

Eyewire

# Adjusting for Living Costs Can Change Who Is Considered Poor

*Dean Jolliffe, [jolliffe@ers.usda.gov](mailto:jolliffe@ers.usda.gov)*



Comstock

NOVEMBER 2006

11

AMBER WAVES

- The prevalence of poverty has been greater in nonmetro than metro areas in every year since the 1960s when poverty rates were first officially recorded.
- Adjusting the official poverty measure for cost-of-living differences reverses the rankings of metro and nonmetro poverty.
- Such a reversal could have important implications for the geographic and demographic distribution of Federal funding of poverty-based programs.

An author interview is featured online at:  
[www.ers.usda.gov/amberwaves/](http://www.ers.usda.gov/amberwaves/)

In 1960, the Census Bureau began recording poverty rates by area of residence across the U.S. Every year since then, the prevalence of poverty has been greater in nonmetropolitan (nonmetro) areas than in metropolitan (metro) areas. During the late 1960s, poverty in nonmetro areas was almost twice as high as in metro areas. This difference declined over time, and by the 1990s, the nonmetro poverty rate was between 12 and 30 percent higher than the metro rate. In 2003, 12.1 percent of the metro population was poor, while the poverty rate for nonmetro areas was 14.2 percent.

Poverty estimates figure prominently in the distribution of Federal and State assistance funds. More than 25 different Federal assistance programs link their eligibility criteria in part to poverty lines or rates. Given the higher rates of nonmetro poverty and the link between program eli-

gibility and poverty, it follows that more Federal assistance funds per capita are distributed in nonmetro areas. For example, to receive food stamps, a household's income must be equal to or less than 130 percent of the poverty line. In 2004, the Food Stamp Program distributed more than \$24 billion in program benefits, and Current Population Survey data indicate that per capita benefits were 32 percent higher in nonmetro areas than metro areas. Overall, in 2001, the per capita distribution of Federal funds for income security programs was 17 percent higher in nonmetro than in metro areas.

The National Academy of Sciences has recommended several changes in how the Federal Government measures poverty. ERS examined one of these recommendations—adjusting for geographic differences in the cost of living—and found that such an adjustment would change the geo-

## How the Index Is Constructed

The cost-of-living index uses 2001 Fair Market Rent data, which are collected by HUD to determine eligibility of rental housing units for the Section 8 Housing Assistance Payments program. FMR data estimate the cost of rent plus utilities at the 40th percentile of reported rental expenditures for standard-quality housing.

The index assumes that differences in Fair Market Rents across the U.S. reflect variation in the cost of shelter for low-income families. But people need other goods besides shelter, and the cost-of-living index accounts for these needs by assuming that housing consumes 44 percent of expenditures for a low-income family and that all other goods consume the remaining 56 percent. The costs of these other goods are assumed not to vary across the U.S. The resulting index estimates differences in the cost of living across the U.S. by taking a weighted average of FMR (with a weight of 44 percent) and all other goods, which are assumed not to vary in costs.

Just how accurately does the index portray cost-of-living differences? We don't know, but we can examine whether the findings hold if we were to change some of the assumptions. One concern is that the cost-of-living index assumes that prices of all goods and services, other than housing, do not vary geographically. This assumption is unlikely to be accurate, but the U.S. has no national price index to measure cost-of-living differences across areas to correct it.

State-level analysis suggests that the prices of housing and all other goods are positively correlated. Or, in other words, counties with high housing costs also tend to be counties with high costs for other goods and services. If this positive correlation is true at the national level, then the reversal of the poverty rankings reported here would be amplified. Adjusted nonmetro poverty rates would drop and metro poverty rates would increase by even more than the rates presented here. Alternatively, assuming that areas with high costs of housing are areas with low costs in all other goods would weaken the findings. But the negative correlation between housing costs and costs of all other goods would have to be large (i.e., a coefficient of correlation greater in magnitude than 0.2) for the findings to disappear.

Another concern is that the assumption that the cost of shelter plus utilities makes up 44 percent of the budget for a poor person might overstate housing expenses. If we maintain the assumption of no variation in the cost of nonhousing goods but reduce the share of the index for housing costs, then geographic variation in the cost of living would be dampened. The change in the budget share for housing, though, would have to drop below 33 percent before the reversal of the metro and nonmetro poverty rankings would no longer hold.

graphic distribution of poverty. Currently, the official Federal poverty thresholds assume that the cost of living is the same over the entire U.S. However, the Census Bureau has developed experimental poverty measures that use rent data to create an index for geographic differences in the cost of living. Using this index to adjust for differences in the cost of living reverses the ranking of metro and nonmetro poverty.

## Cost of Living Varies Geographically

The major components of a low-income household's budget are housing, food, transportation, and health care. The purpose of many assistance programs is to boost the purchasing power of needy Americans so they can purchase basic necessities and attain a minimum standard of living. The cost of purchasing many of the basic necessities—the cost of living—varies across the U.S. For Federal assistance programs to boost the purchasing power of program participants by similar amounts, regardless of where they live, it is necessary to account for cost-of-living differences.

The Census Bureau has developed a geographic cost-of-living index based on 2001 Fair Market Rent (FMR) data collected by the U.S. Department of Housing and Urban Development (HUD). FMR data provide full coverage of the U.S., including metro and nonmetro areas, and they reflect the costs of rent and utilities faced by lower income households (see box, "How the Index Is Constructed"). HUD produces annual estimates for 354 metro areas and 2,350 nonmetro counties. The cost-of-living index aggregates the FMR estimates to 100 different price levels, one for metro and one for nonmetro counties of each State plus the District of Columbia (NJ and DC have no nonmetro areas). For the index, metro counties are defined as any county that (1) contains a city with a population of at least 50,000, (2) has an urbanized area as defined by the Census Bureau, or (3) is adjacent to and economically tied to a metropolitan area.

The cost-of-living index is based on data from 2001 and consists of two components—housing and all other goods and services. The index assumes that variation in the FMR data across the U.S. reflects variation in housing costs for the poor. It also assumes that the prices of all other goods and services do not vary (see box, "What the Index Does Not Measure"). Housing is a critical component of the index because it is both the largest budget item for poor families and the most important source of cost-of-living differences in the U.S. Following the recommendations of the National Academy of Sciences, the index assigns a weight of 44 percent for housing expenses and 56 percent for all other goods and services. If the FMR data indicate that rents in a particular area are 10 percent higher than the baseline, then the cost of living in this area is assumed to be 4.4 percent higher than the baseline.

## Adjusting for Living Costs Reverses Poverty Rates

The data used in this article are the 2001 cost-of-living index and the 1992-2003 March Supplement to the Current Population Survey (CPS). CPS data are the basis for the official U.S. poverty estimates and, in more recent years, provide information on more than 80,000 families in each year. The sample represents the civilian, noninstitutionalized population and members of the Armed Forces living either off base or with their families on base. The reference period for income-related questions is the preceding calendar year; there-

fore, the 1992-2003 CPS data provide poverty estimates for 1991 through 2002.

Income, following the Federal definition of poverty, includes all pre-tax income but does not include capital gains or noncash benefits, such as public housing, Medicaid, or food stamps. A person is poor if this measure of income is less than thresholds set by the U.S. Government. Poverty thresholds account for differences in need by setting different thresholds for families of varying sizes. So, for example, in 2001, a three-person family consisting of two adults and one child was poor if its family income was less than \$14,255.

One way to account for cost-of-living differences is to adjust the poverty threshold by the cost-of-living index. For example, the index for metro Illinois is 1.08, which means that the three-person family threshold of \$14,255 would be increased by 8 percent to \$15,395. The index for nonmetro Florida is 0.90 which means that the three-person poverty threshold would decline to \$12,830.

Following the official definition of poverty, 11.1 percent of the metro population was poor in 2001. For nonmetro areas, the poverty rate was 14.2 percent—about 28 percent higher. Once the poverty

### What the Index Does Not Measure

After housing, food and transportation are the next largest expenses, each taking about 15 percent of a poor family's budget. The 2001 cost-of-living index assumes no variation across metro and nonmetro areas in food and transportation costs, but ERS research indicates otherwise.

Households in nonmetropolitan areas report that they can, on average, meet their basic food needs at a lower cost than similar households in metropolitan areas can. Using nationally representative data from the CPS Food Security Supplements on how much households say they would need to spend just to meet their food needs, ERS researchers developed and assessed cost-of-enough-food indexes for 470 geographic areas. At the national level, the research showed that, on average, the cost of enough food is between 11 and 14 percent less for nonmetro households than for otherwise similar households in metro areas. Costs for nonmetro households vary considerably across States.

In contrast, evidence suggests that nonmetro residents face higher transportation costs than individuals living in metro areas. Slightly less than one-third of transportation costs for a poor family consist of expenditures on gasoline. According to data from the Census Bureau and the U.S. Department of Energy, rural households with vehicles consumed nearly 40 percent more gasoline and drove almost a third more vehicle-miles than urban households in 2001. Rural residential vehicles also tend to be less fuel efficient than their urban counterparts—averaging 19.5 vs. 20.5 miles per gallon in 2001. Nonmetro counties located near major metro areas and those located in mountainous areas, such as in Appalachia, have among the longest commutes in America.



Ken Hammond, USDA

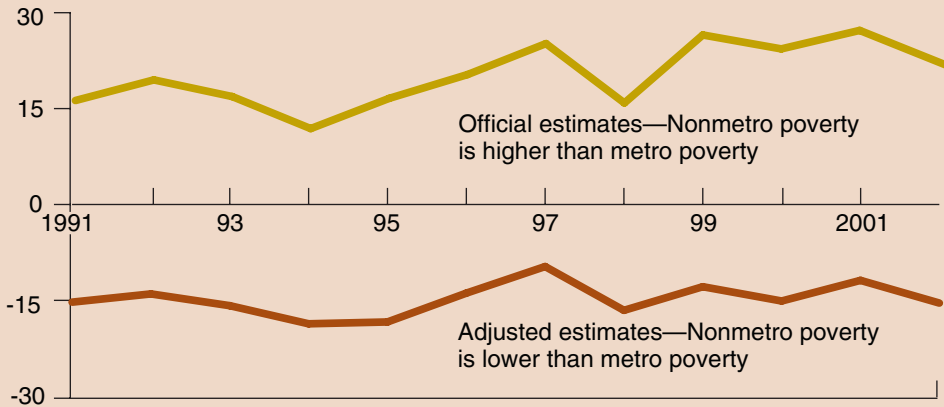
Public transportation may help to meet the mobility needs of carless individuals and can also help to offset the higher transportation costs of nonmetro areas. However, significant gaps exist in the nonmetro transit network, with about 4 out of 10 nonmetro counties having no public transportation services at all, according to the Community Transportation Association of America. Even in nonmetro counties offering transit service, 28 percent offer only limited service (less than 25 trips taken each year per carless household). Lack of access to public transportation can force residents to rely on costlier taxi services.

While the cost-of-enough-food indexes suggest that the 2001 cost-of-living index understates nonmetro-metro differences in living costs, evidence on transportation costs suggests that the index overstates differences. The size of the bias in the index from ignoring differences in transportation costs is about the same as from ignoring differences in food costs, which suggests that the net effect is small. With housing accounting for more than twice the budget share of either food or transportation, the small net effect is unlikely to alter this article's findings.

Dennis Brown, [dennisb@ers.usda.gov](mailto:dennisb@ers.usda.gov) (transportation)  
Ephraim Leibtag, [eleibtag@ers.usda.gov](mailto:eleibtag@ers.usda.gov) (food)

### Cost-of-living adjustment reverses poverty rankings

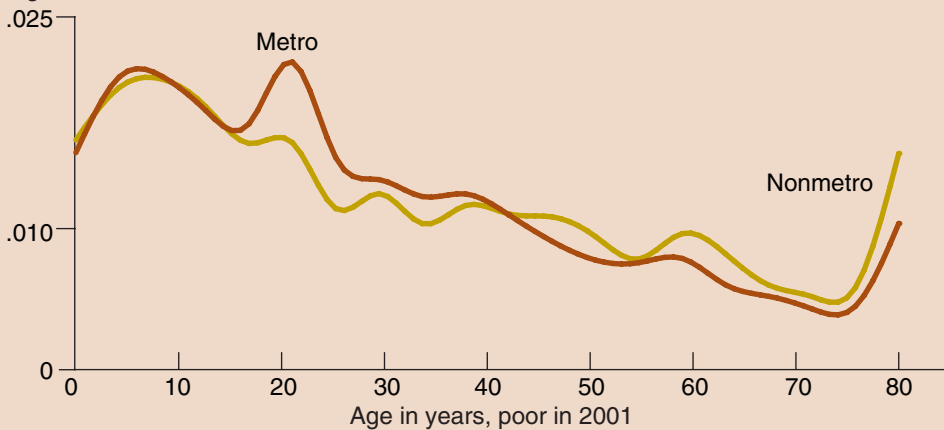
Percent difference between nonmetro and metro poverty rates



Source: Current Population Survey, 1992-2003.

### The nonmetro poor are older than the metro poor

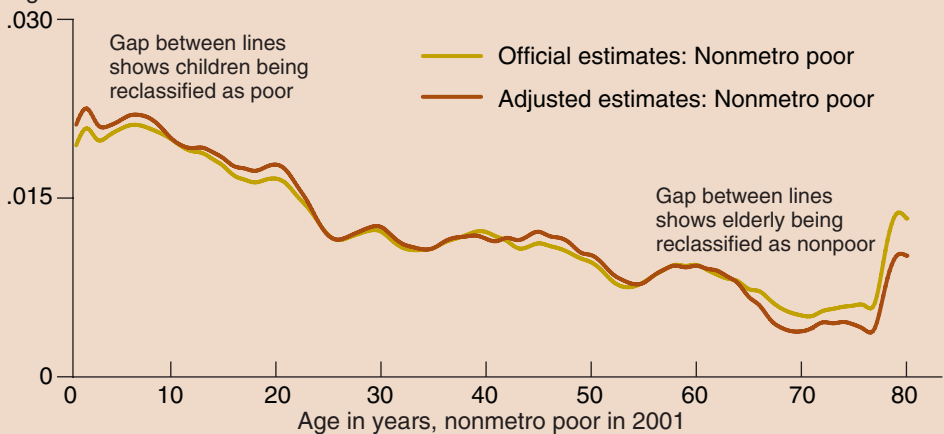
Age distribution



Source: Current Population Survey, 2002.

### Cost-of-living adjustments change the age composition of the nonmetro poor

Age distribution



Source: Current Population Survey, 2002.

thresholds are adjusted using the cost-of-living index, this ranking reverses. The adjusted nonmetro poverty rate drops to 10.5 percent, and the adjusted metro rate increases to 12.0 percent. Where the official poverty rate indicates that the incidence of poverty is 28 percent higher in nonmetro areas, the poverty rate that is adjusted for cost-of-living differences suggests that the incidence of poverty is 12 percent lower in nonmetro areas.

The reversal of poverty rankings is not unique to 2001. Using the 2001 cost-of-living index for multiple years indicates that the reversal holds for every year considered (1991-2002). The use of the 2001 index assumes that the geographic variation in prices over the last decade has been somewhat stable. (This assumption is found to be reasonable from examining earlier years of FMR data.) In most of the years considered, the official nonmetro poverty rate has been more than 15 percent higher than the metro poverty rate. When adjusted for cost-of-living differences, the nonmetro poverty estimates are 10-25 percent less than the metro estimates.

### Nonmetro Elderly Affected the Most

Previous research indicates that the nonmetro poor are somewhat older on average and more likely to be retired, while the metro poor are younger and more likely to be going to school. In 2001, the average age of the poor living in nonmetro areas was about 2 years greater than that of the metro poor. Similarly, 25 percent of the nonmetro poor were age 50 or older, compared with 20 percent of the metro poor.

In 2001, child poverty rates were higher in both metro and nonmetro areas than the poverty rates for other age groups. Children also comprised a greater share of the population of poor people in both metro and nonmetro areas.



Comstock

Differences in the age distribution of the poor across metro and nonmetro areas are seen in adults. A greater share of the metro poor falls in the age range of 18-40 years, while more of the nonmetro poor are middle-aged and elderly.

Adjusting for cost-of-living differences had a larger effect on the age composition of the nonmetro poor than the metro poor. A greater proportion of the nonmetro poor who are reclassified as nonpoor following the cost-of-living adjustment (those with incomes just below the poverty line) are older people. Forty-two percent of the nonmetro poor who are reclassified as nonpoor are over 40 years old. Among the metro poor, 33 percent of those reclassified as nonpoor are over 40.

### Adjustment in Poverty Measures Could Shift Program Funds

With no adjustment for cost-of-living differences, the prevalence of poverty is consistently higher in nonmetro than in metro areas. When the index is used to adjust for cost-of-living differences, poverty is higher in metro than in nonmetro areas. The adjustments would reduce the nonmetro poverty population in 2001 (and increase the metro poverty



Ken Hammond, USDA

population) by 1.9 million people. Given the large number of Federal assistance programs that tie eligibility criteria to poverty, adjusting the official definition of poverty to incorporate cost-of-living differences could have important implications for the distribution of Federal funds. In particular, one would expect to see more funds targeted to people living in metro areas and fewer funds targeted to nonmetro areas.

Adjusting for cost-of-living differences would also change the demographics of poverty. Currently, the nonmetro poor are disproportionately elderly, many of whom are living on fixed incomes near the poverty line. Adjusting for differences in the cost of living would result in reclassifying many of these elderly poor as nonpoor. Of the 1.9 million nonmetro poor who would be reclassified as nonpoor, 25 percent are age 60 or older. This adjustment could significantly affect Federal programs, such as Supplemental Security Income, Medicaid, the Child and Adult

Care Food Program, and the Commodity Supplemental Food Program, as the number of elderly who qualify for these programs would be reduced. **W**

#### This article is drawn from ...

*The Cost of Living and the Geographic Distribution of Poverty*, by Dean Jolliffe, ERR-26, USDA, Economic Research Service, September 2006, available at: [www.ers.usda.gov/publications/err26/](http://www.ers.usda.gov/publications/err26/)

#### You may also be interested in ...

The ERS Briefing Room on Rural Income, Poverty, and Welfare, available at: [www.ers.usda.gov/briefing/incomepovertywelfare/](http://www.ers.usda.gov/briefing/incomepovertywelfare/)

A complete listing of the Federal poverty thresholds is available at: [www.census.gov/hhes/www/poverty/threshld.html](http://www.census.gov/hhes/www/poverty/threshld.html).