

# **Geographic Adjustments of Supplemental Poverty Measure Thresholds: Using the American Community Survey Five-Year Data on Housing Costs**

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January 2011

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## **Abstract**

**Key Words:** Poverty, geographic adjustments

## **Introduction**

In 2009 the Office of Management and Budget's Chief Statistician formed an Interagency Technical Working Group (ITWG) on Developing a Supplemental Poverty Measure. That group included representatives from the U.S. Census Bureau, Bureau of Labor Statistics, Economics and Statistics Administration, Council of Economic Advisers, U.S. Department of Health and Human Services, and Office of Management and Budget. In March 2010 the Interagency Working Group issued a series of suggestions to the Census Bureau and BLS on how to develop a new Supplemental Poverty Measure (Observations from the Interagency Technical Working Group on Developing a Supplemental Poverty Measure). Their suggestions drew on the recommendations of the 1995 report of National Academy of Sciences (NAS) Panel on Poverty and Family Assistance and the extensive research on poverty measurement conducted over the past 15 years, at the Census Bureau and elsewhere. The new thresholds are not intended to assess eligibility for government programs and will not replace the official poverty thresholds. If the President's budget initiative is approved, the Census Bureau will publish the first set of poverty estimates using the new approach in September 2011.

The ITWG suggested that the poverty thresholds be adjusted for price differences across geographic areas using the best available data and statistical methodology. They noted that the American Community Survey (ACS) data appear to be the best data currently available, from which one can create a housing price index based on differences in quality-equivalent rental prices of housing across areas and that it would be good to (1) differentiate this price index by Metropolitan Statistical Areas (MSAs) and by non-MSA areas in each state and (2) utilize a 5-year moving average of the data for each year. They also noted that over time this adjustment mechanism may be modified and improved.

## **I. Background**

In the 40 years since the U.S. Bureau of the Budget (predecessor of the Office of Management and Budget) designated the Orshansky poverty thresholds (with certain revisions) as the federal government's official statistical definition of poverty, there have been numerous studies of the official poverty measure and many of these have focused on the question of adjusting the thresholds to reflect geographic differences in the cost of living.<sup>1</sup> For example, the Education

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<sup>1</sup> The poverty thresholds were originally developed in 1963-1964 by Mollie Orshansky of the Social Security Administration. In May 1965, the U.S. Office of Economic Opportunity adopted Orshansky's poverty thresholds as

Amendments of 1974 mandated a report on the poverty measure. The final U.S. Department of Health, Education and Welfare report (1976) explained:

“because of Congressional interest in the subject (geographic cost-of-living differences), as noted in section 823 of the Education Amendments of 1974, as well as because of concern about the problem among technicians, this study directed considerable effort in an analysis of possibilities for incorporating such differences in a poverty measure” (p. 81-82).

The 1976 report concluded:

“There may be cost-of-living differences between regions, and among urban, suburban, and rural areas, but the extent and nature of these differences is difficult to identify accurately. Existing sources of data which are both accurate at the state and local level and available on a timely basis cannot provide a reliable proxy measure of poverty. Because cost-of-living differences across areas are not satisfactorily measured by existing data and because there is no agreement on the methodology for making such an adjustment, no geographic adjustment in the poverty threshold is made in the report” (pp. xxiii).

Patricia Ruggles (1990) comprehensively reviewed the critiques of the official measure and described the advantages and disadvantages of numerous reform proposals. While she did not propose a specific geographic cost adjustment mechanism, she concluded:

“Considering the magnitude of the price differentials seen across regions, a strong case can be made for some adjustment of the poverty thresholds to take account of these differences” (p. 84).

“In general, adjustments are appropriate where the evidence implies that fewer errors would be introduced into the system by the adjustment than would be corrected by it. Although this book opposes most new complications to our system of poverty thresholds, the evidence for real differences in price levels across regions has become too compelling to ignore” (p. 86).

The General Accounting Office (GAO) (1995) was asked to “provide information about the statistical data requirements that would be needed to adjust for geographic differences in living costs.” GAO asked 15 experts to review 12 different methodologies. The conclusion of the GAO report was not any more optimistic than the 1976 HEW report.

“In the collective view of the experts we asked to assess these methodologies, the long-standing problems involved in identifying a method to adjust poverty measurement for geographic differences in COL have not been resolved; data and conceptual problems have prevented any adjustment in the past and continue to do so today.” (p. 3).

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a working or quasi-official definition of poverty. In August 1969, the U.S. Bureau of the Budget designated the poverty thresholds as the federal government’s official statistical definition of poverty. For a complete history of the poverty thresholds, see Gordon M. Fisher, “The Development and History of the Poverty Thresholds,” *Social Security Bulletin*, Vol. 55, No. 4, Winter 1992, pp. 3-14.

## II. National Academy of Sciences Panel on Poverty and Family Assistance

The GAO study coincided with the work of a panel of the National Academy of Sciences (NAS) whose comprehensive study of the poverty measure was released in 1995 (Citro and Michael, 1995). This study also looked at the question of geographic adjustment of the thresholds and concluded that:

“Evidence of cost-of-living differences among geographic areas -- such as between metropolitan and nonmetropolitan areas -- suggests that poverty thresholds should be adjusted accordingly, but inadequate data make it difficult to determine appropriate adjustments” (p. 8).

The NAS panel recommended that as a “first and partial step” the thresholds be indexed to reflect variations in housing costs across the country and that further research be conducted to develop refined methods and data by which to adjust the poverty thresholds more accurately for geographic cost-of-living differences for housing and other goods and services.

The NAS panel made a number of specific recommendations regarding the first and partial step of adjusting the thresholds to reflect variations in housing costs. These included:

- Data from the decennial census should be used to develop a housing cost index;
- The housing cost index should be developed to cover several population size categories of metropolitan areas in each of the nine geographic census divisions;
- The U.S. Department of Housing and Urban Development (HUD) methodology for developing fair market rents (FMRS) should be used to construct the index;
- The index should only be applied to the portion of the threshold that represents housing costs – 44 percent;
- Research should be conducted to update the index between the decennial censuses.

The NAS panel developed an index using data from the 1990 census. Following the methodology used by HUD to establish FMRS, the index was based on the 45th percentile of the distribution of rents for two-bedroom units that had complete plumbing facilities, kitchen facilities, and electricity and in which the occupant had moved within the last five years. Index values were developed for each of the 341 metropolitan areas in the country and for nonmetropolitan areas within each state. The panel then grouped the metropolitan areas into six population size categories within each of the nine census regions and aggregated the nonmetropolitan areas by region and recomputed the index values.<sup>2</sup>

The NAS panel report’s discussion of geographic cost adjustment concludes with the following caveat:

“The proposed procedure should not be viewed as the last word on the issue of adjusting poverty thresholds for area differences in the cost of living, but rather a modest step in the right direction” (p. 199).

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<sup>2</sup> In order to test this decision to employ regional groupings, the panel compared the set of indexes developed for each of the metropolitan areas to indexes grouped by state (with a metropolitan area and nonmetropolitan area value for each state) and indexes grouped by the nine census divisions. The panel found that the regional indexes produced the index with the smallest share of the population having an index that differed by more than 20 percent from the index produced using the more specific geographies. It further concluded that using the more geographically specific indexes was not desirable because of the limited sample size in smaller metropolitan areas.

### **III. Census Bureau Geographic Adjustment Approaches – NAS Experimental Poverty Measures**

In 1999, the researchers at the Census Bureau and BLS applied the NAS panel recommendations to CPS data to produce an alternative set of poverty estimates for 1990 to 1997. (Short, Garner, Johnson and Doyle, 1999). The report included tables showing poverty rates by geographic region but not by state. The analysis found that when the thresholds were adjusted for geographic differences in housing costs, poverty rates were higher in the Northeast and the West and for people living in suburbs.

In a Census Bureau working paper, “Where We Live: Geographic Differences in Poverty Thresholds,” Short (January 2001) reviewed the three-year average state-specific poverty rates for 1992 using the geographic adjustment methodology from the 1999 report. Short described four major shortcomings of the NAS panel’s geographic adjustment methodology: (1) the data used to construct the index was from the 1990 census and therefore could only be updated every ten years; (2) the regional groupings used to construct the index produced some unexplained results given the wide variation in housing costs within geographic divisions<sup>3</sup>; (3) the suggested methodology did not control for housing quality across areas; (4) the index recommended by the NAS panel used geographic groupings that created confidentiality problems for release of microdata files.

Short proposed an alternative methodology for making geographic adjustments which addressed some of these shortcomings and applied this method to CPS data for 1997. Her primary recommendation was to replace the outdated housing cost data from the 1990 census with the 1999 HUD FMRs. While acknowledging the limitations of the FMRs, Short concluded that because the FMR estimates were current and available for all 341 metropolitan areas as well as for 2,416 counties outside metropolitan areas, using the FMRs to construct an index was the best alternative. Rather than group the housing cost data by regions and population size categories, Short utilized cluster analysis to group all areas into 15 clusters by housing costs. She compared the results of this cluster analysis to the results using an average metropolitan area and nonmetropolitan area amount for each state and found that the results were similar. Subsequent annual Census Bureau estimates of experimental poverty measures have used the FMR-based methodology.

Since the index addressed only differences in housing costs, the index was applied to only 44 percent of the threshold. This produced a fixed-weight interarea price index with two components – housing and all other goods and services – in which the price of other goods and services is assumed not to vary. The estimate of 44 percent came from the Consumer Expenditure survey tabulations of expenditures for two-adult/two-child families. For families at the 35th percentile of the distribution of spending on food, housing and clothing, housing represented 44 percent of total expenditures assuming miscellaneous expenditures are set at 15 percent of the food, housing and clothing amount. In addition, the index is normalized to keep the national average index equal to one. The raw index numbers are divided by the national average index number so that the national average of the new index is equal to one.

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<sup>3</sup> For example, there were higher poverty rates than expected in Maine and lower poverty rates than expected in Connecticut.

**Text Box 1****What are metropolitan and micropolitan statistical areas?**

Metropolitan and micropolitan statistical areas (metro and micro areas) are geographic 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. The term "Core Based Statistical Area" (CBSA) is a collective term for both metro and micro areas. A metro area contains a core urban area of 50,000 or more population, and a micro area contains an urban core of at least 10,000 (but less than 50,000) population. Each metro or micro area consists of one or more counties and includes the counties containing the core urban 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.

While the FMR-based methodology was able to overcome some of the shortcomings of the methodology recommended by the NAS panel, this methodology has its own set of limitations. HUD estimates FMRs for use in the Section 8 low-income housing program and does not support their use for comparing housing costs across localities.<sup>4</sup> The FMR index measures only differences in rental housing costs and therefore implicitly assumes that there are not significant geographic differences in the cost of other basic necessities. Using just two housing cost estimates for each state can misrepresent the cost of living in states where there are multiple metropolitan areas with large differences in the cost of living. For example, in New York, the FMR-based methodology uses the same regional cost adjustment for Buffalo as for New York City, despite large differences in their respective housing costs.

**IV. American Community Survey: Bishaw Index**

The full implementation of the American Community Survey (ACS), as a replacement for the decennial census long form, provides detailed data on housing costs that can be updated each year. Bishaw used ACS data to create a simple geographic cost of living index based on 2007 gross rental costs (Bishaw, 2009). Following the grouping methodology used by the Census Bureau in its experimental poverty measures series, Bishaw assigned each household one of 99 locations based on the state and whether or not the household was in a metropolitan area. (The District of Columbia, New Jersey and Rhode Island have all their population in metropolitan areas.) The geographic cost index for each location was the median gross rent for that location divided by the national median gross rent. Like the FMR-based index, this index was then normalized to set the

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<sup>4</sup> In her January 2001 paper, Short lists the following eleven reasons given by HUD for not supporting the use of FMRS to adjust a poverty threshold: (1) FMRs are only developed for use in section 8 certificate and voucher program; (2) they measure rents not total costs; (3) they use gross rents of recent movers; (4) only major metropolitan areas are checked using Random Digit Dialing surveys; (5) rental markets are volatile; (6) for 99 large areas, rents are adjusted using CPI rent and utility factors. While only available for 32 Consolidated Metropolitan Statistical Areas (CMSAs), they are applied to all Primary Metropolitan Statistical Areas (PMSAs) within the CMSAs; (7) there are updates of rent for small areas with Random Digit Dialing procedures that may result in generalizations of rent changes not applicable to all individual areas; (8) the percentile standard is not consistent over time (the 50<sup>th</sup> percentile from 1975 to 1983, the 45<sup>th</sup> percentile from 1985 to 1994, and the 40<sup>th</sup> percentile starting in 1995); (9) the percentile measure is administratively determined and not based on measurement criteria; (10) the treatment of nonmetropolitan areas has changed over time; (11) in 1996 a state minimum FMR was instituted.

national average at 1.00 and applied to the 44 percent of the threshold assumed to represent shelter and utility costs.

$$Threshold_{ij} = \frac{\left( .44 \times \frac{MGR_{ij}}{MGR_n} + .56 \right) \times Threshold_n}{NF}$$

i = state j=metro or nonmetro

n = national

MGR = Median gross rent

Threshold = Poverty cutoff (Bishaw's analysis used the official threshold)

NF = Normalization Factor

Renwick(2009) compared state level NAS-style poverty rates for 2007 using the Bishaw index and the FMR-based index. She found that generally the ACS index resulted in higher poverty rates in nonmetropolitan areas than the FMR-based index. Poverty rates for areas outside metropolitan areas using the ACS index were higher than poverty rates using the FMR-based index in 21 states and lower in only 2 states (Alaska and Colorado). Overall the poverty rate for metro areas was slightly lower using the ACS index but state level changes in poverty rates for metro areas were mixed — higher in 25 states and lower in 15 states.

There are several concerns with the ACS-based index as developed by Bishaw. First, the median gross rent represents the midpoint of the rental distribution regardless of the size of the unit. The median rent in one geographic location might represent the rent for a studio or one bedroom unit while the median rent in another geographic location may represent the rent for a two or three bedroom unit. Second, the ACS index does not control for differences in housing quality. While the FMR index limits data to rental units that meet minimum HUD standards for participation in the Section 8 program, the ACS indexes developed by Bishaw include all rental units, regardless of quality. Since housing quality varies by geographic area, for geographic areas with a higher incidence of substandard rental units, the ACS methodology may underestimate the cost of decent housing. If substandard units were excluded from the distribution, the median rent would be higher. Third, the ACS-based index, like the FMR-based index, represents only differences in housing costs for renters and does not reflect differences in housing costs for homeowners. Fourth, the index provides a single estimate for all metropolitan areas in a state despite significant intra-state differences in housing costs.

**Text Box 2****American Community Survey Housing Cost Variables**

The data on gross rent were obtained from answers to Housing Questions 11a-d and 15a in the 2009 American Community Survey. Gross rent is the contract rent plus the estimated average monthly cost of utilities (electricity, gas, and water and sewer) and fuels (oil, coal, kerosene, wood, etc.) if these are paid by the renter (or paid for the renter by someone else). Gross rent is intended to eliminate differentials that result from varying practices with respect to the inclusion of utilities and fuels as part of the rental payment. The estimated costs of water and sewer, and fuels are reported on a 12-month basis but are converted to monthly figures for the tabulations. Renter units occupied without payment of rent are shown separately as “No rent paid” in the tabulations.

The data on selected monthly owner costs were obtained from Housing Questions 11 and Questions 17 through 21 in the 2009 American Community Survey. The data were obtained for owner-occupied units. Selected monthly owner costs are the sum of payments for mortgages, deeds of trust, contracts to purchase, or similar debts on the property (including payments for the first mortgage, second mortgages, home equity loans, and other junior mortgages); real estate taxes; fire, hazard, and flood insurance on the property; utilities (electricity, gas, and water and sewer); and fuels (oil, coal, kerosene, wood, etc.). It also includes, where appropriate, the monthly condominium fee for condominiums (Question 13) and mobile home costs (Question 21) (installment loan payments, personal property taxes, site rent, registration fees, and license fees). Selected monthly owner costs were tabulated for all owner-occupied units, and usually are shown separately for units “with a mortgage” and for units “not mortgaged.”

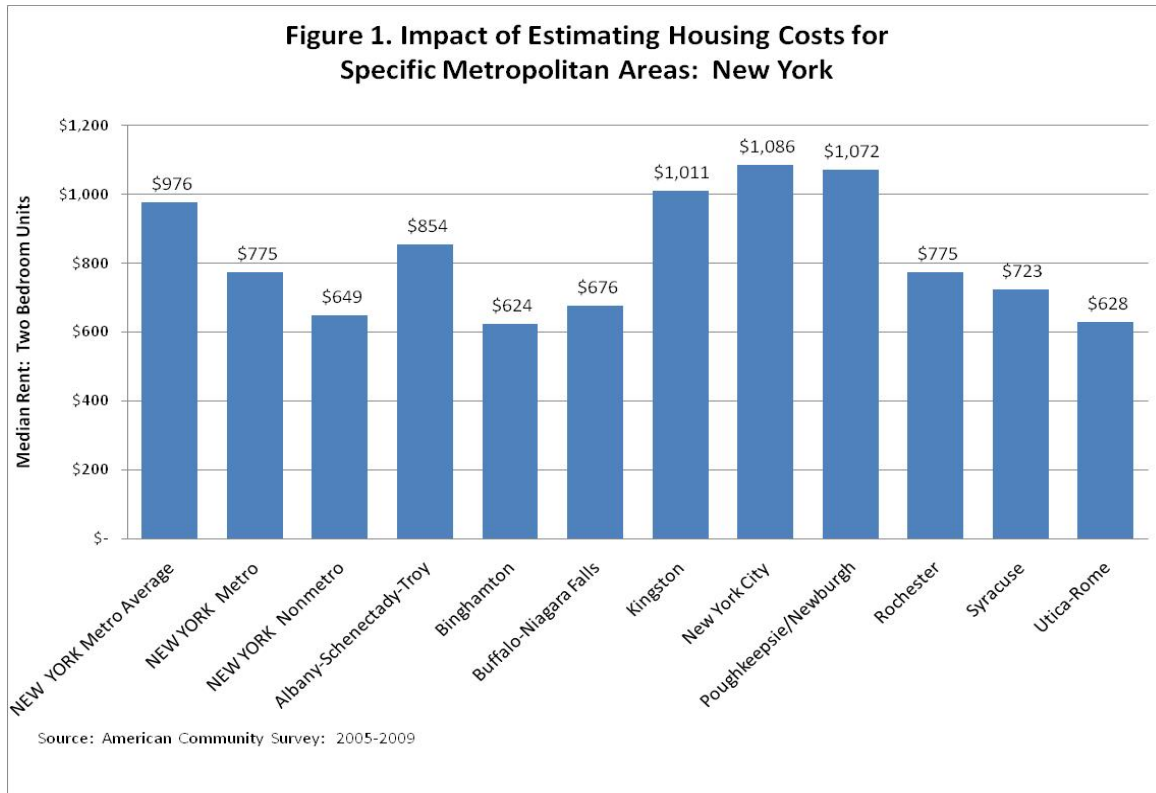
**V. Creating an ACS-based Index for the Supplemental Poverty Measure**

While the ITWG suggestions provide some specific guidance to the Census Bureau and BLS with regards to the development of a regional cost adjustment index for the Supplemental Poverty Measures, there are numerous areas in which the ITWG suggestions are not clear. The following sections of the paper will discuss the options in each of these areas.

**A. Geographic groupings – specific metro areas or average for all metro areas in a state?**

The ITWG suggests that the geographic index be developed for specific metro areas rather than using an average index number for all metro areas in a single state. Given the wide variation in housing costs across metro areas in a single state, this suggestion is reasonable. For example, for New York, ACS estimates of the median gross rent for two bedroom units in metro areas range from \$628 in Utica-Rome to \$1,086 in New York City. The median for all metro areas combined was \$976.



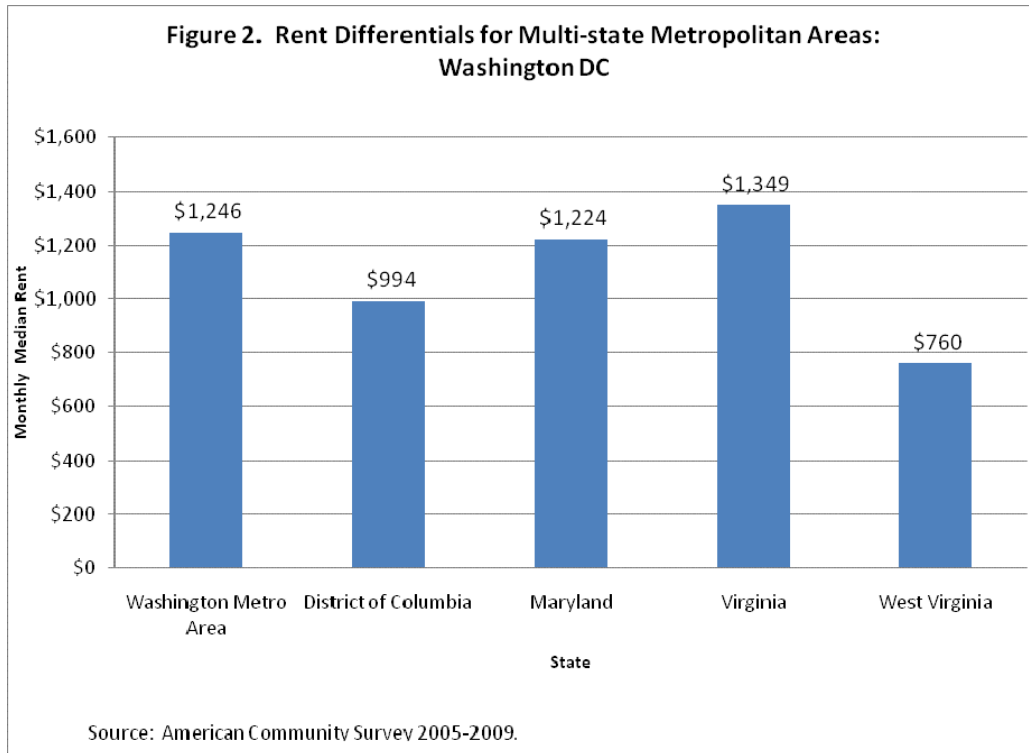


The internal CPS ASEC files identify CBSAs for all households on the file. When the Census Bureau releases the public use version of the file, CBSAs with populations less than 100,000 are not identified. In addition, CBSA codes for portions of CBSAs with populations smaller than 100,000 that could be identified by combining two geographic indicators (e.g. state and CBSA) are also suppressed. The index has been developed with these same geographic limitations. Currently, all definitions for geographic areas on these lists reflect the June 30, 2003 Office of Management and Budget's (OMB) definitions. These are updated every ten years on the CPS ASEC file.

The index shown in this paper groups metro areas that cannot be disclosed into one group in each state, "other metro". The "other metro" group also includes portions of identifiable CBSAs which cannot be identified or are not in the CPS ASEC sample. For example, the Wisconsin portion of the Minneapolis-St. Paul-Bloomington, MN-WI CBSA is not identified in the CPS ASEC public use data. Therefore the housing costs of Wisconsin households in the Minneapolis CBSA in the ACS data will be grouped with Wisconsin's "other metro" areas to create the adjustment index.

#### B. Treatment of Metropolitan Areas that Cross State Lines

Many CBSAs cross state lines. For example, the Washington-Arlington-Alexandria, DC-VA-MD-WV includes households in four different states. The median gross rent for the entire CBSA can be very different than the median gross rent for the state delineated portions of the CBSA. Figure 2 shows how these vary for the Washington-Arlington-Alexandria CBSA.

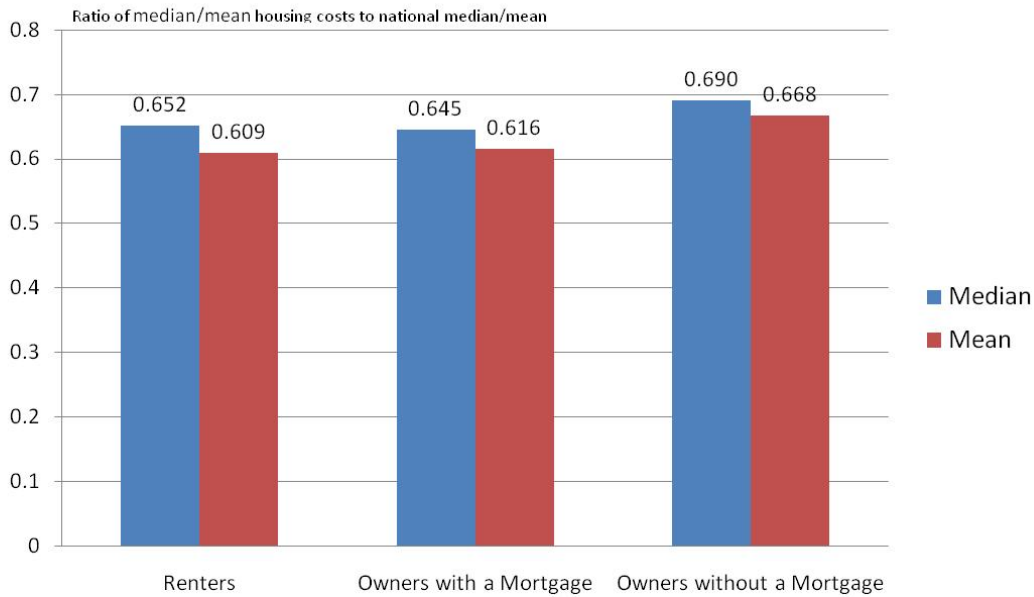


Given these differences in the estimates for portions of each state, the decision was made to treat each separately. This results in 378 distinct geographies.

C. Should index be based on mean or median costs?

Bishaw’s index used median gross rental costs to create an index from ACS data. The index could also be developed using mean costs. The indices were calculated both ways. Since the correlation between the two indices was high (0.99), median costs are used because medians are generally considered a better estimate of central tendency, particularly when values in a distribution are particularly skewed. The index values for most areas using medians were very similar to the index values using medians. In 296 of the 378 geographies, the absolute value of the difference between the two indices for gross rent was less than or equal to .05.

**Figure 3. Impact of Using Median vs Mean to Calculate Geographic Adjustment Index: Georgia Other Metro Areas - 2008**



Source: American Community Survey: 2005-2009.

**D. Should micro<sup>5</sup> areas be included in “other metro” or in nonmetro?**

In this analysis, micro areas are included in the nonmetro category for each state. Any nonmetropolitan county with an [urban cluster](#) of at least 10,000 persons or more is designated the central county of a micro area. As with metro areas, outlying counties are included if commuting to the central county is 25 percent or higher, or if 25 percent of the employment in the outlying county is made up of commuters from the central county. Because they are county-based and include outlying areas, the total area population reaches well beyond 50,000 for many micro areas. The 2003 inaugural set of 560 micro areas included 674 counties and ranging in size from 13,000 (Andrews, Texas) to 182,000 (Torrington, Connecticut). Micro areas contain about 10 percent of the total populations and just under 60 percent of the nonmetro population.

(<http://www.ers.usda.gov/briefing/Rurality/MicropolitanAreas/>)

**E. Should there be a separate index for each of the three thresholds?**

The ITWG suggested that some consideration be given to using a different index, or at least a different weight to the index, for the three different thresholds:

“With different thresholds for renters, homeowners with mortgages, and homeowners without mortgages, better data and future research might lead one to utilize different price weights for different groups. At this point, however, the available data are limited

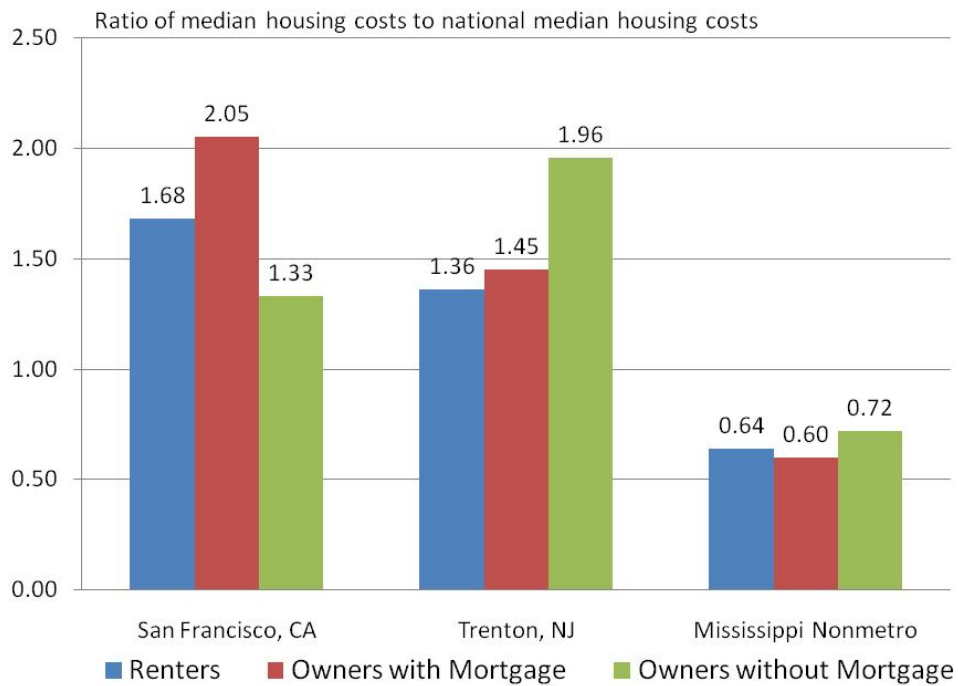
<sup>5</sup> See Text Box 1 for a definition of micro area.

and this means that the area housing price adjustments will be similar for all groups and thresholds.” (ITWG, p. 5)

Since shelter and utilities constitute different shares of the three thresholds, it makes sense to weigh the housing cost adjustment by the appropriate share. For 2008, shelter and utilities made up 49.3 percent of the renter threshold, 50.2 percent of the threshold for owners with a mortgage and 41.9 percent of the threshold for owners without a mortgage.

The five-year ACS file provides a large enough sample to look separately at housing costs for each of these three groups of households. The ACS includes questions about gross rent for renters and monthly housing costs for owners. Use of tenure-specific housing costs results in very different adjustments in some areas. For example, for San Francisco, median rents are 68 percent higher than the national median while costs for owners with a mortgage are almost twice the national average and costs for owners without a mortgage are 33 percent higher. On the other hand in Trenton-Ewing, New Jersey, median rents are 36 percent higher than the national median while owners with a mortgage face costs that are 45 percent higher and owners without a mortgage experience median costs that are almost twice the national median.

**Figure 4. Comparison of Rent Only and Triple Index:  
San Francisco, Trenton and Mississippi Nonmetro**



Source: American Community Survey: 2005-2009.

## F. Controlling for quality differences?

Bishaw's index was based on gross rents for all rental units. In an attempt to "standardize" the housing units, this analysis uses only two bedroom units with complete kitchen and bathroom facilities. The housing quality filter eliminates a small number of units from the sample. For the five year 2005-2009 ACS data, of 112 million occupied housing units, 1 million (less than 1 percent) were eliminated. This varied considerably by state. In Alaska, 4.7 percent of units were eliminated while in Maryland and Utah only 0.6 percent were eliminated.

Other researchers have used an index based on rental costs for households with incomes near the 33rd percentile of the income distribution. For example, the Institute for Research on Poverty (IRP) developed a cost adjustment for its Wisconsin poverty measure that adjusted the threshold (their analysis did not use three separate thresholds) based on the median annual housing costs for renters within the 28th to 38th percentiles of income in the given region to the median annual costs for renters within the same income range statewide. (Julia Isaacs, Joanna Marks, Timothy Smeeding, and Katherine Thornton, September 2010, Wisconsin Poverty Report: Technical Appendix, p. 26)

Future research should consider the use of more sophisticated statistical techniques to establish the housing cost adjustment index. For example, researchers at the Bureau of Economic Analysis use a hedonic regression with all housing characteristics as independent variables with dummy variables for each of the geographic entities to tease out the impact of geography on housing costs.

## G. Normalizing

The Census Bureau practice in the NAS-based experimental poverty measures has been to normalize the geographic adjustment mechanism so that the average adjustment for all family units is equal to 1.0. The rationale for this "normalization" has been that the geographic adjustment should not change the average threshold for the nation as a whole. Depending on the adjustment approach selected, the normalization factor will either increase or decrease the thresholds slightly. For example, for the adjustment index using rental costs based on median rental costs, the adjustment factor is 1.0178494 so normalized thresholds are slightly lower. (The threshold is divided by the adjustment factor.) The adjustment index using the medians of the three difference housing costs, the adjustment factor is 1.0347745. These adjustment factors depend on the CPS ASEC sample and therefore vary from one year to the next.

## F. Comparing Adjusted SPM Thresholds to the Official Thresholds

Comparisons between the SPM thresholds and the official poverty thresholds should be done with caution. The official poverty thresholds are meant to represent the cost of all necessary goods and services purchased by families. The SPM thresholds represent only the cost of food, shelter, clothing, utilities and miscellaneous goods. Important adjustments are made to the resources to reflect other "necessary" expenses that are not included in the SMP thresholds, including taxes, work-related expenses and medical out-of-pocket expenses. These items would have to be added to the SPM thresholds or subtracted from the official thresholds before comparing the two amounts.<sup>6</sup>

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<sup>6</sup> The NAS panel estimated that subtracting these "necessary" expenditures from the 1992 official threshold reduced the threshold for a two adult, two child family from \$14,228 to \$12,000 (Citro and Michael, p. 154).

## VI. Adjusted Thresholds

The 2008 SPM thresholds as derived by BLS from five years of CE data for two adult, two child *SPM families* are: \$25,522 for owners with a mortgage, \$20,426 for owners without a mortgage and \$24,880 for renters. The official 2008 poverty threshold for a two adult, two child family was \$21,834. For 2008, housing and utility costs represented 50.2 percent of the threshold for owners with a mortgage, 41.9 percent of the threshold for owners without a mortgage and 49.3 percent of the threshold for renters.<sup>7</sup> Table 1 provides the two adult/two child thresholds for each tenure status for each geographic area using the triple index and the rent only index using the 2005-2009 ACS data.<sup>8</sup>

Single index based on rental outlays:

$$Threshold_{ijt} = \frac{\left[ HousingShare_t \times \frac{MGRD2B_{ij}}{MGRD2B_n} + (1 - HousingShare_t) \right] \times Threshold_t}{NF}$$

i = state j=specific metro area, other metro or nonmetro

t= tenure: owner with mortgage, owner without a mortgage, renter

n = national

MGRD2B = Median gross rent for a “decent” two bedroom unit

Threshold = CE-based estimate of threshold

HousingShare = percent of threshold represented by housing and utility expenditures

NF = Normalization Factor

Triple index based on housing outlays by tenure:

$$Threshold_{ijt} = \frac{\left( HousingShare_t \times \frac{Outlays_{ijt}}{Outlays_{nt}} + [1 - HousingShare_t] \right) \times Threshold_t}{NF}$$

i = state j=specific metro area, other metro or nonmetro

t= tenure: owner with mortgage, owner without a mortgage, renter

n = national

Outlays = Median gross rent, selected monthly owner costs for owners with and without a mortgage for a “decent” two bedroom unit

Threshold = CE-based estimate of threshold

HousingShare = percent of threshold represented by housing and utility expenditures

NF = Normalization Factor

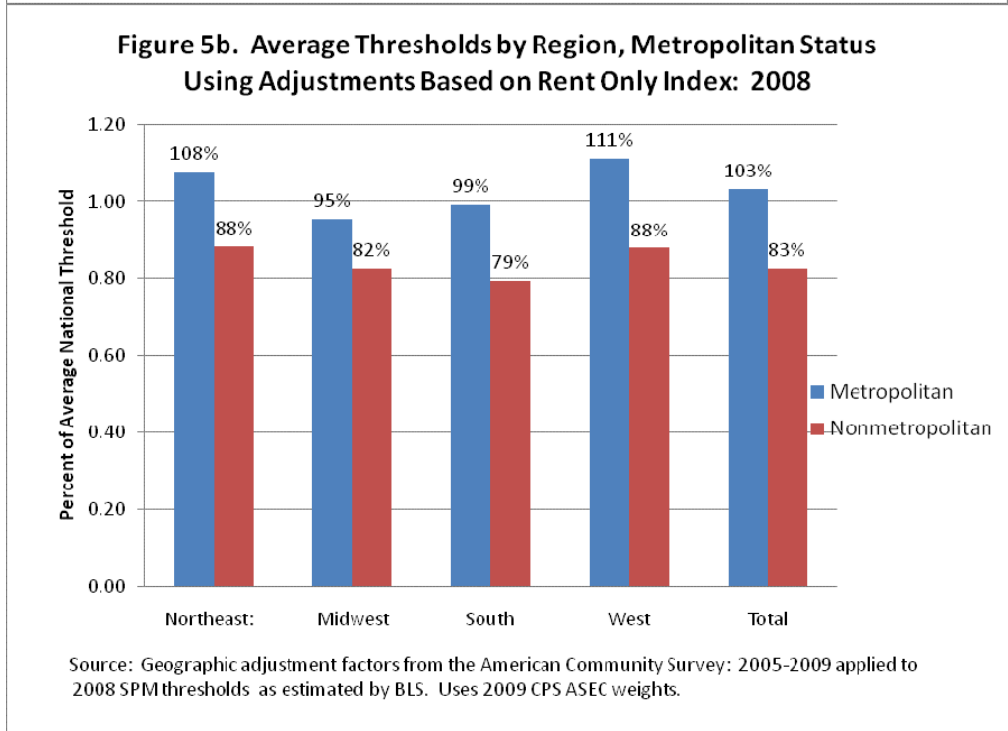
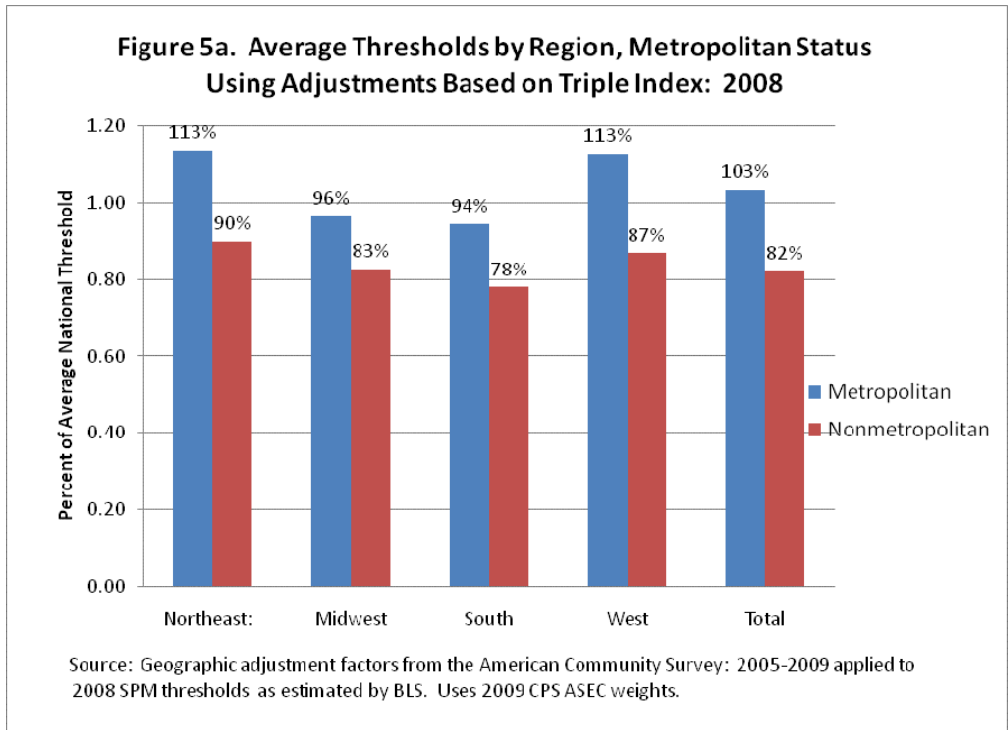
The state of North Dakota has some of the lowest thresholds using the rent-only index with the nonmetropolitan area thresholds of \$20,090, \$16,797, \$19,679 for owners with a mortgage, owners without a mortgage and renters respectively. Using the triple index one of lowest thresholds for owners with a mortgage was nonmetropolitan West Virginia at \$19,641. For owners without a mortgage, one of the lowest thresholds was for nonmetropolitan Kentucky (\$16,900). California had some of the highest thresholds for both the rent-only index and the triple index. San Jose-Sunnyvale-Santa Clara, CA using the rent only-index has thresholds equal to \$34,695, \$26,554 and \$33,662 for owners with a mortgage,

<sup>7</sup> These are the thresholds and housing shares provided by Garner in “Supplemental Poverty Measure Thresholds and the Estimation Sample,” paper prepared for the 2010 APPAM meetings.

<sup>8</sup> For information on sampling and estimation methods, confidentiality protection, and sampling and nonsampling errors, see [American Community Survey Multiyear Accuracy of the Data](#) (3-year 2007-2009 and 5-year 2005-2009).

owners without a mortgage and renters, respectively and using the triple index, a thresholds of \$39,359 for owners with a mortgage. Using the triple index, one of the highest thresholds for owners without a mortgage was for Bridgeport-Stamford-Norwalk, CT at \$30,114.

Figure 5a and Figure 5b show the average thresholds for two adult, two child families in metropolitan vs nonmetropolitan areas by Census region as a percent of the national thresholds. The averages are derived from the 2009 CPS ASEC weights.



## VII . Conclusion

The ITWG suggested that poverty thresholds be adjusted for price differences across geographic areas using the best available data and statistical methodology. They noted that the American Community Survey (ACS) data appear to be the best data currently available, from which one can create a housing price index based on differences in quality-equivalent rental prices of housing across areas and that it would be good to (1) differentiate this price index by Metropolitan Statistical Areas (MSAs) and by non-MSA areas in each State and (2) utilize a 5-year moving average of the data for each year. They also noted that over time this adjustment mechanism may be modified and improved.

The triple index derived from five years of ACS data as described in this paper appears to be the best method currently available to adjust the price differences across geographic areas. The triple index permits the poverty measure to reflect differences in the housing costs by tenure status in a manner consistent with the three distinct poverty thresholds used by the SPM. This analysis has shown that an index can be constructed using either median or mean housing outlays. The two methods produce index values that are very highly correlated but the index constructed using the median is preferable because it lessens the influence of outliers on the index values.

The ITWG suggested that the Census Bureau and BLS researchers continue to investigate indices which could be applied to the entire threshold. There has been some promising research on regional variation in the cost of other basic necessities. USDA has developed an index that uses Nielsen Homescan data to measure regional variation in food prices for 52 goods in 35 market groups (Todd, Mancino, Leibtag and Tripodo, 2010). Census Bureau researchers are looking at differences in transportation costs (Rapino, 2011). Carillo, Early and Olsen (2009) have developed a panel of price indices for housing, other goods, and all goods for each metropolitan area and the nonmetropolitan areas of each state from 1982 through 2008 using housing cost data from the 2000 HUD Customer Satisfaction Survey, data from 2000 Decennial Census and the price indices for non-housing goods produced each quarter for many urban areas by the Council for Community and Economic Research (formerly the American Chambers of Commerce Research Association or ACCRA). BEA researchers are continuing their research combining CPI price data and ACS housing cost data to create regional price parities. (Aten, 2010). Future research should clearly continue to evaluate these options.

Tables.

Table 1. Two Adult/Two Child Thresholds by Metro Area and Adjustment Index: 2008

Maps:

1. Two Adult/Two Child Thresholds for Renters: 2008
2. Two Adult/Two Child Thresholds for Owners with a Mortgage using Rent: 2008
3. Two Adult/Two Child Thresholds for Owners with a Mortgage using Triple Index: 2008
4. Two Adult/Two Child Thresholds for Owners without a Mortgage using Rent Index: 2008
5. Two Adult/Two Child Thresholds for Owners without a Mortgage using Triple Index: 2008



**Table 1. Two Adult/Two Child Thresholds by Metro Area and Adjustment Index: 2008**

	Two Adult/Two Child Threshold Using Triple Index			Two Adult/Two Child Threshold Using Rent Index		
	Owners with Mortgage	Owners Free and Clear	Renters	Owners with Mortgage	Owners Free and Clear	Renters
<b>National Average from CE Data</b>	<b>25,522</b>	<b>20,426</b>	<b>24,880</b>	<b>25,522</b>	<b>20,426</b>	<b>24,880</b>
ALABAMA Metro	20,615	17,841	21,446	21,935	18,030	21,446
ALABAMA Nonmetro	20,743	17,841	20,060	20,487	17,063	20,060
Anniston-Oxford, AL	20,551	17,439	21,090	21,563	17,781	21,090
Birmingham-Hoover, AL	22,255	18,475	22,967	23,523	19,091	22,967
Decatur, AL	20,897	18,004	20,538	20,987	17,396	20,538
Florence, AL	19,949	17,722	20,562	21,012	17,413	20,562
Huntsville, AL	21,127	18,004	21,752	22,255	18,244	21,752
Mobile, AL	21,742	18,543	22,476	23,011	18,749	22,476
Montgomery, AL	21,307	18,244	22,709	23,254	18,911	22,709
Tuscaloosa, AL	21,845	18,449	22,795	23,344	18,971	22,795
ALASKA Metro	27,854	23,576	27,309	28,059	22,121	27,309
ALASKA Nonmetro	26,739	21,718	26,916	27,649	21,847	26,916
ARIZONA Metro	22,883	18,381	24,218	24,830	19,964	24,218
ARIZONA Nonmetro	22,140	17,585	22,083	22,601	18,475	22,083
Phoenix-Mesa-Scottsdale, AZ	24,920	19,887	25,493	26,163	20,854	25,493
Prescott, AZ	24,292	19,014	24,414	25,035	20,101	24,414
Tucson, AZ	23,767	19,553	24,205	24,817	19,955	24,205
ARKANSAS Metro	20,448	18,167	21,286	21,768	17,918	21,286
ARKANSAS Nonmetro	19,782	17,722	20,244	20,679	17,191	20,244
Fayetteville-Springdale-Rogers, AR-MO	22,152	18,149	22,439	22,972	18,723	22,439
Fort Smith, AR-OK	20,346	17,790	21,225	21,704	17,876	21,225
Little Rock-North Little Rock, AR	21,537	18,500	22,832	23,382	18,997	22,832
CALIFORNIA Metro	26,060	20,075	24,254	24,869	19,990	24,254
CALIFORNIA Nonmetro	27,867	20,169	25,101	25,753	20,580	25,101
Bakersfield, CA	24,920	19,348	23,469	24,049	19,442	23,469
Chico, CA	25,343	20,049	25,138	25,791	20,606	25,138
El Centro, CA	24,330	18,594	22,672	23,216	18,885	22,672
Fresno, CA	25,586	20,144	24,426	25,048	20,109	24,426
Los Angeles-Long Beach-Santa Ana, CA	34,964	22,146	31,491	32,428	25,039	31,491
Madera, CA	26,201	19,040	23,641	24,228	19,562	23,641
Merced, CA	26,854	19,228	23,506	24,087	19,467	23,506
Modesto, CA	27,687	20,494	25,812	26,496	21,076	25,812
Napa, CA	36,489	24,585	30,878	31,787	24,611	30,878
Oxnard-Thousand Oaks-Ventura, CA	34,426	23,576	32,988	33,991	26,083	32,988
Riverside-San Bernardino, CA	28,084	21,179	27,922	28,699	22,549	27,922
Sacramento--Arden-Arcade-Roseville, CA	30,327	22,163	27,321	28,072	22,129	27,321
Salinas, CA	35,157	21,932	29,063	29,891	23,344	29,063
San Diego-Carlsbad-San Marcos, CA	34,273	22,403	31,148	32,069	24,799	31,148
San Francisco-Oakland-Fremont, CA	38,987	23,250	33,221	34,234	26,246	33,221
San Jose-Sunnyvale-Santa Clara, CA	39,359	24,260	33,662	34,695	26,554	33,662
San Luis Obispo-Paso Robles, CA	31,211	22,121	29,026	29,852	23,319	29,026
Santa Barbara-Santa Maria-Goleta, CA	35,195	23,884	32,350	33,325	25,638	32,350
Santa-Cruz-Watsonville, CA	37,937	22,001	33,209	34,221	26,237	33,209
Santa Rosa-Petaluma, CA	34,670	23,011	30,081	30,954	24,055	30,081
Stockton, CA	28,789	19,835	26,401	27,111	21,487	26,401
Vallejo-Fairfield, CA	31,864	21,958	29,050	29,878	23,336	29,050
Visalia-Porterville, CA	23,895	18,971	22,672	23,216	18,885	22,672

**Table 1. Two Adult/Two Child Thresholds by Metro Area and Adjustment Index: 2008**

	Two Adult/Two Child Threshold Using Triple Index			Two Adult/Two Child Threshold Using Rent Index		
	Owners with Mortgage	Owners Free and Clear	Renters	Owners with Mortgage	Owners Free and Clear	Renters
COLORADO Metro	24,215	18,261	22,930	23,485	19,065	22,930
COLORADO Nonmetro	25,022	19,134	23,739	24,330	19,630	23,739
Boulder, CO	28,648	21,410	27,125	27,867	21,992	27,125
Colorado Springs, CO	24,881	19,630	24,291	24,907	20,015	24,291
Denver-Aurora, CO	27,264	21,153	25,959	26,649	21,179	25,959
Fort Collins-Loveland, CO	25,829	19,981	24,120	24,728	19,895	24,120
Greeley, CO	26,099	19,861	23,052	23,613	19,151	23,052
Pueblo, CO	22,460	19,014	22,034	22,550	18,440	22,034
CONNECTICUT METRO	28,840	24,962	27,174	27,918	22,026	27,174
CONNECTICUT Nonmetro	28,482	24,894	25,481	26,150	20,845	25,481
Bridgeport-Stamford-Norwalk, CT	34,452	30,114	31,271	32,197	24,885	31,271
Danbury, CT	32,940	26,939	31,921	32,876	25,339	31,921
Hartford-West Hartford-East Hartford, CT	28,943	26,708	26,965	27,700	21,881	26,965
New Haven, CT	30,224	27,906	28,646	29,455	23,053	28,646
Norwich-New London, CT-RI	28,828	25,364	27,407	28,161	22,189	27,407
Waterbury, CT	28,174	26,614	26,033	26,726	21,230	26,033
DELAWARE Nonmetro	24,856	20,683	24,193	24,805	19,947	24,193
Dover, DE	25,535	19,553	25,334	25,996	20,743	25,334
Philadelphia-Camden-Wilmington, PA-NJ-DE	25,970	21,599	26,990	27,726	21,898	26,990
Washington-Arlington-Alexandria, DC-VA-MD-WV	35,054	23,909	27,480	28,238	22,240	27,480
FLORIDA Metro	26,201	20,589	26,094	26,790	21,273	26,094
FLORIDA Nonmetro	22,242	18,449	22,476	23,011	18,749	22,476
Cape Coral-Fort Myers, FL	26,086	23,533	26,499	27,213	21,556	26,499
Deltona-Daytona Beach-Ormond Beach, FL	24,305	21,085	25,506	26,175	20,862	25,506
Fort Walton Beach-Crestview-Destin, FL	24,523	20,306	25,039	25,689	20,537	25,039
Gainesville, FL	23,395	19,176	25,064	25,714	20,554	25,064
Jacksonville, FL	24,600	19,442	25,383	26,047	20,777	25,383
Lakeland-Winter Haven, FL	23,126	20,332	24,377	24,997	20,075	24,377
Miami-Fort Lauderdale-Miami Beach, FL	28,456	24,474	28,854	29,673	23,199	28,854
Naples-Marco Island, FL	29,366	25,578	28,069	28,853	22,651	28,069
Ocala, FL	22,281	19,553	23,801	24,395	19,673	23,801
Orlando, FL	24,907	20,614	26,928	27,662	21,855	26,928
Palm Bay-Melbourne-Titusville, FL	24,164	20,734	25,371	26,034	20,768	25,371
Panama City-Lynn Haven, FL	23,549	18,663	25,003	25,650	20,512	25,003
Pensacola-Ferry Pass-Brent, FL	23,421	18,569	23,837	24,433	19,699	23,837
Port St. Lucie-Fort Pierce, FL	24,971	22,891	26,720	27,444	21,710	26,720
Punta Gorda, FL	24,113	21,205	25,555	26,227	20,897	25,555
Sarasota, FL	26,483	23,156	26,941	27,674	21,864	26,941
Tallahassee, FL	23,241	19,040	24,905	25,548	20,443	24,905
Tampa-St. Petersburg-Clearwater, FL	25,035	21,085	26,192	26,893	21,342	26,192
Vero Beach, FL	24,190	23,644	25,702	26,380	20,999	25,702
GEORGIA Metro	21,922	18,072	22,574	23,113	18,817	22,574
GEORGIA Nonmetro	20,974	17,773	20,611	21,063	17,448	20,611
Albany, GA	20,282	18,192	21,004	21,473	17,722	21,004
Athens-Clark County, GA	22,819	18,500	23,175	23,741	19,236	23,175
Atlanta-Sandy Springs-Marietta, GA	26,175	19,930	25,714	26,393	21,008	25,714
Augusta-Richmond County, GA-SC	21,537	18,055	22,439	22,972	18,723	22,439
Chattanooga, TN-GA	20,948	17,490	21,335	21,819	17,953	21,335

**Table 1. Two Adult/Two Child Thresholds by Metro Area and Adjustment Index: 2008**

	Two Adult/Two Child Threshold Using Triple Index			Two Adult/Two Child Threshold Using Rent Index		
	Owners with Mortgage	Owners Free and Clear	Renters	Owners with Mortgage	Owners Free and Clear	Renters
Columbus, GA-AL	21,512	18,449	22,537	23,075	18,791	22,537
Macon,, GA	22,088	18,500	22,132	22,652	18,509	22,132
Savannah, GA	23,613	19,014	24,721	25,355	20,315	24,721
Valdosta, GA	21,063	17,319	22,169	22,691	18,535	22,169
Warner Robins, GA	21,320	18,218	23,543	24,125	19,493	23,543
HAWAII Nonmetro	30,403	20,520	30,105	30,980	24,072	30,105
Honolulu, HI	32,248	23,225	32,436	33,414	25,698	32,436
IDAHO Metro	22,037	18,945	21,347	21,832	17,961	21,347
IDAHO Nonmetro	21,807	18,167	21,249	21,730	17,893	21,249
Boise City-Nampa, ID	23,177	19,108	22,905	23,459	19,048	22,905
Coeur d'Alene, ID	23,690	18,757	22,979	23,536	19,099	22,979
ILLINOIS Metro	20,525	19,176	21,556	22,050	18,107	21,556
ILLINOIS Nonmetro	21,025	19,365	21,090	21,563	17,781	21,090
Bloomington-Normal IL	23,293	21,367	23,224	23,792	19,271	23,224
Champaign-Urbana, IL	22,806	20,426	23,359	23,933	19,365	23,359
Chicago-Naperville-Joliet, IN-IN-WI	30,327	25,150	26,573	27,290	21,607	26,573
Davenport-Moline-Rock Island, IA-IL	22,486	20,118	21,863	22,370	18,321	21,863
Decatur, IL	20,333	19,134	21,814	22,319	18,286	21,814
Kankakee-Bradley, IL	24,049	21,932	23,702	24,292	19,604	23,702
Peoria, IL	22,255	20,332	22,635	23,177	18,860	22,635
Rockford, IL	23,408	22,052	23,065	23,626	19,159	23,065
St. Louis, MO-IL	22,588	20,263	23,028	23,587	19,134	23,028
Springfield, IL	22,101	19,861	22,562	23,101	18,808	22,562
INDIANA Metro	21,768	19,176	22,672	23,216	18,885	22,672
INDIANA Nonmetro	21,397	18,971	21,531	22,024	18,090	21,531
Anderson, IN	21,871	19,271	22,341	22,870	18,654	22,341
Bloomington, IN	21,525	19,134	23,126	23,690	19,202	23,126
Chicago-Naperville-Joliet, IN-IN-WI	23,946	21,299	23,899	24,497	19,741	23,899
Evansville, IN-KY	21,678	19,390	22,844	23,395	19,005	22,844
Fort Wayne, IN	21,115	19,510	22,182	22,703	18,543	22,182
Indianapolis, IN	23,254	20,049	23,874	24,471	19,724	23,874
Louisville, KY-IN	22,460	19,390	22,623	23,165	18,851	22,623
Michigan City-La Porte, IN	22,191	19,553	22,586	23,126	18,826	22,586
South Bend-Mishawaka, IN-MI	21,627	19,647	23,298	23,869	19,322	23,298
IOWA Metro	22,678	20,075	22,562	23,101	18,808	22,562
IOWA Nonmetro	21,192	19,416	20,648	21,102	17,473	20,648
Cedar Rapids, IA	22,755	20,871	22,378	22,908	18,680	22,378
Davenport-Moline-Rock Island, IA-IL	22,665	20,520	22,500	23,036	18,766	22,500
Des Moines, IA	23,792	21,111	23,543	24,125	19,493	23,543
Iowa City, IA	23,805	20,777	23,666	24,254	19,579	23,666
Omaha-Council Bluffs, NE-IA	23,011	20,426	23,101	23,664	19,185	23,101
Waterloo-Cedar Falls, IA	21,781	19,861	21,838	22,345	18,303	21,838
KANSAS Metro	21,602	19,699	22,648	23,190	18,868	22,648
KANSAS Nonmetro	20,410	18,988	20,857	21,320	17,619	20,857
Kansas City, MO-KS	24,330	21,059	24,941	25,586	20,469	24,941
Lawrence, KS	23,434	21,770	23,592	24,177	19,527	23,592
Topeka, KS	22,076	20,144	22,341	22,870	18,654	22,341
Wichita, KS	21,947	19,485	22,231	22,755	18,577	22,231

**Table 1. Two Adult/Two Child Thresholds by Metro Area and Adjustment Index: 2008**

	Two Adult/Two Child Threshold Using Triple Index			Two Adult/Two Child Threshold Using Rent Index		
	Owners with Mortgage	Owners Free and Clear	Renters	Owners with Mortgage	Owners Free and Clear	Renters
KENTUCKY Metro	20,448	17,773	21,053	21,525	17,756	21,053
KENTUCKY Nonmetro	19,757	16,900	20,060	20,487	17,063	20,060
Bowling Green, KY	21,307	17,867	21,789	22,293	18,269	21,789
Cincinnati-Middletown, OH-KY-IN	23,344	19,861	23,040	23,600	19,142	23,040
Lexington-Fayette, KY	22,242	18,954	22,635	23,177	18,860	22,635
Louisville, KY-IN	22,691	19,228	22,500	23,036	18,766	22,500
LOUISIANA Metro	21,217	17,413	21,973	22,486	18,398	21,973
LOUISIANA Nonmetro	20,231	17,371	20,452	20,897	17,336	20,452
Baton Rouge, LA	22,063	17,867	23,335	23,908	19,348	23,335
Lafayette, LA	21,883	17,679	22,341	22,870	18,654	22,341
Lake Charles, LA	20,833	17,841	22,280	22,806	18,612	22,280
Monroe, LA	20,846	17,345	21,286	21,768	17,918	21,286
New Orleans-Metairie-Kenner, LA	24,715	19,459	25,518	26,188	20,871	25,518
Shreveport-Bossier City, LA	21,102	17,396	22,537	23,075	18,791	22,537
MAINE Metro	24,843	21,410	23,837	24,433	19,699	23,837
MAINE Nonmetro	22,511	19,741	21,961	22,473	18,389	21,961
Bangor, ME	22,972	20,358	23,629	24,215	19,553	23,629
Portland-South Portland, ME	26,854	23,250	26,376	27,085	21,470	26,376
MARYLAND Metro	22,293	19,040	20,317	20,756	17,242	20,317
MARYLAND Nonmetro	26,816	20,991	24,610	25,240	20,238	24,610
Baltimore-Towson, MD	27,713	22,429	27,738	28,507	22,420	27,738
Hagerstown-Martinsburg, MD-WV	25,624	19,818	24,009	24,612	19,818	24,009
Philadelphia-Camden-Wilmington, PA-NJ-DE	27,777	22,703	26,082	26,778	21,265	26,082
Salisbury, MD	23,562	21,179	25,211	25,868	20,657	25,211
Washington-Arlington-Alexandria, DC-VA-MD-WV	30,467	24,680	30,927	31,838	24,645	30,927
MASSACHUSETTS Metro	26,944	23,387	24,586	25,215	20,221	24,586
MASSACHUSETTS Nonmetro	35,708	28,702	34,766	35,849	27,324	34,766
Barnstable Town, MA	29,250	24,611	29,467	30,314	23,627	29,467
Boston-Cambridge-Quincy, MA-NH	33,696	27,290	30,768	31,672	24,534	30,768
Leominster-Fitchburg-Gardner, MA	28,815	24,329	25,064	25,714	20,554	25,064
Providence-Fall River-Warwick, MA-RI	29,455	23,738	24,291	24,907	20,015	24,291
Springfield, MA-CT	26,829	23,250	24,684	25,317	20,289	24,684
Worcester, MA-CT	29,776	24,474	26,450	27,162	21,521	26,450
MICHIGAN Metro	22,473	20,426	22,316	22,844	18,637	22,316
MICHIGAN Nonmetro	22,319	19,673	21,789	22,293	18,269	21,789
Ann Arbor, MI	27,854	24,842	26,045	26,739	21,239	26,045
Detroit-Warren-Livonia, MI	25,535	22,608	24,819	25,458	20,383	24,819
Flint, MI	22,755	21,111	22,439	22,972	18,723	22,439
Grand Rapids-Wyoming, MI	23,895	21,299	23,052	23,613	19,151	23,052
Holland-Grand Haven, MI	24,177	21,299	23,175	23,741	19,236	23,175
Jackson, MI	22,857	20,657	22,697	23,241	18,903	22,697
Kalamazoo-Portage, MI	23,152	20,683	22,832	23,382	18,997	22,832
Lansing-East Lansing, MI	23,613	21,838	23,813	24,407	19,681	23,813
Monroe, MI	24,702	22,121	23,335	23,908	19,348	23,335
Muskegon-Norton Shores, MI	22,562	19,818	22,243	22,767	18,586	22,243
Niles-Benton Harbor, MI	22,588	19,236	21,826	22,332	18,295	21,826
Saginaw-Saginaw Township North, MI	21,717	19,835	22,292	22,819	18,620	22,292
MINNESOTA Metro	24,164	20,563	22,684	23,229	18,894	22,684

**Table 1. Two Adult/Two Child Thresholds by Metro Area and Adjustment Index: 2008**

	Two Adult/Two Child Threshold Using Triple Index			Two Adult/Two Child Threshold Using Rent Index		
	Owners with Mortgage	Owners Free and Clear	Renters	Owners with Mortgage	Owners Free and Clear	Renters
MINNESOTA Nonmetro	22,998	19,579	21,446	21,935	18,030	21,446
Duluth, MN-WI	23,523	19,818	23,040	23,600	19,142	23,040
Minneapolis-St Paul-Bloomington, MN-WI	27,931	22,523	26,291	26,995	21,410	26,291
St. Cloud, MN	24,728	20,452	22,611	23,152	18,843	22,611
MISSISSIPPI Metro	21,448	18,569	22,366	22,896	18,672	22,366
MISSISSIPPI Nonmetro	20,372	18,030	20,440	20,884	17,328	20,440
Gulfport-Biloxi, MS	22,140	18,423	24,426	25,048	20,109	24,426
Jackson, MS	21,678	18,286	23,727	24,318	19,622	23,727
Memphis, TN-MS-AR	22,242	19,040	23,923	24,523	19,758	23,923
MISSOURI Metro	20,987	18,312	21,274	21,755	17,910	21,274
MISSOURI Nonmetro	20,167	17,884	20,366	20,807	17,276	20,366
Columbia, MO	21,089	19,134	22,292	22,819	18,620	22,292
Joplin, MO	20,231	17,910	21,556	22,050	18,107	21,556
Kansas City, MO-KS	22,998	20,118	23,641	24,228	19,562	23,641
St. Louis, MO-IL	23,972	20,494	24,156	24,766	19,921	24,156
Springfield, MO	20,577	17,910	21,814	22,319	18,286	21,814
MONTANA Metro	23,741	19,673	22,549	23,088	18,800	22,549
MONTANA Nonmetro	22,947	19,108	21,593	22,088	18,132	21,593
Billings, MT	22,524	19,647	22,574	23,113	18,817	22,574
NEBRASKA Metro	23,728	20,922	22,684	23,229	18,894	22,684
NEBRASKA Nonmetro	21,256	19,835	20,943	21,409	17,679	20,943
Omaha-Council Bluffs, NE-IA	23,895	21,059	23,911	24,510	19,750	23,911
NEVADA Metro	24,958	22,985	25,518	26,188	20,871	25,518
NEVADA Nonmetro	23,331	19,082	23,972	24,574	19,793	23,972
Las Vegas-Paradise, NV	27,290	21,222	27,407	28,161	22,189	27,407
Reno-Sparks, NV	27,354	21,624	26,708	27,431	21,701	26,708
NEW HAMPSHIRE Metro	29,647	26,708	27,996	28,776	22,600	27,996
NEW HAMPSHIRE Nonmetro	26,778	24,329	26,033	26,726	21,230	26,033
Boston-Cambridge-Quincy, MA-NH	30,506	27,829	28,903	29,724	23,233	28,903
Rochester-Dover, NH-ME	27,546	26,682	26,585	27,303	21,616	26,585
Allentown-Bethlehem-Easton, PA-NJ	32,018	27,547	27,345	28,097	22,146	27,345
Atlantic City, NJ	28,943	26,965	27,726	28,494	22,412	27,726
New York-Northern New Jersey-Long Island, NY-NJ-PA	34,349	29,267	30,081	30,954	24,055	30,081
Ocean City, NJ	27,751	24,260	26,904	27,636	21,838	26,904
Philadelphia-Camden-Wilmington, PA-NJ-DE	28,072	26,682	27,628	28,392	22,343	27,628
Trenton-Ewing, NJ	31,313	28,608	29,283	30,122	23,498	29,283
Vineland-Millville-Bridgeton, NJ	26,829	24,543	26,045	26,739	21,239	26,045
NEW MEXICO Nonmetro	20,858	17,508	20,832	21,294	17,602	20,832
Albuquerque, NM	23,280	18,971	23,408	23,985	19,399	23,408
Farmington, NM	22,216	17,003	22,366	22,896	18,672	22,366
Las Cruces, NM	21,192	18,449	21,397	21,883	17,995	21,397
Santa Fe, NM	27,662	20,024	26,732	27,457	21,718	26,732
NEW YORK Metro	24,190	21,530	24,205	24,817	19,955	24,205
NEW YORK Nonmetro	23,241	21,273	22,316	22,844	18,637	22,316
Albany-Schenectady-Troy, NY	26,073	22,891	25,383	26,047	20,777	25,383
Binghamton, NY	22,537	21,410	21,948	22,460	18,381	21,948
Buffalo-Niagara Falls, NY	23,754	22,754	22,721	23,267	18,920	22,721
Kingston, NY	28,456	25,150	27,738	28,507	22,420	27,738

**Table 1. Two Adult/Two Child Thresholds by Metro Area and Adjustment Index: 2008**

	Two Adult/Two Child Threshold Using Triple Index			Two Adult/Two Child Threshold Using Rent Index		
	Owners with Mortgage	Owners Free and Clear	Renters	Owners with Mortgage	Owners Free and Clear	Renters
New York-Northern New Jersey-Long Island, NY-NJ-PA	36,848	28,959	28,854	29,673	23,199	28,854
Poughkeepsie-Newburgh-Middletown, NY	30,737	27,478	28,646	29,455	23,053	28,646
Rochester, NY	24,318	23,173	24,205	24,817	19,955	24,205
Syracuse, NY	23,639	21,932	23,433	24,010	19,416	23,433
Utica-Rome, NY	23,101	21,504	22,010	22,524	18,423	22,010
NORTH CAROLINA Metro	22,614	19,108	22,819	23,370	18,988	22,819
NORTH CAROLINA Nonmetro	21,602	18,167	21,286	21,768	17,918	21,286
Asheville, NC	22,652	18,355	22,917	23,472	19,057	22,917
Charlotte-Gastonia-Concord, NC-SC	23,869	19,390	24,046	24,651	19,844	24,046
Durham, NC	23,908	20,306	24,537	25,163	20,186	24,537
Fayetteville, NC	21,781	19,065	23,335	23,908	19,348	23,335
Greensboro-High Point, NC	22,319	18,475	22,635	23,177	18,860	22,635
Hickory-Morgantown-Lenoir, NC	21,179	17,465	21,053	21,525	17,756	21,053
Jacksonville, NC	21,986	18,098	22,893	23,446	19,040	22,893
Raleigh-Cary, NC	24,010	20,007	24,868	25,509	20,417	24,868
Winston-Salem, NC	21,717	18,149	22,022	22,537	18,432	22,022
NORTH DAKOTA Metro	23,690	20,589	21,617	22,114	18,149	21,617
NORTH DAKOTA Nonmetro	20,948	19,108	19,679	20,090	16,797	19,679
Fargo, ND-MN	23,549	21,504	21,887	22,396	18,338	21,887
OHIO Metro	21,602	19,108	21,200	21,678	17,858	21,200
OHIO Nonmetro	21,986	19,296	21,311	21,794	17,935	21,311
Akron, OH	23,741	21,530	23,813	24,407	19,681	23,813
Canton-Massillon, OH	22,729	20,118	21,887	22,396	18,338	21,887
Cincinnati-Middletown, OH-KY-IN	24,190	21,770	23,371	23,946	19,373	23,371
Cleveland-Elyria-Mentor, OH	24,510	22,069	23,543	24,125	19,493	23,543
Columbus, OH	24,305	21,299	24,021	24,625	19,827	24,021
Dayton, OH	22,972	20,469	22,905	23,459	19,048	22,905
Springfield, OH	22,037	20,195	22,182	22,703	18,543	22,182
Toledo, OH	23,101	21,179	22,476	23,011	18,749	22,476
Youngstown-Warren-Boardman, OH	22,178	20,400	21,458	21,947	18,038	21,458
OKLAHOMA Metro	19,795	17,413	19,790	20,205	16,874	19,790
OKLAHOMA Nonmetro	19,923	17,841	20,661	21,115	17,482	20,661
Lawton, OK	21,307	18,218	21,764	22,268	18,252	21,764
Oklahoma City, OK	21,332	18,475	22,586	23,126	18,826	22,586
Tulsa, OK	21,666	18,689	22,893	23,446	19,040	22,893
OREGON Metro	25,048	21,205	23,715	24,305	19,613	23,715
OREGON Nonmetro	23,126	18,945	22,243	22,767	18,586	22,243
Bend, OR	26,201	20,589	24,316	24,933	20,032	24,316
Eugene-Springfield, OR	24,843	20,007	23,948	24,548	19,776	23,948
Medford, OR	25,304	21,342	24,058	24,664	19,853	24,058
Portland-Vancouver-Beaverton, OR-WA	27,969	22,403	24,905	25,548	20,443	24,905
Salem, OR	24,933	20,751	22,893	23,446	19,040	22,893
PENNSYLVANIA Metro	23,177	20,871	22,746	23,293	18,937	22,746
PENNSYLVANIA Nonmetro	22,319	20,007	21,151	21,627	17,824	21,151
Allentown-Bethlehem-Easton, PA-NJ	25,420	22,660	25,076	25,727	20,563	25,076
Altoona, PA	21,666	19,741	20,857	21,320	17,619	20,857
Erie, PA	22,473	20,751	22,439	22,972	18,723	22,439
Harrisburg-Carlisle, PA	24,407	21,410	23,948	24,548	19,776	23,948

**Table 1. Two Adult/Two Child Thresholds by Metro Area and Adjustment Index: 2008**

	Two Adult/Two Child Threshold Using Triple Index			Two Adult/Two Child Threshold Using Rent Index		
	Owners with Mortgage	Owners Free and Clear	Renters	Owners with Mortgage	Owners Free and Clear	Renters
Johnstown, PA	20,705	19,348	20,060	20,487	17,063	20,060
Lancaster, PA	25,163	21,770	24,340	24,958	20,049	24,340
Philadelphia-Camden-Wilmington, PA-NJ-DE	27,226	23,533	26,573	27,290	21,607	26,573
Pittsburgh, PA	22,921	20,683	22,697	23,241	18,903	22,697
Reading, PA	24,843	22,523	24,083	24,689	19,870	24,083
Scranton-Wilkes Barre, PA	23,280	21,153	21,875	22,383	18,329	21,875
York-Hanover, PA	24,484	22,146	23,678	24,266	19,587	23,678
Providence-Fall River-Warwick, MA-RI	30,096	25,082	26,291	26,995	21,410	26,291
SOUTH CAROLINA Metro	20,641	17,533	21,151	21,627	17,824	21,151
SOUTH CAROLINA Nonmetro	21,384	17,867	20,881	21,345	17,636	20,881
Anderson, SC	20,948	17,465	21,151	21,627	17,824	21,151
Augusta-Richmond County, GA-SC	20,743	17,910	21,740	22,242	18,235	21,740
Charleston-North Charleston, SC	24,689	19,955	24,757	25,394	20,340	24,757
Charlotte-Gastonia-Concord, NC-SC	23,229	18,757	23,298	23,869	19,322	23,298
Columbia, SC	22,165	18,423	23,187	23,754	19,245	23,187
Greenville, SC	21,717	17,773	22,169	22,691	18,535	22,169
Myrtle Beach-Conway-North Myrtle Beach, SC	22,562	19,065	23,948	24,548	19,776	23,948
Spartanburg, SC	20,897	17,182	21,323	21,807	17,944	21,323
SOUTH DAKOTA Metro	23,767	20,195	22,366	22,896	18,672	22,366
SOUTH DAKOTA Nonmetro	21,486	19,579	20,293	20,730	17,225	20,293
Sioux Falls, SD	23,472	20,263	22,562	23,101	18,808	22,562
TENNESSEE Metro	20,782	17,465	21,961	22,473	18,389	21,961
TENNESSEE Nonmetro	20,359	17,439	20,329	20,769	17,251	20,329
Chattanooga, TN-GA	22,063	18,517	22,451	22,985	18,731	22,451
Johnson City, TN	20,974	17,276	20,808	21,268	17,585	20,808
Kingsport-Bristol, TN-VA	20,333	16,994	20,391	20,833	17,294	20,391
Knoxville, TN	21,819	18,030	22,549	23,088	18,800	22,549
Memphis, TN-MS-AR	23,049	20,263	23,739	24,330	19,630	23,739
Nashville-Davidson-Murfreesboro, TN	23,280	19,365	23,911	24,510	19,750	23,911
TEXAS Metro	21,307	19,159	23,052	23,613	19,151	23,052
TEXAS Nonmetro	20,935	18,706	21,286	21,768	17,918	21,286
Amarillo, TX	21,678	18,706	22,697	23,241	18,903	22,697
Austin-Round Rock, TX	26,778	22,258	26,327	27,034	21,436	26,327
Beaumont-Port Author, TX	21,307	19,176	22,537	23,075	18,791	22,537
Brownsville-Harlingen, TX	21,217	18,971	21,323	21,807	17,944	21,323
Corpus Christi, TX	22,819	20,075	24,537	25,163	20,186	24,537
Dallas-Fort Worth-Arlington, TX	24,638	21,222	25,690	26,368	20,991	25,690
El Paso, TX	21,102	17,910	21,470	21,960	18,047	21,470
Houston-Baytown-Sugar Land, TX	24,984	20,965	25,064	25,714	20,554	25,064
Killeen-Temple-Fort Hood, TX	21,883	19,536	23,089	23,651	19,176	23,089
Laredo, TX	22,703	19,485	22,819	23,370	18,988	22,819
Longview, TX	20,692	18,500	22,218	22,742	18,569	22,218
Lubbock, TX	20,846	18,920	23,163	23,728	19,228	23,163
McAllen-Edinburg-Pharr, TX	20,397	18,689	21,728	22,229	18,226	21,728
Midland, TX	21,320	18,612	24,181	24,792	19,938	24,181
San Antonio, TX	22,281	19,416	24,254	24,869	19,990	24,254
Victoria, TX	21,730	19,065	22,954	23,511	19,082	22,954
Waco, TX	21,627	19,912	23,396	23,972	19,390	23,396

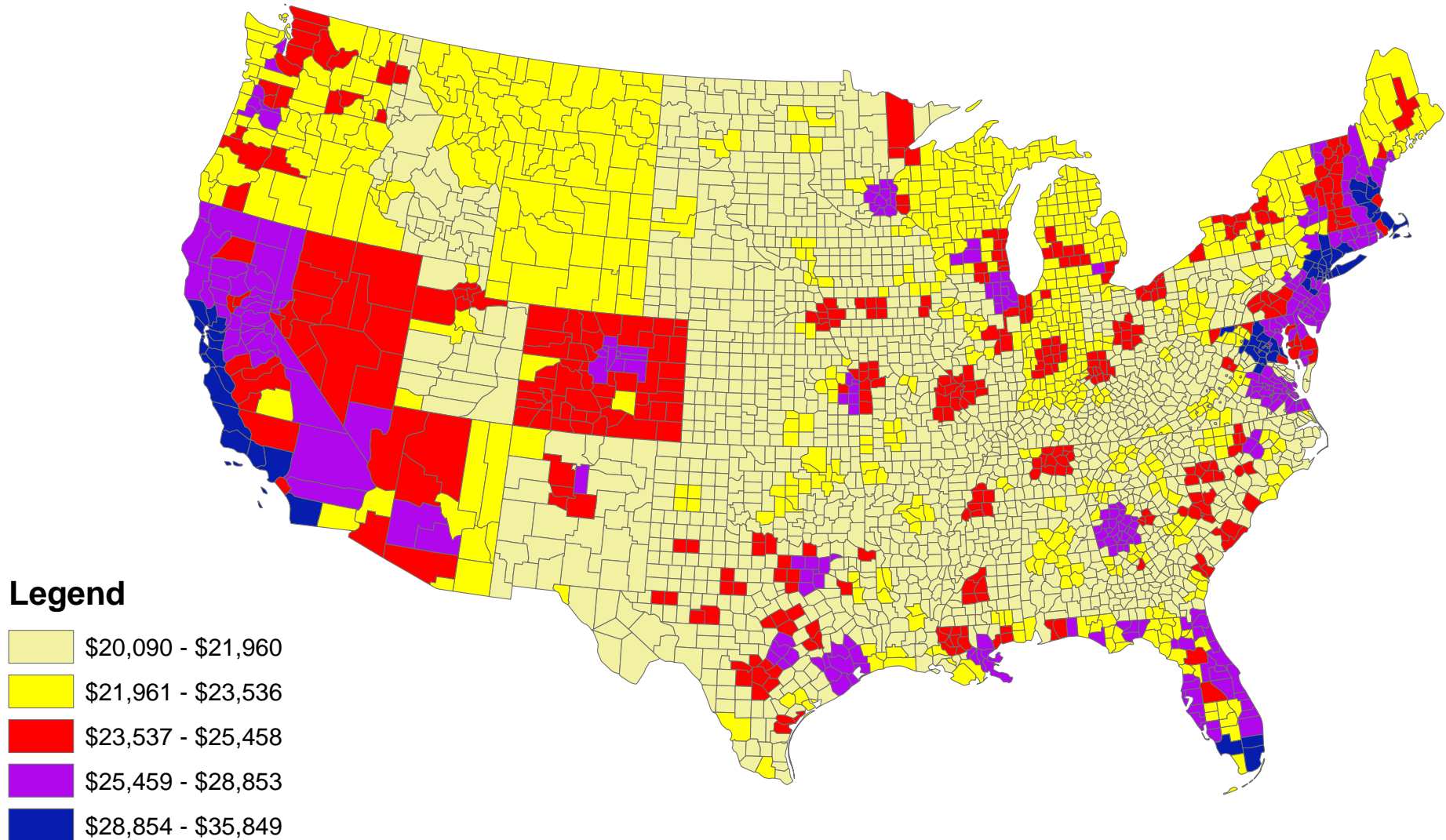
**Table 1. Two Adult/Two Child Thresholds by Metro Area and Adjustment Index: 2008**

	Two Adult/Two Child Threshold Using Triple Index			Two Adult/Two Child Threshold Using Rent Index		
	Owners with Mortgage	Owners Free and Clear	Renters	Owners with Mortgage	Owners Free and Clear	Renters
UTAH Metro	22,908	18,945	22,280	22,806	18,612	22,280
UTAH Nonmetro	21,922	17,867	21,127	21,602	17,807	21,127
Ogden-Clearfield, UT	23,485	19,253	23,187	23,754	19,245	23,187
Provo-Orem, UT	24,369	19,442	22,881	23,434	19,031	22,881
Salt Lake City, UT	25,125	20,144	24,414	25,035	20,101	24,414
VERMONT Metro	24,933	22,095	23,678	24,266	19,587	23,678
VERMONT Nonmetro	24,843	23,362	24,144	24,753	19,912	24,144
Burlington-South Burlington, VT	27,674	25,270	27,578	28,341	22,309	27,578
VIRGINIA Metro	22,588	18,124	22,783	23,331	18,962	22,783
VIRGINIA Nonmetro	21,102	17,465	20,992	21,461	17,713	20,992
Harrisonburg, VA	22,819	17,910	23,187	23,754	19,245	23,187
Lynchburg, VA	21,243	18,030	21,249	21,730	17,893	21,249
Richmond, VA	24,446	20,426	25,089	25,740	20,571	25,089
Roanoke, VA	22,460	18,517	22,513	23,049	18,774	22,513
Virginia Beach-Norfolk-Newport News, VA-NC	25,420	20,940	25,788	26,470	21,059	25,788
Washington-Arlington-Alexandria, DC-VA-MD-WV	32,889	24,962	32,791	33,786	25,946	32,791
WASHINGTON Metro	24,061	20,007	23,126	23,690	19,202	23,126
WASHINGTON Nonmetro	24,266	19,271	22,574	23,113	18,817	22,574
Bellingham, WA	26,034	21,487	24,389	25,010	20,084	24,389
Bremerton-Silverdale, WA	26,765	22,069	25,407	26,073	20,794	25,407
Olympia, WA	26,637	21,128	25,223	25,881	20,666	25,223
Portland-Vancouver-Beaverton, OR-WA	26,919	21,744	24,512	25,138	20,169	24,512
Seattle-Tacoma-Bellevue, WA	30,608	24,166	27,137	27,879	22,001	27,137
Spokane, WA	23,549	19,835	23,052	23,613	19,151	23,052
Yakima, WA	22,409	19,536	22,218	22,742	18,569	22,218
WEST VIRGINIA Metro	21,115	18,055	21,519	22,011	18,081	21,519
WEST VIRGINIA Nonmetro	19,641	16,926	19,949	20,372	16,985	19,949
Charleston, WV	20,384	17,345	21,151	21,627	17,824	21,151
Huntington-Ashland, WV-KY-OH	20,282	17,063	21,286	21,768	17,918	21,286
WISCONSIN Metro	25,817	22,471	23,249	23,818	19,288	23,249
WISCONSIN Nonmetro	23,549	21,111	21,948	22,460	18,381	21,948
Appleton, WI	24,753	21,770	22,611	23,152	18,843	22,611
Eau Claire, WI	23,613	21,299	22,402	22,934	18,697	22,402
Green Bay, WI	23,933	21,556	22,905	23,459	19,048	22,905
Janesville, WI	23,818	21,693	23,224	23,792	19,271	23,224
La Crosse, WI	23,818	21,316	22,451	22,985	18,731	22,451
Madison, WI	27,149	24,209	25,407	26,073	20,794	25,407
Milwaukee-Waukesha-West Allis, WI	26,598	24,235	24,426	25,048	20,109	24,426
Oshkosh-Neenah, WI	23,946	22,095	22,243	22,767	18,586	22,243
Racine, WI	25,035	23,036	23,543	24,125	19,493	23,543
Wausau, WI	23,792	20,708	22,243	22,767	18,586	22,243
WYOMING Metro	22,601	19,228	21,961	22,473	18,389	21,961
WYOMING Nonmetro	23,075	18,757	22,083	22,601	18,475	22,083

Source: : Geographic adjustment factors from the American Community Survey: 2005-2009 applied to 2008 SPM threshold as estimated BLS.



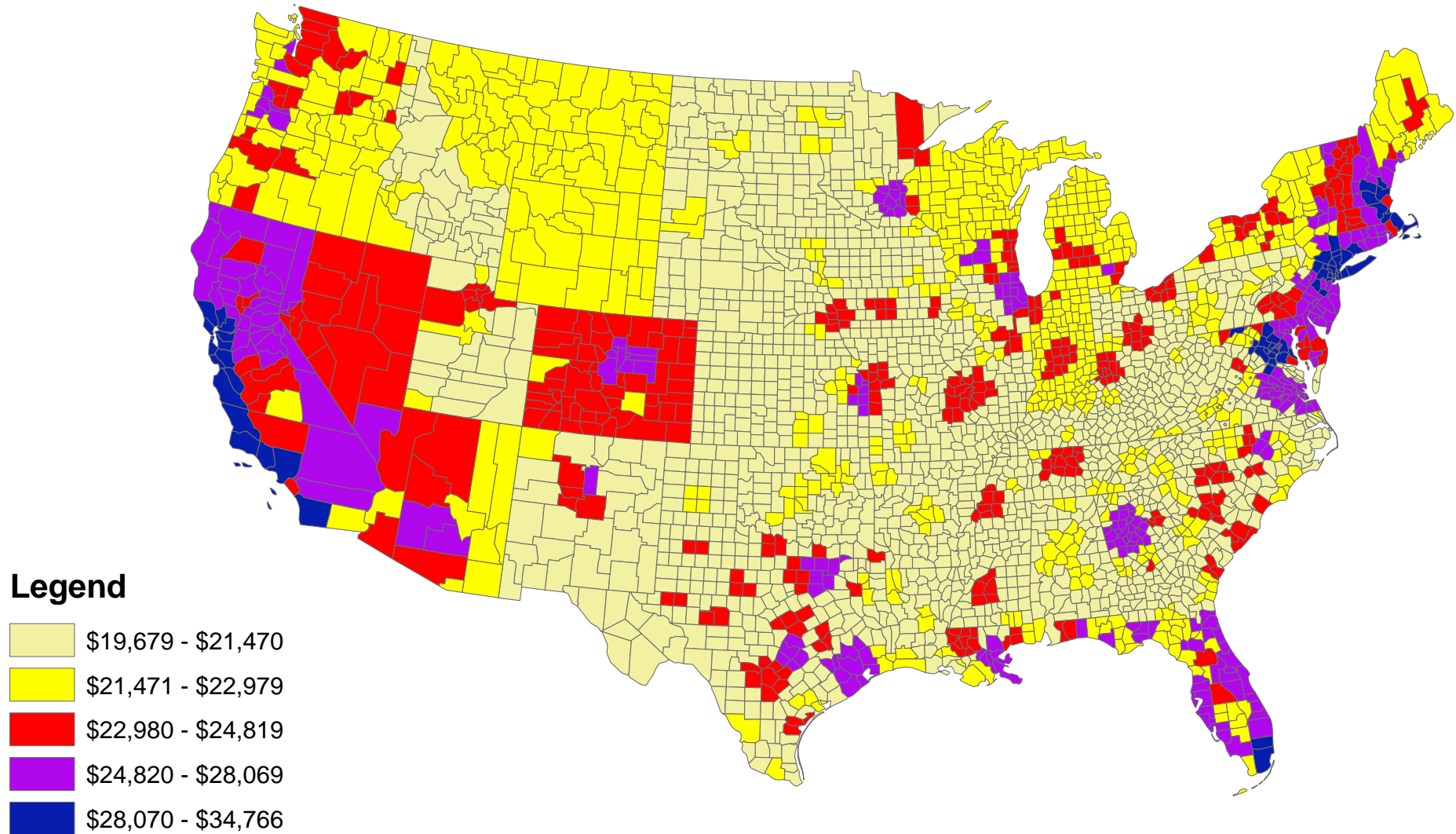
# SPM Poverty Thresholds: Two Adults, Two Children, Owners with Mortgage Using Rent: 2008



Source: Index based on median gross rent for two bedroom units from the American Community Survey 2005-2009

2008 SPM Threshold for owners with a mortgage from BLS.

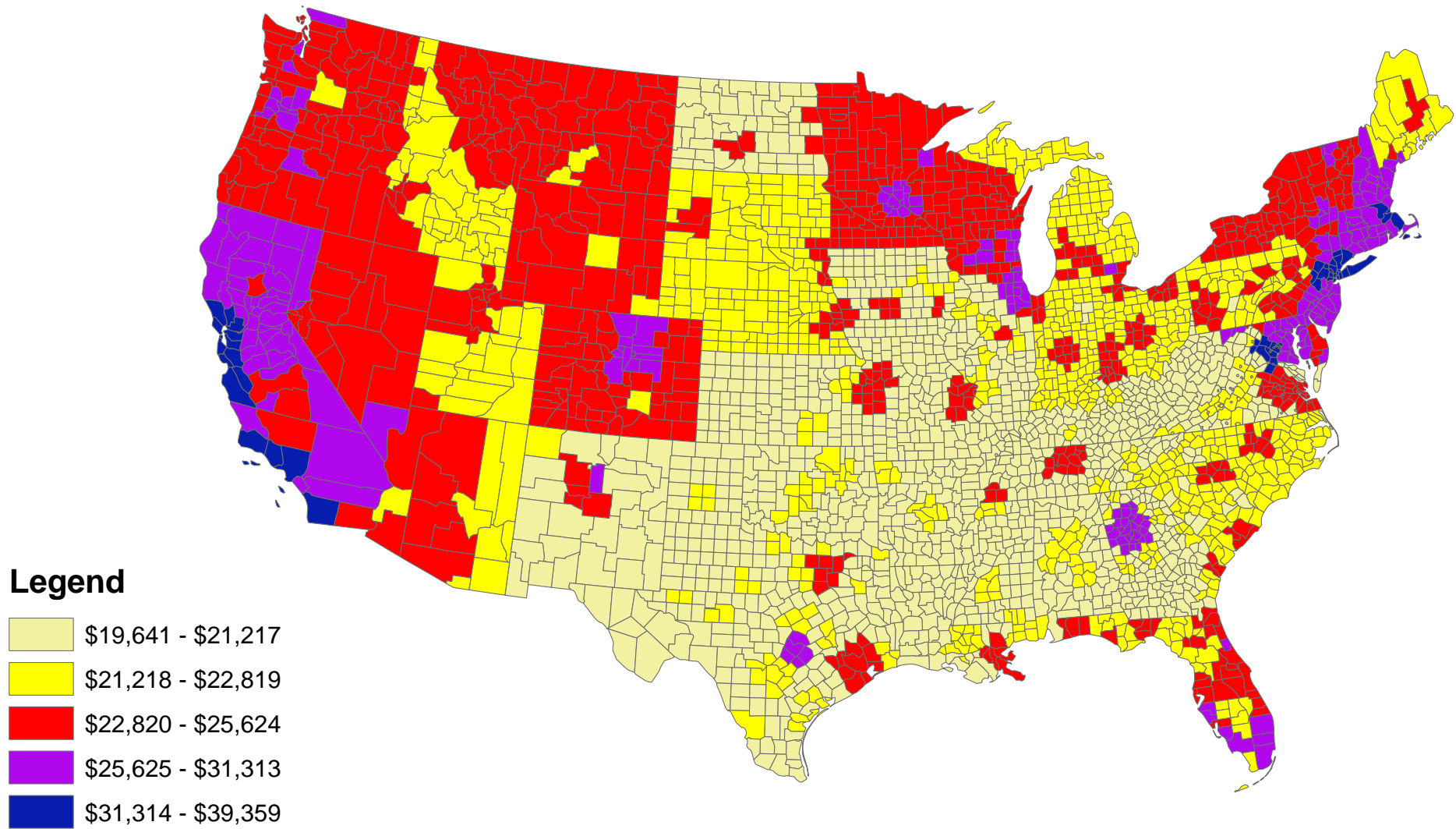
# SPM Poverty Thresholds: Two Adults, Two Children, Renters: 2008



Source: Index based on median gross rent for two bedroom units from the American Community Survey 2005-2009

2008 SPM Threshold for renters from BLS.

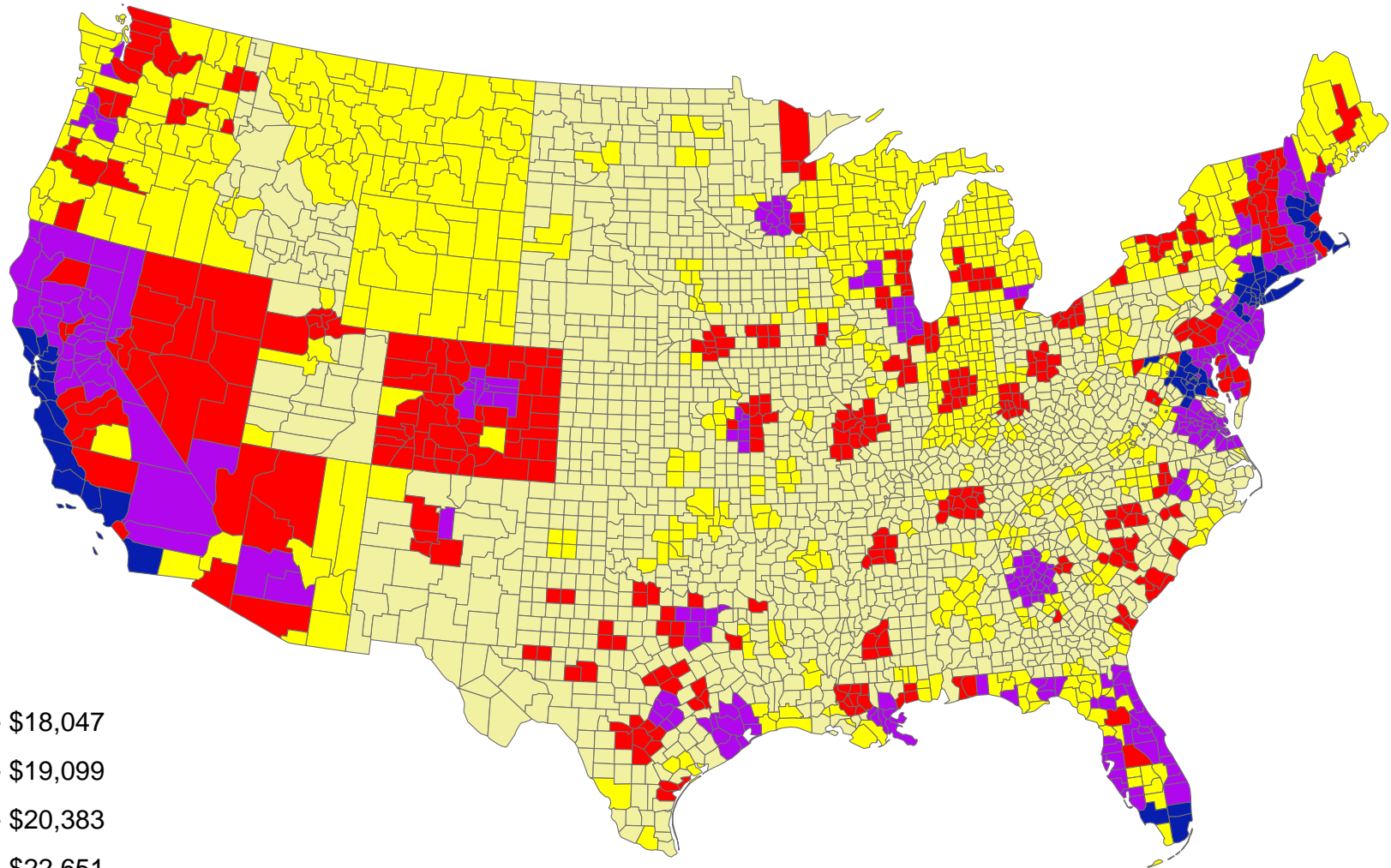
# SPM Poverty Thresholds: Two Adults, Two Children Owners with Mortgage Using Triple Index: 2008



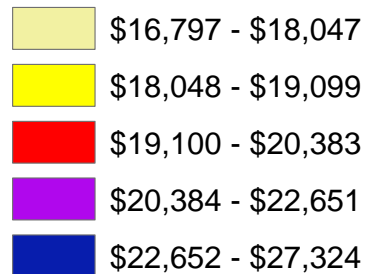
Source: Index based on median owners costs for two bedroom units with a mortgage from the American Community Survey 2005-2009.

SPM 2008 threshold for owners with a mortgage from BLS.

# SPM Poverty Thresholds: Two Adults, Two Children, Owners Without a Mortgage Using Rent Index: 2008



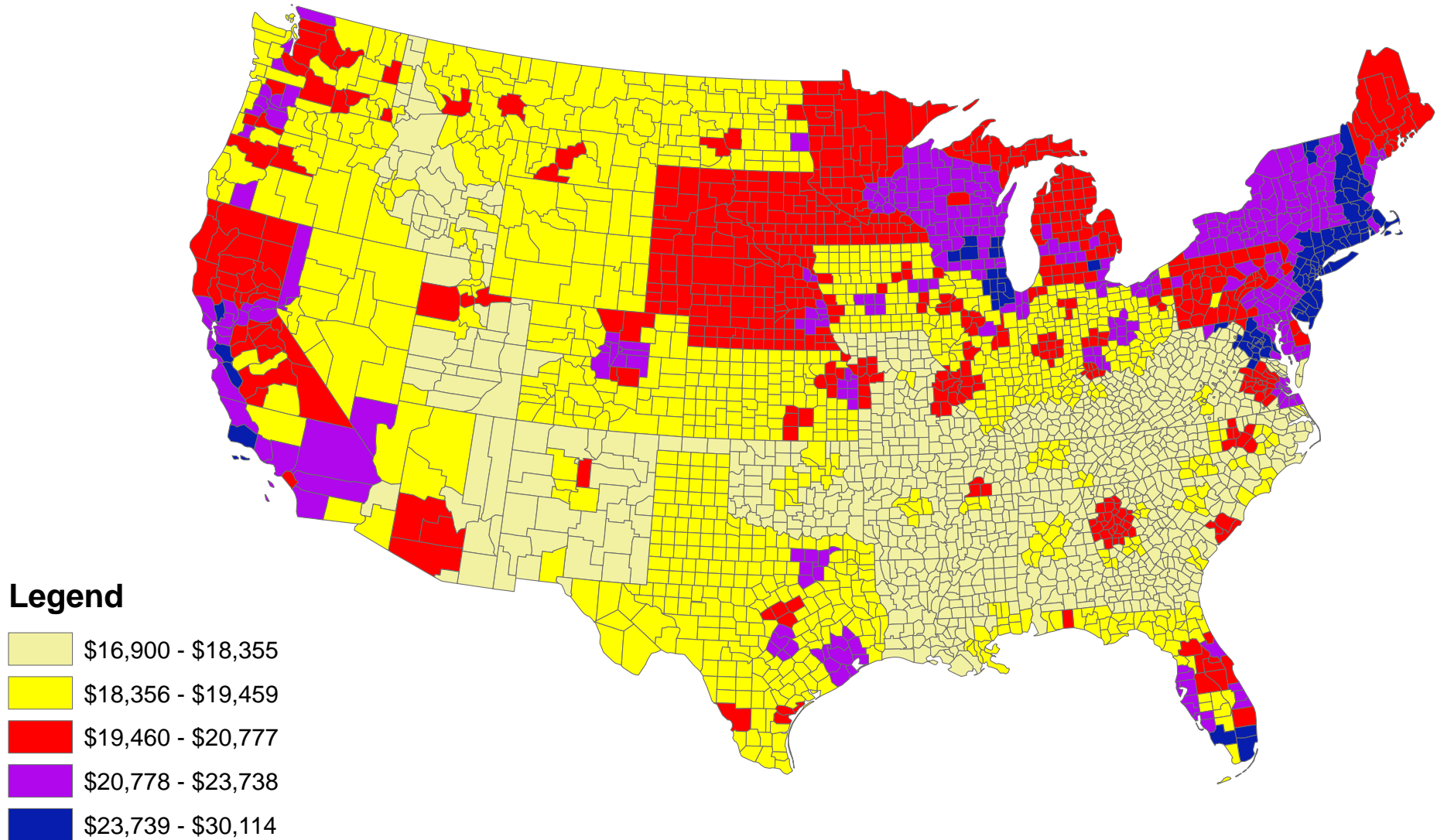
## Legend



Source: Index based on median gross rent for two bedroom units from the American Community Survey 2005-2009  
2008 SPM Threshold for owners without a mortgage from BLS.



# SPM Poverty Thresholds: Two Adults, Two Children, Owners Without a Mortgage Using Triple Index: 2008



Source: Index based on median owners costs for two bedroom units without a mortgage from the American Community Survey 2005-2009  
2008 SPM Threshold for owners without a mortgage from BLS.

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