U.S. Census Bureau, 2010 Small Area Income and Poverty Estimates.

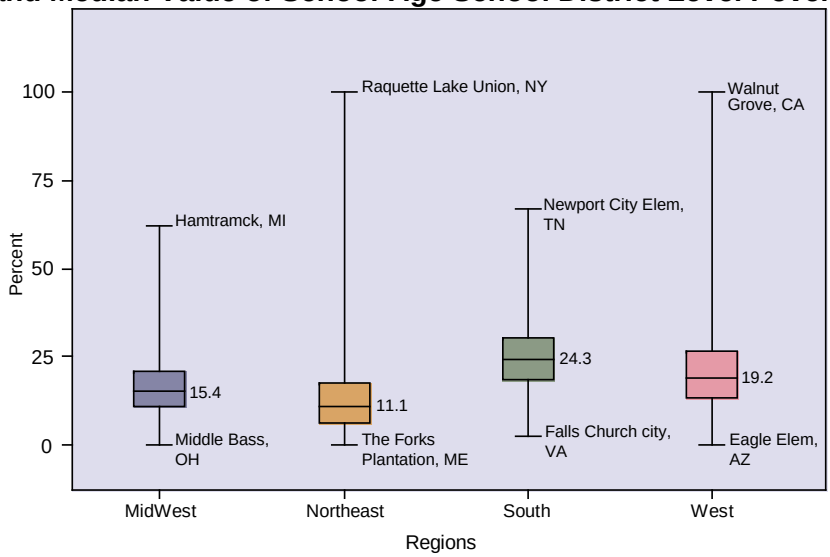
Figure 19. **Percentage of School-Age Children in Families in Poverty: 2010**



Variation in School District Poverty

Figure 19 shows the distribution of school-age 5 to 17 children in poverty by school district.[19] This map provides an overview of the variation in poverty throughout the school districts in the U.S.[20] The white area shows the school districts with the lowest poverty (0 to 10.1 percent) and the dark blue highlights the areas with the highest poverty (40.5 to 100 percent). Both high and low poverty school districts are scattered throughout the nation, with some areas of concentration. Higher poverty rates noted on the map include school districts in Arizona, South Dakota, and Montana in the West region; and in the South, in South Texas, Alabama, Louisiana, and Mississippi. Many of the states in the Northeast and Midwest regions, as well as Wyoming in the West, were observed in the lowest range of poverty.

Figure 20. **Range and Median Value of School-Age School District Level Poverty Rates by Region: 2010**



Notes: The data shown are estimates containing uncertainty. Apparent differences among the estimates may not be statistically significant. In particular, school districts identified as minimum and maximum may have several other school districts that are statistically indistinguishable. The box and whisker plots show the distribution of poverty by school district. The whiskers indicate the minimum and maximum values, while the upper and lower borders of the box represent the interquartile range (25th and 75th percentile). The line inside the box indicates the locatio of 50th percentile (median value). The school-age poverty rate refers to children ages 5 to 17 in families.
Source: U.S. Census Bureau, 2010 Small Area Income and Poverty Estimate

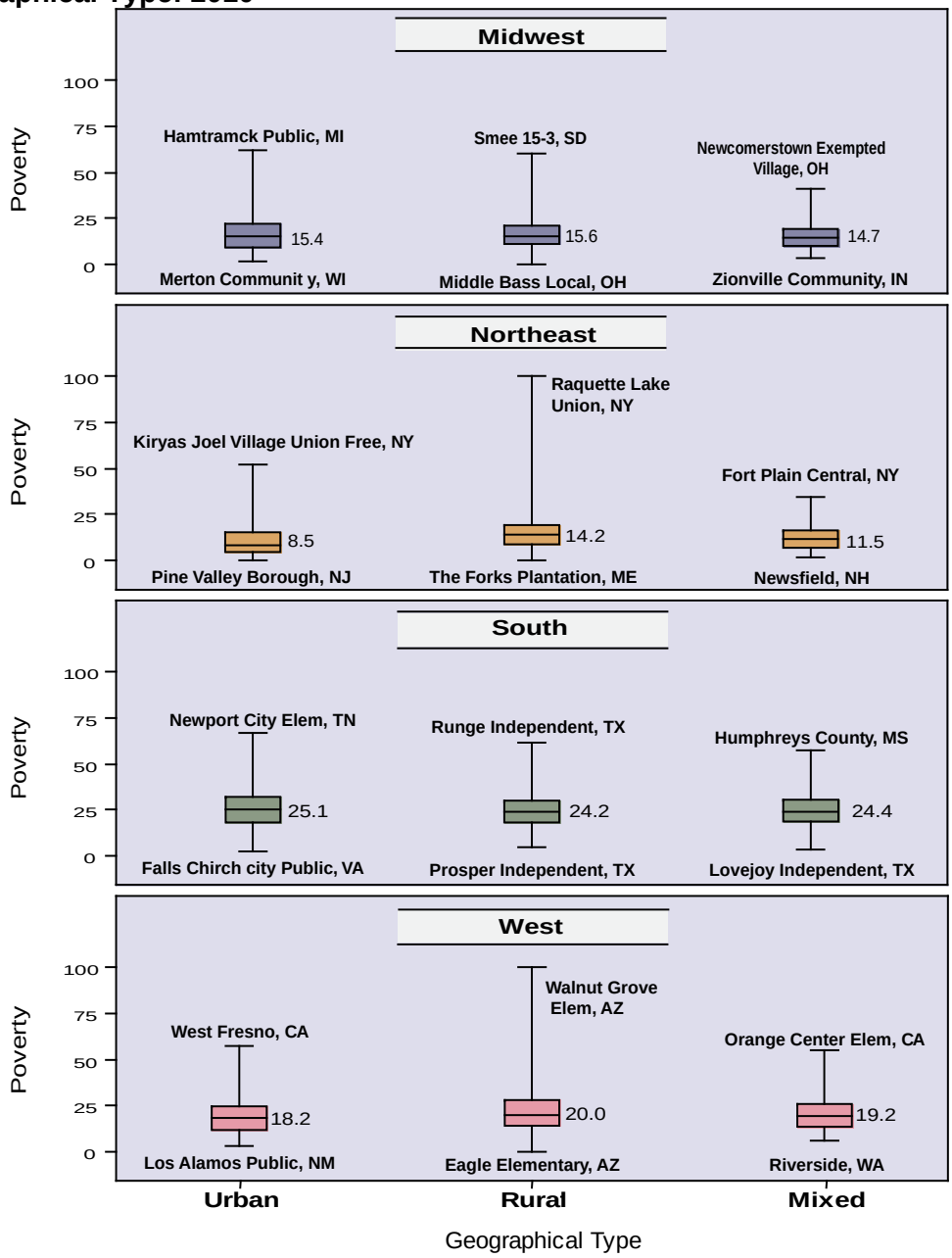
Figure 20 displays the median and the highest and lowest poverty rate estimates for the school-aged population at the school district level by region. The median poverty rate ranges for 11.1 percent in the Northeast to 24.3 percent in the South. The median poverty rates for the Midwest and the West were 15.4 percent and 19.2 percent, respectively.

School districts are often smaller entities than counties and can be within a metropolitan area, but still composed of entirely rural blocks. For this reason, it is more useful to analyze place of residence as a geographical type (urban, rural, or mixed urban and rural), rather than metropolitan or micropolitan.[21] Figure 21 presents school-age poverty rates at the school district level by geographical type and region. Among the geographical types, the Midwest region has similar median poverty rates – urban (15.4 percent), rural (15.6 percent) and mixed urban and rural (14.7 percent). The Northeast region shows more diversity among the

[19] The term 'children ages 5 to 17' refers to an estimate of the number of children who live within the geographic boundaries of the school district and who are in the appropriate grade range. It is not a measure of school district enrollment.
[20] For a large-scale view, refer to the SAIPE interactive mapping tool: http://www.census.gov/did/www/saipe/data/maps/index.html.
[21] The rural percentage of any geographic area is calculated as the percentage of Census 2010 total population within blocks designated as rural by their Census 2010 population density. The categories used in this report are: 'Urban' - a school district with less than 34 percent of the population in rural blocks; 'Mixed Urban and Rural' – a school district with 34 to 66 percent of the population in rural blocks; and 'Rural' – a school district with 67 percent of more of the population in rural blocks.

geographical types with a large variation in the range of school district poverty in rural areas. Similar to the Midwest region, the South region has similar median poverty rates for urban (25.1 percent), rural (24.2 percent) and mixed urban and rural (24.4 percent). The South region also has similar variation in range for each of the three geographical types. The West region has large variation in the range of poverty for rural areas and smaller variation in the range for both urban and mixed urban and rural.

Figure 21. **Range and Median Value of School-Age School District-Level Poverty Rates by Region and Geographical Type: 2010**



Notes: The data shown are estimates containing uncertainty. Apparent differences among the estimates may not be statistically significant. In particular, school districts identified as minimum and maximum may have several other school districts that are statistically indistinguishable. The school-age poverty rate refers to children ages 5 to 17 in families. The rural percentage of the geographic area is calculated as the percentage of Census 2010 total population within blocks designated as rural by their Census 2010 population density. The categories used in this report are: 'urban' - a school district with less than 34 percent of the population in rural blocks; 'mixed urban and rural' - a school district with 34 to 66 percent of the population in rural blocks; and 'rural' - a school district with 67 percent or more of the population in rural blocks.
Source: U.S. Census Bureau, 2010 Small Area Income and Poverty Esitmates

Table 2. **Percent of School-Age Population by School District Poverty Rate by State: 2010**

Name	Number of Districts	School-Age Population	Less than or equal to 10 percent poverty rate	10 percent to 20 percent poverty rate	More than 20 percent poverty rate
United States	13,603	53,989,894	20.4	34.3	45.3
Alabama	134	826,106	3.0	31.2	65.8
Alaska	53	133,946	49.2	42.0	8.8
Arizona	215	1,173,681	9.4	34.3	56.3
Arkansas	251	513,709	3.4	31.0	65.5
California	965	6,777,478	14.1	34.3	51.6
Colorado	178	884,219	28.2	42.9	28.9
Connecticut	166	614,399	60.3	21.9	17.7
Delaware	16	149,979	8.4	80.2	11.4
District of Columbia	1	68,479	0.0	0.0	100.0
Florida	67	2,928,533	0.0	31.2	68.8
Georgia	183	1,805,112	5.3	41.9	52.8
Hawaii	1	216,292	0.0	100.0	0.0
Idaho	115	307,676	0.4	80.0	19.6
Illinois	868	2,291,794	30.7	29.1	40.2
Indiana	292	1,173,114	19.0	39.0	42.0
Iowa	363	525,523	30.1	48.8	21.0
Kansas	293	521,778	34.5	34.9	30.6
Kentucky	176	740,593	6.6	19.3	74.1
Louisiana	69	803,211	0.0	28.3	71.7
Maine	242	204,529	23.6	50.1	26.3
Maryland	24	988,008	65.3	24.1	10.7
Massachusetts	304	1,051,576	54.6	22.8	22.6
Michigan	552	1,742,332	22.7	36.3	41.1
Minnesota	337	928,021	42.8	41.5	15.7
Mississippi	149	543,403	0.0	19.6	80.4
Missouri	521	1,033,992	24.3	34.9	40.8
Montana	426	161,117	8.7	52.8	38.5
Nebraska	253	327,597	28.0	48.6	23.4
Nevada	17	477,685	2.1	96.1	1.8
New Hampshire	178	217,168	64.0	33.9	2.2
New Jersey	561	1,523,092	59.0	17.4	23.6
New Mexico	89	374,525	0.9	8.3	90.8
New York	684	3,162,711	28.8	19.8	51.3
North Carolina	118	1,650,410	0.0	36.7	63.3
North Dakota	184	105,550	30.5	59.4	10.0
Ohio	613	2,004,871	23.7	33.1	43.2
Oklahoma	532	666,054	6.3	37.6	56.1
Oregon	197	629,194	11.6	48.3	40.1
Pennsylvania	500	2,059,081	33.9	33.8	32.3
Rhode Island	36	166,354	41.5	27.5	31.0
South Carolina	87	777,806	1.4	34.3	64.3
South Dakota	156	143,440	16.1	67.8	16.1
Tennessee	136	1,087,338	3.4	32.3	64.3
Texas	1,032	4,955,390	10.9	29.8	59.3
Utah	41	609,101	28.3	55.6	16.1
Vermont	267	97,288	41.7	47.5	10.8
Virginia	138	1,345,029	47.8	30.6	21.6
Washington	295	1,143,438	21.1	53.8	25.1
West Virginia	55	282,953	0.0	31.8	68.2
Wisconsin	425	979,908	29.8	48.1	22.1
Wyoming	48	95,311	18.3	79.7	2.0

Notes: The data shown are estimates containing uncertainty. Apparent differences among the estimates may not be statistically significant. The estimates shown are conceptually different from the SAIPE state estimates because some undefined geographic areas are not included in these estimates. The poverty ratio is computed as the number of children ages 5 to 17 in families in poverty divided by the number of children ages 5 to 17. School-age population does not include Kalawao County, Hawaii.
Source: U.S. Census Bureau, 2010 Small Area Income and Poverty Estimates.

Distribution of School District Poverty

Table 2 shows the distribution of school-age children by level of poverty rate of the school district. There were 54.0 million school-age children in 13,604 school districts.[22] Of these, 20.4 percent of school-age children reside in school districts with poverty estimates below 10 percent.[23] An estimated 34.3 percent of school-age children reside in districts with poverty estimates between 10 and 20 percent, and 45.3 percent of school-age children reside in districts with poverty greater than 20 percent.

Viewing the SAIPE poverty data separately by state suggests a wide range of variation in distribution of school-age population by poverty rate (Figure 22). The distribution shows that in some states, a large proportion of the school-age children reside in districts with poverty rates less than 10 percent, while in some states, the larger proportion of the school-age children reside in districts with poverty rates greater than 20 percent. Most states have a pattern somewhere in between, exhibiting a mix of poverty rate categories.

Census Bureau Income and Poverty Data Sources

SAIPE is one of several sources of income and poverty data available from the Census Bureau. Other sources include: Annual Social and Economic Supplement to the Current Population Survey (CPS ASEC); American Community Survey (ACS); Survey of Income and Program Participation (SIPP); and Census 2000 long-form. Each of these sources differs from the others in some 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. It is important to understand that different surveys and methods, which are designed to meet different needs and produce different results.

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

Since 2006, the ACS releases 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 starting in 2008 for areas and subpopulations as small as 20,000. Five-year ACS estimates are 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/.

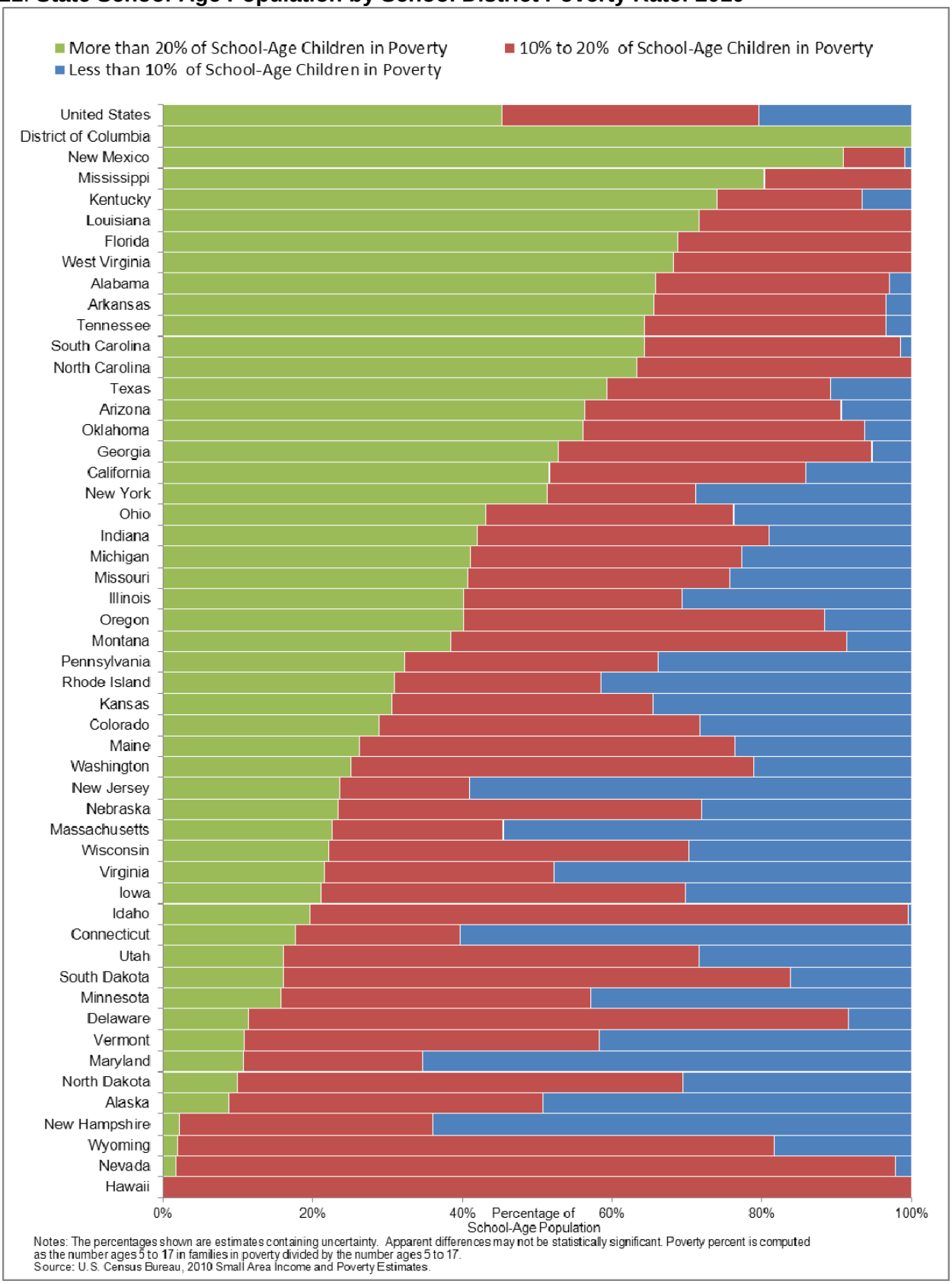
The SIPP is most useful for understanding the dynamics of income and poverty (changes in income and poverty rates for the same households over three or four years) and for examining the nature and frequency of poverty spells. The SIPP also permits researchers to look at monthly or quarterly changes in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

The Decennial Census long-form estimates offer the best measure of change between 1990 and 2000 for subnational areas and for subpopulations. Since the ACS replaces the long-form, the 2010 Census will not provide income and poverty estimates. Since 2010, ACS 5-year estimates provide data at the census tract level that is comparable to earlier decennial census estimates.

[22] For analysis, 15 counties were omitted for having zero population for children ages 5 to 17.

[23] Poverty rates for school districts are computed as the number of children ages 5 to 17 in families in poverty divided by the number of children ages 5 to 17. Thus, the estimate is not a true rate because children not in families are included in the denominator but not the numerator.

Figure 22. **State School-Age Population by School District Poverty Rate: 2010**



Notes: The percentages shown are estimates containing uncertainty. Apparent differences may not be statistically significant. Poverty percent is computed as the number ages 5 to 17 in families in poverty divided by the number ages 5 to 17.
Source: U.S. Census Bureau, 2010 Small Area Income and Poverty Estimates.

Disclaimer

This paper is released to inform interested parties of ongoing research and to encourage discussion of work in progress. The views expressed on statistical, methodological, or technical issues are those of the authors and not necessarily those of the U.S. Census Bureau.

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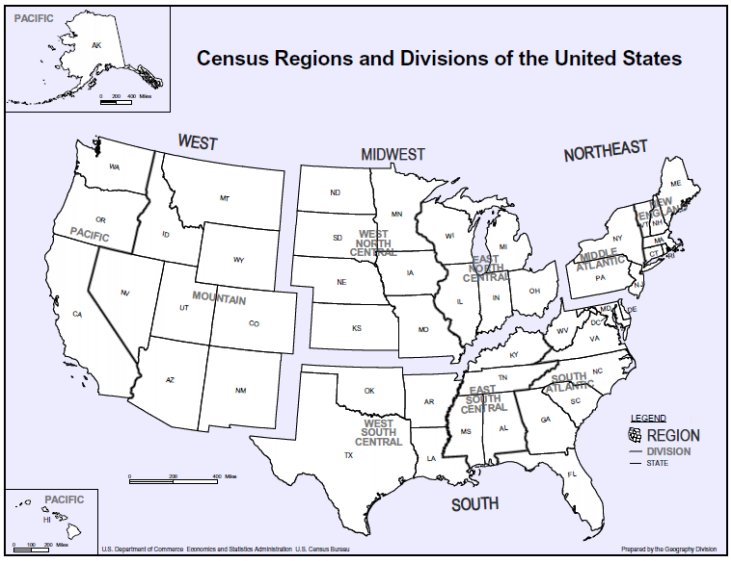
Contact

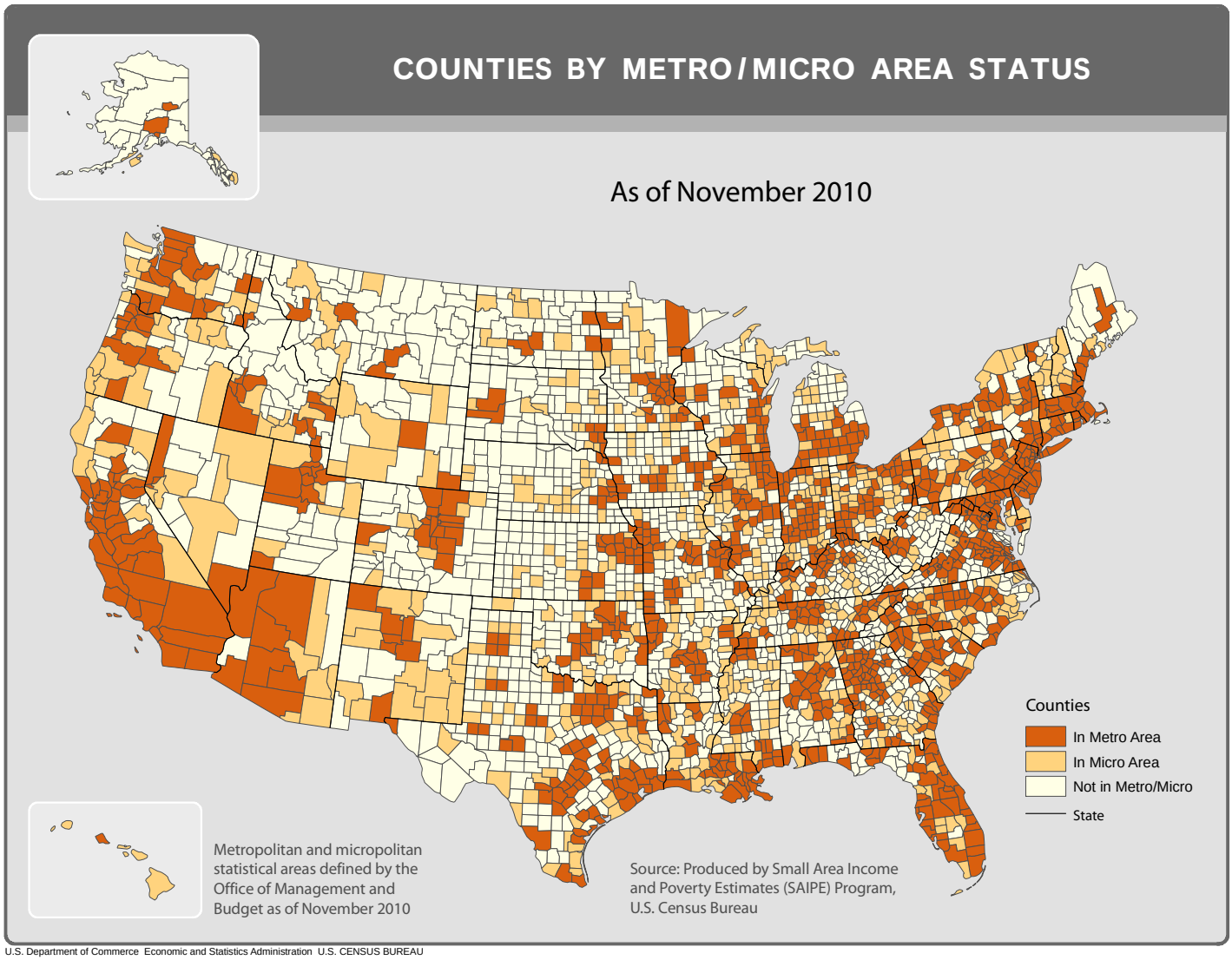
For questions related to the contents of this document, including the SAIPE program's estimates and methodology, contact the Small Area Estimates Branch at: (301) 763-3193 or hhes.saipe@census.gov.
For questions related to income and poverty definitions, the American Community Survey, or other Census Bureau surveys, contact the U.S. Census Bureau call center at 1-800-923-8282 (toll free) or visit ask.census.gov for further information.

Appendix

Appendix 1.



Appendix 2.



Appendix 3. **Supplemental Information for School Districts**

School District Grade Relevance and Boundary Updates

Grade relevance refers to the grades serves by school districts in a particular geographic area. For example, one district may provide secondary education for grades 9 to 12, while another district in the same geographic area may provide elementary education for grades Kindergarten through 8. These two districts thus occupy the same territory and can be said to have overlapping boundaries. In the SAIPE program's computations, each child is assigned to a specific grade and counted among either the secondary or elementary school-age population in that area. This is done based on the child's age in the decennial census and the updated grade spans of the secondary and elementary districts. In the above example of 9-12 and K-8 grade ranges, the relevant children ages 5 to 17 in the secondary district are the subset of child ages 14 to 17, and the relevant children ages 5 to 17 in the elementary district are the subset of children ages 5 to 13.

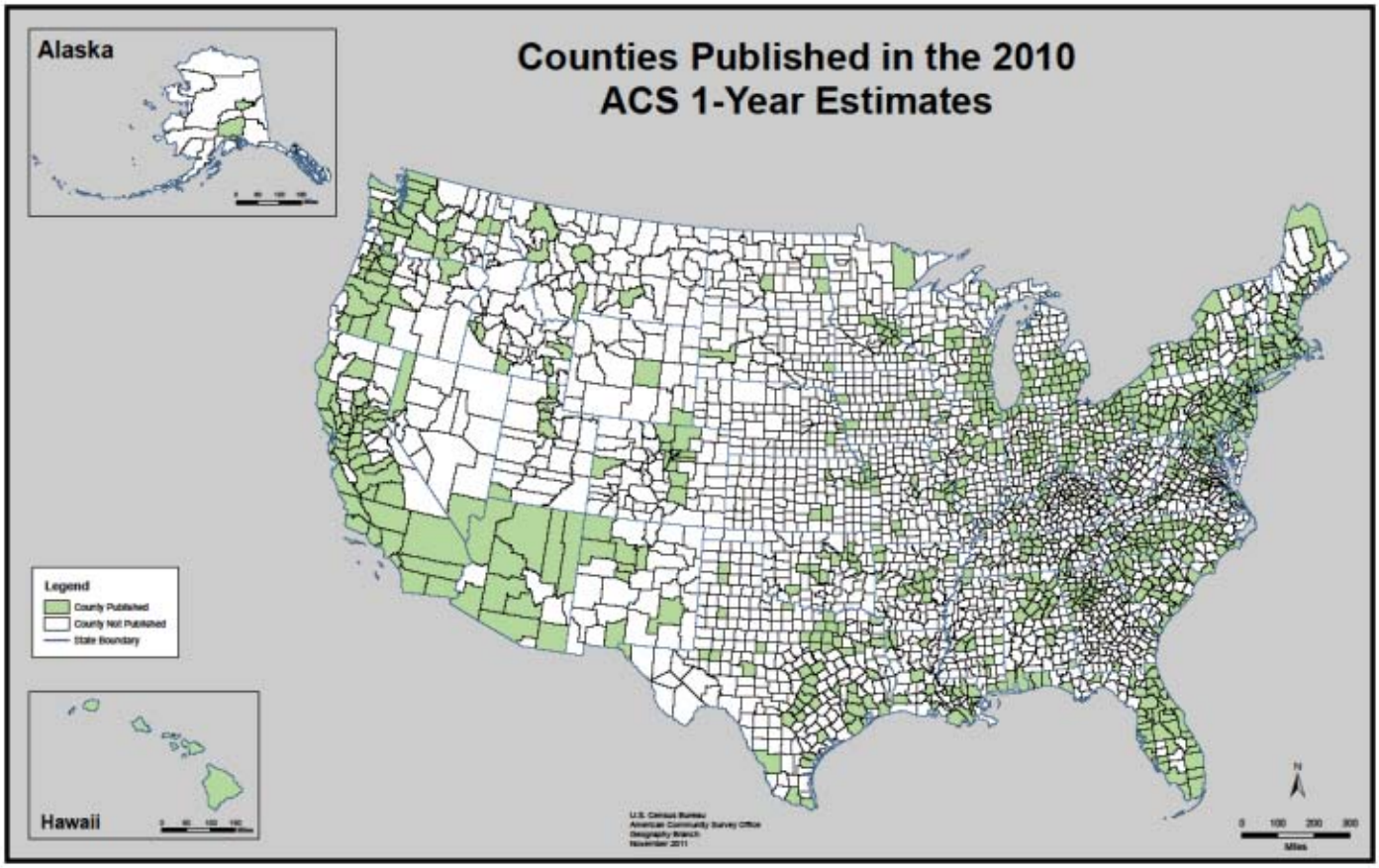
Grade spans and boundaries of school districts are updated through the Census Bureau's school district boundary review, known as the School District Review Program (SDRP). Specifically, the SDRP identifies new

districts and districts no longer in existence, collects boundary changes to existing school districts, and collects other administrative information, such as the grade range for which each district is financially responsible. Further information is available at: http://www.census.gov/geo/www/schdist/sch_dist.html.

Comparing SAIPE Estimates to Means-Tested Government Programs

Many government programs use the poverty guidelines to establish income eligibility for benefit programs that are above the official poverty thresholds used by SAIPE. The 2010 poverty threshold for a family of four was $22,113 (100%). The poverty guidelines, a simplified version of the poverty thresholds, are issued each year by the Department of Health and Human Services (HHS).[29] For example, income eligibility for the Supplemental Nutrition Assistance Program (SNAP) is generally income less than 130% of the poverty guideline. The Free and Reduced-Price Lunch (FRPL) program uses the same 130% of the poverty guideline for free lunch and 185% of the poverty guidelines for reduced price lunch. A family of four would need an annual income lower than $29,055 to be eligible for SNAP or free lunch and the same family would need an annual income lower than $41,348 to be eligible for reduced price lunch.[30]

Appendix 4.



[29] For more information about poverty guidelines including how they differ from poverty thresholds used by the U.S. Census Bureau, see http://www.census.gov/hhes/www/poverty/about/overview/measure.html .

[30] Poverty guidelines are higher for Alaska and Hawaii.