Do the Proposed Revisions of the Poverty Measure Matter for Rural America?

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ABSTRACT

Proposed changes in poverty measurement methods would lower the nonmetro poverty rate by 3 percentage points and raise the metro poverty rate by 1 percentage point. The resulting nonmetro poverty rate would be lower than the metro rate, reversing the historic rural poverty gap. Measured poverty would decline by 4 percentage points in the nonmetro South and by more than 10 percentage points for nonmetro blacks. The adjustment for cost of housing accounts for most of the metro-nonmetro difference between the current and proposed measures.

Keywords: Rural poverty, nonmetro poverty, poverty measurement

Introduction

A National Academy of Sciences (NAS) panel commissioned by four Federal agencies(1) recommended in May 1995 a major revision of the methodology for measuring poverty in the United States (Citro and Michael 1995). If implemented, the new method would change the makeup of the population measured as poor.(2) The effects of the changes would differ substantially between nonmetro and metro areas. Here, we describe the effects of the proposed revisions on the incidence of measured poverty in nonmetro areas relative to metro areas, and among racial and regional subcategories of the nonmetro population.

The Revised Poverty Measure

The current official poverty measure was developed about 30 years ago, and has remained almost unchanged, except for inflation adjustments, up to the present (Ruggles 1990). The measure compares a defined set of family resources (pre-tax income plus cash benefits) with a poverty threshold (adjusted for family size and composition) to determine the poverty status of the family. Due to social, political, and economic changes over the last 30 years, a number of widely recognized problems and inconsistencies in the poverty measure have emerged. The NAS study was directed at addressing those issues. The proposed new poverty measure, like the current one, would compare family resources to a poverty threshold, but would introduce substantial changes in both the definition of the threshold and the composition of the family resources to be compared with it. The most important changes and those most likely to affect measured poverty differently in nonmetro and metro areas are summarized in table 1 and discussed briefly below. For a full description of the methodology and the proposed data sources, see Citro and Michael (1995).

Revisions to the Poverty Threshold

(1) The poverty threshold for the reference family (two adults and two children) would be determined and carried forward in time as a proportion of the median expenditure by families of that size nationwide for food, clothing, and shelter. The panel suggested 90 to 104 percent of the median as a reasonable range.(3)

(2) The adjustment of the poverty threshold for family size and composition would reflect a lower economy of scale than the current measure, and the economy of scale would be consistent for additional family members. (The current adjustment has some irregularities in that regard.) For each family size and composition, an index would be calculated as the number of adult-equivalents (with children under 18 counted as 0.7 adult equivalent), raised to a power of from 0.65 to 0.75 to reflect economies of scale. The ratio of that index to the index of the reference family, multiplied by the reference-family poverty threshold would yield the poverty threshold for the family. The effect of the lower economy of scale would be to reduce the poverty threshold (and, thus, the poverty rate) of single persons living alone relative to that of reference-size families.

(3) The poverty threshold would be adjusted to reflect geographic differences in cost of housing. The adjustment would be calculated for nine regions, and, within each region, for several population-size categories of metropolitan areas based on the Housing and Urban Development (HUD) "fair market rents" (FMR) data (Citro

and Michael 1995). The cost-of-housing adjustment for nonmetro areas (which are not covered by the FMR data) would be set equal to that of the smallest population-size metro category in the region. The base of the adjustment index would be set to give a national mean adjustment (weighted by population) of zero.

Table 1--Comparison of current and proposed poverty measurement methods

Component	Current	Proposed (by NAS panel)
Threshold for reference family (2 adults and 2 children)	Originally set at three times the cost of the "economy food plan;" carried forward through time by adjusting for inflation using the Consumer Price Index.	Calculated each year as a fixed proportion of the sum of median expenditures by such families (2 adults and 2 children) for food, clothing, and shelter. Data source: 3-year average from Consumer Expenditure Survey.
Adjustment of threshold for family size and composition	Table of multipliers for each combination of family size and number of children; differs (lower) if family head is elderly. Based on differences by family size of the original cost of the "economy food plan" and of the observed ratio of food expense to other expenses.	Adjusted by ratio of family-size-index to reference-family-size-index. The index is calculated as: $ADULT\_EQUIV^S$ where ADULT_EQUIV is the number of adult-equivalents (with children counted as 0.7). S is an exponent with value less than 1 to acount for economies of scale. No difference if family head is elderly.
Adjustment of threshold for regional cost of living	None	Housing component of threshold adjusted for cost of housing using HUD "fair market rent" data. Applied at level of nine regions and, within each region, at several levels of metropolitan size.
Adjustment of family resources for taxes	Pre-tax income included in family resources.	Federal and State taxes and Social Security payroll taxes excluded from family resources; earned income tax credit added to family resources
Adjustment of family resources for welfare benefits	Cash benefits included in family resources: social security, SSI, AFDC.	Cash and near-cash benefits (except medical) included in family resources: Social Security, SSI, AFDC, food stamps, free school lunches, housing and energy subsidies

(Continued)

(Table 1 continued)

Component	Current	Proposed (by NAS panel)
Adjustment of family resources for work-related expenses	None	Set amount for estimated work expenses for each working adult excluded from family resources; cost of child care excluded if all adults work (imputed value or, if data source includes this information, actual expense with a maximum cap).
Adjustment of family resources for medical expenses	None; employer or government payment of health insurance not included in family resources; out-of-pocket expenses for insurance or medical costs not deducted from family resources.	Out-of-pocket cost of medical insurance and medical expenses deducted from family resources. (Imputed value based on age applied unless data source includes this information.)
Adjustment of family resources for child-support payments	Receipt of child support included in family resources, but payment of child support not deducted.	Receipt of child support included in family resources, and payment of child support deducted from family resources.
Data source for family resources	Current Population Survey (CPS) March Demographic Supplement.	Survey of Income and Program Participation (SIPP). This is predicated on the planned expansion of the SIPP sample size to about 50,000 households.[1]

[1]However, the NAS Panel's estimates of effects of the changes, as well as the estimates here are based on CPS data

Items to be included in family resources would be defined consistently with the elements included in the poverty threshold calculation. The current methodology is inconsistent in this regard. The current threshold is based on consumption expenditures, but the family resources include pre-tax income plus cash, but not near-cash, transfers.

(4) Federal and State taxes, Social Security payroll taxes, work-related expenses, and child-care expenses would be excluded from family resources, and earned income tax credit would be included in family resources.[4]

(5) The value of near-cash benefits (food stamps, subsidized and free school lunches, and housing and energy subsidies) as well as cash benefits (old-age and survivor insurance, supplemental security insurance, AFDC) would be included in family resources.

(6) Out-of-pocket costs for medical care and medical insurance would be deducted from family resources.

Data Source for Family Resources

(7) The Survey of Income and Program Participation (SIPP) would replace the Current Population Survey (CPS) as the data source for the official poverty statistics. This is predicated on the planned expansion of the SIPP sample to about 50,000 households. SIPP oversamples low-income households and includes data for several income and expense items that would have to be estimated and imputed if CPS data were used.

Effects of the Revisions on Poverty Rates

The NAS panel identified several changes in the composition of the population measured as poor that would result from these revisions. The proportion of the poor in families with one or more workers would increase; the proportion of the poor in families that lack health insurance coverage would increase; and the proportion in families that receive public assistance would decrease. Regionally, the Northeast and West would register a larger share of the poor, while the share in the South and, to a lesser extent, the Midwest would decrease (Citro and Michael 1995).

The overall effect of the proposed revisions on the nonmetro poverty rate compared with that in metro areas is not immediately apparent. Some changes would tend to increase measured poverty more in rural than in urban areas; other changes would have the opposite effect. The geographic adjustment for cost of housing would reduce measured poverty in nonmetro areas, especially in the South, where housing is generally less expensive. The deduction of taxes and work expenses from the family resource measure would increase the poverty rate in nonmetro areas more than in metro areas because of the higher proportion of working poor in the nonmetro poverty population. On the other hand, including the earned income tax credit in family resources would offset those effects partially or completely.

Here, drawing on the data source used by the NAS panel, we describe the impacts of the proposed revisions on poverty rates in nonmetro and metro areas, and among nonmetro regional and racial population groups.

Data and Methods

The Committee on National Statistics (CNS) provided ERS with two data files used by NAS for their analysis of the effects of implementing the new poverty measure. The first is an extract from the March 1993 Current Population Survey. It has a record for each family or unrelated individual and includes variables identifying the State of residence, metro status and size of metro area of residence, and race of family head. Three variables provide sums of March Supplement person weights for all persons, for children, and for elderly (age > 64) in the family. The second file, which can be matched to the CPS extract, includes ratios of family resources to poverty threshold under the current poverty measure and under the proposed measure with various combinations of threshold and economy-of-scale parameter values. For each measure, we dichotomized the resources-to-poverty-threshold ratio into poor (ratio < 1) and nonpoor (ratio >= 1) and calculated the resulting poverty rates, using the appropriate March Supplement weights. Three measures are compared here:

CURRENT - the official poverty measure now in use.

SAME_RATE - the proposed methodology with the reference-family poverty threshold set at $13,175 - the level that yields the same national-level poverty rate as does CURRENT. Use of this threshold facilitates analysis of the *relative* effects of the proposed poverty measure on poverty rates of subgroups of the population.

HIGHER_THRESHOLD - the proposed methodology with the reference-family poverty threshold set at the midpoint of the suggested range ($14,800). This threshold is believed by the NAS panel to coincide reasonably well with poverty as understood and socially defined by the general public.

The resource-to-threshold ratios associated with the separate implementation of each of the elements in the proposed measure (keeping all other elements as in the current measure) also were included in the data file. Poverty rates calculated from those ratios were compared with rates based on the current measure to identify the differential effects of each component on the measured poverty of population subgroups.

The results described below are based on the economy-of-scale exponent of 0.75. The NAS Panel recommended a value in the range of 0.65 to 0.75, and the data file provided resource-to-threshold ratios for the proposed measure only for those two values of the exponent. The value selected for the exponent affects differentially the poverty rates of families of different size. For example, under the current measure, the poverty rate for nonmetro women living alone is 34.4 percent. Under the new measure it would drop to 20.3 percent with the economy-of-scale exponent at 0.65, and to 16.5 percent with the exponent at 0.75. However, exploratory analyses (not shown) confirmed that the value of the exponent, within the suggested range, has no appreciable effect on the overall poverty rates in metro and nonmetro areas nor on the poverty rates of the nonmetro subgroups considered in the present study.[5]

Findings

Under the new method, with the threshold set so as to leave the national poverty rate unchanged, *measured poverty in nonmetro areas would decrease by 3 percentage points, and in metro areas it would increase by 1 percentage point* (table 2). This would reverse the long-observed "poverty gap" between nonmetro and metro areas; the nonmetro poverty rate would be about 1 percentage point lower than the metro rate. The effects for children are nearly the same as those for all persons. For the elderly, the poverty rate would decline in both metro and nonmetro areas, but the decline would be much larger in nonmetro than in metro areas (-5.5 compared with -0.7 percentage points).

If the threshold were raised to $14,800, the nonmetro poverty rate (all ages) would increase by nearly 1 percentage point, while the metro poverty rate would increase by 4.5 percentage points. Under this scenario, also, the resulting nonmetro poverty rate would be slightly lower than the metro poverty rate.

The relative change between nonmetro and metro areas is almost entirely the result of the geographic cost-of-housing adjustment. Applying only the cost-of-housing adjustment without any other changes would reduce the nonmetro poverty rate by 2.38 percentage points and increase the metro poverty rate by 0.89 percentage points (table 3). A similar analysis (not shown) of the *revised measure* with and without the cost-of-housing adjustment provides even more dramatic evidence of the effect of that adjustment. Keeping all other components as in the revised measure, the cost-of-housing adjustment reduces the nonmetro poverty rate by 4.26 percentage points and increases the metro poverty rate by 1.23 percentage points. These effects are larger than the total changes resulting from implementing the revised measure and are partially offset by effects of the other elements.

As expected, the decrease in measured poverty would be greatest in the nonmetro South (table 4). The decrease also would be substantial in the nonmetro West and Midwest, while the Northeast nonmetro poverty rate would be nearly unchanged. The decrease in the poverty rate of the nonmetro West is especially notable contrasted with the 3-percentage-point increase in the metro poverty rate for that region that would be registered under the new measure. Further analysis (not shown) revealed that the regional differences, like the metro-nonmetro difference, were largely a result of the cost-of-housing adjustment.

Table 2--Effects of proposed changes in poverty measurement on poverty rates in nonmetro and metro areas

	Nonmetro		Metro	
Poverty measurement method[1]	Poverty rate	Change from CURRENT	Poverty rate	Change from CURRENT
	Percent	Percentage points	Percent	Percentage points
All persons: CURRENT SAME_RATE HIGHER_THRESHOLD	16.84 13.87 17.69	 -2.97 +.85	13.91 14.88 18.42	 +.97 +4.51
Children: CURRENT SAME_RATE HIGHER_THRESHOLD	23.76 19.83 24.47	 -3.93 +.71	21.47 22.47 27.30	 +1.00 +5.83
Elderly: CURRENT SAME_RATE HIGHER_THRESHOLD	14.88 9.37 13.45	 -5.51 -1.43	12.24 11.56 15.24	 -.68 +3.00

[1]The poverty measures are:
CURRENT: Existing poverty measure.
SAME_RATE: NAS proposed measure with reference-family threshold set so as to yield the same national-level poverty rate as the current measure.
HIGHER_THRESHOLD: Proposed measure with reference-family threshold set at $14,800 - about the middle of the suggested range.
Source: ERS analysis of National Academy of Sciences/Committee on National Statistics data file on effects of proposed changes in poverty measurement (based on March 1993 CPS).

Table 3--Effects of components of proposed poverty measurement methodology on poverty rate in nonmetro and metro areas[1]

	Change in poverty rate	
Component	Nonmetro	Metro
	Percentage points	

Table 3--Effects of components of proposed poverty measurement methodology on poverty rate in nonmetro and metro areas[1]		
Adjusting poverty threshold for cost of housing by region and, within region by nonmetro and (several sizes of) metro status	-2.38 +.67	+.89 +.39
Excluding Federal and State taxes from family resources and including EIT (estimated based on income, family composition, and State of residence)	-1.78 +1.05	-1.62 +.72
Including value of near-cash benefits in family resources	+.34	+.25
Deducting work-related expenses (imputed at $750 annually for each worker)	+2.86	+1.87
Deducting imputed child-care expenses if all adults in family work (imputed at estimated national mean)	-.76	-.72
Deducting medical out-of-pocket expenses (imputed through a rather complex procedure based on age, family composition, and medical insurance coverage)		
Adjusting poverty threshold for family size by the proposed method with economy-of-scale exponent=0.75		

[1]Values shown here are the changes in poverty rate that would result from the implementation of the component with all other components as in the current measure.
Source: ERS analysis of National Academy of Sciences/Committee on National Statistics data file on effects of proposed changes in poverty measurement (based on March 1993 CPS).

Table 4--Effects of proposed changes in poverty measurement on poverty rates by residence and region				
	Nonmetro		Metro	
Poverty measurement method[1]	Poverty rate	Change from CURRENT	Poverty rate	Change from CURRENT
	Percent	Percentage points	Percent	Percentage points
Northeast: CURRENT SAME_RATE	11.92 11.77	-.15	 12.42 14.27	+1.85
Midwest: CURRENT SAME_RATE	14.04 11.61	-2.43	 12.69 12.51	-.18
South: CURRENT SAME_RATE	20.49 16.42	-4.07	 15.48 15.10	-.38
West: CURRENT SAME_RATE	15.58 12.54	-3.04	 14.35 17.34	+2.99

[1]The poverty measures are:
CURRENT: Existing poverty measure.
SAME_RATE: NAS proposed measure with reference-family threshold set so as to yield the same national-level poverty rate as the current measure.
Source: ERS analysis of National Academy of Sciences/Committee on National Statistics data file on effects of proposed changes in poverty measurement (based on March 1993 CPS).

There are substantial differences between blacks and whites in the changes that would result from implementing the new methodology (table 5). Of particular note, the poverty rate among nonmetro blacks would decline by more than 10 percentage points. The poverty rate among metro blacks also would decline, although by a much smaller amount, while that of metro whites would increase. The difference in the poverty rates of blacks and whites would decline in both metro and nonmetro areas, but it would still be very large. Within racial groups, metro and nonmetro poverty rates would be essentially equal. Here, too, the cost-of-housing adjustment is a major factor; almost all nonmetro blacks live in the South. With all other components of the proposed measure constant, the cost-of-housing adjustment accounts for 8.3 of the 10 percentage-point decline in nonmetro black poverty.

Policy and Research Implications

Adoption of the proposed poverty measure would alter substantially our assessment of the rural-urban and regional distribution of the economically disadvantaged population. If the new measure also is used for purposes of program

administration--to determine eligibility for public assistance programs, and to allocate Federal program funds among States--it will have very direct consequences in determining who receives help, and how much they receive. It is, therefore, very important to get it right. That is, so far as feasible, the measure should correspond with the real economic deprivation of families. In general, the NAS proposal appears to do this. It is conceptually consistent and resolves a number of problems and inconsistencies in the current measure. In particular, the proposed measure defines the items included in family resources consistently with the elements on which the poverty threshold is based. And, because it includes as family resources the major near-cash benefits as well as cash benefits, the proposed measure would produce a poverty rate that reflects the poverty-alleviating effects of government transfers and welfare programs.

However, there is reason to question the appropriateness of the adjustment of the poverty threshold for cost of housing. Some adjustment for cost of living may be justified. But, for two reasons, a full cost-of-housing adjustment based on HUD fair market rents (FMRs), as proposed by the NAS panel, may not be appropriate. First, the HUD estimates may not adequately adjust for differences in housing quality, and, thus, may overstate the differences in housing cost between low-cost and high-cost

Table 5--Effects of proposed changes in poverty measurement on poverty rates by residence and race

	Nonmetro		Metro	
Poverty measurement method[1]	Poverty rate	Change from CURRENT	Poverty rate	Change from CURRENT
	Percent	Percentage points	Percent	Percentage points
White:				
CURRENT	14.30	-2.18	10.79	+1.36
SAME_RATE	12.12		12.15	
Black:				
CURRENT	40.76	-10.22	31.72	-1.97
SAME_RATE	30.54		29.75	

[1]The poverty measures are:
CURRENT: Existing poverty measure.
SAME_RATE: NAS proposed measure with reference-family threshold set so as to yield the same national-level poverty rate as the current measure.
Source: ERS analysis of National Academy of Sciences/Committee on National Statistics data file on effects of proposed changes in poverty measurement (based on March 1993 CPS).

areas.(6) FMR estimates are based on the 45th percentile of "standard quality" housing rented in the previous 2 years. Although the "standard quality" constraint eliminates from consideration houses lacking plumbing and other minimal necessities, the quality of the remaining houses, and, in particular, of those at the 45th percentile, may still differ substantially from area to area. It seems quite likely that an area with generally low incomes will have lower quality housing at the 45th percentile of this category of rental units than will an area with high incomes.

Second, costs of other (non-housing) goods and services may vary inversely with housing costs between rural and urban areas. The NAS study recognizes that non-housing costs vary, but concludes (correctly, we believe) that data sources adequate to support a more general cost-of-living adjustment do not currently exist. The study concludes that it is, nevertheless, appropriate to adjust for cost of housing, since defensible data do exist for that sector. However, if non-housing costs of living are inversely related to cost of housing, then adjusting only for cost of housing unfairly understates the cost of living where housing costs are low. There is evidence that costs of transportation (Expert Committee on Family Budget Revisions 1980; Rogers 1988), food (Cude and Walker 1983), and health care and life insurance (Rogers 1988) are higher in rural than in urban areas. The Expert Committee on Family Budget Revisions (1980) cited evidence that "...transportation expenditures trade off in predictable and plausible ways with shelter expenditures and that the total expenditure, taking the two of them together, is not importantly related to location either by city size or region" (p. 88). This is exactly the sort of inverse relationship that would make it inappropriate to adjust only for cost of housing. Although the NAS panel cited this observation by the Expert Committee on Family Budget Revisions as an argument against adjusting for geographic differences in transportation costs (Citro and Michael, p. 185), they did not consider its implications to adjusting for housing costs.

The empirical evidence for the two concerns outlined above should be reviewed thoroughly prior to finalizing and adopting the new poverty measure. If the evidence is reasonably strong for either or both of them, then the poverty threshold should be adjusted for only an appropriate proportion of the cost-of-housing differential as measured by the HUD fair market rent data.

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1. The NAS study was jointly commissioned by the Bureau of the Census (Department of Commerce), the Administration for Children and Families (Department of Health and Human Services), the Bureau of Labor Statistics (Department of Labor), and the Food and Nutrition Service (Department of Agriculture).
2. The measure might also change the overall poverty rate, but that would depend on the value selected for a parameter for which the NAS panel recommended a range, but not a specific figure. The discussion here focuses on the *relative* effects of the proposed changes on various subgroups.
3. This range is the product of two parameter ranges suggested by the panel. The first is the proportion of the median expenditure for the three basic categories that should be considered minimally normative, with a suggested range of from 78 to 83 percent. The second is a multiplier to allow a small additional amount for other needed expenses, with a suggested range of from 1.15 to 1.25.
4. The Survey of Income and Program Participation (SIPP), proposed by the NAS panel as the data source for the official poverty statistics, includes data on these items. If the Current Population Survey (CPS) is used (as it is for the present analysis and for the NAS preliminary estimates) then values for these items must be imputed based on relevant data that are available in the survey.
5. This assumes that for each economy-of-scale exponent value, the reference-family threshold is adjusted to give the same national poverty rate.
6. This is a problem recognized by the NAS panel (Citro and Michael 1995, p. 189).