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Distribution Sensitive Measures Of Poverty In The United States: Comment

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This paper by John Bishop, John Formby, and Buhong Zheng begins with the postulate that there are serious flaws in the way in which poverty is officially defined and measured and, therefore, in the estimates of poverty which are published by U.S. Bureau of the Census. I agree.

Four areas are troublesome for the authors and their paper addresses each in turn. First, the official definition of poverty raises fundamental questions as to how physical needs are defined and measured. Second, the income definition used to classify a person or family as poor is not sufficiently comprehensive. Third, differences in the cost of living in different parts of the country are not and never have been incorporated in the official poverty standard. Fourth, the official standard is not sensitive to the fact that the hardship of poverty is greater for some persons and families than for others.

I agree with the authors in all four instances by and large but the devil, as they say, is in the details. My comments, however, are selective rather than comprehensive.

FIRST FLAW: DEFINING AND MEASURING POVERTY

As to the first flaw, Bishop *et al.* assert that:

- 1 the problem originates in the definition of poverty
- 2 the definition must be grounded in basic human physical needs
- 3 defining poverty is inevitably arbitrary.

I agree with the first two, but not the third.

The official poverty income threshold is defined in terms of the cost of the food necessary for a nutritionally adequate diet (referred to as the *Economy Food*



Plan). In turn, the poverty income threshold – the income just sufficient to purchase the goods and services which meet all human physical needs—is estimated at three times the cost of the Economy Food Plan. The multiple of three derives from survey research on consumer expenditures conducted in the 1950s which indicated that households at that time spent about one third of their income on food. In 1965 Mollie Orshansky, the original architect of the official poverty standard, called the 3:1 income–food relationship an “interim guide” (Orshansky 1965:3).

There are no direct estimates of any other basic human physical needs, such as shelter, clothing, health care, transportation, included in the official poverty statistics. This shortcut in the construction of the poverty income threshold reduces the difficulty of estimating poverty but deals with unmet human physical needs superficially.

The authors’ “inevitably arbitrary,” however, is misleading because it suggests that ultimately there is no way to reach agreement as to how to improve the definition of poverty used in the official U.S. estimates of poverty. Although this term has widespread and long-standing use in poverty research, it does not serve us well. There is nothing arbitrary, for instance, about grounding the definition of poverty in human physical needs, even though mainstream economics construes consumption strictly in terms of human physical wants. Further, there is nothing arbitrary about the recommendation that the official poverty income threshold should be based squarely on actual estimates of all of the elements of human physical needs, not just the cost of food, difficult though that may be.

Rather than being *inevitably arbitrary*, the definition of poverty properly understood is *inherently value-laden*, that is, it unavoidably reflects the value systems of the persons using it. The student of poverty is free to use whatever definition or income threshold suits his/her purposes provided he/she can show clearly that the statistical evidence forthcoming leads to a clearer understanding of unmet human physical needs and therefore represents a better definition of poverty. Otherwise the results have no practical meaning.

In their paper, Bishop *et al.* use several alternative thresholds, such as 75 percent or 125 percent of the official poverty income threshold, but they are not convincing as to how their statistical evidence improves our understanding of unmet human physical needs and thereby contributes to an improvement in the present definition of poverty. Any alternative income threshold which is based strictly on some fraction or multiple of the 100 percent poverty income threshold is excessively arbitrary because it does nothing to remove or reduce the fundamental underlying flaws in that threshold. Such alternative thresholds only perpetuate those flaws and for that reason their usefulness is highly questionable.

The central definitional and measurement problems inhere in the 100 percent threshold *per se* and therein our efforts should be directed. To continue with such

alternative thresholds simply leads to a proliferation of numbers on the extent of poverty¹ and does not help answer the ultimate question in poverty research: "What to do for the poor?" Ultimately, the proof of the superiority of one definition of poverty compared to another depends on applying both to the same data set and comparing the results. Of the two, the one which probes more deeply into the nature of poverty and helps sharpen our understanding of the plight of the poor is the better definition.

SECOND FLAW: DEFINING AND MEASURING INCOME

Along with the 100 percent poverty income threshold, information on income from survey research is required to officially classify a person or family as poor. Unlike the concept underlying the poverty income threshold, however, the concept underlying income is not value-laden. Simply put, selecting a proper definition of income is not a normative issue. Rather it is a technical problem and, for that reason, the authors' quite sensible recommendation to make the concept more comprehensive is not controversial.²

In the official poverty estimating process, as Bishop *et al.* indicate in their paper, income includes wages and salaries, self-employment income, dividends, interest, rent, cash transfers, and other cash income. Their recommendation adjusts the income used in the official estimates:

- 1 *upward* by adding food stamps, subsidies for housing, energy, and school lunches, implicit return on home equity, and earned income tax credit
- 2 *downward* by deducting federal and state income taxes, along with payroll and property taxes.

Aside from the difficulties attendant on its application, I cannot think of one good reason for not implementing this recommendation. Orshansky herself admitted a certain crudeness in her initial efforts to estimate poverty (Orshansky 1965: 12). Removing this specific source of some of that crudeness is long overdue.³

1 In the most recently published Census report on poverty in the U.S. in 1997, there are separate estimates of poverty based on the following threshold levels: 0.50, 1.00, 1.25, 1.50, 1.75, and 2.00. The headcount estimates of poverty range from 14.6 million or 5.4 percent of the population to 86.3 million or 32.1 percent of the population. See Dalaker and Naifeh (1998: Table 2).

2 Bishop-Formby-Zheng are not the first to recommend a more comprehensive measure of income (see, for example, Citro and Michael 1995: 39-42).

3 In the Census report on poverty in 1997, there are estimates of the rate of poverty based on 15 "alternative definitions of poverty" all including more or less other income sources, taxes, and other items such as subsidies and imputed return on home equity. These estimates range from a low of 9.2 percent for the entire U.S. population to a high of 21.3 percent. See Dalaker and Naifeh (1998:xiv-xv).

THIRD FLAW: INCORPORATING COST OF LIVING

The official poverty income threshold takes no direct account of differences in the cost of living across the United States. The anomaly in this regard is that the income information obtained every year from survey research (the Current Population Survey administered in March) reflects (imperfectly) such differences in that income from sources such as labor and rental income, child support, unemployment insurance, and public assistance is higher or lower in those places where the cost of living is higher or lower.

Bishop *et al.* draw on one of the recommendations of the National Research Council in 1995 to use hedonic price indices for estimating inter-area differences in the cost of housing in order to construct their own indices of the cost of living. Guided by the reliability of the statistical evidence on the cost of housing, the authors prepared 1990 cost-of-living indices for 30 large urban areas which they combined into eight urban regions. The cost of living in all eight regions combined was estimated and assigned an index number of 100.0. Then the cost of living in each of the eight regions was estimated in relation to that base figure, with separate index-number estimates for owners and for renters.

The highest cost-of-living region in 1990 was New York\Boston where the cost-of-living index was estimated at 109.3 for owners and the lowest cost-of-living region was Southern Cities (including Atlanta, Dallas, Houston, New Orleans, and Tampa) where the index was estimated at 92.0 for owners. For renters, the range from highest-cost region to lowest-cost region was somewhat smaller: 106.3 in Los Angeles\San Francisco to 92.9 in Southern Cities.

Applying these cost-of-living indices to the Census Bureau's official count of the number of poor persons in those eight urban regions in 1990, the authors report the percentage difference in the headcount in those regions. In two of the eight regions – New York\Boston and Los Angeles\San Francisco – the official count underestimated the number of poor persons by 4.4 percent and 8.5 percent respectively. In the other six regions, the official count overestimated the number of poor persons by as much as 12.1 percent in Southern Cities and by as little as 0.9 percent in Chicago\Detroit.

These findings indicate that taking the cost of living into account has an important effect on the estimates of the poor derived directly from the government's own data. It follows that estimates of the number of persons who are poor would be more accurate if explicit cost-of-living adjustments were introduced into official poverty estimating process.

Ideally, cost-of-living adjustments should be made by defining each of the separate needs which make up the universe of human physical need—food, shelter, clothing, and the like—and pricing each one separately for different

regions of the country for which there are known to be cost-of-living differences. The result would be different 100 percent poverty income thresholds for persons and families living in different cost-of-living regions of the country.

FOURTH FLAW: MEASURING THE HARDSHIP OF THE POOR

In their paper, Bishop *et al.* are more attentive to and present more statistical evidence on the removal of the flaw in the official 100 percent poverty standard relating to its not being sensitive to changes in the distribution of income among the poor. The authors use the Sen index to correct for this defect in the official poverty estimates.

In brief, the Sen index adjusts the official poverty estimates of the number of persons in poverty by the extent to which:

- 1 the incomes of the poor fall short of the official poverty income threshold
- 2 the distribution of income among the poor is more or less equal.

The Sen index is based on the premise that some of the poor are much needier than others and that it is necessary to take such differences into account in order to measure more accurately the meaning of poverty. The Sen index, in other words, probes poverty more deeply than does the official headcount standard.

Thus, the Sen index in effect modifies the official headcount statistics on poverty by taking account of differences in the hardship of the poor. The result is a rate which can be compared to the official poverty rate and which I call the "hardship-sensitive poverty rate."⁴ The two rates are equal when the income shortfall is zero and the Gini coefficient is zero. By virtue of the way in which it is constructed,⁵ the hardship-sensitive poverty rate cannot be greater than the official poverty rate.

The authors also converted both sets of estimates into index-number form. They ran their calculations for the years 1961 through 1996 on the following poverty thresholds: 50 percent, 75 percent, 100 percent, 125 percent, 150 percent, 175 percent, and 200 percent. For reasons which are specified in our discussion of the first flaw, our remarks here relate just to the estimates based on the official 100-percent of poverty threshold.

4 I do this because otherwise there could be unnecessary confusion between the authors' "Sen index" which refers to this rate of poverty which is sensitive to the hardship of the poor and their indexation of the "Sen index."

5 $S = H [I + (1-I)G_p (q/q + 1)]$ where S is the hardship-sensitive poverty rate, H is the official poverty rate, I is the ratio of the average income shortfall to the poverty line, G_p is the Gini coefficient of income inequality among the poor (my emphasis), and q is the number of persons officially counted as poor.

Their findings indicate that for the 1961–1996 period the hardship-sensitive poverty rate ranged from a high of 10.0 percent in 1961, when the official rate reached its high of 16.5 percent, to a low of 4.9 percent in 1965, when the official poverty rate also reached its low of 9.2 percent. Typically the difference between the two rates throughout this period was on the order of roughly 2:1.

The hardship-sensitive poverty rate has much to recommend it. It is particularly valuable in its index-number form where it measures changes from one year to the next in the *overall economic hardship endured by the poor population*. My personal preference is to pair it not with the official poverty rate but with the actual headcount of the poor which from year to year shows changes in the *total number of persons in the poverty population*. Progress toward the reduction of poverty must be measured in terms of the number of persons who are poor. The urgency with which we pursue that objective is determined importantly by how much economic hardship poor persons have to endure.

SUMMING UP

There are five points which bear repeating. First, defining poverty is a problem involving the normative concept of unmet human physical needs. It follows that the definition of poverty is inherently value-laden most fundamentally because it reflects the value systems of the persons who use it. Our task is to try to understand poverty better by probing it more deeply. This task requires us to apply any new definition of poverty and the definition in official use at the time to the same data and to compare the results in order to determine which of the two better matches our intuitive understanding of poverty. This work, carefully done, has the effect of little by little reducing the arbitrariness in the official definition of poverty and thereby contributes to the development of a better definition of poverty.

Second, it is time for poverty researchers to demonstrate how a poverty threshold which is some fraction or multiple of the 100 percent poverty income threshold removes the underlying flaws in the 100 percent threshold and why using such an alternative standard probes human physical needs more deeply and thereby represents an improvement over the 100-percent standard. Continuing to use such an alternative threshold without demonstrating its superiority simply leads to a proliferation of numbers on poverty which likely are more confusing than enlightening.

Third, there is a compelling case for expanding the definition which is used in collecting information on income from persons and families through survey research and which ultimately is matched against the official poverty income threshold to classify persons and families as poor/nonpoor. At the same time, the 15 different definitions already in use by the Census Bureau produce so many different

estimates of poverty as to make the overall issue of defining and measuring poverty appear to be even more arbitrary than is necessary. After more than 30 years of intense research on the poverty question, reaching agreement on the income definition to be used in survey research is long overdue.

Fourth, some adjustments for differences in the cost of living across the U.S. is called for. My preference is to introduce these adjustments at the same time the nonfood elements of human physical needs such as shelter, clothing, medical care are carefully defined and measured and are directly incorporated in the official definition of poverty.

Fifth, and last, a hardship-sensitive poverty measure would add substantially to our understanding of poverty because it measures what the current headcount does not: the intensity of the hardship of unmet human physical needs. I recommend that such a measure be added to the other tools for which the Census Bureau collects data every year provided we can avoid the proliferation of variations on the basic definition and of the numbers which have attended the development of the official poverty standard.

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