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

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Abstract

Key Words: Poverty, geographic adjustments

Introduction

In 2009 the Office of Management and Budget's Chief Statistician formed the 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.

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.[1] For example, the Education Amendments of 1974 mandated a report on the poverty measure and the final U.S. Department of Health, Education and Welfare report (1976) explained that "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 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 did conclude:

> "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).

[1] 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 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.[2]

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

[2] 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.

"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).

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;[3] (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 was normalized to keep the national average index equal to one. The raw index numbers were divided by the national average index number so that the national average of the new index was equal to one.

[3] For example, there were higher poverty rates than expected in Maine and lower poverty rates than expected in Connecticut.

Since the FMR-index does not control for differences in the housing quality, Short compared these FMR-based indexes (and the resulting state poverty rates) to indexes developed by Malpezzi, Chun and Green (1998) computed by applying hedonic methods to decennial census data for 1990. She found that the Malpezzi indexes were very similar to the FMR indexes, except that they were lower for a few states: Washington, Nevada, Utah, Colorado and New Mexico.

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

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

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

[4] 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 50th percentile from 1975 to 1983, the 45th percentile from 1985 to 1994, and the 40th 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.

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 then 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 1
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.

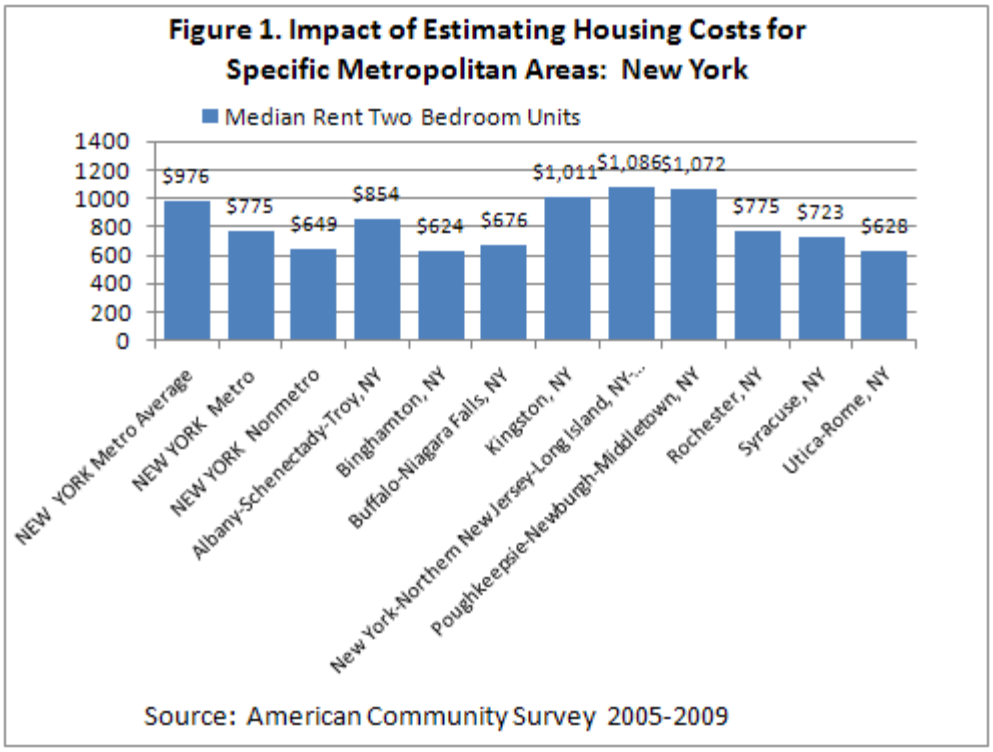
The data on selected monthly owner costs were obtained from Housing Questions 11 and Questions 17 through 21 in the 2009 American Community Survey. The data were obtained for owner-occupied units. Selected monthly owner costs are the sum of payments for mortgages, deeds of trust, contracts to purchase, 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. Figure 1 shows the range of median rents for New York.



The internal CPS ASEC files identify Core Based Statistical Areas (CBSA) 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.

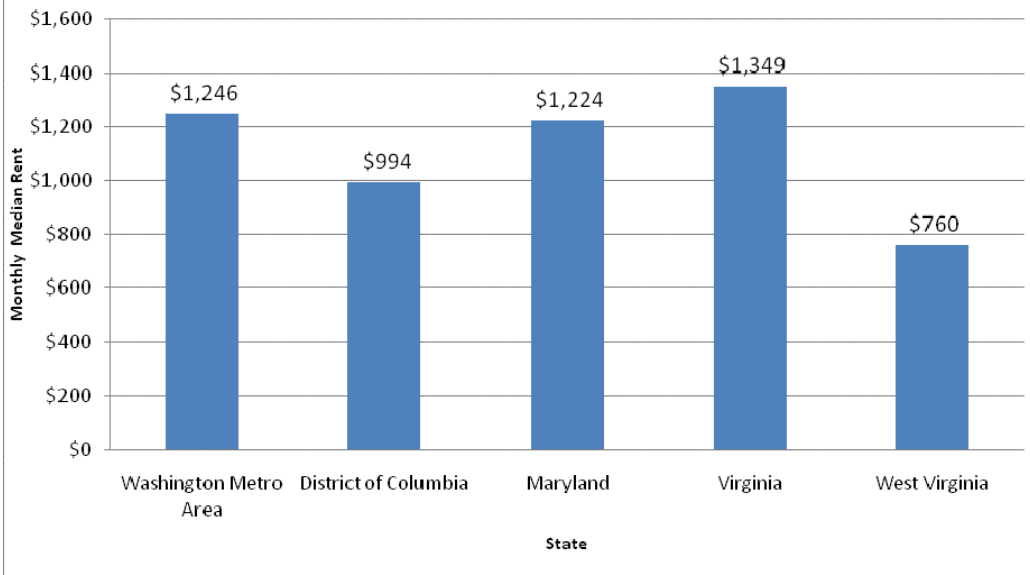
The indices in this paper group metro areas that cannot be disclosed into one group in each state, "other metro". The "other metro" group also includes portions of identifiable CBSAs which cannot be identified or are not in the CPS ASEC sample. For example, the Wisconsin portion of the Minneapolis-St. Paul-Bloomington, MN-WI CBSA is not identified in the CPS ASEC public use data.

Therefore the Wisconsin households in the Minneapolis CBSA in the ACS data will be grouped with Wisconsin's "Other Metro" areas. The housing costs for these "other metro" areas are be used to create the index used to adjust the thresholds for CPS ASEC households in the Wisconsin portion of the Minneapolis CBSA.

The remaining geographies are categorized as "nonmetro" for each state. 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/)

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.

Figure 2. Rent Differentials for Multi-state Metropolitan Areas: Washington DC



Source: American Community Survey 2005-2009.

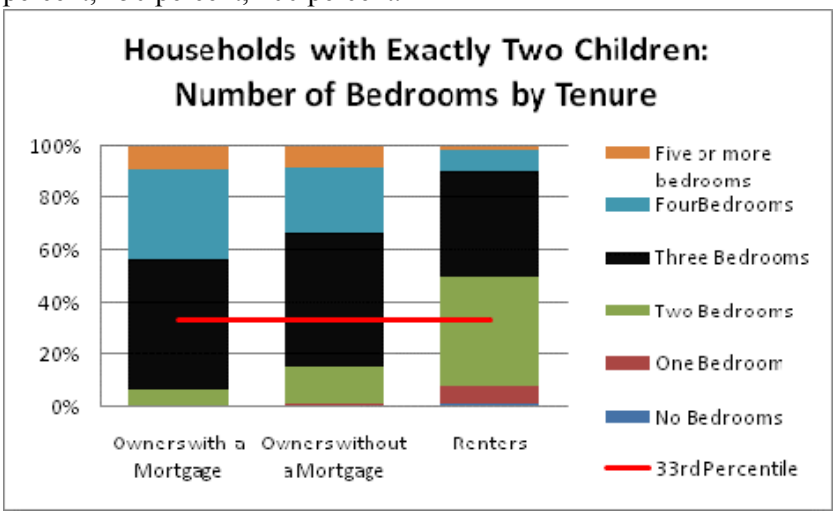
The literature in this field suggests that the geographic boundaries should attempt to roughly approximate labor market areas. Households may be trading off housing costs with commuting expenses. Therefore the same adjustment should be made regardless of whether or not the MSA crosses state lines. Given disclosure concerns, this general rule cannot be followed when a portion of a MSA in a particular state is too small to be disclosed on the CPS ASEC file, as is the case

for the West Virginia portion of the Washington DC metro area. In that case those households will be assigned the index corresponding to "Other Metro" areas in the particular state. [5]

B. Mechanically, how should the index be constructed? How can we take into account differences in quality?

Bishaw's index used median gross rental costs to create an index from ACS data but there are several different options. Bishaw's index was based on gross rents for all rental units. In an attempt to "standardize" the housing units, this analysis uses only 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.

Analysis of the housing choices of families with exactly two children (the reference group for the SPM threshold estimates), reveals that renters are most likely to live in two bedroom units. Therefore, several indices were developed using only two-bedroom units. These indices were constructed using the mean, the median rents and the geometric mean of gross rent.[6] Since differences in rental costs may be different for households near the bottom of the income distribution, an alternative index was estimated using rents at the 33rd percentile of the rental distribution rather than the median.[7] Another set of indices were estimated using median rent for households with incomes below a given income to poverty ratio, e.g. 200 percent, 150 percent, 100 percent.



Source: American Community Survey: 2005-2009 data

[5] This is a change from the methodology used in my January 2011 SGE paper. For that analysis separate index values were used for each portion of a multi-state MSA.

[6] Since 1998, the Bureau of Labor Statistics has used a geometric mean in the calculation of the Consumer Price Index. Monthly Labor Review Online. October 1998, Vol. 121, No. 10, "Incorporating a geometric mean formula into the CPI." Kenneth V. Dalton, John S. Greenlees, Kenneth J. Stewart.

[7] 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)

Another option is to use the predicted rent from a hedonic estimation of housing outlays. This is the approach developed by analysts at BEA/BLS in their estimates of regional price parities. (Aten, 2011) This hedonic regression could be done as a quantile regression to capture the differences in rent at something below the mean/median of the rental distribution.

The indices were calculated from the five year ACS data using all of these methods.[8] Table 1 compares these indices and shows the correlation across them. For each index, the table shows the maximum, the minimum, the range, the ratio of the maximum to the minimum. The correlations among the indices were high (>.98). In the interest of simplicity, the median was used to develop the index in this paper. Further research will focus on refining this methodology with particular interest in using hedonic regressions to control for differences in the quality of housing.

C. 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 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. [9]

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. Using owners' outlays to create a separate index for homeowners is problematic, particularly for owners with a mortgage. The outlays of homeowners with a mortgage vary with the terms of the mortgage and the length of tenure as well as the value of the home. Median costs for homeowners in an area with limited mobility may reflect relative housing prices in some previous period more than current housing market conditions. Since rental costs, even using data from the five year ACS sample, more accurately reflect current market conditions only rental outlays are used in the construction of the index.

D. 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. In this analysis, the geographic adjustment mechanism was not normalized.

[8] At this time the author has not yet been able to run a quantile regression with the large five-year ACS data set.
[9] The thresholds and shelter "shares" for 2009 used in this paper are taken from Garner (August, 2011).

E. 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.[10]

VI. Adjusted Thresholds

The 2009 SPM thresholds as derived by BLS from five years of CE data for two adult, two child *SPM families* are: $24.450 for owners with a mortgage, $20,298 for owners without a mortgage and $23,874 for renters. The official 2009 poverty threshold for a two adult, two child family was $21,756. Table 2 provides the two adult/two child thresholds for each tenure status for each geographic area using the 2005-2009 ACS data for those geographies included in the 2010 CPS ASEC.[11]

Single index based on rental outlays:

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

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

VII . Poverty Rates

Tables 3, 4 and 5 provide state level poverty estimates using three different poverty measures: the official, the SPM with geographic adjustments, the SPM without geographic adjustments. In order to facilitate comparisons, the official estimates include unrelated children under age 15 in the poverty universe and therefore will not match published estimates of official poverty rates. The SPM with geographic adjustments uses the index based on median gross rents for two-bedroom units with complete kitchens and bathrooms from the 2005-2009 five-year ACS data.[12]

[10] 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).

[11] For information on sampling and estimation methods, confidentiality protection, and sampling and nonsampling errors,please see the "American Community Survey Multiyear Accuracy of the Data (3-year 2007-2009 and 5-year 2005-2009)" available at http://www.census.gov/acs/www/data_documentation/documentation_main/.

[12] The poverty rate estimates in this paper are from the Annual Social and Economic Supplement (ASEC) to the 2010 Current Population Survey (CPS). The estimates in this paper (which may be shown in text, figures, and tables) are based on responses from a sample of the population and may differ from actual values because of sampling variability or other factors. As a result, apparent differences between the estimates for two or more groups may not be statistically significant. All comparative statements have undergone statistical testing and are significant at the 90 percent confidence level unless otherwise noted. Standard errors were calculated using replicate weights. Further information about the source and accuracy of the estimates is available at <www.census.gov/hhes/www/p60_236sa.pdf>.

Tables 6 and 7 look more closely at the impact of geographic adjustments on poverty rates and the demographic composition of people in poverty. Table 6 compares poverty rates using the SPM approach with and without geographic adjustments. Adding geographic adjustments reduced the poverty rate of those living outside metropolitan areas by about four percentage points and for those living in the Midwestern and Southern census regions.

Table 7 shows the impact of geographic adjustment on the composition of the population identified as "in poverty". Without geographic adjustments, 18.4 percent of the poor lived outside metropolitan statistical areas. After geographic adjustment this is reduced by 4.6 percentage points to 13.8 percent. The share of the poor living in the West is increased from 24.5 percent to 28.5 percent by the geographic adjustments.

VIII . Correlation with Other Measures of Material Deprivation

In a December 2008 paper published by the Center for Economic and Policy Research, Shawn Fremstad examined the relationship between state poverty rates using the NAS approach adjusting for differences in housing costs and two other measures of well-being and economic hardship. He found that state poverty rates calculated using the official poverty thresholds (which are not adjusted for geographic cost differences) were better correlated with food insecurity rates and a health and education index (two of the three components of the American Human Development Index) than the NAS poverty rates.

Prior research has found little correlation between deprivation indices and poverty rates . Short looked at income poverty and indicators of material hardship in the Survey of Income and Program Participation and concluded "Income poverty and indicators of material hardship are really two different answers to two different questions." (Short, 2005) Sullivan et.al. using the Women's Employment Study found a weak relationship between current income and material hardship. For example, they found that having a mental health disorder explains more than four times as much of the variation in hardship as current disposable income. Average income (over six years of survey) had stronger impact. (Sullivan 2006)

Table 8 provides some summary statistics regarding the correlation of the SPM poverty rates, the official poverty rates and the poverty rates using the SPM without geographic adjustments to a number of measures of deprivation at the state level. The official poverty rates are more highly correlated with the rate of food insecurity than the SPM (with or without geographic adjustments). However, there are a number of hardship indicators with which the SPM geographically adjusted is more closely correlated than the official measure, particularly those which involve housing cost burdens, crowding, homelessness, and foreclosures. Further research could explore the reasons for the mismatch between the geographically adjusted poverty rates and these economic hardship measures and explore the question of whether or not such correlations should serve as the criteria for assessing adjustment strategies.

VIII . Further Research

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.

One area where the adjustment mechanism could be improved would be with regards to differences in transportation costs. If individuals are able to satisfy their transportation needs using public transit and therefore do not need to purchase and maintain an automobile, the resources they need to purchase the rest of the consumption bundle described by the thresholds may be lower. This issue is complex because work-related transportation costs are subtracted from the SPM resource calculation while other transportation needs are reflected in the miscellaneous portion of the threshold. Would the adjustment be made on the threshold side or the resource side of the equation? What would be the appropriate level of geography to make an adjustment? Access to public transit may vary significantly within a single metropolitan statistical area. If housing costs within a metropolitan statistical area vary inversely with commuting distances and costs has the housing adjustment already taken differential transportation costs into account. [13]

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 measures regional variation in food prices for 52 goods in 35 market groups (Todd, Mancino, Leibtag and Tripodo, 2010). 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 from1982 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, 2011). Future research should clearly continue to evaluate these options.

On April 28, 2011 the University of Kentucky Center for Poverty Research (UKCPR), in conjunction with the Brookings Institution and U.S. Census Bureau, sponsored a research forum on the Cost of Living and the Supplemental Poverty Measure. Among the more than 60 attendees were representatives from Agency for Healthcare Research and Quality, the Bureau of Economic Analysis, Bureau of Labor Statistics, Census Bureau, Congressional Research Service, Government Accountability Office, National Academy of Science, Office of the Assistant Secretary for Planning and Evaluation in DHHS, Office of Management and Budget, academia, and think tanks. The goal of the forum was to gather leading economists in a roundtable format (1) to critically evaluate the proposed Census method for geographic adjustment, (2) to offer empirically implementable alternatives to the Census approach (including whether to adjust at all), and (3) to suggest future directions for research on geographic adjustment of poverty thresholds. [14]

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[13] For more detailed discussion of the challenges for developing a transportation cost index, see *Research on Commuting Expenditures for the Supplemental Poverty Measure* [PDF - 44k] (Melanie Rapino, Brian McKenzie, Mathew Marlay) available at http://www.census.gov/hhes/povmeas/methodology/supplemental/research.html and a forthcoming paper by these same authors, *Research on Commuting Expenditures and Geographic Adjustments in the Supplemental Poverty Measure*, which will be presented at the Joint Statistical Meetings in August 2011.

[14] All papers presented at the forum as well as the summary recommendations from the forum can be found at http://www.ukcpr.org/Conferences.aspx

Although the experts expressed a diverse set of opinions on the efficacy and challenges of adjusting the poverty thresholds for differences in regional cost of living, during the roundtable discussion the experts reached *unanimous* consensus on the following:

- Some form of adjustment to the SPM thresholds for geographic differences in cost of living is preferable to no adjustment.
- The current method of adjusting the SPM threshold for housing price differences across regions but not other components of the consumption bundle is reasonable until better data become available.
- The adjustment for geographic housing price differences should be based on quality-adjusted rental costs.
- New sponsored research to inform how and for whom to adjust thresholds for geographic differences in cost of living should be a high priority.

Subsequent Census Bureau research will focus on the priorities identified by this group.

Table 1: Comparing Geographic Index Values

Geography	Median	Mean	Geomean	33rd Percentile	Income below 200% poverty	Income below 150% of poverty	Income below 100% of poverty	Hedonic - BEA
Maximium	1.81	1.73	1.88	1.87	1.81	1.75	1.76	1.67
Minimum	0.58	0.55	0.57	0.60	0.59	0.59	0.59	0.55
Range	1.23	1.18	1.32	1.27	1.23	1.16	1.18	1.12
Ratio of Max to Min	3.14	3.16	3.32	3.10	3.09	2.97	3.00	3.05
CORRELATION COEFFICIENTS								
Median		0.99	0.99	0.99	1.00	1.00	1.00	0.98
Mean			1.00	0.99	0.99	0.99	0.99	0.99
Geomean				0.99	0.99	0.99	0.99	0.99
33rd Percentile					0.99	0.99	0.99	0.98
Income below 200% poverty						1.00	1.00	0.98
Income below 150% of poverty							1.00	0.98
Income below 100% of poverty								0.98

Source: American Community Survey 2005-2009. For information on sampling and estimation methods, confidentiality protection, and sampling and nonsampling errors,please see the "American Community Survey Multiyear Accuracy of the Data
(3-year 2007-2009 and 5-year 2005-2009)" available at
http://www.census.gov/acs/www/data_documentation/documentation_main/.

Table 2. Thresholds for Two Adult Two Child Families: 2009

		Index based on Median Rents	Homeowners with Mortgage	Homeowners without a Mortgage	Renters
		Share of threshold	0.506	0.405	0.494
		Threshold from CE*	24,450	20,298	23,874
1001	ALABAMA Metro	0.71951	20,980	17,992	20,566
1002	ALABAMA Nonmetro	0.6073171	19,592	17,070	19,243
2001	ALASKA Metro	1.19756	26,894	21,922	26,204
2002	ALASKA Nonmetro	1.16585	26,502	21,661	25,830
4001	ARIZONA Metro	0.94634	23,786	19,857	23,241
4002	ARIZONA Nonmetro	0.77195	21,629	18,423	21,184
5001	ARKANSAS Metro	0.70732	20,829	17,892	20,422
5002	ARKANSAS Nonmetro	0.62195	19,773	17,190	19,415
6001	CALIFORNIA Metro	0.94878	23,816	19,877	23,270
6002	CALIFORNIA Nonmetro	1.01829	24,676	20,448	24,090
8001	COLORADO Metro	0.84146	22,489	18,995	22,004
8002	COLORADO Nonmetro	0.90732	23,303	19,536	22,781
9001	CONNECTICUT Metro	1.18659	26,758	21,832	26,075
9002	CONNECTICUT Nonmetro	1.04878	25,053	20,699	24,449
10002	DELAWARE Nonmetro	0.9439	23,756	19,837	23,212
10420	Akron, OH Metropolitan Statistical Area	0.91341	23,379	19,586	22,853
10500	Albany, GA Metropolitan Statistical Area	0.68415	20,542	17,701	20,149
10580	Albany-Schenectady-Troy, NY Metropolitan Statistical Area	1.04146	24,963	20,639	24,363
10740	Albuquerque, NM Metropolitan Statistical Area	0.88049	22,971	19,316	22,465
10900	Allentown-Bethlehem-Easton, PA-NJ Metropolitan Statistical Area	1.04024	24,948	20,629	24,349
11020	Altoona, PA Metropolitan Statistical Area	0.67195	20,391	17,601	20,005
11100	Amarillo, TX Metropolitan Statistical Area	0.82195	22,247	18,834	21,774
11300	Anderson, IN Metropolitan Statistical Area	0.79268	21,885	18,594	21,429
11340	Anderson, SC Metropolitan Statistical Area	0.69634	20,693	17,802	20,293
11460	Ann Arbor, MI Metropolitan Statistical Area	1.09512	25,627	21,080	24,996
11500	Anniston-Oxford, AL Metropolitan Statistical Area	0.69146	20,633	17,762	20,235
11540	Appleton, WI Metropolitan Statistical Area	0.81463	22,157	18,774	21,688
11700	Asheville, NC Metropolitan Statistical Area	0.84024	22,473	18,985	21,990
12001	FLORIDA Metro	1.09878	25,672	21,110	25,039
12002	FLORIDA Nonmetro	0.80366	22,021	18,684	21,558
12020	Athens-Clarke County, GA Metropolitan Statistical Area	0.86098	22,730	19,155	22,234
12060	Atlanta-Sandy Springs-Marietta, GA Metropolitan Statistical Area	1.06829	25,295	20,859	24,679
12100	Atlantic City-Hammonton, NJ Metropolitan Statistical Area	1.23171	27,317	22,203	26,607
12260	Augusta-Richmond County, GA-SC Metropolitan Statistical Area	0.78415	21,780	18,524	21,328
12420	Austin-Round Rock, TX Metropolitan Statistical Area	1.11829	25,913	21,270	25,269
12540	Bakersfield, CA Metropolitan Statistical Area	0.88537	23,032	19,356	22,522
12580	Baltimore-Towson, MD Metropolitan Statistical Area	1.23293	27,332	22,213	26,621
12940	Baton Rouge, LA Metropolitan Statistical Area	0.87439	22,896	19,265	22,393
13001	GEORGIA Metro	0.8122	22,127	18,754	21,659
13002	GEORGIA Nonmetro	0.65244	20,150	17,441	19,775
13140	Beaumont-Port Arthur, TX Metropolitan Statistical Area	0.80854	22,081	18,724	21,616
13380	Bellingham, WA Metropolitan Statistical Area	0.95976	23,952	19,967	23,399
13460	Bend, OR Metropolitan Statistical Area	0.95366	23,877	19,917	23,327
13740	Billings, MT Metropolitan Statistical Area	0.8122	22,127	18,754	21,659
13780	Binghamton, NY Metropolitan Statistical Area	0.76098	21,493	18,333	21,055
13820	Birmingham-Hoover, AL Metropolitan Statistical Area	0.8439	22,519	19,015	22,033
14020	Bloomington, IN Metropolitan Statistical Area	0.85732	22,685	19,125	22,191
14060	Bloomington-Normal, IL Metropolitan Statistical Area	0.86463	22,775	19,185	22,277

Table 2. Thresholds for Two Adult Two Child Families: 2009

		Index based on Median Rents	Homeowners with Mortgage	Homeowners without a Mortgage	Renters
14260	Boise City-Nampa, ID Metropolitan Statistical Area	0.83902	22,458	18,975	21,975
14500	Boulder, CO Metropolitan Statistical Area	1.18293	26,713	21,802	26,031
14540	Bowling Green, KY Metropolitan Statistical Area	0.74756	21,327	18,223	20,897
14740	Bremerton-Silverdale, WA Metropolitan Statistical Area	1.04329	24,986	20,654	24,385
15002	HAWAII Nonmetro	1.42561	29,716	23,797	28,894
15180	Brownsville-Harlingen, TX Metropolitan Statistical Area	0.70976	20,859	17,912	20,451
15380	Buffalo-Niagara Falls, NY Metropolitan Statistical Area	0.82439	22,277	18,854	21,803
15940	Canton-Massillon, OH Metropolitan Statistical Area	0.7561	21,433	18,293	20,998
15980	Cape Coral-Fort Myers, FL Metropolitan Statistical Area	1.13171	26,079	21,381	25,427
16001	IDAHO Metro	0.7122	20,889	17,932	20,480
16002	IDAHO Nonmetro	0.70366	20,784	17,862	20,379
16300	Cedar Rapids, IA Metropolitan Statistical Area	0.79634	21,930	18,624	21,472
16580	Champaign-Urbana, IL Metropolitan Statistical Area	0.87561	22,911	19,275	22,407
16620	Charleston, WV Metropolitan Statistical Area	0.69634	20,693	17,802	20,293
16700	Charleston-North Charleston-Summerville, SC Metropolitan Statistical Area	0.99024	24,329	20,218	23,759
16740	Charlotte-Gastonia-Concord, NC-SC Metropolitan Statistical Area	0.92683	23,545	19,696	23,011
16860	Chattanooga, TN-GA Metropolitan Statistical Area	0.78902	21,840	18,564	21,386
16980	Chicago-Naperville-Joliet, IL-IN-WI Metropolitan Statistical Area	1.11951	25,929	21,280	25,283
17001	ILLINOIS Metro	0.72927	21,101	18,072	20,681
17002	ILLINOIS Nonmetro	0.69146	20,633	17,762	20,235
17020	Chico, CA Metropolitan Statistical Area	1.02073	24,706	20,468	24,118
17140	Cincinnati-Middletown, OH-KY-IN Metropolitan Statistical Area	0.87073	22,851	19,235	22,349
17460	Cleveland-Elyria-Mentor, OH Metropolitan Statistical Area	0.89146	23,107	19,406	22,594
17660	Coeur d'Alene, ID Metropolitan Statistical Area	0.84512	22,534	19,025	22,047
17820	Colorado Springs, CO Metropolitan Statistical Area	0.95244	23,862	19,907	23,313
17860	Columbia, MO Metropolitan Statistical Area	0.78902	21,840	18,564	21,386
17900	Columbia, SC Metropolitan Statistical Area	0.8622	22,745	19,165	22,249
17980	Columbus, GA-AL Metropolitan Statistical Area	0.80854	22,081	18,724	21,616
18001	INDIANA Metro	0.81951	22,217	18,814	21,745
18002	INDIANA Nonmetro	0.72683	21,070	18,052	20,652
18140	Columbus, OH Metropolitan Statistical Area	0.93049	23,590	19,727	23,054
18580	Corpus Christi, TX Metropolitan Statistical Area	0.97195	24,103	20,067	23,543
19001	IOWA Metro	0.81098	22,112	18,744	21,645
19002	IOWA Nonmetro	0.65488	20,180	17,461	19,804
19100	Dallas-Fort Worth-Arlington, TX Metropolitan Statistical Area	1.06585	25,265	20,839	24,651
19340	Davenport-Moline-Rock Island, IA-IL Metropolitan Statistical Area	0.78415	21,780	18,524	21,328
19380	Dayton, OH Metropolitan Statistical Area	0.83902	22,458	18,975	21,975
19460	Decatur, AL Metropolitan Statistical Area	0.64634	20,075	17,391	19,703
19500	Decatur, IL Metropolitan Statistical Area	0.75	21,357	18,243	20,926
19660	Deltona-Daytona Beach-Ormond Beach, FL Metropolitan Statistical Area	1.05122	25,084	20,719	24,478
19740	Denver-Aurora-Broomfield, CO Metropolitan Statistical Area	1.0878	25,536	21,020	24,909
19780	Des Moines-West Des Moines, IA Metropolitan Statistical Area	0.89146	23,107	19,406	22,594
19820	Detroit-Warren-Livonia, MI Metropolitan Statistical Area	0.99512	24,390	20,258	23,816
20001	KANSAS Metro	0.81829	22,202	18,804	21,731
20002	KANSAS Nonmetro	0.67195	20,391	17,601	20,005
20100	Dover, DE Metropolitan Statistical Area	1.03659	24,903	20,599	24,306
20260	Duluth, MN-WI Metropolitan Statistical Area	0.85	22,594	19,065	22,105
20500	Durham-Chapel Hill, NC Metropolitan Statistical Area	0.97195	24,103	20,067	23,543
20740	Eau Claire, WI Metropolitan Statistical Area	0.79756	21,945	18,634	21,486
20940	El Centro, CA Metropolitan Statistical Area	0.81951	22,217	18,814	21,745

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21001	KENTUCKY Metro	0.6878	20,588	17,732	20,192
21002	KENTUCKY Nonmetro	0.60732	19,592	17,070	19,243
21340	El Paso, TX Metropolitan Statistical Area	0.72195	21,010	18,012	20,595
21500	Erie, PA Metropolitan Statistical Area	0.80122	21,991	18,664	21,530
21660	Eugene-Springfield, OR Metropolitan Statistical Area	0.92439	23,515	19,676	22,982
21780	Evansville, IN-KY Metropolitan Statistical Area	0.83415	22,398	18,935	21,918
22001	LOUISIANA Metro	0.76341	21,523	18,353	21,084
22002	LOUISIANA Nonmetro	0.63902	19,984	17,330	19,617
22020	Fargo, ND-MN Metropolitan Statistical Area	0.7561	21,433	18,293	20,998
22140	Farmington, NM Metropolitan Statistical Area	0.79512	21,915	18,614	21,458
22180	Fayetteville, NC Metropolitan Statistical Area	0.87439	22,896	19,265	22,393
22220	Fayetteville-Springdale-Rogers, AR-MO Metropolitan Statistical Area	0.80122	21,991	18,664	21,530
22420	Flint, MI Metropolitan Statistical Area	0.80122	21,991	18,664	21,530
22520	Florence-Muscle Shoals, AL Metropolitan Statistical Area	0.64756	20,090	17,401	19,717
22660	Fort Collins-Loveland, CO Metropolitan Statistical Area	0.9378	23,680	19,787	23,140
22900	Fort Smith, AR-OK Metropolitan Statistical Area	0.70244	20,769	17,852	20,365
23001	MAINE Metro	0.91463	23,394	19,596	22,867
23002	MAINE Nonmetro	0.7622	21,508	18,343	21,069
23020	Fort Walton Beach-Crestview-Destin, FL Metropolitan Statistical Area	1.01341	24,616	20,408	24,032
23060	Fort Wayne, IN Metropolitan Statistical Area	0.78049	21,734	18,493	21,285
23420	Fresno, CA Metropolitan Statistical Area	0.96341	23,997	19,997	23,442
23540	Gainesville, FL Metropolitan Statistical Area	1.01463	24,631	20,418	24,047
24001	MARYLAND Metro	0.62805	19,848	17,240	19,487
24002	MARYLAND Nonmetro	0.97805	24,178	20,118	23,615
24340	Grand Rapids-Wyoming, MI Metropolitan Statistical Area	0.85122	22,609	19,075	22,119
24540	Greeley, CO Metropolitan Statistical Area	0.85122	22,609	19,075	22,119
24580	Green Bay, WI Metropolitan Statistical Area	0.83902	22,458	18,975	21,975
24660	Greensboro-High Point, NC Metropolitan Statistical Area	0.81707	22,187	18,794	21,717
24860	Greenville-Mauldin-Easley, SC Metropolitan Statistical Area	0.77927	21,719	18,483	21,271
25001	MASSACHUSETTS Metro	0.97561	24,148	20,097	23,586
25002	MASSACHUSETTS Nonmetro	1.8061	34,423	26,925	33,381
25060	Gulfport-Biloxi, MS Metropolitan Statistical Area	0.96341	23,997	19,997	23,442
25180	Hagerstown-Martinsburg, MD-WV Metropolitan Statistical Area	0.92927	23,575	19,717	23,040
25420	Harrisburg-Carlisle, PA Metropolitan Statistical Area	0.92439	23,515	19,676	22,982
25500	Harrisonburg, VA Metropolitan Statistical Area	0.8622	22,745	19,165	22,249
25860	Hickory-Lenoir-Morganton, NC Metropolitan Statistical Area	0.6878	20,588	17,732	20,192
26001	MICHIGAN Metro	0.79146	21,870	18,584	21,415
26002	MICHIGAN Nonmetro	0.74756	21,327	18,223	20,897
26100	Holland-Grand Haven, MI Metropolitan Statistical Area	0.86098	22,730	19,155	22,234
26180	Honolulu, HI Metropolitan Statistical Area	1.61585	32,069	25,361	31,137
26420	Houston-Sugar Land-Baytown, TX Metropolitan Statistical Area	1.01463	24,631	20,418	24,047
26580	Huntington-Ashland, WV-KY-OH Metropolitan Statistical Area	0.70732	20,829	17,892	20,422
26620	Huntsville, AL Metropolitan Statistical Area	0.74512	21,297	18,203	20,868
26900	Indianapolis-Carmel, IN Metropolitan Statistical Area	0.91829	23,439	19,626	22,910
26980	Iowa City, IA Metropolitan Statistical Area	0.90122	23,228	19,486	22,709
27001	MINNESOTA Metro	0.82073	22,232	18,824	21,760
27002	MINNESOTA Nonmetro	0.71951	20,980	17,992	20,566
27100	Jackson, MI Metropolitan Statistical Area	0.82195	22,247	18,834	21,774
27140	Jackson, MS Metropolitan Statistical Area	0.9061	23,288	19,526	22,767
27260	Jacksonville, FL Metropolitan Statistical Area	1.04146	24,963	20,639	24,363

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27340	Jacksonville, NC Metropolitan Statistical Area	0.8378	22,443	18,965	21,961
27500	Janesville, WI Metropolitan Statistical Area	0.86463	22,775	19,185	22,277
27740	Johnson City, TN Metropolitan Statistical Area	0.66829	20,346	17,571	19,962
27780	Johnstown, PA Metropolitan Statistical Area	0.60732	19,592	17,070	19,243
27900	Joplin, MO Metropolitan Statistical Area	0.72927	21,101	18,072	20,681
28001	MISSISSIPPI Metro	0.79512	21,915	18,614	21,458
28002	MISSISSIPPI Nonmetro	0.6378	19,969	17,320	19,602
28020	Kalamazoo-Portage, MI Metropolitan Statistical Area	0.83293	22,383	18,925	21,904
28100	Kankakee-Bradley, IL Metropolitan Statistical Area	0.90366	23,258	19,506	22,738
28140	Kansas City, MO-KS Metropolitan Statistical Area	0.93415	23,635	19,757	23,097
28660	Killeen-Temple-Fort Hood, TX Metropolitan Statistical Area	0.85366	22,640	19,095	22,148
28700	Kingsport-Bristol-Bristol, TN-VA Metropolitan Statistical Area	0.63415	19,924	17,290	19,559
28740	Kingston, NY Metropolitan Statistical Area	1.23293	27,332	22,213	26,621
28940	Knoxville, TN Metropolitan Statistical Area	0.80976	22,096	18,734	21,630
29001	MISSOURI Metro	0.7061	20,814	17,882	20,408
29002	MISSOURI Nonmetro	0.63171	19,894	17,270	19,530
29100	La Crosse, WI-MN Metropolitan Statistical Area	0.80244	22,006	18,674	21,544
29180	Lafayette, LA Metropolitan Statistical Area	0.79268	21,885	18,594	21,429
29340	Lake Charles, LA Metropolitan Statistical Area	0.7878	21,825	18,554	21,371
29460	Lakeland-Winter Haven, FL Metropolitan Statistical Area	0.95854	23,937	19,957	23,385
29540	Lancaster, PA Metropolitan Statistical Area	0.9561	23,907	19,937	23,356
29620	Lansing-East Lansing, MI Metropolitan Statistical Area	0.91341	23,379	19,586	22,853
29700	Laredo, TX Metropolitan Statistical Area	0.83171	22,368	18,915	21,889
29740	Las Cruces, NM Metropolitan Statistical Area	0.71585	20,935	17,962	20,523
29820	Las Vegas-Paradise, NV Metropolitan Statistical Area	1.2061	27,000	21,992	26,305
29940	Lawrence, KS Metropolitan Statistical Area	0.89512	23,152	19,436	22,637
30001	MONTANA Metro	0.80976	22,096	18,734	21,630
30002	MONTANA Nonmetro	0.73171	21,131	18,092	20,710
30020	Lawton, OK Metropolitan Statistical Area	0.74634	21,312	18,213	20,882
30460	Lexington-Fayette, KY Metropolitan Statistical Area	0.81707	22,187	18,794	21,717
30780	Little Rock-North Little Rock-Conway, AR Metropolitan Statistical Area	0.83293	22,383	18,925	21,904
30980	Longview, TX Metropolitan Statistical Area	0.78293	21,764	18,514	21,314
31001	NEBRASKA Metro	0.82073	22,232	18,824	21,760
31002	NEBRASKA Nonmetro	0.67927	20,482	17,661	20,091
31100	Los Angeles-Long Beach-Santa Ana, CA Metropolitan Statistical Area	1.53902	31,119	24,729	30,231
31140	Louisville/Jefferson County, KY-IN Metropolitan Statistical Area	0.80854	22,081	18,724	21,616
31180	Lubbock, TX Metropolitan Statistical Area	0.85976	22,715	19,145	22,220
31340	Lynchburg, VA Metropolitan Statistical Area	0.70366	20,784	17,862	20,379
31420	Macon, GA Metropolitan Statistical Area	0.77561	21,674	18,453	21,228
31460	Madera-Chowchilla, CA Metropolitan Statistical Area	0.89878	23,198	19,466	22,680
31540	Madison, WI Metropolitan Statistical Area	1.04268	24,978	20,649	24,377
32001	NEVADA Metro	1.05244	25,099	20,729	24,492
32002	NEVADA Nonmetro	0.92561	23,530	19,686	22,997
32580	McAllen-Edinburg-Mission, TX Metropolitan Statistical Area	0.74268	21,267	18,183	20,839
32780	Medford, OR Metropolitan Statistical Area	0.93293	23,620	19,747	23,083
32820	Memphis, TN-MS-AR Metropolitan Statistical Area	0.90976	23,334	19,556	22,810
32900	Merced, CA Metropolitan Statistical Area	0.8878	23,062	19,376	22,551
33001	NEW HAMPSHIRE Metro	1.25366	27,588	22,383	26,866
33002	NEW HAMPSHIRE Nonmetro	1.0939	25,612	21,070	24,981
33100	Miami-Fort Lauderdale-Pompano Beach, FL Metropolitan Statistical Area	1.32439	28,463	22,965	27,700

Table 2. Thresholds for Two Adult Two Child Families: 2009

		Index based on Median Rents	Homeowners with Mortgage	Homeowners without a Mortgage	Renters
33140	Michigan City-La Porte, IN Metropolitan Statistical Area	0.81341	22,142	18,764	21,673
33260	Midland, TX Metropolitan Statistical Area	0.94268	23,741	19,827	23,198
33340	Milwaukee-Waukesha-West Allis, WI Metropolitan Statistical Area	0.96341	23,997	19,997	23,442
33460	Minneapolis-St. Paul-Bloomington, MN-WI Metropolitan Statistical Area	1.11463	25,868	21,240	25,226
33660	Mobile, AL Metropolitan Statistical Area	0.80366	22,021	18,684	21,558
33700	Modesto, CA Metropolitan Statistical Area	1.07561	25,385	20,920	24,766
33740	Monroe, LA Metropolitan Statistical Area	0.70732	20,829	17,892	20,422
33780	Monroe, MI Metropolitan Statistical Area	0.87439	22,896	19,265	22,393
33860	Montgomery, AL Metropolitan Statistical Area	0.82317	22,262	18,844	21,789
34740	Muskegon-Norton Shores, MI Metropolitan Statistical Area	0.78537	21,795	18,534	21,343
34820	Myrtle Beach-North Myrtle Beach-Conway, SC Metropolitan Statistical Area	0.92439	23,515	19,676	22,982
34900	Napa, CA Metropolitan Statistical Area	1.48902	30,500	24,318	29,641
34940	Naples-Marco Island, FL Metropolitan Statistical Area	1.25976	27,664	22,433	26,938
34980	Nashville-Davidson--Murfreesboro--Franklin, TN Metropolitan Statistical Are	0.92073	23,469	19,646	22,939
35002	NEW MEXICO Nonmetro	0.66951	20,361	17,581	19,976
35380	New Orleans-Metairie-Kenner, LA Metropolitan Statistical Area	1.05244	25,099	20,729	24,492
35620	New York-Northern New Jersey-Long Island, NY-NJ-PA Metropolitan Statistical	1.35366	28,825	23,205	28,045
35660	Niles-Benton Harbor, MI Metropolitan Statistical Area	0.75122	21,372	18,253	20,940
36001	NEW YORK Metro	0.94512	23,771	19,847	23,227
36002	NEW YORK Nonmetro	0.79146	21,870	18,584	21,415
36100	Ocala, FL Metropolitan Statistical Area	0.9122	23,364	19,576	22,839
36140	Ocean City, NJ Metropolitan Statistical Area	1.16463	26,487	21,651	25,816
36260	Ogden-Clearfield, UT Metropolitan Statistical Area	0.8622	22,745	19,165	22,249
36420	Oklahoma City, OK Metropolitan Statistical Area	0.81341	22,142	18,764	21,673
36500	Olympia, WA Metropolitan Statistical Area	1.02805	24,797	20,529	24,205
36540	Omaha-Council Bluffs, NE-IA Metropolitan Statistical Area	0.90732	23,303	19,536	22,781
36740	Orlando-Kissimmee, FL Metropolitan Statistical Area	1.16707	26,517	21,671	25,844
36780	Oshkosh-Neenah, WI Metropolitan Statistical Area	0.78537	21,795	18,534	21,343
37001	NORTH CAROLINA Metro	0.83171	22,368	18,915	21,889
37002	NORTH CAROLINA Nonmetro	0.70732	20,829	17,892	20,422
37100	Oxnard-Thousand Oaks-Ventura, CA Metropolitan Statistical Area	1.66098	32,627	25,732	31,669
37340	Palm Bay-Melbourne-Titusville, FL Metropolitan Statistical Area	1.04024	24,948	20,629	24,349
37460	Panama City-Lynn Haven-Panama City Beach, FL Metropolitan Statistical Area	1.00976	24,571	20,378	23,989
37860	Pensacola-Ferry Pass-Brent, FL Metropolitan Statistical Area	0.91463	23,394	19,596	22,867
37900	Peoria, IL Metropolitan Statistical Area	0.81707	22,187	18,794	21,717
37980	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD Metropolitan Statistical Area	1.15732	26,396	21,591	25,729
38001	NORTH DAKOTA Metro	0.73415	21,161	18,113	20,739
38002	NORTH DAKOTA Nonmetro	0.57561	19,200	16,809	18,869
38060	Phoenix-Mesa-Scottsdale, AZ Metropolitan Statistical Area	1.05	25,069	20,709	24,464
38300	Pittsburgh, PA Metropolitan Statistical Area	0.82195	22,247	18,834	21,774
38900	Portland-Vancouver-Beaverton, OR-WA Metropolitan Statistical Area	0.99634	24,405	20,268	23,831
38940	Port St. Lucie, FL Metropolitan Statistical Area	1.15	26,306	21,531	25,643
39001	OHIO Metro	0.7	20,738	17,832	20,336
39002	OHIO Nonmetro	0.70854	20,844	17,902	20,437
39100	Poughkeepsie-Newburgh-Middletown, NY Metropolitan Statistical Area	1.30732	28,252	22,824	27,498
39140	Prescott, AZ Metropolitan Statistical Area	0.9622	23,982	19,987	23,428
39340	Provo-Orem, UT Metropolitan Statistical Area	0.83659	22,428	18,955	21,947
39380	Pueblo, CO Metropolitan Statistical Area	0.76829	21,583	18,393	21,141
39460	Punta Gorda, FL Metropolitan Statistical Area	1.05488	25,129	20,749	24,521
39540	Racine, WI Metropolitan Statistical Area	0.89146	23,107	19,406	22,594

Table 2. Thresholds for Two Adult Two Child Families: 2009

		Index based on Median Rents	Homeowners with Mortgage	Homeowners without a Mortgage	Renters
39580	Raleigh-Cary, NC Metropolitan Statistical Area	0.99878	24,435	20,288	23,860
39740	Reading, PA Metropolitan Statistical Area	0.93537	23,650	19,767	23,112
39900	Reno-Sparks, NV Metropolitan Statistical Area	1.14878	26,291	21,521	25,629
40001	OKLAHOMA Metro	0.58537	19,320	16,889	18,984
40002	OKLAHOMA Nonmetro	0.6561	20,195	17,471	19,818
40060	Richmond, VA Metropolitan Statistical Area	1.01707	24,661	20,438	24,075
40140	Riverside-San Bernardino-Ontario, CA Metropolitan Statistical Area	1.24756	27,513	22,333	26,794
40220	Roanoke, VA Metropolitan Statistical Area	0.80732	22,066	18,714	21,602
40380	Rochester, NY Metropolitan Statistical Area	0.94512	23,771	19,847	23,227
40420	Rockford, IL Metropolitan Statistical Area	0.85244	22,624	19,085	22,134
40900	Sacramento--Arden-Arcade--Roseville, CA Metropolitan Statistical Area	1.19878	26,909	21,932	26,218
40980	Saginaw-Saginaw Township North, MI Metropolitan Statistical Area	0.78902	21,840	18,564	21,386
41001	OREGON Metro	0.90488	23,273	19,516	22,752
41002	OREGON Nonmetro	0.78537	21,795	18,534	21,343
41060	St. Cloud, MN Metropolitan Statistical Area	0.81463	22,157	18,774	21,688
41180	St. Louis, MO-IL Metropolitan Statistical Area	0.91707	23,424	19,616	22,896
41420	Salem, OR Metropolitan Statistical Area	0.8378	22,443	18,965	21,961
41500	Salinas, CA Metropolitan Statistical Area	1.34146	28,674	23,105	27,901
41540	Salisbury, MD Metropolitan Statistical Area	1.02683	24,782	20,519	24,190
41620	Salt Lake City, UT Metropolitan Statistical Area	0.9622	23,982	19,987	23,428
41700	San Antonio, TX Metropolitan Statistical Area	0.94878	23,816	19,877	23,270
41740	San Diego-Carlsbad-San Marcos, CA Metropolitan Statistical Area	1.51098	30,772	24,499	29,900
41860	San Francisco-Oakland-Fremont, CA Metropolitan Statistical Area	1.68049	32,869	25,892	31,900
41940	San Jose-Sunnyvale-Santa Clara, CA Metropolitan Statistical Area	1.71585	33,306	26,183	32,317
42001	PENNSYLVANIA Metro	0.82561	22,292	18,864	21,817
42002	PENNSYLVANIA Nonmetro	0.69634	20,693	17,802	20,293
42020	San Luis Obispo-Paso Robles, CA Metropolitan Statistical Area	1.3378	28,629	23,075	27,858
42060	Santa Barbara-Santa Maria-Goleta, CA Metropolitan Statistical Area	1.60854	31,979	25,301	31,051
42100	Santa Cruz-Watsonville, CA Metropolitan Statistical Area	1.67927	32,854	25,882	31,885
42140	Santa Fe, NM Metropolitan Statistical Area	1.15122	26,321	21,541	25,657
42220	Santa Rosa-Petaluma, CA Metropolitan Statistical Area	1.42439	29,700	23,787	28,879
14600	Bradenton-Sarasota-Venice, FL Metropolitan Statistical Area	1.16829	26,532	21,681	25,859
42340	Savannah, GA Metropolitan Statistical Area	0.98659	24,284	20,188	23,716
42540	Scranton--Wilkes-Barre, PA Metropolitan Statistical Area	0.75488	21,417	18,283	20,983
42660	Seattle-Tacoma-Bellevue, WA Metropolitan Statistical Area	1.18415	26,728	21,812	26,046
43340	Shreveport-Bossier City, LA Metropolitan Statistical Area	0.80854	22,081	18,724	21,616
43620	Sioux Falls, SD Metropolitan Statistical Area	0.81098	22,112	18,744	21,645
43780	South Bend-Mishawaka, IN-MI Metropolitan Statistical Area	0.87073	22,851	19,235	22,349
43900	Spartanburg, SC Metropolitan Statistical Area	0.70976	20,859	17,912	20,451
44001	RHODE ISLAND Metro	1.23171	27,317	22,203	26,607
44060	Spokane, WA Metropolitan Statistical Area	0.85122	22,609	19,075	22,119
44100	Springfield, IL Metropolitan Statistical Area	0.81098	22,112	18,744	21,645
44180	Springfield, MO Metropolitan Statistical Area	0.75	21,357	18,243	20,926
44220	Springfield, OH Metropolitan Statistical Area	0.78049	21,734	18,493	21,285
44700	Stockton, CA Metropolitan Statistical Area	1.12439	25,989	21,321	25,341
45001	SOUTH CAROLINA Metro	0.69634	20,693	17,802	20,293
45002	SOUTH CAROLINA Nonmetro	0.67439	20,422	17,621	20,034
45060	Syracuse, NY Metropolitan Statistical Area	0.88171	22,987	19,326	22,479
45220	Tallahassee, FL Metropolitan Statistical Area	1.00244	24,480	20,318	23,903
45300	Tampa-St. Petersburg-Clearwater, FL Metropolitan Statistical Area	1.10732	25,778	21,180	25,140

Table 2. Thresholds for Two Adult Two Child Families: 2009

		Index based on Median Rents	Homeowners with Mortgage	Homeowners without a Mortgage	Renters
45780	Toledo, OH Metropolitan Statistical Area	0.80366	22,021	18,684	21,558
45820	Topeka, KS Metropolitan Statistical Area	0.79268	21,885	18,594	21,429
45940	Trenton-Ewing, NJ Metropolitan Statistical Area	1.35854	28,886	23,245	28,103
46001	SOUTH DAKOTA Metro	0.79512	21,915	18,614	21,458
46002	SOUTH DAKOTA Nonmetro	0.62561	19,818	17,220	19,459
46060	Tucson, AZ Metropolitan Statistical Area	0.94512	23,771	19,847	23,227
46140	Tulsa, OK Metropolitan Statistical Area	0.8378	22,443	18,965	21,961
46220	Tuscaloosa, AL Metropolitan Statistical Area	0.83049	22,353	18,905	21,875
46540	Utica-Rome, NY Metropolitan Statistical Area	0.76585	21,553	18,373	21,112
46660	Valdosta, GA Metropolitan Statistical Area	0.77927	21,719	18,483	21,271
46700	Vallejo-Fairfield, CA Metropolitan Statistical Area	1.34024	28,659	23,095	27,887
42680	Sebastian-Vero Beach, FL Metropolitan Statistical Area	1.06707	25,280	20,849	24,665
47001	TENNESSEE Metro	0.7622	21,508	18,343	21,069
47002	TENNESSEE Nonmetro	0.62927	19,863	17,250	19,502
47020	Victoria, TX Metropolitan Statistical Area	0.84268	22,504	19,005	22,019
47220	Vineland-Millville-Bridgeton, NJ Metropolitan Statistical Area	1.09512	25,627	21,080	24,996
47260	Virginia Beach-Norfolk-Newport News, VA-NC Metropolitan Statistical Area	1.07439	25,370	20,910	24,751
47300	Visalia-Porterville, CA Metropolitan Statistical Area	0.81951	22,217	18,814	21,745
47380	Waco, TX Metropolitan Statistical Area	0.87927	22,956	19,306	22,450
47580	Warner Robins, GA Metropolitan Statistical Area	0.89146	23,107	19,406	22,594
47900	Washington-Arlington-Alexandria, DC-VA-MD-WV Metropolitan Statistical Area	1.52317	30,923	24,599	30,044
47940	Waterloo-Cedar Falls, IA Metropolitan Statistical Area	0.75244	21,387	18,263	20,954
48001	TEXAS Metro	0.85122	22,609	19,075	22,119
48002	TEXAS Nonmetro	0.70732	20,829	17,892	20,422
48140	Wausau, WI Metropolitan Statistical Area	0.78537	21,795	18,534	21,343
48620	Wichita, KS Metropolitan Statistical Area	0.78415	21,780	18,524	21,328
49001	UTAH Metro	0.7878	21,825	18,554	21,371
49002	UTAH Nonmetro	0.6939	20,663	17,782	20,264
49180	Winston-Salem, NC Metropolitan Statistical Area	0.76707	21,568	18,383	21,127
49420	Yakima, WA Metropolitan Statistical Area	0.78293	21,764	18,514	21,314
49620	York-Hanover, PA Metropolitan Statistical Area	0.90244	23,243	19,496	22,723
49660	Youngstown-Warren-Boardman, OH-PA Metropolitan Statistical Area	0.72073	20,995	18,002	20,580
50001	VERMONT Metro	0.90244	23,243	19,496	22,723
50002	VERMONT Nonmetro	0.94024	23,711	19,807	23,169
51001	VIRGINIA Metro	0.82927	22,338	18,894	21,860
51002	VIRGINIA Nonmetro	0.68293	20,527	17,691	20,135
53001	WASHINGTON Metro	0.85732	22,685	19,125	22,191
53002	WASHINGTON Nonmetro	0.8122	22,127	18,754	21,659
54001	WEST VIRGINIA Metro	0.72561	21,055	18,042	20,638
54002	WEST VIRGINIA Nonmetro	0.59756	19,471	16,990	19,128
55001	WISCONSIN Metro	0.86707	22,805	19,205	22,306
55002	WISCONSIN Nonmetro	0.76098	21,493	18,333	21,055
56001	WYOMING Metro	0.7622	21,508	18,343	21,069
56002	WYOMING Nonmetro	0.77195	21,629	18,423	21,184
70750	Bangor, ME	0.89756	23,183	19,456	22,666
70900	Barnstable Town, MA	1.37439	29,082	23,376	28,289
71650	Boston-Cambridge-Quincy, MA-NH	1.46341	30,183	24,108	29,339
71950	Bridgeport-Stamford-Norwalk, CT	1.52073	30,892	24,579	30,015
72400	Burlington-South Burlington, VT	1.21951	27,166	22,103	26,463
72850	Danbury, CT	1.57439	31,556	25,020	30,648

Table 2. Thresholds for Two Adult Two Child Families: 2009

		Index based on Median Rents	Homeowners with Mortgage	Homeowners without a Mortgage	Renters
73450	Hartford-West Hartford-East Hartford, CT	1.16951	26,547	21,691	25,873
74500	Leominster-Fitchburg-Gardner, MA	1.01463	24,631	20,418	24,047
75700	New Haven, CT	1.30732	28,252	22,824	27,498
76450	Norwich-New London, CT-RI (RI portion recoded to P	1.2061	27,000	21,992	26,305
76750	Portland-South Portland, ME	1.12195	25,959	21,301	25,312
77200	Providence-Fall River-Warwick, MA-RI	1.09268	25,597	21,060	24,967
77350	Rochester-Dover, NH-ME (Maine portion not identifi	1.13902	26,170	21,441	25,514
78100	Springfield, MA-CT (Connecticut portion not identi	0.98415	24,254	20,168	23,687
78700	Waterbury, CT	1.0939	25,612	21,070	24,981
79600	Worcester, MA-CT (Connecticut portion not identifi	1.12805	26,034	21,351	25,384

* Thresholds are for 2009 without imputations for noncash benefits from Garner, August 2011.

Source: Source: American Community Survey 2005-2009. For information on sampling and estimation methods, confidentiality protection, and sampling and nonsampling errors,please see the "American Community Survey Multiyear Accuracy of the Data (3-year 2007-2009 and 5-year 2005-2009)" available at http://www.census.gov/acs/www/data_documentation/documentation_main/.

Table 3 - State Poverty Rates Official vs SPM - Geographically Adjusted with the Rent Index: 2009
Using 2008 Thresholds

	Official**	SE	SPM Geo Adjusted	SE	Difference	SE DIFF	
AL	16.8	1.6	16.4	1.3	-0.4	0.9	
AK	12.1	1.1	11.2	1.0	-0.9	0.9	
AZ	21.3	1.5	22.0	1.8	0.7	0.9	
AR	19.1	2.5	16.9	2.6	-2.1	1.4	
CA	15.5	0.6	23.0	0.7	7.6	0.4	*
CO	12.4	1.0	15.1	1.1	2.7	0.7	*
CT	8.6	0.7	11.3	0.9	2.7	0.7	*
DE	12.4	1.1	14.2	1.1	1.8	0.9	*
DC	18.0	1.2	23.7	1.4	5.8	1.1	*
FL	14.6	0.8	20.0	0.9	5.3	0.5	*
GA	18.5	1.3	19.3	1.2	0.8	0.9	
HI	12.6	1.2	18.8	1.3	6.3	1.1	*
ID	13.9	2.2	11.7	1.7	-2.2	1.4	
IL	13.3	0.8	14.3	0.8	1.0	0.6	*
IN	16.4	1.3	15.5	1.3	-0.9	0.8	
IA	10.9	0.9	8.1	0.9	-2.8	0.8	*
KS	13.9	1.7	11.3	1.4	-2.6	1.0	*
KY	17.1	1.5	13.7	1.5	-3.4	1.1	*
LA	14.3	1.6	12.9	1.1	-1.4	1.5	
ME	11.6	1.0	10.1	0.9	-1.5	0.7	*
MD	9.7	0.7	14.2	0.9	4.5	0.7	*
MA	10.9	1.0	13.8	1.2	2.9	0.9	*
MI	14.2	1.0	12.7	0.9	-1.5	0.6	*
MN	11.1	0.9	11.1	1.0	0.0	0.7	
MS	23.2	1.3	17.6	1.3	-5.6	1.5	*
MO	15.6	1.1	13.4	1.4	-2.2	1.0	*
MT	13.5	1.6	11.2	1.6	-2.3	1.2	*
NE	10.0	0.8	9.5	1.0	-0.5	0.7	
NV	13.1	1.2	17.9	1.4	4.7	1.0	*
NH	7.9	0.8	10.5	0.8	2.6	0.6	*
NJ	9.5	0.8	13.1	1.0	3.6	0.6	*
NM	19.6	1.6	15.8	1.5	-3.8	1.1	*
NY	15.9	0.7	18.1	0.7	2.2	0.6	*
NC	17.0	1.2	14.6	1.0	-2.4	0.8	*
ND	11.0	1.5	8.9	1.1	-2.1	0.8	*
OH	13.5	0.8	12.0	0.7	-1.5	0.6	*
OK	13.0	1.1	11.2	1.1	-1.8	1.2	
OR	13.7	1.2	14.0	1.3	0.3	1.1	
PA	11.2	0.8	10.9	0.7	-0.3	0.6	
RI	13.2	1.1	12.6	1.0	-0.6	1.1	
SC	13.8	1.0	14.3	1.1	0.5	0.7	
SD	14.3	2.2	12.3	1.3	-2.0	1.6	
TN	16.7	1.6	15.2	1.5	-1.5	1.1	
TX	17.4	0.8	17.1	0.7	-0.3	0.5	
UT	9.8	1.1	10.2	1.1	0.3	1.0	
VT	9.6	0.9	8.6	0.9	-1.0	0.8	
VA	10.8	1.2	12.0	1.0	1.2	0.7	
WA	11.9	0.9	11.4	0.9	-0.5	0.6	
WV	16.0	1.5	11.8	1.2	-4.2	1.0	*
WI	11.1	1.0	10.8	0.9	-0.2	0.8	
WY	9.3	0.9	8.9	1.0	-0.2	1.0	

* Statistically difference from zero at the 90 percent confidence level.

** Official estimates do not match published estimates because universe includes unrelated children.

Source: Current Population Survey Annual Social and Economic Supplement: 2010. Further information about the source and accuracy of the estimates is available at <www.census.gov/hhes/www/p60_236sa.pdf>.

Table 4 - State Poverty Rates Official vs SPM - Not Geographically Adjusted : 2009

	Official**	SE	SPM No Geo Adjustment	SE	Difference	SE DIFF	
AL	16.8	1.6	20.6	1.4	3.76	1.2	*
AK	12.1	1.1	10.1	1.0	-2.01	0.8	*
AZ	21.3	1.5	22.4	1.8	1.16	1.0	
AR	19.1	2.5	21.6	2.8	2.48	1.3	*
CA	15.5	0.6	16.8	0.6	1.33	0.4	*
CO	12.4	1.0	15.2	1.1	2.85	0.7	*
CT	8.6	0.7	9	0.8	0.37	0.6	
DE	12.4	1.1	12.9	1.0	0.49	0.9	
DC	18.0	1.2	16.7	1.3	-1.24	1.3	
FL	14.6	0.8	17.8	0.9	3.11	0.5	*
GA	18.5	1.3	21	1.3	2.53	0.7	*
HI	12.6	1.2	11.9	1.1	-0.62	1.0	
ID	13.9	2.2	15.3	2.0	1.47	1.2	
IL	13.3	0.8	14.5	0.9	1.24	0.7	*
IN	16.4	1.3	18.1	1.2	1.7	0.8	*
IA	10.9	0.9	10.8	0.8	-0.11	0.8	
KS	13.9	1.7	13.5	1.4	-0.42	1.1	
KY	17.1	1.5	18.2	1.9	1.12	0.9	
LA	14.3	1.6	14.6	1.4	0.22	1.1	
ME	11.6	1.0	11.9	1.1	0.29	0.8	
MD	9.7	0.7	10.6	0.8	0.96	0.6	
MA	10.9	1.0	10.8	1.0	-0.14	0.8	
MI	14.2	1.0	13.4	0.9	-0.81	0.6	
MN	11.1	0.9	11.3	1.1	0.2	0.6	
MS	23.2	1.3	22.5	1.6	-0.67	1.1	
MO	15.6	1.1	15.7	1.4	0.06	1.0	
MT	13.5	1.6	14.5	1.8	0.99	1.2	
NE	10.0	0.8	12.2	1.0	2.27	0.8	*
NV	13.1	1.2	14.7	1.2	1.54	0.9	*
NH	7.9	0.8	9.4	0.7	1.51	0.6	*
NJ	9.5	0.8	10	0.9	0.51	0.6	
NM	19.6	1.6	18.2	1.5	-1.34	0.9	
NY	15.9	0.7	15.5	0.7	-0.33	0.5	
NC	17.0	1.2	17.2	1.2	0.21	0.7	
ND	11.0	1.5	12.5	1.3	1.53	0.8	*
OH	13.5	0.8	14.4	0.8	0.9	0.6	
OK	13.0	1.1	14.6	1.5	1.57	1.2	
OR	13.7	1.2	15.8	1.3	2.14	1.1	*
PA	11.2	0.8	12	0.7	0.82	0.5	
RI	13.2	1.1	12	1.0	-1.25	1.1	
SC	13.8	1.0	16.1	1.3	2.26	0.8	*
SD	14.3	2.2	15.4	1.6	1.13	1.2	
TN	16.7	1.6	19.4	1.7	2.67	1.0	*
TX	17.4	0.8	18	0.8	0.6	0.6	
UT	9.8	1.1	11.8	1.2	1.91	1.2	
VT	9.6	0.9	8.5	1.0	-1.09	0.8	
VA	10.8	1.2	12.2	1.2	1.42	0.5	*
WA	11.9	0.9	11.9	0.8	0.03	0.7	
WV	16.0	1.5	15.2	1.5	-0.77	1.1	
WI	11.1	1.0	12	1.0	0.84	0.8	
WY	9.3	0.9	10.9	1.1	1.62	0.9	*

* Statistically difference from zero at the 90 percent confidence level.

** Official estimates do not match published estimates because universe includes unrelated children.

Source: Current Population Survey Annual Social and Economic Supplement: 2010. Further information about the source and accuracy of the estimates is available at <www.census.gov/hhes/www/p60_236sa.pdf>.

Table 5 - State Poverty Rates SPM - Geographically Adjusted with the Rent Index vs SPM - Not Geographically Adjusted: 2009

	SPM Geo Adjusted	SE	SPM Not Geo Adjusted	SE	Difference	SE DIFF	
AL	16.4	1.3	20.6	1.4	4.2	0.6	*
AK	11.2	1.0	10.1	1.0	-1.1	0.4	*
AZ	22.0	1.8	22.4	1.8	0.5	0.2	*
AR	16.9	2.6	21.6	2.8	4.6	0.7	*
CA	23.0	0.7	16.8	0.6	-6.2	0.4	*
CO	15.1	1.1	15.2	1.1	0.2	0.2	
CT	11.3	0.9	9.0	0.8	-2.3	0.4	*
DE	14.2	1.1	12.9	1.0	-1.3	0.4	*
DC	23.7	1.4	16.7	1.3	-7.0	1.0	*
FL	20.0	0.9	17.8	0.9	-2.2	0.4	*
GA	19.3	1.2	21.0	1.3	1.7	0.7	*
HI	18.8	1.3	11.9	1.1	-6.9	0.8	*
ID	11.7	1.7	15.3	2.0	3.6	0.7	*
IL	14.3	0.8	14.5	0.9	0.2	0.3	
IN	15.5	1.3	18.1	1.2	2.6	0.7	*
IA	8.1	0.9	10.8	0.8	2.7	0.5	*
KS	11.3	1.4	13.5	1.4	2.2	0.5	*
KY	13.7	1.5	18.2	1.9	4.5	1.0	*
LA	12.9	1.1	14.6	1.4	1.7	0.7	*
ME	10.1	0.9	11.9	1.1	1.8	0.5	*
MD	14.2	0.9	10.6	0.8	-3.5	0.5	*
MA	13.8	1.2	10.8	1.0	-3.0	0.5	*
MI	12.7	0.9	13.4	0.9	0.7	0.2	*
MN	11.1	1.0	11.3	1.1	0.2	0.4	
MS	17.6	1.3	22.5	1.6	4.9	1.2	*
MO	13.4	1.4	15.7	1.4	2.3	0.3	*
MT	11.2	1.6	14.5	1.8	3.3	0.9	*
NE	9.5	1.0	12.2	1.0	2.7	0.7	*
NV	17.9	1.4	14.7	1.2	-3.2	0.6	*
NH	10.5	0.8	9.4	0.7	-1.1	0.3	*
NJ	13.1	1.0	10.0	0.9	-3.1	0.5	*
NM	15.8	1.5	18.2	1.5	2.5	0.6	*
NY	18.1	0.7	15.5	0.7	-2.5	0.4	*
NC	14.6	1.0	17.2	1.2	2.6	0.6	*
ND	8.9	1.1	12.5	1.3	3.6	0.5	*
OH	12.0	0.7	14.4	0.8	2.4	0.4	*
OK	11.2	1.1	14.6	1.5	3.4	0.9	*
OR	14.0	1.3	15.8	1.3	1.8	0.4	*
PA	10.9	0.7	12.0	0.7	1.1	0.3	*
RI	12.6	1.0	12.0	1.0	-0.6	0.2	*
SC	14.3	1.1	16.1	1.3	1.8	0.4	*
SD	12.3	1.3	15.4	1.6	3.2	0.7	*
TN	15.2	1.5	19.4	1.7	4.1	0.6	*
TX	17.1	0.7	18.0	0.8	0.9	0.3	*
UT	10.2	1.1	11.8	1.2	1.6	0.3	*
VT	8.6	0.9	8.5	1.0	-0.1	0.5	
VA	12.0	1.0	12.2	1.2	0.3	0.5	
WA	11.4	0.9	11.9	0.8	0.5	0.4	
WV	11.8	1.2	15.2	1.5	3.5	0.6	*
WI	10.9	0.9	12.0	1.0	1.1	0.3	*
WY	9.1	1.0	10.9	1.1	1.8	0.5	*

* Statistically difference from zero at the 90 percent confidence level.

Source: Current Population Survey Annual Social and Economic Supplement: 2010. Further information about the source and accuracy of the estimates is available at <www.census.gov/hhes/www/p60_236sa.pdf>.

Table 6 - Impact of Geographic Adjustments on Poverty Rates - Selected Groups

	SPM with Geo Adjustment	SE	SPM-Not Geographically Adjusted	SE	Difference	SE	
RESIDENCE							
Metro Area- Inside Principal Citiy	20.3	0.4	19	0.3	1.4	0.2	*
Metro Area- Outside Principal City	13.5	0.3	12.6	0.2	1.0	0.1	*
Outside Metro Area	13.9	0.5	18.1	0.5	-4.3	0.2	*
REGION							
Northeast	14.1	0.4	12.5	0.3	1.6	0.2	*
Midwest	12.5	0.3	14	0.3	-1.5	0.1	*
South	16.3	0.3	17.4	0.3	-1.1	0.1	*
West	19.2	0.4	16.2	0.4	3.0	0.2	*
Tenure Status							
Owner- Mortgage	8.3	0.2	8.3	0.2	0.0	0.1	
Owner-No Mortgage	14	0.4	14.6	0.4	-0.6	0.1	*
Renter	29	0.4	27.7	0.4	1.3	0.2	*
AGE							
Children	17.9	0.3	17.5	0.31418	0.44	0.14987	*
Adults	14.9	0.2	14.7	0.17627	0.28	0.08001	*
Elderly	15.6	0.4	15.7	0.35422	-0.14	0.14528	

* Statistically different from zero at the 90 percent confidence level.

Source: Current Population Survey Annual Social and Economic Supplement: 2010. Further information about the source and accuracy of the estimates is available at <www.census.gov/hhes/www/p60_236sa.pdf>.

Table 7 - Distribution of People in Poverty by Selected Characteristics: Impact of Geographic Adjustment

	SPM with Geo Adjustment	SE	SPM-Not Geographically Adjusted	SE	Difference	SE	
RESIDENCE							
Metro Area- Inside Principal Citiy	41.5	0.7	39.4	0.8	2.11	0.3	*
Metro Area- Outside Principal City	44.7	0.8	42.2	0.8	2.46	0.3	*
Outside Metro Area	13.8	0.6	18.4	0.8	-4.58	0.3	*
REGION							
Northeast	16.1	0.4	14.5	0.3	1.62	0.2	*
Midwest	17.3	0.4	19.7	0.4	-2.4	0.2	*
South	38.1	0.5	41.4	0.5	-3.28	0.3	*
West	28.5	0.5	24.5	0.5	4.05	0.2	*
Tenure Status							
Owner- Mortgage	25.8	0.5	26.2	0.5	-0.36	0.2	
Owner-No Mortgage	18.5	0.5	19.6	0.5	-1.18	0.2	*
Renter	55.7	0.6	54.2	0.6	1.54	0.3	*
AGE							
Children	28.1	0.3	27.8	0.3	0.22	0.1	
Adults	59.4	0.3	59.3	0.3	0.11	0.1	
Elderly	12.5	0.3	12.9	0.3	-0.33	0.1	*

* Statistically different from zero at the 90 percent confidence level.

Source: Current Population Survey Annual Social and Economic Supplement: 2010. Further information about the source and accuracy of the estimates is available at <www.census.gov/hhes/www/p60_236sa.pdf>.

Table 8. Correlations between State Poverty Rates and Other Deprivation Measures

State	Food-Insecure Households (%)	Marginally Attached Workers (per 10,000 working-age Adults)	Renters with Severe Housing-Cost Burden (gross rent > 50% of household income)	Owners Spending 30% or More on Housing (%)	Housing Units with 1.01 or More Occupants per Room (%)	Foreclosures (per 10,000 homes)	Homeless (% of population)	Infant Mortality Rate (per 1,000 live births)	Property Crime (per 100,000)	Incarceration Rate (per 100,000 inhabitants)	Unemployment Rate (% ages 16 and over)	Bankruptcies (filings per 1,000)
CORRELATIONS												
SPM	0.233	0.558	0.533	0.468	0.579	0.412	0.482	0.393	0.589	0.480	0.530	0.290
OFFICIAL	0.692	0.316	0.183	-0.129	0.211	0.042	0.080	0.552	0.515	0.552	0.414	0.271
SPM_NGA	0.618	0.219	0.143	-0.154	0.150	0.137	0.002	0.528	0.535	0.610	0.401	0.422
SOURCE:	U.S. Department of Agriculture. *Household Food Security in the United States, 2007.* Tables 5 & 7. Data are for 2007.	AHDP calculation based on employment data from the Bureau of Labor Statistics, Current Population Survey and population estimates from the U.S. Census Bureau, Population Division. Marginally attached workers include working-age adults who want a job and who are available for work but have given up on searching for employment. This group is excluded from standard counts of the unemployed and from the unemployment rate. Data are for 2009.	U.S. Census Bureau, American Community Survey 2008. Table B25070. Figures do not include home owners or renters living in group quarters, such as college students living in dorms. Gross rent includes average monthy utility costs. Data are for 2008.	U.S. Census Bureau. American Community Survey 2008. Tables GCT2515 and GCT2513. Data are for 2008.	U.S. Census Bureau. American Community Survey 2008. Table GCT2509. Data are for 2008.	RealtyTrac - http://www.realtytrac.com. Data are for April 2010.	National Alliance to End Homelessness, *Homelessness Counts*, 2007. Table 2. Data are for 2007.	Centers for Disease Control and Prevention. *Infant Mortality Statistics from the 2005 Period Linked Birth/Infant Death Data Set.* National Vital Statistics Reports 57, no. 2 (July 30, 2008): Table 3. Data are for 2003-2005.	Federal Bureau of Investigation. *2008 Crime in the United States*. Table 5. Data are for 2008.	Department of Justice, Bureau of Justice Statistics, Prison Inmates at Midyear 2008 - Statistical Tables. Tables 10, 15, 17. National data, which also include local inmates, not directly comparable with state data. Data are for 2008.	U.S. Department of Labor, Bureau of Labor Statistics, Civilian Noninstitutional Population (preliminary). Data are for May 2010.	American Bankruptcy Institute, Bankruptcy Filing Statistics. http://www.abiworld.org/. Data are for 2009.

Source: Data are for 2007. American Human Development Project of the Social Science Research Council. HD Index and Supplemental Indicators by State 2010-2011 Dataset.

References

Aten, Bettina. November 2005. "Report on Interarea Price Levels, 2003." BEA Working Paper, 2005-11.

Aten, Bettina. September 2006. "Interarea Price Levels: An Experimental Methodology," Monthly Labor Review 129.

Aten, Bettina, Eric Figueroa and Troy Martin. April 2011. "Notes on Esti mating the Multi- year Regional Price Parities by 16 Expenditure Categories: 2005-2009."

Aten, Bettina, and Roger D'Souza. Novem ber 2008. "R egional Price Parities: Com paring Price Level Differences Across Geographic Areas," BEA Research Spotlight.

Aten, Bettina and Marshall Reinsdorf. "Co mparing the Consistency of Price Parities for Regions of the U.S. in an E conomic Ap proach Framework." Pape r presented at the 31st General Conference of IARIW, Au gust 201 0. Available at: http://bea.gov/papers/pdf/comparing_the_consistency_ price_parities _for_regions_of_the_us_in_an_economic_approach_framework.pdf

Bishaw, Alemayehu. April 2009. "Adjusting Poverty Thresholds Based on Differences in Housing Costs: Applications in the Am erican Community Survey, " poster presentation prepa red for the Populatio n Association of America Annual Conference.

Carrillo, Paul E. And Dirk W. Early, Edgar O. Olsen. April 13, 2009. "New Cross-Sectional Price Indices for All Are as in the United States," Paper presen ted at the A merican Re al Estate and Urban Economics Association Annual Meetings.

Citro, Const ance F., an d Robert T. Michael (eds). 199 5. Me asuring Pove rty: A New Approach. Washington, D.C.: National Academy Press.

Fremstad, Shawn. Decemb er 2008. "Measuring Poverty and Economic Inclusion. The Cur rent Poverty Measure, the NAS Alternative, and the Case for a Truly New Approach." Washington, D.C.: Center for Economic Policy Research.

Kokoski, Mary, Patrick Cardiff and Brent Moulto n. 1994. "Interarea Price Ind exes for Consu mer Goods and Services: An Hedonic Approach Using CPI Da ta," BLS Working Paper No. 256, available fro m the Office of Price and Living Conditions.

Kokoski, M ary, Brent Moulton an d Kim Ziescha nge. 199 9. "Interarea Price Co mparisons for Heterogeneous Goods and Several Le vels of Comm odity Aggregation," in Heston, A., and Lipsey, R. (eds), International and Interarea Com parisons of Income, Output and Pric es,ed, by Alan Heston and Robert Lipsey. Chicago: University of Chicago Press, 123-66.

Malpessi, Stephen, Gregor y Chun, a nd Richard Green. Su mmer 1998. " New Place-t o-Place Housing Price Indexes for U.S. M etropolitan Areas, and Thei r Det erminants: An Application of Housing Indicators," Real Estate Economics, 276(2) pp. 235-275.

Rapino, Melanie, Brian McKenzie and Mathew Marlay. 2010. "Research on Commuting Expenditures for the Supplemental Poverty Measure." Available from U.S. Census Bureau working papers.

Rapino, Melanie, Brian McKenzie and Mathew Marlay. 2011. Research on Commuting Expenditures and Geographic Adjust ments in the Supplemental Pove rty Measure. Paper to be presented at the Joint Statistical Meetings, August 2011.

Renwick, Trudi. 2011. " Geographic Adjustments of Supplemental Poverty Measure Thresholds: Using the American Community Survey Five-Year Data on Housing Costs. Paper pre sented at the January 2011 Annual Convention of the Allied Social Scie nces Associations, Denver, CO. Available fro m Census Bureau working papers.

Renwick, Trudi. 200 9. "Alternative Geographic Adju stments of U.S. Poverty Thresholds: Im pact on State Poverty Rates." P aper presented at the Joint Statistical Me etings, Washington, D.C. A vailable from Census Bureau working papers.

Ruggles, Patricia. 1990, Drawing the L ine: Alterna tive Poverty Measures an d Their I mplications for Public Policy, Washington, D.C.: The Urban Institute Press.

Short, Kathle en and Trudi Renwick. 2010. Supple mental Poverty Measure: Preli minary Estimates fo r 2008. Paper presented at 32nd Annua l Resear ch Conf erence of the Associati on for Public Polic y Analysis and Management, Boston, MA.

Short, Kathleen. 2005. "Material and Financial Hardship and Income-based Poverty Measures in the United States." Journal of Social Policy (34)(i), pp. 21-38.

Short, Kathleen. 2001. "Where We Live: Geographic Differences in Poverty Thresholds," United States Bureau of the Census. Paper presented at the Annual Meeting of the Society of Government Economists, New Orleans, LA.

Short, Kathleen, Thesia Garner, David Johnson and Patricia Doyle. 1999. Experimental Poverty Measures: 1990 to 1997, U.S. Census Bureau, Current Population Reports, Consumer Income P60-205, Washington, D.C.: U.S. Government Printing Office.

Sullivan, James X, Lesley Turner and Sheldon Danziger, 2006. "The Relationship between Income and Material Hardship," July 3, 2006. http://fordschool.umich.edu/research/poverty/pubs.php

Todd, Jessica E., Lisa Mancino, Ephraim Leibtag and Christina Tripodo. 2010. Methodology Behind the Quarterly Food-at-Home Price Database, U.S. Department of Agriculture, Technical Bulletin No (TB-1926).

U.S. Department of Health, Education and Welfare. 1976. The Measure of Poverty: A Report to Congress as Mandated by the Education Amendments of 1974, Washington, D.C.: U.S. Government Printing Office, p xxiii.

U.S. General Accounting Office. 1995. Poverty Measurement: Adjusting for Geographic Cost-of-Living Difference, Washington, D.C.: U.S. General Accounting Office, GAO/GGD-95-64.