Adjusting Poverty Thresholds Based on Differences in Housing Cost: Applications of American Community Survey

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Background

The official poverty thresholds assume that all necessary household consumer goods and services are equal in cost, despite other measurable cost-of-living differences, in various localities.[1] In reality, the prices of goods and services in some localities are considerably higher than others, which impact the varying cost for the same level of household services. Recognizing such differences was an underlying reason for the Office of Personnel Management to make locality pay adjustments on wages and salaries for people working similar jobs while residing in different areas. Similarly, such differences were also part of the reason for the National Academy of Science's Panel on Poverty and Family Assistance (the Panel) to recommend changes in methodology of poverty measurement to reflect actual differences in cost of living between places.

The Panel took the position that the poverty thresholds in a new measure of poverty should represent a minimum level of needs, in which the amount should be higher in areas where the prices of basic necessities (housing, food, etcetera) are higher, despite economic arguments to the contrary. (Such arguments include factors such as the fact that those areas also have higher average incomes and the fact that people could relocate.) In its 1995 report, *Measuring Poverty: A New Approach*, the Panel included the following specific recommendation with regard to geographic adjustments in the measure of need (the thresholds)

> "Recommendation 3.2. The poverty thresholds should be adjusted for differences in the cost of housing across geographic areas of the country. Available data from the decennial census permits the development of a reasonable cost-of-housing index for nine regions and

[1] The Bureau of Labor Statistics classifies all household expenditures on goods and services that are purchased for consumption into eight major categories. Food and Beverages, Housing cost, Apparel, Transportation, Medical care, recreation, education and communication, and other goods and services make up all the major categories.

> within each region, for several population size categories for metropolitan areas. The index should be applied to the housing portion of the poverty thresholds."
> Citro and Michael (1995) page 8.

The NAS panel also acknowledged the significant impact of housing cost on cost-of-living differences between different geographic areas as compared to the cost of other household expenditure items. In its report, the Panel emphasized the need to make at least a partial adjustment for geographic cost-of-living differences using housing cost data.

Using this recommendation as a guide, the Census Bureau has used several methods to adjust for cost of living differences. In a January 2001 paper prepared for Annual Meeting of the Society of Government Economists, Kathleen Short reviewed the recent research and challenges in the area of geographic adjustments to the poverty thresholds. At a June 2004 workshop on experimental poverty measurement hosted by the National Academies, Chuck Nelson presented a paper that reviewed the recommendations made by the 1995 Panel and how those had been followed, adapted, or expanded in subsequent research. Both of these papers and a few more listed in the references, do an excellent job of describing the Panel's recommended method and a few of the challenges to implementing the method. Readers looking for more detail are encouraged to read these papers.

Data Sources

This paper utilizes housing data from the American Community Survey (ACS), which began full implementation in 2005. The ACS, collecting housing, social, demographic, and economic data for every geographic area in the country, provides annual estimates for geographic areas with population of 65,000 or more. Using the 2007 ACS data, direct estimate medians of the gross monthly renter=s cost are calculated for metropolitan and non-metropolitan areas within states. The data for monthly housing costs are based on gross rent for renter-occupied units. The monthly rental housing cost includes the contract monthly rent plus the estimated average monthly cost of utilities (electricity, gas, water, and sewer).

Also, this paper uses Fair Market Rents (FMR) data, developed by the Department of Housing and Urban Development for the purpose of administering rental housing subsidies. Fair Market Rents are developed using a combination of housing data from decennial census, American Housing Survey (will be replaced by ACS), and a Random Digit Dialing survey.[2] It provides annual estimates for 530 metropolitan and 2,045 non-metropolitan counties. However, since the FMR data are not fully adjusted for interarea differences in quality of housing and are based only on rental costs from recent movers, direct application of this data for other purpose should be carefully examined.

Methods

This paper presents a simple method for creating an index to adjust the poverty thresholds for differences in the cost of rental housing. In summary, the steps are as follows:

Step 1. Raw Indexes

Following the Census method that has been employed since 1999 in the NAS-based series, this paper assigns households to a location based on state and presence in a metropolitan area, resulting in 99 distinctly grouped locations (the District of Columbia, New Jersey, and Rhode Island have all their populations in metropolitan areas.)

The ACS median rent-based index is the local median gross rent divided by the national median gross rent. The FMR-based index is the local two bedroom FMR divided by the national median FMR. Each household in the ACS is assigned a local area based on the state and presence in a metropolitan area. Every household in the ACS gets two raw indexes, one based on the ACS method and one based on the FMR method. The national weighted household mean raw indexes are used in step 2 to normalize the indexes.

Step 2. Normalized Indexes

The raw indexes are adjusted for the estimated fraction of the poverty budget of the

2 Random Digit Dialing (RDD) is a telephone survey conducted by HUD based on a sampling procedure that uses computers to select statistically random samples of telephone numbers, dial and keep track of them, and tabulate the responses to the calls. RDD surveys are conducted in a limited number of areas each year to assess housing market conditions.

reference family for housing costs (shelter and utilities). The NAS Panel recommended that 44 percent of the thresholds be adjusted for differences in the cost of housing. This is essentially a fixed-weight index that assumes that 44 percent of the cost of living varies with housing cost and 56 percent does not vary. The scaled raw index for each household is divided by the household weighted national mean index to create the final index. The national weighted index is then equal to 1 for both methods. In this way, this research examines the distributional impact holding the national level constant.

Step 3. Adjusting the Thresholds

The final normalized index is multiplied by the family or individual's appropriate threshold from the official matrix. For example, a four-person family with two children under 18 interviewed in January 2007 is assigned a threshold of $20,435 from the matrix regardless of the location of residence. Using the official poverty calculation, all families of this size have the same threshold. Applying the index based on the location of the family to the official threshold will result in location-specific thresholds. If this family lived in Alabama, this is how the index would impact the threshold…

	Metropolitan Area Index	Metropolitan Area Threshold	Non-Metropolitan Area Index	Non-Metropolitan Area Threshold
ACS-based index	0.913	$18,453	0.836	$17,084
FMR-based index	0.874	$17,860	0.829	$16,941

Following a similar procedure, that is, applying appropriate index to the official poverty thresholds, location-specific thresholds will be established. This paper will examine the effect of this adjustment on the poverty rate by determining poverty status of families and individuals using these adjusted thresholds.

References

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