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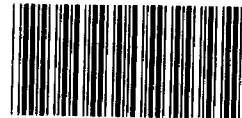
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STATEMENT OF
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BEFORE THE
SUBCOMMITTEE ON CENSUS AND POPULATION
COMMITTEE ON POST OFFICE AND CIVIL SERVICE
HOUSE OF REPRESENTATIVES
ON
EVALUATION OF POVERTY INDICATORS - METHODOLOGICAL ISSUES



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Mr. Chairman and Members of the Committee. It is a pleasure to be here today to report on the work this Subcommittee has requested the General Accounting Office to undertake--that is, the development of a methodology for evaluating proposed changes to poverty indicators and thresholds. In particular, you requested an assessment of the methodological underpinnings of the procedures for valuing noncash benefits such as food, housing, and health care. For part of this effort, we have examined methods that have been applied in the past to assess changes in components of this extremely important indicator of national well-being. Today, I want to bring you up to date on the status of our work.

Specifically, I would like to describe the extent to which technical concerns have been raised on the issues and methods related to valuing noncash benefits; the nature of these concerns which we characterize as conceptual, operational or computational; and some tentative conclusions about results from our work to date.

To begin with, let me provide a bit of background. In 1980, the Congress urged the Bureau of the Census to develop procedures for representing the value of federally funded noncash benefits (such as Medicaid and food stamps) in its poverty assessments. In 1982, the Bureau published the first of several reports that illustrate how selected noncash benefits can be represented in the calculation of annual poverty rates. This work, known as Technical Paper 50, or TP 50, illustrated how the official poverty indicator based on income could be

augmented by including selected noncash benefits, which were valued by three methods (market value, recipient value, and poverty budget share).

It is clear from TP 50 and subsequent Bureau reports that how income is defined and the choice of one method over another make a real difference in conclusions about how many people are in poverty. In fact, the poverty rates in 1979 can range from 6.8 to 11.7 percent, depending on how income is defined and which method of valuing noncash benefits is selected. However, as we testified on April 18, 1985, our preliminary work revealed a number of areas in which the procedures used for each valuation technique may be subject to technical errors and may have a distorting influence on poverty indicators and thresholds. These errors could affect the poverty classification or eligibility of large numbers of individuals and families.

In April, we were able only to illustrate, in a preliminary way, some of these technical concerns. Our work since then has been aimed at mapping more comprehensively the extent and nature of the technical questions involved. While this work is still incomplete, we can now speak to the number of problems that have been identified, the nature of these problems, how they are believed to affect the three different methods for valuing noncash benefits, and what the Bureau has done about them. Our review at this point is based primarily on publicly available documents. As a result, it may not fully represent either all the issues or all the work already done or begun on these

issues. In addition, because our analysis is not yet complete, we have not had the opportunity to discuss the concerns raised with appropriate agency officials. Because of the urgency of identifying technical errors as soon as possible, we have chosen to focus first on problems and then later to assess strengths. Examining the qualities and limitations of past work is essential, of course, in developing a method for evaluating new approaches to valuing noncash benefits.

The Magnitude of Technical
Concerns Relative to Valuing
Noncash Benefits

TP 50, the Bureau's first publication on the three methods, appeared in 1982. Since then, the Bureau has published three additional reports: TP 51 in February 1984, TP 52 in August 1984, and TP 55 in August 1985. In these reports, the Bureau has been properly careful to point out and reiterate the strengths and weaknesses of its procedures. In particular, it has raised many issues it believes may create problems in interpreting the poverty indicator. This type of self-critique is both unusual and admirable; it is also essential in uncharted areas such as this and represents exemplary practice on the part of the Bureau. However, self-critique is not enough. Independent evaluation is also an obvious requirement for a balanced assessment of the Bureau's approach and progress.

We have identified, in addition to these publications, more than 75 publications by non-Bureau authors representing colleges and universities, other government agencies, private research

firms and special interest groups. Looking across all these, we found that the authors have raised technical questions not only about the three Bureau methods (market value, recipient value, and poverty budget share) but also about four crosscutting topics. These four topics are valuation methods in general, the definition and measurement of income, the definition and measurement of poverty, and the poverty threshold. I should point out, however, that few of these independent authors raised direct questions about the Bureau's methods. In most cases, they discussed the valuation of noncash benefits but abstained from direct analysis of the Bureau's approaches.

What do we mean, then, by "direct questions"? To illustrate, we testified earlier that about 28 percent of all Medicare payments are accounted for as services rendered to persons who die within a 12-month period. Since the valuation method for medical benefits assigns an average benefit level to all program participants, the extensive and expensive services provided to those who are in the terminal period of their lives are "credited" to the well-being of all participants, many of whom may have received no actual services during the 12 months. This should, we think, raise the direct question, What are the consequences of using average versus actual benefits received, in valuing Medicare benefits?

But as I noted earlier, we have found few detailed technical criticisms of the Bureau's reports published by independent analysts. The exceptions include Beeghley (1984), who argued that the Bureau's valuation methods count income

twice, implicitly use two different definitions of income, and result in findings that are illogical and unrealistic. Included also is a publication by the Congressional Budget Office (CBO, 1985), which has directly criticized the Bureau's methods. CBO also points out that thresholds are set improperly (i.e., they overstate needs based on normal expenditures of low-income households) and the basic concept of a poverty rate cannot measure degrees of poverty.

Putting together questions such as these from all sources--the Bureau, others, and ourselves (that is, GAO)--we have identified as many as 52 different concerns. Let me stress that we are counting the issues that have been raised, not the number of times they have been raised. That, of course, would be a much larger number. And let me stress that the Bureau itself has reported more than half of the published concerns.

The fact is, then, that despite the paucity of independent technical review of the Bureau's proposed changes, 52 different concerns have been raised. This tentative finding indicates two things: consensus has not been established in the publicly available literature about the appropriateness of the Bureau's methods and further evaluation is a necessity.

How Can We Characterize These Concerns?

These concerns can be roughly grouped into three types: conceptual, operational, and computational. Looking first at the conceptual concerns, we find that these mostly reflect issues of definition or perspective. For example, one conceptual concern has to do with the market value technique and

the possibility that it may overvalue the worth of a benefit, particularly medical benefits for the elderly.

In all, about 44 percent of the concerns we found (that is, 23 of the 52) are conceptual. These are listed individually in table 1. Conceptual concerns almost always have serious implications, because they suggest that choices of what is being measured and how to assign values can yield misleading information if the different consequences of these choices have not been carefully examined.

Turning next to operational concerns, we find that these mostly involve questions of sound practice in data collection. One example of operational concerns involves the "cell-matching procedure" used to estimate "normal" expenditures in the recipient value method. The cell-matching procedure involves tabulating the expenditures of selected groups of unsubsidized recipients on some commodity and assigning these values to "matched" respondents to the Current Population Survey who receive the subsidized commodity. The cell-matching procedure used may thus risk selectivity bias--that is, instead of estimating normal or typical expenditures, it may be exaggerating larger or smaller expenditures. Another example of the operational concerns is that underreporting income in the data bases that are currently used may lead to considerable error in the poverty rates built on these data bases. Specifically, underreporting may differ notably for different population subgroups but this may not be reflected in the overall rate of underreporting.

Table 1

Conceptual Concerns

1. Market value method overvalues benefit worth, especially medical benefits for the elderly
2. Medical market values for the elderly "eliminate" the elderly from counts of the poor in some states
3. Market value method lacks "caps" (limits) for need/benefit categories (especially medical)
4. Recipient value method undervalues transfers relative to earned income
5. Recipient value method overestimates benefit worth because normal expenditures are calculated at a resource level that equals money income plus the market value of all types of noncash transfers
6. Poverty budget share captures the "substitution" effect but not the "income" effect of in-kind benefits
7. Public or government noncash benefits should or should not be included in official definitions of income
8. Private noncash benefits should or should not be included in official definitions of income
9. Calculation of income should be on a pretax (vs. posttax) basis
10. Medicaid expenditures for institutionalized populations should or should not be included in the income of the noninstitutionalized
11. Absolute definition of poverty ignores the well-being of poor relative to national norms
12. Poverty thresholds should be consistent with income definitions
13. Current food-to-income "multiplier" is not appropriate when noncash benefits are included in income definitions
14. Consumer Price Index does not adequately reflect changes in cost of living for the average low-income person
15. Changes in medical costs may be independent of changes in services
16. Assets are not included in official definitions of income
17. Adjustments for work expenses, leisure, etc. are not included in official definitions of income
18. Lifetime income should or should not be a basis for official income definitions
19. Current definition of poverty ignores other conceptualizations (consumption, subjective, sociocultural)
20. A single national threshold may be less appropriate than a set of separate thresholds for geographic areas
21. Medical needs of the elderly should be included in threshold for the elderly
22. Same valuation methods should be used to (a) determine need and (b) value noncash income
23. Official minimum-needs standards may be inaccurate and out of date

In our analysis of this type of question, we found that about 44 percent of the concerns (that is, 23 of the 52) deal with operational concerns. These are listed in table 2. The reasons these operational concerns are important is that they can account for serious distortions in the rates that are eventually reported. That is, as a result of dubious procedures for obtaining information, poverty indicators can misrepresent what is actually happening, even though the right things are being assessed.

Turning last to computational concerns, we find that these mostly involve issues in how data are analyzed. For example, one computational concern is the procedure used to replace negative subsidy values, found when subtracting subsidized housing rents from estimated market rents, with zero values. Another computational concern derives from the fact that the cell-matching procedure used in the recipient value approach suppresses typical variability; this makes benefit values seem more homogeneous than they may actually be.

In all, only about 12 percent of the concerns (that is, 6 of the 52) deal with computational issues. These are listed in table 3. The reason we think they are important is that they can cause systematic distortions in analyses of who is most affected by changes in the way poverty is estimated. Also, computational issues can be treacherous in that they are, at times, both highly technical and relatively difficult to detect.

Table 2

Operational Concerns

1. Insurance value is used for medical benefits (vs. services consumed)
2. Medical goods comparable to Medicare and Medicaid are difficult to identify in private market
3. Persons categorically eligible but not enrolled are not accounted for when the "population at risk" is estimated as persons ever enrolled or covered under Medicaid
4. Normal expenditures are a weak approximation of a utility function
5. Family (cell) matching procedure used to estimate normal expenditures risks selectivity bias
6. Constructing an adequate counterfactual group is difficult
7. Recipient value and normal expenditures method assumes that benefits in excess of normal expenditures have a value of zero
8. Consumer Expenditure Survey data used for recipient values are of poor quality
9. 1960-61 Consumer Expenditure Survey data used to calculate poverty budget share values are out of date
10. Quantity and quality of available benefit data are questionable
11. Quality of HCFA Medicaid data is poor
12. No adjustment is made for Medicaid benefit differences by race or residence
13. Private as well as public school children were counted in Current Population Survey as participants in the hot lunch program
14. Income is underreported in the Current Population Survey
15. Program participation is underreported in the Current Population Survey
16. Household (vs. family) should or should not be used as income unit
17. Multiplier used to calculate threshold may be inaccurate under current consumption patterns
18. Time period for which income is measured (short-term vs. long-term) may affect results
19. "Market basket" has been restricted to private goods and services
20. All persons receiving cash assistance have been counted as "recipients" of Medicaid regardless of whether they have received benefits or say they are covered
21. Medical benefits paid to deceased persons are included in average benefit value assigned to recipients
22. Current Population Survey population coverage may not be adequate
23. For most programs, the Current Population Survey data make no distinction between part-year and full year participation

Table 3

Computational Concerns

1. Variance of normal expenditures is suppressed in cell-matching approach (limitation of number of cells)
2. Some regression R^2 values are low (e.g., medical values for persons under 65 years old; $R^2 = 0.07$)
3. Imputation methods--missing data and benefit value--may not be adequate for poverty population
4. Poverty rate ignores the extent of income fluctuations around the poverty line
5. Average (mean) medical benefit may be less appropriate than alternative measures of central tendency
6. Negative values for housing subsidies were assigned a value of zero

Do the Proposed Methods Differ
in the Type of Concern
Associated with Them?

At this stage of our work, we cannot yet report to you on how serious these concerns may be, how much they may affect the different topics and methods, or in what order of priority they should be considered. We have noted that some of the 52 concerns are associated more with one method or topic than others are, as you can see from table 4. From a look at the table, it is clear that the fewest concerns--only 2--have thus far been raised about the poverty budget share method, and the greatest number of concerns--13--have been expressed about the definition and measurement of income. However, we also know that the seven methods and topics in table 4 have not equally received independent, critical attention. So a first point about this table is that it may reflect not real priorities but only variations in the evaluation that has been devoted to each of the methods and topics.

A second point from the table is that it shows variation, as well, in the type of concern about different methods and topics. It is mostly operational questions that have been raised about the recipient value method and valuation methods in general. The definition and measurement of income have drawn both conceptual and operational questions. And the poverty threshold has elicited primarily conceptual attention.

But let me emphasize again that the table reflects the concentration of attention and analysis to date. It does not

Table 4

Number of Concerns by Type

<u>Method or topic</u>	<u>Conceptual</u>	<u>Operational</u>	<u>Computational</u>	<u>Total</u>
Market value method	3	1	1	5
Recipient value method	2	5	2	9
Poverty budget share method	1	1	0	2
Valuation methods in general	1	9	1	11
Definition and measurement of income	7	5	1	13
Definition and measurement of poverty	2	0	1	3
Definition and measurement of poverty thresholds	7	2	0	9
Total	<u>23</u>	<u>23</u>	<u>6</u>	<u>52</u>

reflect our conclusions about the seriousness of the concerns or about which methods and topics should be given the greatest scrutiny. Indeed, we are as much troubled about the categories for which no concerns or very few concerns have been raised as we are about those that are filled with concerns.

For example, the results from the market value method are widely used and reported in estimates of poverty rates that include noncash benefits. But it appears that few researchers have raised technical concerns about the very difficult issues in assessing the computational strengths and limitations of this approach. In our future work, we will attempt to determine whether few concerns have been identified for a particular cell because there are none or because of neglect.

This means that our analyses will have to examine, one at a time, all the concerns raised to date so that they can be ranked for priority according to their seriousness and ease of resolution. Since our work involves a systematic study of the conceptual, operational, and computational issues related to the seven topics and methods, it is more than likely that we will identify some new concerns. However, we will be examining the strengths as well as the weaknesses of the methods and topics in order to put the concerns in a more comprehensive context and determine their relative importance.

Is Empirical Assessment Feasible?

It is intuitively obvious that some of the 52 concerns are likely sources of error. One example may be data quality (items 8 through 11 in table 2). Other concerns may seem

somewhat more arcane, and it may be harder to get a sense of how serious they are. In our opinion, a good way to assess the importance of a concern is to make an empirical analysis of its consequences. For example, when we see the range within which the poverty indicator may be expected to fluctuate as the result of a particular concern, we can get a sense of how important attention to the individual method may be.

We have not found many instances of the empirical analysis of these questions. In our view, we think it would have been both feasible and useful to have conducted such analyses. Indeed, the bulk of the critiques we have reviewed have not only raised few direct questions, as I have already noted; they have also performed few reanalyses. Their essential function has been to raise points of potential shortcomings.

However, we have been able to locate some empirical analyses that do demonstrate the feasibility of empirically examining some of the concerns--that is, that the magnitude of their influence can be examined. These empirical studies suggest that certain of the concerns may represent serious problems. For example, we compared the poverty rate estimates resulting from the Bureau's reports with those reported by independent analysts who made conceptual, operational, or computational changes (or all three together) along the lines suggested by the list of concerns. Table 5 shows the results of this comparison.

Table 5

Comparison of Results from Previous Studies
Using the Market Value of In-Kind Transfers

Study	Data set, income year	Poverty rate (persons)		Reduction in poverty
		Prior to in-kind transfers	After in-kind transfers	
FOOD, HOUSING, AND MEDICAL TRANSFERS				
Bureau ^a Paglin ^b	CPS, 1975 Grouped CPS, 1975	12.3% 10.0	— 3.6%	— 64.0%
Bureau ^a Technical Paper 50 ^c	CPS, 1979 CPS, 1979	11.7 11.1	6.8 6.4	41.9 42.3
Gottschalk ^d	CPS, 1979	—	6.1	—
Bureau ^a Hoagland ^e	CPS, 1980 Aged CPS, 1978 aged to 1980	13.0 8.6	7.9 3.9	36.7 54.6
Bureau ^a Stockman ^f	CPS, 1981 CPS, 1981	14.0 14.0	9.0 8.5	35.7 39.3
FOOD AND HOUSING TRANSFERS ONLY				
Bureau ^a Technical Paper 50 ^c	CPS, 1979 CPS, 1979	11.7 11.1	9.7 9.4	17.1 15.6
Bureau ^a Hoagland ^e	CPS, 1980 Aged CPS, 1978 aged to 1980	13.0 8.6	11.1 5.9	14.6 31.3

^aThe Bureau's estimates are based on pre-tax family income with no adjustment for income underreporting.

^bEstimates include some adjustment for taxes paid and for household income sharing between unrelated members of the same household.

^cTP50 estimates are based on pretax household income with no adjustment for income underreporting.

^dAdjusted for income underreporting and taxes paid.

^eEstimates are adjusted for income underreporting.

^fStockman's procedures are similar to the Bureau's.

Source: Bureau of the Census, Technical Paper 50, p. 93, and Technical Paper 52, p. XIII; U.S. House of Representatives, "Poverty Rate Increase," pp. 50 and 237.

The clearest finding from the table is that poverty rates can differ from the Bureau's reports by as much as 5.2 percentage points. The differences depend on what factors are included in the analysis (such as adjustments for underreporting and taxes paid) and on whether households or families are the unit for which income is measured. But 5.2 percentage points is nontrivial: it would have meant roughly 11 million people, for example, in 1980. Further, depending on the method that is used for valuing noncash benefits and on the factors included in the analysis, the pre and post in-kind transfer poverty rates differed by as much as 6.4 percentage points, or roughly 14 million people in 1980. Further, it should be noted that poverty rates can change by as much as 64% or as little as 15% depending upon what benefits and factors the analyst uses in the estimation procedure. Most of the larger differences between the poverty reduction estimates are accounted for by the inclusion of medical transfers.

We recognize that some of the 52 concerns may not be tractable, particularly conceptual issues such as those associated with absolute rather than relative approaches to poverty (item 11 in table 1). However, we estimate that at least half of the concerns already identified are tractable. In our opinion, empirical analyses like those we have just cited illustrate that the technical concerns are important insofar as they lead to notable differences in estimates of the poverty rate.

How Have the Identified
Concerns Been Dealt With?

As I have emphasized, 36 of the concerns that have been raised were identified by the Bureau itself in TP 50, published in 1982. We report now on the extent to which the Bureau has dealt with these concerns. Reviewing the Bureau's technical papers 51, 52, and 55 (published in 1984 and 1985), we found that some of the concerns raised in TP 50 were not mentioned again in later reports; some others (the majority) were raised at least briefly in all reports, but only 1 (or 2 percent of the concerns) has actually been examined empirically (so the user could know more about the extent of the problem). In other words, our review of the Bureau's published work on valuing noncash benefits to date indicates that the Bureau has done little to address directly the concerns it has known about since 1982 or earlier.

A major focus at the Bureau which does appear to directly address some of the concerns is the development of the Survey of Income and Program Participation (SIPP). SIPP is intended to provide improved information on economic well-being by expanding and revising a set of questions on income sources and amounts, program participation, taxes paid, and a variety of related matters such as work expenses and housing costs. If successful, SIPP could provide not only more extensive data but also data of higher quality on the economic situation of U.S. families and individuals. Eventually, it would replace the Current Population Survey (CPS) for income and poverty estimation.

It is conceivable, given the extensive development effort the Bureau has devoted to SIPP, that rather than allocating scarce resources to the CPS-based problems identified in TP 50, the Bureau is exploring these problems as they relate to SIPP. If this is the case, then it is fair to ask, To what extent does the Bureau's work on SIPP shed light on the issues posed in Technical Paper 50?

When we compared our list of concerns with the contents of papers on SIPP that the Bureau has made available, we found that of the 36 issues identified by the Bureau in TP 50, at least 5 may be directly addressed by SIPP. For the most part, the work on SIPP has been devoted to achieving comprehensiveness with respect to data on cash income and program participation and to assessing the quality of these data (specifically, item 9 in table 1 and items 10, 14, 15, and 23 on table 2). We do not at all want to minimize the importance of this work. Clearly, SIPP may overcome many of the limitations of CPS data by providing, for example, data on the taxes that families pay as well as data on part-year versus full-year program participation. At the present time, however, the Bureau's work on SIPP is not directed toward many of the remaining issues that it has identified in its own publications as relevant to the valuation of noncash benefits and related components of the poverty indicator.

The Bureau has focused additional attention on developing methods of valuing the in-kind benefits that are provided by private sector employers. However, this work relates specifically to only one issue raised in Technical Paper

50--that is, whether to include private noncash benefits in the official definition of income (item 8 in table 1).

Thus, having surveyed the Bureau's technical paper series, as well as potentially related research on which the Bureau has focused its recent efforts, our tentative finding is that the Bureau has spent a minimum of effort toward assessing the importance of the broad range of issues raised in Technical Paper 50 and resolving them. But, we have yet to confirm, through formal conversations with the Bureau, whether they have actually assessed the importance of those concerns and resolved them. We can confidently say, however, that these assessments, if they were conducted, have not been reported in their technical papers.

What Are Our Tentative Conclusions?

We draw three tentative conclusions based on our work to date. First, there has been little direct, in-depth technical analysis of the three methods for valuation of noncash benefits and of valuation methods in general, even though a wide array of technical concerns--conceptual, operational, and computational--have been raised about them. Much of the detailed criticism that has been published is reported in the Bureau's own 1982 report, and there is a noticeable paucity of direct independent review.

Second, conceptual and operational concerns have, relatively speaking, received most of the attention in the publicly available literature while the computational issues, which are often harder to ferret out, have received very

little. That this is so may be an accurate reflection of the true seriousness of the concerns, or it may reveal the inaccessibility of the information that would permit addressing them.

Third, the Bureau has made little effort to test the robustness of its own methods, at least in terms of publishing information on the extent and severity of the many questions it had identified in 1982. Further empirical analysis and greater information distribution are needed to confirm the extent to which the existing concerns are serious as well as to identify potential problems with other aspects of the formulae that have not been critiqued in detail. Empirical examination may be difficult, but it is feasible. In our opinion, the Bureau may be in the best position to perform these assessments. But it is also true that researchers outside the Bureau could contribute substantially to this effort.

This concludes my prepared statement, Mr. Chairman. I would be happy to respond to questions.

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