

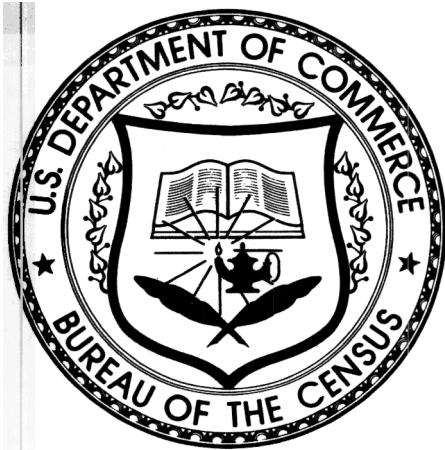
BUREAU OF THE CENSUS

Conference on the Measurement of Noncash Benefits

December 12–14, 1985

Fort Magruder Inn & Conference Center
Williamsburg, Virginia

Proceedings... Vol. I



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Clarence J. Brown, Deputy Secretary
Robert Ortner, Under Secretary
for Economic Affairs

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PREFACE

The Bureau of the Census held a Conference on the Measurement of Noncash Benefits on December 12 to 14, 1985 in Williamsburg, Virginia. The impetus for the conference was the strong growth in noncash benefits during the past two decades and the recent publication by the Census Bureau of experimental estimates of the number of persons in poverty when income is defined to include the value of certain government noncash benefits. These estimates were published in Technical Papers 50, 51, 52 and 55. As indicated in our statement of purpose:

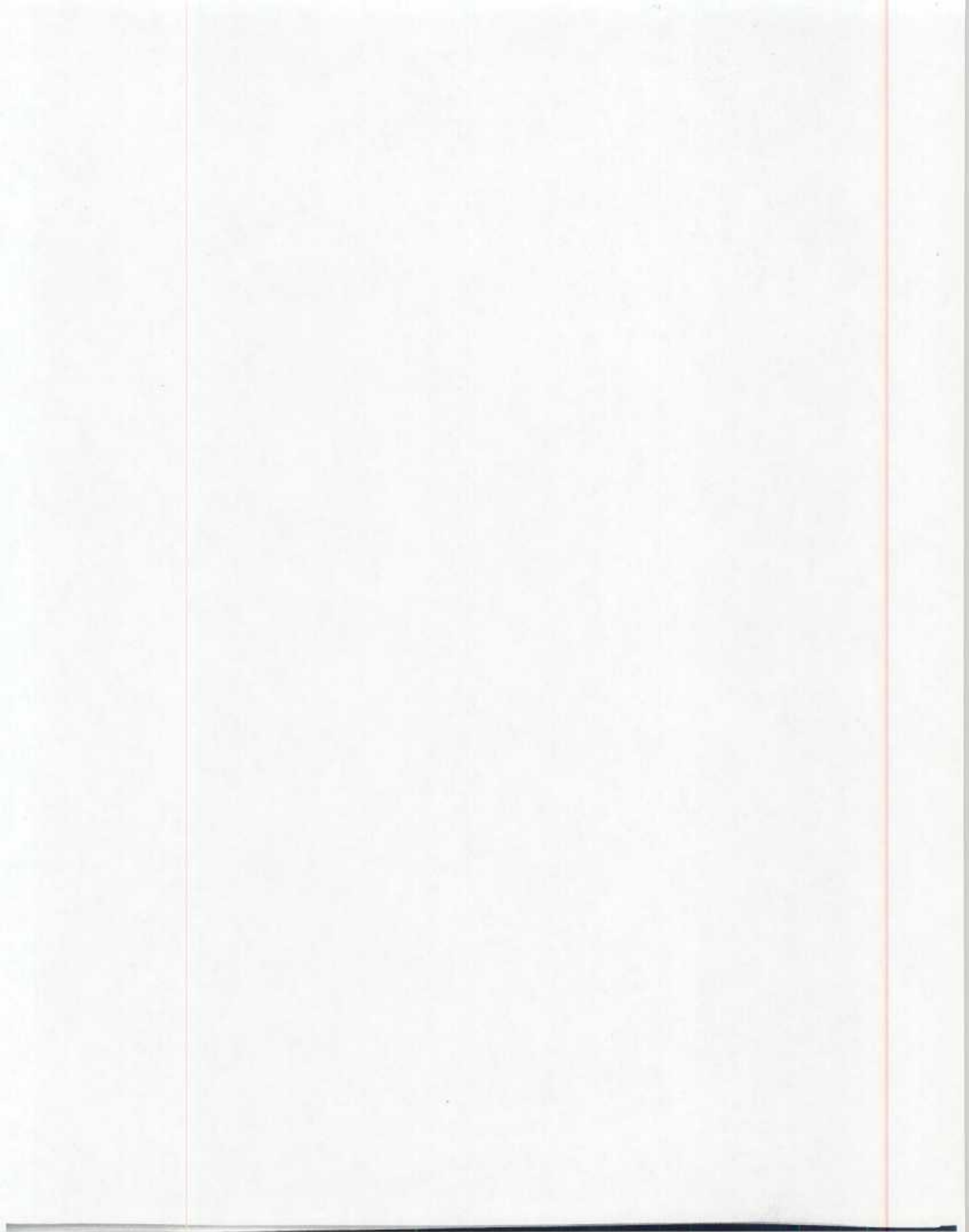
"The conference was designed to provide a wide variety of academic, private sector, and government researchers, as well as representatives from public interest groups and interested Congressional committees, an opportunity to learn about the issues involved and to make their own views known to the Census Bureau."

The conference was attended by 115 persons, including 23 from the Census Bureau. The 92 participants from outside the Census Bureau included 40 persons from universities and nonprofit research organizations, 16 persons from public interest groups and other private sector organizations, and 36 persons from other government agencies and Congressional Committees.

The format included presentation of papers by authors on four major topics, comments by two discussants on each paper, and rejoinders by the authors. Following the presentations, the participants broke into five discussion groups in which specific issues were discussed in greater detail. The conference concluded with a plenary session in which rapporteurs from outside the Census Bureau summarized the findings and conclusions from each working group, followed by a period of open discussion in which all attendees were encouraged to make their views known.

We want to thank every one involved in making the conference a success; the organizers, speakers, discussants, participants, rapporteurs, staff, and the National Science Foundation which provided partial financial support for this effort.

The proceedings are being published in two parts. This volume includes the formal presentations made at the conference; that is, the introductory and concluding remarks made by the executive staff of the Bureau, the four formal papers presented at the conference (including subsequent revisions by the authors), written comments by the discussants, and other relevant material about the conference. An edited transcript of the discussions that took place in the working groups and the plenary sessions will be published in a separate volume.



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Welcome Address

John G. Keane
Director
Bureau of the Census

I welcome you on behalf of the Census Bureau. We are glad that you are here at this technical conference. I underscore those words technical conference. We need your participation and I know we will have it. We value your views and I know we will get them.

The first line of the Census Bureau mission reads as follows: "In its best interests, a civilized nation counts and profiles its people and institutions". I say to you that this Conference on the Measurement of Noncash Benefits fits well within that opening line. Certainly the counting and profiling of the people. That is what we are about.

Later on in that 56-word mission statement are two words...only two words...but a lot of meaning. The words are "invite scrutiny". It has been a long-standing practice of the Census Bureau to invite scrutiny. Now we have formalized that invitation in our mission statement. And so I say to you, as I scan this illustrious group, we invite your scrutiny. We have tried to put together a balanced scholarly group interested in this important topic. There is about everyone here but the press. The press was not invited. Therefore you can truly be candid with each other and with the Census Bureau.

There are two other perspectives to mention before we start our work. One is the notion of who gains from noncash benefits. It is perhaps easy to get mired down in the lower-income spectrum, or that range of the overall income spectrum. Let us not be ensnared by that in our discussions. Let us realize again that it applies up and down the income line and that we should discuss the whole spectrum.

The second area is to clarify and identify the responsibility for defining poverty in this country. The Office of Management and Budget has that responsibility. The Census Bureau does not define poverty. Many who should know better sometimes say we do. Others who do not know better, I hope, do so now. I stress again that the Census Bureau does not define poverty.

Those of you who may not want to take a lot of notes should know that there will be proceedings. Each of you will get a copy. We have retained stenographic services to make sure that all of the deliberations are recorded and we will reflect those in our proceedings. It will probably be a two-tier proceedings, that is, one with the four formal papers (including revisions by the authors) and the written comments by the discussants. The second volume will contain edited transcripts of the working group discussions as well as the discussions that took place in the plenary sessions.

Now it's time for some "thank you's". I thank all of you who have come to participate. You will all have that chance. I also thank the Conference Committee. And I thank the National Science Foundation for its funding support.

At this point, I wish us the collective success that, in my judgment, is commensurate with the significance of the topic we deliberate.

Statement of Purpose and Review of Past Work

William P. Butz
Associate Director for Demographic Fields
Bureau of the Census

Welcome to the Census Bureau's first Conference on the Measurement of Noncash Benefits. We are really delighted to have you here. As many of you know, it has been a long and sometimes arduous road to this Conference, and we thank those who helped make it a reality. We also thank all of you in advance for your contributions over the next two days, and in the future, as we work together to design and produce a technically sound family of statistics for this important area of policy concern.

Let me begin by telling you what the Conference is not. The Census Bureau is not here to tell you and the user community what we are going to publish next year. Rather, we are here to learn from you what should be included in our reports now and in the more distant future. The Census Bureau is not here to tell those of you who are expert economists, statisticians and policy analysts what concepts and technical approaches should be employed to produce sound data. Rather, we are here to get your advice on the best methods and concepts to generate technically sound data that is relevant to the research and policy questions you face in your day-to-day work.

Reflecting our needs for expert assistance and advice, the Conference is a blend of persons from a variety of backgrounds and with a variety of interests. Many of you are experts on theory, methods, data interpretation, or all three. Others have particular program or institutional interests in the policy area that border on the technical and conceptual issues. All of you are vital to the successful initiation and growth of this enterprise.

Our dialogue should begin from a historical context so, first, I will briefly review the background of the income statistics produced by the Census Bureau and the experimental work we have done on the valuation of noncash benefits. Later I will give a general overview of organization and procedures of the Conference and of our plans to publish the proceedings and your recommendations.

The Consumer Income data series began in 1947. When you compare the early reports to the latest releases, as many of you have done in your research, it is hard to believe that they are part of the same series. There has been a remarkable evolutionary change over the past 38 years in the quality and quantity of data as the Census Bureau responded to the changing needs of data users. This Conference is another step in that evolutionary process.

Back in 1947, noncash benefits were almost insignificant. For the most part, people were paid in cash for their labors. Only a few people were concerned with perks, such as paid insurance, company cars, and expense accounts. Nowadays, more than three-fifths of the work force receive one or more noncash fringe benefits which have become a more and more important aspect of remuneration. This has also been true for the poor; 38 years ago there were no food stamps, no Medicaid and no school lunch programs. Today aggregate means tested noncash assistance amounts to more than \$50 billion, or almost twice as much as Federal cash assistance.

In 1980, perhaps because of the large sums of Federal monies involved and the proliferation of programs, the Congress directed the Secretary of Commerce to develop and publish overall estimates of noncash benefits accruing to people with incomes below the poverty level. To provide the necessary data, the income supplement to the March 1980 Current Population Survey was modified to include questions about the receipt of the major noncash benefits.

Dr. Timothy Smeeding, then working at the Census Bureau as a Fellow of the American Statistical Association and the National Science Foundation, prepared a study that was published in 1982 as Census Bureau Technical Paper 50. His exploratory analysis showed what the poverty rate would be for various groups within the population under three valuation techniques for three different combinations of noncash benefits for a total of nine different measures. The most comprehensive measure added to money income the value of five major government programs: food stamps, school lunches, Medicaid, Medicare, and subsidized housing.

Although many found these new experimental tabulations useful in their analyses, others sharply criticized them. These criticisms often centered on the treatment of medical benefits, which allegedly distorted the poverty estimates, especially for the elderly. For example, applying the market value approach to medical benefits made it practically impossible in certain states to be elderly and poor at the same time, because the insurance value of Medicare alone could raise a person above the poverty line. The large values assigned to Medicare and Medicaid programs meant that some persons would not be classified as poor, even if they had no other cash or noncash resources. There were also criticisms of an approach that counted the cost of medical care received by institutionalized persons as income received by the noninstitutionalized population. Some even misread the Technical Papers and concluded that if a person had, say, a \$14,000 operation paid for by Medicare or Medicaid, that amount was attributed to the person's income and said in effect, that the sicker you were the richer you were. This is incorrect, of course. The experimental estimates of the value of medical care have been and are based on insurance values, not actual expenditures. Also among the family of measures were three estimates that excluded all medical benefits. Other tabulations excluded institutional medical benefits. The Smeeding report and the estimates it contained were unofficial and experimental. Since then, we have published Technical Papers updating the experimental estimates annually through 1984. The most recent Technical Paper is in your conference packet. I want to emphasize that the Technical Paper Series is only a beginning. More research and investigation is needed before a consensus is reached on the adoption of concepts and methods for a technically sound noncash series. That is why we are having this Conference; we need your guidance, comments, and suggestions.

Moving on to the larger issues of private noncash benefits, the Current Population Survey (CPS) does not collect sufficiently detailed or comprehensive information on employer-provided noncash benefits to allow us to produce a general income series comparable to the experimental poverty series. The Survey of Income and Program Participation (SIPP), which includes questions on employer-paid health insurance and pension plans, as well as questions concerning whether or not workers are covered by life insurance, receive expense accounts, have use of company cars, and are provided with meals and lodging as part of their job, should help us in the development of a broader range of noncash benefits reports.

Of course, no survey can tell us how to value noncash benefits to workers. We have started preliminary research in this area. Paul Ryscavage, of my staff, and

Sheldon Haber, of George Washington University, are developing procedures for valuing selected employer-provided noncash benefits. They are developing a methodology for estimating fringe benefits for individual workers based on SIPP data, a Bureau of Labor Statistics Survey on employer expenditures, and national income data.

After that brief introduction let me describe how we will proceed for the next two days. We have commissioned four papers for this Conference. They will be presented tomorrow morning. After each presentation, two discussants will give their views on the paper and the topic. The authors will then have an opportunity for a rejoinder which I imagine they will all need.

After the presentations, we will break up into five smaller groups in the afternoon. Each group will discuss all four papers and other specific questions. On Saturday morning each group will present a report on its discussions. We will have a court stenographer at each working group as well as the plenary sessions to prepare a verbatim transcript which will be used to prepare a summary of the proceedings to be published by the Census Bureau. The proceedings will include all of the papers, the written comments of the discussants, as well as a summary of the discussions, rejoinders, and reports from the five working groups. Everyone will be heard and what you say will be documented.

The first paper will be given by Lawrence Summers and David Ellwood of Harvard University. It is entitled "Measuring Income: What Kind Should Be In?" This presentation will provide a discussion of what we are measuring as income and, conceptually, what should be included in income measures for various uses. This varies depending on the use of the data for different purposes: marketing, academic, legislative, or analytical. This is the pervasive topic of the Conference. It enters into all aspects and uses of our income series. There are probably as many points of view on this topic as there are users and uses of the income data. And I expect that this topic will generate much discussion and provide the Census Bureau with a better insight into how you, our data users, relate to the data and how you define your data requirements. Albert Rees of the Sloan Foundation and Alan Blinder of Princeton University and The Brookings Institution are the discussants.

Barry Chiswick of the University of Illinois at Chicago is presenting the second paper entitled "Evaluation of Census Bureau Procedures for the Measurement of Noncash Benefits and the Incidence of Poverty." The Census Bureau has used three experimental methods for valuing noncash benefits and done so for three sets of benefits. One point of unanimity is that not one of the nine approaches was trouble-free. It often seems that users would like to fine-tune the measurement approach to fit their individual requirement. Obviously, this is impossible. Therefore, from Barry and from you, the Census Bureau is looking for cost-effective ways of producing data series that best meet the requirements of all data users. Please make your views on this known at the working groups. Henry Aaron of The Brookings Institution and Edgar Browning of Texas A & M University are the discussants on Barry's paper.

Our third paper is entitled "The Statistical Measurement of Poverty." Michael Ward of the Unicon Research Corporation is the author. His paper addresses how alternative measures of income, including those that include the value of noncash benefits, relate to each other. This paper also will relate income measures to their uses, poverty determination being the most prominent. Our discussants are June O'Neill of The Urban Institute and Eugene Smolensky of the University of Wisconsin.

The final paper, titled "Alternative Poverty Measures and the Allocation of Federal Benefits," is the joint effort of Eric Hanushek, now at the University of Rochester, and Robertson Williams of the Congressional Budget Office. This paper looks at the implications for assistance programs of changing the definition of income. This issue includes not only the Bureau's statistical definitions of income and poverty, which are used in some Federal assistance programs, but also the Office of Management and Budget's poverty income guidelines and their definitions of income which are primarily used for program eligibility for individuals and families. One of the discussants is Kenneth Clarkson of the University of Miami, the other was to be Wendell Primus of the House Ways and Means Committee. The Ways and Means Committee is a bit busy these days and Wendell called to tell us that he would not be able to get here. But we are very fortunate that Patricia Ruggles of The Urban Institute has agreed to discuss this paper.

Tomorrow, each of you will participate in one of five group discussions. Groups have been kept small (about 25 persons) so that each member will have an opportunity to have his/her views heard, and in the interest of saving time, group assignments have been set up in advance. Each group will have a rapporteur from outside the Census Bureau who will summarize and present the group's findings and conclusions to the plenary session on Saturday morning. Census Bureau people have been designated as group leaders.

Thank you again for joining with us in this important early stage of the creation of a new and important initiative in socioeconomic statistics.

**STATISTICAL
DEFINITION
OF
INCOME**

Authors

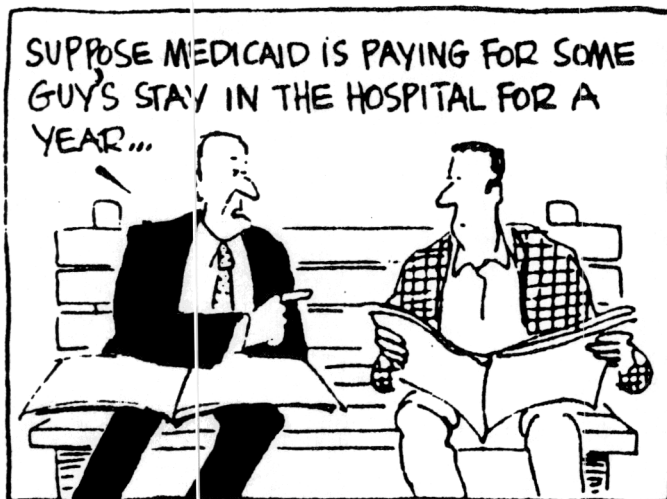
**David T. Ellwood
Lawrence H. Summers**

Discussants

**Alan S. Blinder
Albert Rees**

Measuring Income: What Kind Should Be In?

David T. Ellwood and Lawrence H. Summers
Harvard University



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Measurements of the distribution of income are central to the evaluation and formulation of economic and social policies. Annual reports of the distribution of income are widely monitored as indicators of the success or failure of government policies. The way in which these statistics are constructed is therefore of more than just academic interest. It influences the way in which we judge our success as a society in achieving widely shared goals of equity and efficiency.

Inevitably, a single measure of the distribution of income will be arbitrary and will obscure certain dimensions of the true distribution of well-being. More information will always be better than less if there are no costs to gathering and assimilating it. But many of those concerned with the distribution of income will have little patience for statistical debates and will focus on a single set of official income estimates and associated poverty statistics. It is therefore also inevitable that public perceptions of the economic equity will come to depend critically on whatever income concepts underlie official Census calculations.

The central role of official definitions in framing political debate is well illustrated by the well known history of the development of the poverty line. The official definition of the poverty line was based on studies of the money needed to maintain a minimally adequate diet in the 1950s. A multiplier reflecting the fraction of money spent on food by average families of various sizes was applied to the food budget, and this was labelled the poverty line. This definition is still used despite the documentation of problems with the original calculations and substantial changes in budget patterns of the poor and non-poor. And it cannot be denied that the official report of the number of persons under the poverty line is by a wide margin the single most important fact influencing judgements about anti-poverty efforts.

The statistical definition of income for official purposes clearly matters. How should it be chosen? What should it be? This paper offers some reflections on these issues. A great deal of work has been done exploring the implications of alternative statistical definitions of income for the income distribution. Pioneering work by several authors, including Smolensky et al. (1977), Browning (1976), Paglin (1980) and most notably Timothy Smeeding (1982), have greatly enhanced our understanding the role of noncash benefits in income. Rather than reviewing this work, which is summarized in Smeeding (1982), we focus on the prior question of what definition of income is appropriate given the uses to which official Census income distribution numbers are put.

An a priori approach reduces the inevitable role of political preferences and may help to insure consistency of principle in the definition of income. A direct corollary of this approach is that the existing definition of the poverty line ought not to drive our statistical definition of income. The poverty line ought to be drawn in recognition of what is or is not included in income.¹

The paper is organized as follows. Section I lays out some issues of principle involved in the statistical definition of income. We argue in particular that a principled middle ground must be found between the "only cash counts" concepts that underlie current definitions and the "overall well-being" concepts that seem to

¹The Poverty Budget Share (PBS) approach to valuing in-kind benefits, though very appealing for defining the number of poor persons, is an example of where the poverty line definition drives the treatment of in-kind benefits.

underlie some suggestions for reform. An alternative set of principles is suggested and defended. The next four sections discuss the appropriate treatment of taxes, nonmedical in-kind benefits for the poor, medical benefits, and capital income. Section VI concludes the paper by discussing the implications of our conclusions for the measurement of poverty and directions for future development of information on the income distribution.

HOW SHOULD INCOME BE DEFINED?

Most economic discussions of income measurement start with the Haig-Simons definition of income as the sum of consumption and the change in net worth. Unfortunately this definition provides little guidance in resolving the inherent tensions of formulating a statistical definition of income for purposes of measurement. There is a conflict between the goal of accurate measurement of a well defined concept, and the desire for a measure which corresponds at least imperfectly to what seems socially relevant. These tensions may be illustrated by considering two plausible but what we believe are unacceptable sets of principles for the statistical definition of income.

A first position is that "only cash counts." Something like this position seems to underlie current official statistics which include government transfer payments but exclude largely fungible awards of food stamps and include Social Security taxes paid by workers but exclude Social Security taxes paid by their employers. At a superficial level this definition may be defended by claiming that cash income is what is meant by the term income and that it is relatively easy to define and measure. Moving away from the cash concept places us at the top of a potentially very slippery slope leading down towards confusion.

But precision of definition and relative ease of measurement are necessary but not sufficient conditions for a proposed income definition. We must define income in a way that corresponds to something we actually care about. We do not care, to a first approximation, whether people purchase food with government checks or government food stamps. Nor do we care whether taxes are said to be levied on employers or their employer. A cash concept will lead to the appearance of inequity where it is not present. The income distribution will depend on the form that assistance takes even where form is functionally irrelevant. A cash-only definition, therefore, seems to us and most other outside observers to be untenable. The concept of individual well-being must play some role in a proper income definition.

A superficially attractive alternative to the "only cash counts" concept is the "overall well-being" concept. This definition might be explained and defended as follows. The goal of the distribution of income is to reflect the distribution of well-being measured in dollars. It makes no difference whether or not people are provided with cash which they use to purchase goods or whether they are directly provided with goods. Therefore the appropriate measure of income is the sum of cash income and the amount which people would have been willing to pay for all other goods and services that are provided to them. Thinking along these lines appears to lie behind research efforts to estimate the value of in-kind benefits to recipients and then to include them in measured income.

But if the goal is to measure overall well-being, there is almost no limit to what could be included as income. Public schools represent a publicly provided service which most people would be willing to pay for. Publicly provided recreational or security services clearly influence well-being. Those earning their income by working 20 hours a week have more leisure than those who must work 40

hours. Yet these omissions in our current definition are rarely criticized and proposals to include them generate little support. Such examples make the point that when we think about the income distribution we have in mind a measure of something more specific than overall well-being.

An Income Definition

A middle ground must be found between the purely cash concepts which underlie current definitions and the hopeless task of measuring overall well-being. We propose the objective that income statistics measure distribution of the potential material well-being. The key element of this definition is that it is intended to measure well-being only within a certain sphere--that of material consumption. It avoids inconsistency by calling for the inclusion of all benefits which increase material consumption regardless of whether or not they come in cash form. At the same time, it provides a criterion for determining which of the many facets of existence that affect individuals' happiness should be included in the income definition. According to this definition government provided food should affect measured income because food obviously affects material well-being quite directly. Public efforts to reduce air pollution probably do not contribute directly enough to material consumption to be included.

Our proposed principle for the statistical definition of income is consistent with the ultimate objectives the income distribution numbers serve. Perhaps their single most important use is in estimating the number of persons in poverty. Although the term poverty carries with it a connotation of deprivation along many dimensions, the government has chosen to define poverty only along the material spectrum. The current poverty line attempts to measure the minimal expenditure necessary to attain a minimally adequate material standard of living. More generally, income distribution statistics are used to reach judgements about the distribution of material well-being in the population.

Economic theorists' concept of separability may provide a way of understanding this definition. Our proposed statistical definition of income implies that individuals' utility functions are separable between utility producing private goods consumption, and other sources of utility. The distribution of income should then be thought of as attempting to measure the distribution of the private goods consumption piece of individual well-being. While the assumption of separability is strong, without some such assumption there is little basis for making sense of income measures that do not try to grapple with all sources of human happiness. We adopt the separability assumption not because we believe its empirical accuracy, but because of the need to find a theoretical construct corresponding to the thing that income statistics seek to measure.

Implications

This concentration on material well-being does not resolve all of the difficult issues in deciding what ought to be included in measured income. It offers only limited guidance in deciding how to value capital assets and noncash benefits with an important time component. But we found it helpful in deciding about most of the issues commanding considerable attention presently. In particular there are two key guidelines which ought to be applied in deciding whether a noncash benefit ought to be included in income. The benefit ought to be included if it provides for immediate material consumption or if the benefit is fungible, freeing up resources which then become available for material consumption.

Any noncash benefit or transfer not counted as cash income which provides for immediate material consumption should be valued in income. When the government or private organizations provide food or housing either directly or through some voucher/subsidy, the material well-being of the recipient is clearly enhanced. There is little basis for excluding such benefits from income when they so clearly enhance material consumption.

In some cases, the fair market value of the benefits provided, the private cost of purchasing these in-kind benefits, and the value recipients place on the benefits may diverge. For benefits like housing or medical care which are often provided in quantities greater than would normally be purchased, beneficiaries may value the benefits at less than their market cost.² From a theoretical standpoint, benefits should be measured at recipient value - not market value. Recipient values reflect the amount of cash that recipients would be willing to accept in place of the noncash benefit.

A second implication of our defining principle is that the inclusion of benefits received by individuals that do not provide for immediate consumption goods should depend on their fungibility. Benefits such as insurance against various contingencies does not directly augment personal consumption. But it may reduce individuals' felt need to purchase insurance thereby freeing up resources for private consumption. To the extent that noncash benefits allow consumers to augment their consumption spending they should be included as income, even if the benefits do not augment immediate consumption directly.

Pragmatic Considerations

Abstract principles like those above need to be tempered with more practical considerations in arriving at a statistical definition of income. Two crucial practical considerations are consistency and tractability. Consistency considerations require that the income distribution should depend on the economic substance of the transactions of households not on their form. Relabelling of benefits, changes in the sides of the market on which taxes are levied and other changes in form but not substance should not affect the measured income distribution. A closely related idea is that whether or not a benefit is counted as income should not depend on its source. The same benefit contributes equally to well-being regardless of whether it comes from a private or public source. Moreover, the goal of consistency requires the absence of double counting. Benefits should be included only once in income--not be included both when they are promised and again when they are delivered.

A second pragmatic consideration that must govern judgements about the statistical definition of income is tractability. There is little point in calling for the inclusion in income of benefits that cannot be measured. Where immeasurable benefits closely substitute for other measurable benefits, there is some argument for maintaining consistency by excluding both. Beyond the goal of tractability is the related goal of objective concreteness. Income statistics play an important

²There is yet a third notion of benefit valuation, that of government cost, which includes the full cost of provision including administrative costs and any inefficiencies in delivery. This concept seems to have no particular relevance to income statistics.

role in political controversies. It is therefore desirable that they be based as much as possible on concretely observable variables rather than on inevitably speculative extrapolations and imputations. Some compromises between what one would ideally like to measure and what can be accurately measured are appropriate in settling on an income definition.

Additional Conceptual Problems In Defining Income

Two other issues regularly arise in discussions of the distribution of economic welfare are frequently omitted from discussions of the statistical definition of income. First, there is the time dimension in the measurement of consumption. A focus on private purchases of goods and services raises the question of how to treat income that is saved. An easy answer holds that it is available to purchase future consumption and so is appropriately included in the measurement of income. As discussions of the horizontal equity merits of income and consumption taxation have made clear, this argument is not entirely satisfactory. Lifetime opportunities depend on the total amount of non-capital income individuals earn during their lifetimes. Nor is the alternative approach of ignoring saved income completely satisfying. Income saved is available for material consumption, even if those who receive it choose to save it.

The development of a fully satisfying approach for the treatment of capital income, durable goods consumption, and noncash income that is distributed over a considerable time period lies beyond the scope of this paper. Our view is that any theoretically appropriate and consistent treatment of these items would require such a massive change in the collection and conception of income statistics. Extensive discussion of those changes would distract from consideration the other noncash benefits which can be accommodated quite comfortably within the broad outlines of the current income conception. We do provide some guidance on the treatment of pensions and housing in a later section of the paper because they have generated considerable controversy.

A second issue concerns the question of whose utility we are trying to measure. Is the appropriate unit of analysis the family or the individual? Official poverty lines are calculated for families of different sizes. Changing living arrangements and family structures may be significantly altering the income distribution even if the distribution of material well-being has remained stable. Since these issues do not directly involve the statistical definition of income we avoid them until the concluding section of the paper. But we suspect that differences in the treatment of family size are likely to be more consequential than differences in which components of income are included in the official statistics.

The next sections of the paper applies the principles developed here to the specific issues that arise in the statistical definition of income.

THE TREATMENT OF TAXES

The present official income definition does not subtract taxes from income. Official statistics therefore measure the pre-tax distribution of income. If the primary purpose of income statistics is to measure the potential for material well-being, there very simply is no justification for including taxes in income. Since private goods can be purchased only out of after-tax income, two individuals with the same pre-tax income but different post-tax income have different standards of living.

We can see no consistent argument for including cash transfers in income while not subtracting tax payments. This point becomes especially clear when the examples of taxes on government transfer benefits is considered. Can it really matter for the income distribution whether Social Security benefits are taxed or checks are simply reduced by an equal amount? Under the current pre-tax post-transfer income definition, it would.

Subtracting taxes from income would also serve the goal of consistency in the measurement of income. Current practice distinguishes between taxes paid by employers and employees--the former are not included in income while the latter are. But there are compelling reasons to believe that the economic effects of taxes on firms and workers do not differ. Contributions from both employer and employee ought to be included or neither should. A decision to count these taxes runs into a very serious double counting problem. Unemployment Compensation and Social Security benefits are counted as income when the benefits are paid. There is no logic to counting the same money as income both for those who give it up and for those who receive it.

Taxes are not always ultimately borne by those who proximately pay them. But this does not provide an argument for including them in income. In so far as taxes are shifted, the mechanism involves changes in prices and pre-tax factor payments. The pre-tax distribution of income that we measure already reflects tax induced changes in prices and factor payments. This means that the post-tax income distribution accurately reflects the ultimate real effects of taxation on the distribution of standards of living. Moreover, the alternative pre-tax distribution of income is a curious hybrid measure, reflecting only indirect and not direct influences of taxes on the distribution of income.

It might be argued that some state and local taxes should be included in income in so far as they are payments for the provision of public services which are close substitutes for private consumption. For example, municipal golf courses represent a kind of public service that frees up resources for spending on other private goods. While correct in principle, our judgement is that the component of state and local expenditures that takes the form of such private consumption substitutes is relatively small. Moreover most individual variations in state and local taxes paid do not represent variations in the level of publicly provided substitutes for private material consumption. Rather they represent differences in the level of community income or in decisions about the level of public services such as education.

An important exception to the rule that all taxes be subtracted from income is the case of property taxes on owner occupied housing. As is noted below, it makes little sense to subtract taxes paid on housing when imputed rent is not included in income.

The removal of tax payments from income ought to be feasible. Indeed Census studies have reported estimates of the post-tax income distribution as have other researchers, notably Pechman and Okner (1974). Just as estimates of the distribution of income exclusive of transfers are now prepared, it would be desirable to continue to prepare estimates of the pre-tax income distribution. As well as providing statistics comparable to current ones, this would be helpful for situations where the income distribution is used to assess the distribution of earning power.

NONMEDICAL IN-KIND BENEFITS FOR THE POOR

There are three prominent nonmedical in-kind benefits for the poor. Food and nutrition subsidies, energy assistance, and public housing. We will briefly discuss each issue.

Food Stamps and School Lunches

For most purposes the food stamp program can be thought of as a program which provides food stamps with a cash purchasing power equal to roughly 1/3 of the difference between the poverty line and the recipient family's income (both computed on a monthly basis). Thus, amount of food stamps received declines with income. For any family that would have spent at least as much on food as they receive in stamps, the program provides completely fungible benefits. The cash which would otherwise have gone to purchase food is available for the purchase of other goods. For these persons, except for the inconvenience of the stamps and the stigma which may be attached to their use, food stamps are equivalent to cash. For those who would have purchased less food, behavior is constrained and the recipient value would be less than the market value.

There have been several studies of comparing the recipient and market values of food stamps. The universal conclusion seems to be that food stamps are, in the words of Smeeding (1982), "on the average, for all practical purposes as good as cash." Indeed much of literature in the field comes from an earlier period where food stamps had a purchase requirement which should have constrained behavior much more than the current system does, yet most studies conclude its value is close to cash.³ Since market and recipient values for food stamps are so close, and since market values are very easy to measure (recipients are asked it on the CPS), we think the market value of food stamps ought to be included in income.

School lunch programs are somewhat more difficult to measure because there is some variation in the subsidy depending on income levels and school, and partly because good information on who actually uses free or subsidized lunches and the amount of the subsidy is difficult to determine. The program is large enough, roughly \$2 billion, that its benefits logically should be counted. Our impression is that the methods used for valuing lunches and assigning income are acceptable given the many practical problems. Though the case for using market value here is less clear cut than in the case of food stamps, we think the modest size of the program and the hopeless complexity and error involved in trying to get true recipient values of school lunch justify the use of market values.

³See Clarkson (1976), Smolensky, et al. (1977), MacDonald (1977), and Plotnick and Smeeding (1979). This literature typically finds recipient valuations in excess of 90 percent of the market value. Smeeding (1982) found that on average recipient values were 96 percent of market values and that 90 percent of recipient values were at least as high as market values.

Energy Assistance

There is virtually no literature on the influence that valuing Energy assistance would have on income or poverty. Benefits totalled \$x billion in 1984. Benefits are delivered in many forms, everything from added cash benefits for those on AFDC to direct payment of utility bills of needy recipients.⁴

Energy assistance clearly deserves to be treated as income. Certainly direct or indirect payments for utility bills amount to immediate material consumption. And money which would have been spent to pay utility bills is fully freed for other consumption. We suspect its market value and recipient value are very close. The complexity of the program and the difficulty in evaluating its benefits given the diversity of delivery mechanisms probably explain its omission from so much of the current work on in-kind benefits. The money ought to be counted as income, and unless practical problems are insurmountable, we recommend that it be so included.

Housing Assistance

Housing assistance poses the hardest problem among these three in-kind benefits. It provides direct consumption benefits and thus clearly deserves to be counted in income. The problems arise because most studies seem to imply that recipients value these subsidies at far below market rates, and because it is likely to be very difficult to calculate either market or recipient values of subsidized housing based primarily on CPS data unless a major commitment of questionnaire time were devoted to the issue.

Housing assistance is offered in several forms. Often the government provides direct public housing charging well below market rents. The Section 8 program reduces the rent of selected rental units. The fact that housing is often offered directly and that it is subsidized in various ways makes it very difficult to determine the true market value of the subsidy, particularly since there are no questions on housing and rent on the March CPS. Determining the recipient value is even more difficult.

There is considerable evidence that recipients often value their in-kind housing benefits below market value. For example, Kraft and Olsen (1977) report that recipient values of less than 75 percent of market value on average, though Olsen and York (1984) report 91 percent for housing subsidies in New York City in 1965. Smeeding (1982) reports values averaging 80 percent. While considerable questions remain about the true recipient valuations, the discrepancies between market and recipient values may be great enough in this situation to merit the use of something other than pure market valuations (even if they could be generated accurately), particularly for very low income households where recipient values sometimes diverge rather sharply from the market.

We are somewhat uncomfortable with what has been done to date to estimate recipient (and market) values of housing. The current Census procedure following Smeeding (1982) involves elaborate matching and averaging schemes are used to link benefits based on hedonic price equations using Annual Housing Survey data to housing beneficiaries reported on the CPS. We believe that this would be a fruitful area for more commissioned research. Among other things we believe it probably

⁴See Urban Systems Research and Engineering (1981).

makes sense to try to elicit some better information from the CPS on actual rent paid and likely market rents. Information of this sort may yield information that is as accurate as the elaborate system now used with greater fidelity to the usual procedures for valuing income.⁵ In the mean time it seems reasonable to use the current procedure for measuring recipient values.⁶

MEDICAL CARE

We can find no theoretical basis for the current treatment of medical care benefits. Employer provided benefits, government benefits, and free or uncompensated care⁷ goes uncounted in income. Yet for those who must buy their own insurance or pay for care out-of-pocket, no deduction is made from income so implicitly medical care is counted for these persons. Only about one-third of all medical costs are included in income, and half are omitted.⁸

There is even less logic to adding in only the value of government provided medical care but not adding in the estimated \$82 billion in employer provided and publicly subsidized health benefits.⁹ And there is least logic to counting only Medicaid and Medicare benefits as income, (and excluding other forms of government provided and uncompensated care for the poor).¹⁰

Consistency requires that all medical benefits be included in income or that all be excluded. Changes in employer practices, in the tax treatment of employer provided health insurance, in government coverage for the poor, and even in reimbursement mechanisms will almost certainly affect the fraction of total medical care counted as income in any system which does not try to capture all or nothing of medical care costs. With medical care costs now running at roughly 10 percent of GNP, such apparent distortions in the distribution of income might be very large.

⁵In fact, we suspect the respondent would tend to undervalue the market rent if he undervalued the subsidy. A direct set of questions might therefore come close to providing recipient values without the need for interpolation from other surveys or elaborate adjustments for market versus recipient valuations.

⁶Though we favor the recipient value approach, we do not feel the use of market values would distort incomes too seriously. We would favor the inclusion of market values over the inclusion of nothing at all.

⁷Care provided to the poor on a charity basis, bad debts, etc.

⁸We know of no exact accounting of what fraction of all medical costs are now excluded from income. Total medical care costs were \$355 billion in 1983. Government pays \$149 billion (U.S. Bureau of the Census (1984b)). Private employer costs for health insurance were \$82 billion (Ryscavage and McNeil (1985)). An additional \$11 billion was spent by private sources for facilities and research. Most of the remaining \$113 billion was presumably paid by consumers for insurance and out-of-pocket expenses and would be counted in income.

⁹Ryscavage and McNeil (1985).

¹⁰By some estimates uncompensated care is as large as \$15 of \$20 billion.

The groups which will be most affected by decisions about the valuation of medical care are the poor and elderly. The treatment of medical care in income statistics is likely to strongly influence our impression of the prevalence of poverty. Indeed in 1983, including just market valuations for food and housing alone lowers poverty among the elderly only slightly, from 14.1 percent to 12.3 percent. But adding in the market value for Medicare and Medicaid drops the figure all the way to 3.3 percent. In some high benefit states, including Medicaid and Medicare at market values essentially eliminates poverty among the elderly.¹¹

While we do not believe the issue is clear cut, we are inclined to exclude nearly all medical care expenditures from income, including most out-of-pocket expenditures. Our view is that including medical benefits and expenditures would do more to distort the picture of the distribution of material well-being than to sharpen it, and that the distortions would be particularly great for low income persons. This judgement rests on three arguments: variation in medical needs, lack of fungibility, and practical considerations.

Variation in Medical "Need" - More Is Not Always Better

An editorial cartoon by Wasserman examined the issue of in-kind medical benefits and the poor. The text read:

- Man 1: The government exaggerates the number of poor people.
 Man 2: Really?
 Man 1: Sure - They don't count all the benefits poor people get for free.... Suppose Medicaid is paying for some guy's stay in the hospital for a year.... He's making over a hundred grand.

The reason Wasserman's cartoon seems absurd is that we recognize that there are people who become very sick and need medical care. And the need for large amounts of medical care is an indication that something is seriously wrong. Thus unlike the case of food or housing, where evidence of very high levels of expenditures would be taken as evidence of superior levels of material well-being, high levels of medical care carry no such presumption. More is not better in the usual sense. When comparing two equally sick or equally healthy people, more is clearly better. But when comparing two people who may have very different medical problems, more usually indicates worse. If more means worse, then adding the actual value of medical care can give very perverse results as in Wasserman's cartoon.

The superficially appealing solution to this dilemma is to value the insurance protection provided, rather than the care received. More insurance protection is better than less. But more costly insurance cost does not necessarily indicate greater protection. Different well defined insurance groups have very different expected medical costs. For example, in New York in 1983, combined Medicaid and Medicare costs for an elderly person were roughly \$9,400 in 1983; for a nondisabled child, \$600.¹²

¹¹Ryscavage and McNeil (1985).

¹²U.S. Bureau of the Census (1984a). The \$600 figure is for Medicaid coverage only. Medicare is not available to nondisabled children.

We have argued that in-kind benefits should, in principle, be valued at recipient, not market value. If we use recipient values, we are unlikely to get variations in values that are as extreme, but the basic difficulty remains.¹³ We would still expect a very large component of the variation in the recipient values of medical protection across different groups to reflect variations in the health of the recipient groups.

If we assign a value to medical protection to be included in income, we will assign more income to the sick, the disabled, and the old than to the young and healthy—even if we use recipient values of the insurance. This will give the impression that at equal levels of other income and equal levels of medical protection, those likely to have the greatest medical problems are richer, sometimes considerably richer than those who are very healthy. Ad hoc adjustments like omitting institutional care as is done in some calculations by Smeeding (1982) and others does not solve the problem. It merely hides the unsatisfactory nature of including medical costs. The problem of varying health status is particularly extreme among the poor who are offered medical protection, for they typically include the old, the sick, and the disabled, along with young children and their parent(s).

Fungibility

Although utilization of medical care is clearly influenced by prices and income, the fact that it is so heavily affected by health status suggests that it is not the same as traditional material consumption. While the question of whether it represents material consumption might be argued either way, if provision of medical benefits frees up income that otherwise would have been spent on care, one would be more inclined to include it as income. Employer provided medical insurance for the middle and upper classes, undoubtedly passes this fungibility criterion, since most would purchase at least a modest level of protection anyway. Medical care provided by the government provided to the poor almost certainly fails it.

Medical insurance is typically provided through employment. Yet very few Medicaid recipients work, so few would get protection from employers. They would be forced to buy private insurance where half of the premium goes to cover commissions and administrative costs.¹⁴ As the low recipient values of medical coverage may indicate, few would be willing to pay for comprehensive protection. Many, perhaps most, would go completely uninsured.

¹³We are somewhat skeptical of the methods used to date to determine recipient values of medical care. There are numerous sources of reduced cost or free care that offer some protection against very serious illness for the uninsured or underinsured, so using expenditures of the uninsured to project willingness to pay is inappropriate. Moreover, for those who do become very sick, distortions caused by income effects are likely to be large. We suspect that if recipient values could be measured accurately, at a given level of income, elderly and disabled persons would place a far higher value on the medical protection offered by the government than a healthy young adult would.

¹⁴Davis and Schoen (1978).

Medical care expenditures are extremely unequally distributed. Even when people are insured, most spend very little on medical care. A small number of persons account for the overwhelming majority of medical costs. In Michigan for example, excluding the long term care population, the most expensive 4 percent of Medicaid enrollees account for more than half of all Medicaid expenditures. The top 12 percent account for 75 percent of total costs. The bottom half of enrollees account for only 3 percent of total expenditures! Over half enrollees have expenditures of less than \$100.¹⁵

In the absence of insurance we can surmise that most would spend very little on medical care. The unlucky few who needed a considerable amount would have been forced to spend nearly all of their income, go heavily into debt, rely on free care and the like. Thus when we provided coverage to these groups, we did not free up much money for consumption for the vast majority of enrollees. They previously would have spent little for medical care, they now spend nothing.

Our view is that medical care is best excluded from income, but if it were included, there is far more logic to including the partially fungible employer provided benefits to the middle class than the nonfungible benefits provided to the poor.

Consistency and Practical Problems

Consistency argues for the inclusion or exclusion of nearly all health expenditures. But there are large practical problems associated with moving in either direction. Moving towards more complete accounting of medical benefits would require measuring the value of insurance provided by employers. Those interviewed in the CPS cannot be expected to estimate the value or comprehensiveness of their benefits, so some imputation method would have to be used which would likely be subject to large errors. If benefits are valued for the poor, we have argued that recipient values must be used, but the measurement problems are enormous. The problem is particularly difficult since free care is an available substitute, so current out-of-pocket expenditures by the poor are not good indications of potential willingness to pay. And the technical problems associated with determining the recipient insurance value of uncompensated care are frightening. Who is covered by it? Should insurance value be imputed to all poor persons?

A decision to exclude all medical care from income probably poses fewer problems of measurement, but there would still be complications. In principal, one could simply ask respondents to the CPS how much they actually spent for medical care or insurance. This figure could then be subtracted from income. Undoubtedly, though, there would be measurement errors in the recall of medical costs.

A decision to exclude out-of-pocket expenses from income would represent an important change from the income definition (comparable to a decision to include costs not now included). It might be argued that out-of-pocket costs are highly discretionary and thus ought to be included in income. However, studies of out-of-pocket expenditures do not seem to bear out this premise. Per capita out-of-pocket expenditures for actual care vary only slightly with income, people with income near

¹⁵Inferred from U.S. Department of Health and Human Services (1984) and unpublished data. Numbers for California, New York, and other states are very similar.

the poverty line average \$185 per person, those with income over twice the poverty line average \$202. Moreover, these expenditures are highly skewed, with the top 15 percent of families accounting for over half of total out-of-pocket spending.¹⁶ We believe that a family with \$20,000 in earnings and \$5,000 in medical expenditures really is considerably poorer than another with the same earnings and no medical costs. The fact that large medical expenses are deductible for Federal income tax purposes suggests that others share this view.¹⁷

These arguments notwithstanding, a decision to exclude all medical care expenses from income is an uncomfortable one. Consumers clearly value care. The poor are certainly better off as a result of the benefits they receive. The crucial issue is whether including medical benefits and expenditures tend to enlighten or confuse us about the distribution of material well-being. We favor their exclusion. We want to emphasize, though, that excluding medical expenditures from income does not indicate that they have no value, just as failing to include the value of leisure or police protection does not indicate they have no value. There are many ways to measure the distribution of health and medical protection of the population without including medical benefits as income.

CAPITAL INCOME

As tax theorists have long recognized, the measurement of capital income is extremely difficult. Fundamental problems arise in both theory and measurement. At the level of theory, there is substantial debate over the relative merits of the Haig-Simons and consumed income, income concepts.¹⁸ At the practical level very difficult problems arise in measuring income that results from unrealized capital gains, and in measuring real economic income in an inflationary environment. Current practices are not easily reconciled with consistent application of either the Haig-Simons or consumed income concepts. Indeed any fully consistent solution to the problem of measuring capital income is likely to require fairly radical changes in income statistics in ways that have so far received relatively little discussion.

Consistency with the Haig-Simons income concept would require that all changes in real net worth be included in income. Current practice does not come close to achieving this goal in three important respects. First, capital gains and losses are excluded from the current income definition. While capital gains and losses on corporate stock are likely to be significant only for high income individuals, changes in the value of houses and durable goods are likely to be important for much of the population. Second, no efforts are made to adjust measured capital income for the effects of inflation. A very large part of interest income comes from the

¹⁶These figures are for direct health expenditures excluding long term care and payments for insurance. Health Care Financing Administration (1985).

¹⁷Actually the tax treatment of out-of-pocket expenses suggest one possible alternative to reduce the discretionary component of medical expenses. One might deduct all health insurance premiums to be consistent with the treatment of employer provided coverage, but only subtract out-of-pocket expenditures for actual care above a certain dollar amount, say \$500 or even \$1,000.

¹⁸For a variety of perspectives on the relative merits of each definition, see Pechman (1980).

inflationary component of interest rates, whereas only the real component represents a true increment to net worth.¹⁹ The proper measurement of profit income in an inflationary environment also requires that a variety of adjustments be made.²⁰ Note that unlike the case of labor income, calculating real capital income requires making adjustments for the current price level and its rate of change.

Third, the Haig-Simon concept requires that just as interest received is included in income, interest paid should be deducted. Thus much of the interest and profit income that shows up in official income statistics currently, is not real income since it reflects only the effects of inflation. On the other hand, most real capital income including capital gains and the service value of owner occupied housing does not show up in the official statistics.

Nor does current practice comport with consumed income concepts. Savings is included in income, while consumption financed out of borrowing, gifts, or assets is excluded. The consumption value of housing is excluded. And moving towards an income definition based on current consumption would require considerably more data than is now available on the CPS.

We do not see a clear path towards a consistent capital income definition. Rather than pursuing this issue, we address pragmatically two aspects of the current income definition that have generated controversy--the treatment of pensions and housing.

Pensions

Pensions present a difficult income definition issue because pension arrangements are complex and widely varying. Current procedures treat pension benefits as income and ignore the value of pension contributions in constructing income measures. We believe that this choice is appropriate for reasons of both principle and practicality.

Employer commitments to provide pension income do not represent directly provided consumption benefits. They thus do not qualify as income on this score. While there is controversy about the extent to which private pensions lead to reductions in private savings, it seems clear that savings are reduced far less than dollar for dollar by the accrual of pension benefits.²¹ To the extent that pension

¹⁹Suppose an individual invests \$1,000 in a non-inflationary environment and receives a 3 percent return. His measured income, which in this case equals his real income, will be \$30. With 10 percent inflation, and a corresponding increase in the interest rate to 13 percent, his measured income will be \$130. Even though his real net wealth has increased by only \$30, therefore his true income is still \$30.

²⁰For a comprehensive discussion of the influence of inflation on measured capital income, see Aaron (1976).

²¹For a survey of the evidence on the effects of pensions on savings, see Aaron (1982).

income does not reduce savings, private pensions do not qualify as income under our fungibility criterion either. Indeed if consumption is largely unaffected by pension benefits until they are actually received, the most logical treatment is to count these as income when they are received rather than when they are accrued.

Practical considerations also suggest that pension contributions should not be included in income. It would be double counting to include both employers contributions for pensions or employees' benefit accruals in income and then to count pension benefits received. Moreover measuring pension benefit accruals is extraordinarily difficult. For most workers who are covered by defined benefit plans there is no simple relationship between employer contributions and benefits accruals. Indeed the timing of the accrual of pension benefits is a subject of continuing controversy.²² It is not possible without an enormous investment of resources to get a meaningful measure of pension accruals and so one is thrown back to valuing pension benefits only when they are received.

Owner-Occupied Housing

As a matter of principle an individual's real income should include the value of the imputed rent on his home or other durable goods. As long as the returns on other capital assets are included in income, there is little basis for excluding the return to housing just because it comes in the form of rental services. Rental services are after all a form of consumption. They surely augment an individual's material standard of living. A related principle is that mortgage interest payments or at least their real component, should be deducted in computing income. Interest payments reduce potential consumption and standard of living.

Unfortunately there are difficult data problems involved in measuring both imputed rents and mortgage interest payments. Neither are currently investigated in the March CPS. Moreover, the estimation of imputed rents is notoriously difficult, and individuals are unlikely to be knowledgeable about the fraction of their mortgage payment that represents interest as opposed to principal. As a partial solution to this problem, it is sometimes suggested that imputed rent only on individuals' equity in their homes be included in income and that mortgage interest be subtracted from income. Implementing this procedure requires a judgement about the appropriate imputed rental rate. If as is plausible, the imputed rental rate were set equal to the after-tax real interest rate on mortgages, any additions to income would be negligible because after-tax real interest rates are close to zero. Alternatively, using observed rental value ratios is a possibility, but is not a very satisfactory procedure if there are substantial risks which home owners bear but tenants do not. Even after imputing rent there remains the problem of treating capital gains or losses on housing.

Beyond the practical difficulties that attend the measuring the "income" generated by owner-occupied housing, there is a plausible theoretical argument to be made in favor of current procedures. The consumed income concept argues for the exclusion of imputed rent. Housing is purchased out of income that is already reflected in the official statistics. Hence it might be thought redundant to include the value of housing services in income as well as the income used to purchase a house. Of course, a similar argument can be made about capital income

²²For more detailed discussion of these issues, see Wise (1985).

of all sorts. And it is undoubtedly true that with a given level of currently measured income, families who own their homes have a higher material standard of living than those who do not.

The treatment of housing should depend on how other components of capital income are treated. We believe that the treatment of capital income in general merits extensive investigation. In the meantime, we would not favor a change in current procedures. A corollary to this conclusion is that property taxes on owner-occupied housing should not be excluded from income since imputed rent is not included in income. Research directed at finding ways of taking account of owner-occupied housing in the income distribution statistic seems to us to be a very high priority.

CONCLUSIONS

This paper has proposed some principles for the statistical definition of income and considered their implications. It is clear that income distribution statistics have many uses in both formulating and evaluating policy, and in research. The appropriate income concept depends on the question being considered. We believe therefore that the Census should continue to publish income distribution statistics based on a number of different definitions of income. In particular, income distribution statistics based on current definitions should certainly be maintained. But at the same time, we believe the primary income definition should be altered.

We recommend three major deviations from present income definitions: the omission of taxes from income, the addition of nonmedical in-kind benefits for the poor, and the omission of medical costs, including out-of-pocket costs. The arguments in favor of these changes are sufficiently compelling to overcome our general reluctance to tamper with a definition which has stood with modest changes for many years. There is little logic in the partial treatment of taxes and medical care in the present definition or for the omission of valuable in-kind benefits.

We have stressed that savings and capital income pose difficult problems for income definition and measurement. Given the broad weaknesses in the current treatment of capital income, we found it hard to justify any marginal changes in the treatment of capital income and durable goods. There are strong arguments to exclude pension income on the basis of its limited fungibility and to avoid double counting it when it is received by retirees. For owner-occupied housing, we were unable to see that any alternative treatment would be sufficiently informative or logical to justify the errors and confusion counting it would introduce.

Certainly an area for future research is the question of just how capital assets, income, and durable consumption should be treated. To the extent that income is intended to measure material well-being, savings should perhaps be subtracted. Consumption may be a better measure of material well-being than income. It has the additional virtue of being less subject to random transitory variations than income. We believe that efforts should be undertaken to develop information on the distribution of consumption expenditures as a possible complement to the income distribution statistics. In addition, it would be desirable to gather information on the distribution of wealth if it is really potential material well-being that is of concern.

We also believe the Census Bureau should investigate publishing a set of income statistics which are adjusted for family size. Any index of the material well-being of a household should depend on both its income and its size. The principle of

making adjustments is already accepted in the calculation of the poverty line which differs by family size. Just how it should depend on size has been the subject of a great deal of research on "equivalence scales." We believe that consideration should be given to drawing on and extending this research in order to construct a distribution of individual material well-being for the entire population. With family sizes and structures changing so dramatically over time, the current distributional figures may provide misleading signals about the movements in well-being.

Income Definition and the Poverty Line

Before concluding we would like to emphasize that we have intentionally taken little direct account of what the poverty line currently measures in reaching our conclusions about what should be counted in income. The poverty count still represents probably the single most powerful piece of information that the income statistics generate. Thus the question of the definition of poverty and its relation to the definition of income deserves very close attention.

If changes in the income definition like those proposed here were implemented, it is possible that the poverty line would need to be redefined slightly, primarily because of our recommendations about medical costs. The exclusion of taxes actually is quite appropriate for the current standard since it was clearly framed in terms of after-tax income. Adopting our recommendations that food stamps, housing benefits and energy assistance be included in the income definition would require few changes since these programs were very small when the line was first drawn. Our recommendation that medical expenses be excluded from income might lead to a call for a revision in the poverty line since some medical care costs are implicitly included in the budget studies on which was used to form the multiplier and set the poverty line.

It should be clear from our discussion, however, that if our proposals are not adopted, there is even more reason to redefine the poverty line. The change in the number of poor old people ought to be the same if Social Security benefits are cut directly or are cut an equal amount by making them taxable (assuming the cuts fall on the same people). Cuts in the taxes poor people pay, like those currently proposed, should reduce measured poverty.

Even more importantly, if medical care is included in income, then it is absolutely essential that the poverty line be adjusted for differences in medical "need," difficult and arbitrary as that might be. When medical care is included, the disabled and elderly do face a much higher cost of living in the same way that larger families do. Failure to adjust the poverty line will mislead us about the material well-being of many groups.

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Comments

Alan S. Blinder

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on the paper by

David T. Ellwood and Lawrence H. Summers

I agree with the basic principles enunciated by Ellwood and Summers. I agree with two of their three major recommended changes in Census procedures. I even agree, at least as much as they do, with their recommended nonchanges for pensions and imputed rents. So what's a poor discussant to do? In my remarks, I will talk briefly about how some i's could be dotted and some t's could be crossed differently. Then I will chide Ellwood and Summers for ducking some issues they should have tackled.

Ellwood and Summers decide that Census should strive to measure material well-being. To do this, income in-kind, valued at recipient value, should be included if it provides material consumption directly or if it frees up income for the recipient to use for other purposes. Application of this principle leads Ellwood and Summers to recommend two major changes in current CPS definitions. Simple logic leads to the third.

Simple logic says that the CPS should subtract taxes from income to put Census income on a more logical post-tax post-transfer basis. People, including me, have been saying this for years.¹ So far as I can tell, there is no argument in favor of the current procedure. (However, I agree with Ellwood and Summers that Census should maintain the old series for the sake of historical comparability.) My footnote is that, since we are measuring income, it seems to me that we should deduct only taxes on income, not taxes on other economic activities (like sales taxes).

Ellwood and Summers' second recommendation is that in-kind benefits provided by government, other than those for medical care, should be included in income. I endorse this recommendation, including the inclusion of energy assistance, which is typically overlooked. I would, however, emphasize that symmetry demands that income in-kind paid by private employers should also be included. I am thinking here of such things as employer-provided food and lodging (especially to farm workers), company cars, and life and health insurance.

Third, Ellwood and Summers do not want to count medical benefits paid in-kind, for reasons poetically captured by the cartoon. For consistency, they correctly point out, out-of-pocket medical expenditures must then be deducted from income.

This marks a clear departure from the basic principle of using recipient value but they defend it eloquently on the grounds that a recipient of large medical benefits is no better off than an otherwise identical individual who receives no

¹See Alan Blinder, "The Level and Distribution of Economic Well-Being," in M.S. Feldstein (ed.), The American Economy in Transition (University of Chicago Press, 1980), especially pages 418 and 442-443.

benefits because he is not sick. At the risk of sounding like a Philistine, I'd like to take issue with this recommendation. It seems to me that it makes more sense to include the value of medical insurance, not medical benefits, whether publicly or privately provided.

Let me illustrate the issues by an example. Consider the following four hypothetical people:

Person	Cash income	Insurance provided?	Medical bills	Medical benefits
A	\$20,000	Yes	0	0
B	20,000	No	0	0
C	20,000	Yes	\$4,000	\$4,000
D	20,000	No	\$4,000	0

Under current CPS procedures, all four people have \$20,000 in income. A and C have medical insurance provided by their employer or by the government (and not included in the \$20,000). B and D do not.

Under the procedures recommended by Ellwood and Summers, the first three still have \$20,000 in income, but D has a \$16,000 income -- indicating that he is worse off. By contrast, if all medical benefits were included, C's income would be raised to \$24,000 while leaving all the others at \$20,000. As Ellwood and Summers say, it seems absurd to treat C as better off than A.

But what about A and B? Neither got sick, so neither drew benefits. But health insurance is a valuable service that enhanced A's material well-being directly, just as did the fire insurance on his home. Hence, by Ellwood and Summers' basic measurement principle, the recipient value of medical insurance should be counted as income. Ellwood and Summers object that some groups (e.g., the elderly, the poor) have greater medical needs than others, and hence would have higher valuations for health insurance, leaving us once again in the awkward position of the cartoon: attributing more income to the (probabilistically) more infirm. One suggestion is to treat Medicare and Medicaid recipients as participants in a group health insurance policy and include the recipient value of that group policy -- which would be the same for every Medicare recipient and for every Medicaid recipient -- in income. Then, if the insurance is worth \$1,000, A's income is \$21,000 while B's income is \$20,000.

That seems clearly correct. But what about the thornier issue of comparing A with C (or B with D)? Obviously, if out-of-pocket medical expenses are discretionary, we do not want to deduct them from income. If D spent \$4,000 to buy a nose job for his daughter, that is equivalent to spending \$4,000 on clothing and beauty treatments. However, I agree with Ellwood and Summers that most medical expenses are obligatory investment expenditures, not discretionary consumption expenditures. Still, we must recognize that treating all medical expenses as discretionary introduces measurement error. As Ellwood and Summers note, yet more

measurement error will be introduced if the CPS starts to collect data on out-of-pocket medical expenses, which may not be reported accurately by survey respondents.

But the biggest problem is conceptual. Deducting medical expenditures from income opens a Pandora's box that Ellwood and Summers wisely counseled us to leave shut: the measurement of utility rather than income. It seems pretty clear that D has less utility than B, even though their incomes are equal. But this is often true. At equal incomes, a handicapped person probably has lower utility than a non-handicapped person, even if his medical bills are no higher. Someone who must work twice as many hours to earn the same income is probably worse off than someone who works half as many hours. Each of us can think of other examples.

The specific rationale for not counting medical benefits is, presumably, that those particular dollars do not buy happiness; they just maintain human capital. But if income spent on medical care is deducted for this reason, why not deduct expenditures on formal education and training programs? Why not deduct commuting costs and other job-related expenses? There is no logical place to stop.

Finally, let me flag four issues that Ellwood and Summers ducked or barely mentioned.

First, I repeat that, if in-kind benefits provided by government are to be included in income, then so should be in-kind benefits provided by private employers. That means that Census should start valuing fringe benefits other than pensions, which now amount to a substantial fraction of wages.

Second, Ellwood and Summers only obliquely discussed whether a year is the best time unit for measuring income -- when they discussed saving and income from capital. Do they think a year is a reasonable time unit? The answer here is, of course, intimately tied up with the proper treatment of property income.

Third, the problem of underreporting is, in my view, a major one to which Census should devote more effort. According to data for 1983, the CPS found 90 percent of independent estimates, but only 45 percent of property income and only 69 percent of non-social-security transfers.² This gross amount of underreporting creates problems for each of the uses to which CPS income data are commonly put.

1. It gives a distorted impression of the "average" income level in the United States. How can it be that mean Census family income per capita in 1984 was \$9,614 when personal income per capita was \$12,726 according to the national income accounts? It was not that different, of course. Yet Census numbers are commonly used for this purpose.
2. It distorts the shape of the income distribution since the grossest underreporting comes in the two tails of the distribution.
3. How it effects estimated time trends is less clear. It depends on how underreporting varies over time. But it is worrisome, for example, that mean Census family income from 1977 to 1984 grew only 70 percent while personal income per capita grew 82 percent.

²Kindly provided to me over the telephone by the Bureau of the Census.

Finally, Ellwood and Summers say very little about the choice of recipient unit. But, as I stressed in my 1980 paper,³ that is an absolutely crucial issue for making comparisons of income distributions through time. As we all know, the demographic composition of American families and unrelated individuals has changed dramatically over time. And it just so happens that different demographic groups have income distributions that are shaped quite differently. In 1964, for example, the Gini ratio was .41 for two-person families but .31 for four-person families; it was .34 for male-headed families but .43 for female-headed families.⁴ These differences are huge compared to the changes in income distribution that we see from year to year. So changes in inequality over time tell us mostly about shifting demography.

To get a clear picture of changes in inequality over time, we need separate income distributions for different types of recipient units such as traditional two-parent families, one parent-families with children, multi-adult units without children, unrelated individuals, etc. But if some distributions grow more equal while others grow more unequal, how are these disparate distributions to be combined? I wish two bright young men like Ellwood and Summers had spent a little time thinking about this problem.

3Op cit., especially pages 437-442.

4U.S. Bureau of the Census, Trends in the Income of Families and Persons in the United States, 1947-1964, Technical Paper No. 17, U.S. Government Printing Office, Washington, D.C. 1967, various tables.

Comments

Albert Rees

Alfred P. Sloan Foundation

on the paper by

David T. Ellwood and Lawrence H. Summers

I am a great admirer of earlier work by both of these authors. It was therefore a surprise to me to find many points of disagreement with the present paper. The paper covers a number of difficult issues, and I shall not attempt to discuss all of them. Instead, I shall concentrate on issues involving income in-kind, to the exclusion of taxes and income from capital, because it is in the treatment of income in-kind that I disagree with the proposals made.

Let me start with a point on which I strongly agree. The authors write (p. 2) "...the existing definition of the poverty line ought not to drive our statistical definition of income. The poverty line ought to be drawn in recognition of what is or is not included in income." Exactly so. But in view of that principle, it is disappointing to find Section III dealing with "nonmedical in-kind benefits to the poor" (my emphasis). If housing subsidies to the poor are to be included in income, so should housing subsidies to the nonpoor. There are occupations, including the clergy and college presidents, where free housing is a substantial component of real income. This raises measurement problems, but no worse ones for the nonpoor than for the poor. If we ask a parson the annual rental value of his parsonage, we will probably get an underestimate, but any reasonable positive number will bring us closer to measuring his true income than not including the housing at all. I would apply the same principle to medical care. Some portion of the cost of Medicare should be included in the income of the poor if and only if some portion of the cost of employer-provided health insurance is included in the income of employed workers -- otherwise our measures of income distribution would be seriously distorted. This issue does not arise in the paper because the authors do not propose to count Medicare as income.

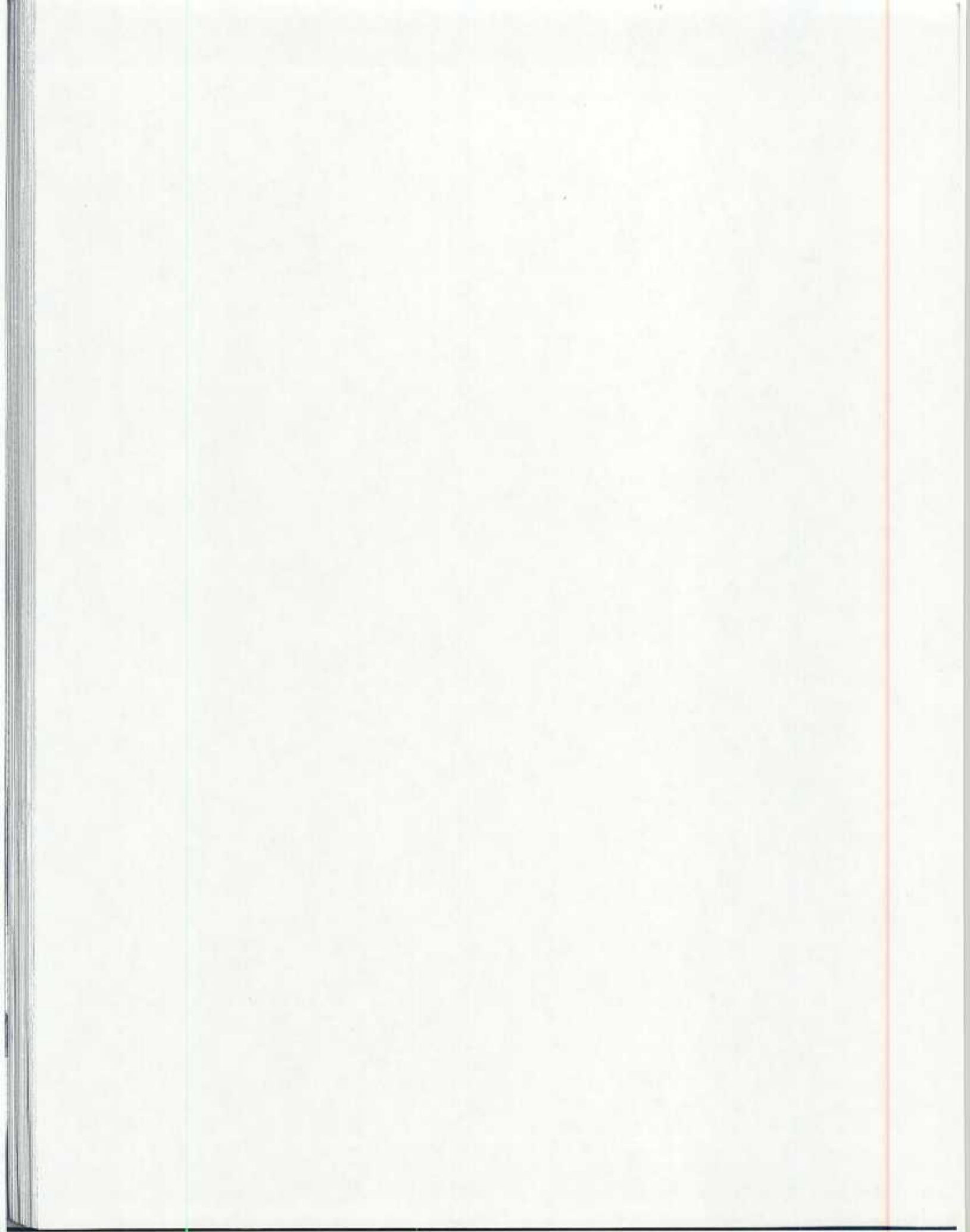
Ellwood and Summers define income in terms of "potential material well-being" without ever defining the term "material." Let me suggest that it be defined in terms of command over goods and services available in the marketplace. This would mean that the ability to obtain entertainment, travel, and medical care are as much income as the ability to obtain meat, potatoes, and Cadillacs. Perhaps this point labors the obvious, but I worry that by using the term "material" and then excluding medical care from income, Ellwood and Summers might be understood as attempting a distinction between goods and services. I would include the ability to send children to private schools in income, whether paid for out-of-pocket or provided by an employer but I would not include the cost of public schools because public schooling is freely available to all. Neither would one include such elements of well-being as climate or clean air, for which there is no market.

This brings me to the Ellwood and Summers treatment of medical care, which is where I part company with them entirely. Most economists are searching for a more comprehensive definition of income than the present one. By excluding from income funds spent out-of-pocket for medical care, Ellwood and Summers would give us a narrower definition of income than we now have. In my view, we should move in the opposite direction, and include in income some measure of the value of government-

subsidized or employer-subsidized medical care. It is obviously correct to rule out the valuation of medical care on the basis of case-by-case consumption, which produces the absurdity that one's income is highest during a year spent in the hospital. Valuation of medical care on an insurance basis is clearly called for. Ellwood and Summers object to this because of the great difference in insurance costs for different age groups. Yet nowhere is it written on tablets of stone that the insurance-based estimate of the value of medical care should be age-specific. Let me suggest as a possible starting point for discussion that we include in measured income the full cost of government-subsidized or employer-subsidized medical insurance up to a limit equal to the average cost per capita of such coverage for the population of all ages.

I readily grant that there are measurement problems with income in-kind. Any measure we design will be rough, especially at first. But is zero really the best bad measure of something we know to be large and positive?

Government-subsidized and employer-subsidized medical care are the largest and fastest growing form of income in-kind. If we give up on measuring this, we should forget about food stamps and public housing--taken by themselves, they are not worth the trouble.



**METHODS
OF
MEASURING
NONCASH
BENEFITS**

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Evaluation of Census Bureau Procedures for the Measurement of Noncash Benefits and the Incidence of Poverty

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INTRODUCTION

A statistic is a summary measure designed to simplify a complex array of concepts and data. It is best to think of a statistic not as "the truth," but as the shadow of the truth. Just as shadows in the natural world may present a distorted image of the object creating the shadow, so too in the world of statistical shadows. To understand and interpret appropriately a statistic requires a knowledge of how the statistic is created, including the myriad of explicit and implicit assumptions.

In addition, a statistic is meaningful only in a comparative situation. To know that the measurement of some phenomenon, say X, is six units is not meaningful. To know it was five units last year and six units this year can provide substantive content. However, for a statistic to provide such content one of the explicit or implicit assumptions must be that there has been no change in the measuring rod, but merely in the item being measured.

The purpose of this paper is to evaluate the procedures developed by the Census Bureau to solve one such measurement problem, the incorporation of noncash benefits in measures of the rate and incidence of poverty. Problems arise because of the essentially arbitrary nature of the poverty threshold, the change over time in the measuring rod (money income as a proportion of total income), and the difficulty of measuring noncash forms of income on a household or family basis.

Section II provides a brief overview of the nature of the measurement issue. Section III describes the official definition of poverty and the types of income used to measure the incidence of poverty. Sections IV to VI discuss and critique each of the three procedures the Census Bureau has developed for incorporating noncash public income transfer benefits into the measures of income.¹ In the Bureau's Technical Papers they are referred to as the "market value," the "recipient value" (or "cash equivalent"), and the "poverty budget share value" procedures. These procedures are applied to measuring the value of food, medical, and housing subsidies. Section VII discusses some problems in the presentation of poverty estimates that include the value of noncash income. Based on these analyses, the conclusion (Section VIII) offers a set of recommendations. Two categories of recommendations are offered--those that can be implemented with current knowledge and those that require additional research before implementation. The latter may be viewed as the outline of an agenda for the continuing Census Bureau research on this issue.

¹The Census Bureau procedures are developed and implemented in several reports. See U.S. Bureau of the Census (1982, 1984a, 1984b, 1985) and McNeil (1985). For an analysis that shows even greater poverty reduction from the noncash transfers than does the Census Bureau's methodology, see Paglin (1980).

BACKGROUND

The Census Bureau has primary responsibility for the measurement of the personal distribution of income, that is, the distribution of income among families, individuals, and households. The first major Census Bureau effort in this area was in the 1940 Census of Population. Questions on the sources of individual and household money income have been included in each subsequent decennial census. With the development of the monthly Current Population Survey (CPS) in the late 1940's, the Census Bureau has generated annual data on the level and distribution of the personal distribution of income.

Data on the personal distribution of income have taken on added significance since the 1960's. The focus of domestic public policy on poverty led to both the "War on Poverty" and the development of indices of poverty to measure the extent of the problem and the success of public programs. The annual Census Bureau report on the incidence of poverty always generates considerable interest among academics, policy makers and policy analysts, as well as among the public at large. The success of various public programs as well as the state of the economy are judged, in part, by whether the incidence of poverty has changed.

The Census Bureau's efforts to measure the poverty rate have been plagued by numerous problems because of the rapid changes occurring in the economy, within families and households, and in the public sector. The Bureau's efforts to track a moving target have been impressive. One such heroic effort has been the measurement of income used for estimating the incidence of poverty.

In an earlier era the measurement of economic well-being, particularly for nonfarm dwellers, seemed simpler. Economic well-being was intended to reflect command over potential consumption, and current money income was viewed as a close proxy for consumption. Those who consumed more were deemed to be better off, those who consumed less were deemed to be worse off. Consumption is, however, very difficult to measure. People simply do not keep track of the total of their large number of separate expenditures (some small and some large in magnitude) on a very large number of separate items. Current income is generally considered a conceptually less perfect but a more readily measured proxy for economic well-being.²

But how is income to be measured? The simplest measure of income is the money or "cash" income that individuals receive in exchange for working or renting their nonlabor assets, or as unrequited transfers. Compared to consumption expenditures, income tends to be received by most individuals in less frequent but larger amounts. Money income tallies are also generated for other purposes (e.g., income taxation).

When the Census Bureau was developing procedures for measuring the personal distribution of income, including the poverty statistics, money income was the primary, if not nearly the exclusive, source of income for the poor and the nonpoor alike. In the past two decades, however, other sources of income have grown in importance. The major forms of in-kind or noncash public income transfers that have been created in the past quarter of a century include those that are "near" money (e.g., food stamps), vouchers that permit access to consumption (e.g., Medicaid), and price subsidies (e.g., Medicare and rent subsidies). Measured in 1983 dollars, means-tested cash assistance programs have increased from \$17.8 billion in 1965 to

²For a statement of the conceptual superiority of potential consumption (rather than actual consumption or current income) as the measuring rod for poverty, see Ruggles and Ruggles (1984).

\$27.6 billion in 1983. However, the noncash benefits for the poor and aged show a much larger growth rate and now dwarf the cash benefits. Public expenditures (in 1983 dollars) on the noncash benefits have increased from under \$6 billion in 1965 to about \$106 billion in 1983 (see table 1).

The growth of income in-kind affects all segments of the population, the poor and nonpoor alike. For example, as a share of national income, supplements to wages and salaries increased from 7.8 percent in 1970 to 12.3 percent in 1983, while wages and salaries decreased from 67.7 percent to 62.7 percent of national income. (U.S. Bureau of the Census, Statistical Abstract of the United States: 1985, table 728, p. 438.)

The increase in income (including cash and noncash components) has outstripped the growth in money income. Certain types of noncash income impact disproportionately on the low-income population. The growth in public noncash transfers can have a seemingly perverse effect. The more money spent on noncash transfer programs targetted to the poor, the lower the money income of the poor. This arises if noncash transfers are substituted for cash transfers or if their

Table 1. The Value of Means-Tested Cash Assistance Programs and the Market Value of Selected Noncash Benefits, For Selected Years: 1965 to 1983

(In millions of 1983 constant dollars)

Type of benefit	1965	1975	1979	1983
Means-tested cash assistance ¹	\$17,772	\$33,122	\$31,764	\$27,589
Noncash benefits, total	5,940	66,304	87,416	105,993
Means-tested, total	5,514	36,591	45,208	49,845
Food stamps	101	8,119	8,901	11,117
School lunches	(NA)	1,529	1,811	1,989
Public housing	1,109	4,190	5,740	5,223
Medicaid	4,304	22,754	28,755	31,516
Nonmeans-tested, total	426	29,712	42,156	56,148
Medicare	(NA)	28,855	41,215	55,558
School lunches	426	857	941	590

NA Not applicable.

¹Includes Aid to Families with Dependent Children, general assistance, Supplemental Security Income, and means-tested veterans' pensions.

Source: U.S. Bureau of the Census, Technical Paper 52, Estimates of Poverty Including the Value of Noncash Benefits: 1983, U.S. Government Printing Office, Washington, D.C. 1984, table A.

receipt discourages work effort. If poverty is measured by money income, noncash transfers can increase both consumption and economic well-being, while at the same time increasing measured poverty!

Since the noncash transfers targetted to the poor have grown over time, Census Bureau procedures that focus on money income increasingly overestimate the incidence of poverty relative to (a) what would have been if there were no noncash transfers and (b) what would be estimated if the value of these transfers were included in the poverty statistics.

DEFINING POVERTY AND INCOME CONCEPTS

The official Census Bureau procedures for measuring poverty were developed in the early 1960's. Families and unrelated individuals with incomes below the poverty threshold are counted as being in poverty, while families and unrelated individuals with incomes at or above the threshold are considered not to be in poverty. The poverty thresholds developed at that time were based on two major assumptions. The first was that a certain minimum amount of money had to be spent to secure for a family of a particular size (and sex and age of family head) the minimum amount of food necessary to meet the nutritional requirements of the Department of Agriculture's minimum food plan. The minimum food expenditure was then multiplied by three to obtain the poverty thresholds for each family size. The factor three was selected because the 1955 Food Consumption Survey found that the average of all families (as distinct from poverty or poverty-threshold families) spent about one-third of their income on food. The poverty thresholds are increased annually in accordance with the rise in the Consumer Price Index (CPI).³

Two features of the poverty threshold are most striking. One is that it is a measure of real income rather than relative income. In principle, regardless of the changes in the average real income (or consumption) of the population, the market basket of goods and services that can be purchased with a poverty threshold income does not change. The other is that the threshold is essentially arbitrary. It was, for example, arbitrary to select food's share in consumption for the average family rather than a poverty level or poverty-threshold family. Since lower income families devote a larger share of their income to food, the procedure may have overestimated both the poverty threshold and the extent of poverty. On the other hand, if the current share of food in the average budget were used, the poverty threshold would be increased.

The Department of Agriculture's estimates of the cost of food to meet nutritional requirements are similarly somewhat arbitrary. The poverty thresholds reflect the cost of such requirements as estimated for an "economy food plan" in the early 1960's. Revisions of such food plans made since the 1960's to take into account new information on nutritional requirements and food ordinarily consumed have not been incorporated into the poverty thresholds.

There is no scientific or objective measure for a concept as elusive as "poverty." But arbitrary does not mean useless. The policy interest is not so much in the absolute number of people falling below some rather arbitrary real income threshold, but how that number changes over time.

³For a discussion of some of the problems in using the official Consumer Price Index, see Weicher (1985).

Starting in the mid 1960's new and eventually massive public noncash income transfer programs were created that altered consumption opportunities for the poor, the near-poor, and the aged (table 1). These programs include food stamps, which were introduced in 1964 on an experimental basis to replace the small Food Distribution Program, and became a nationwide program in 1973. They also include Medicare and Medicaid, subsidized medical care programs for the aged and poor, respectively. Although local government housing subsidies existed prior to the 1960's, public housing subsidies increased after rental assistance (Section 8) was introduced in 1974.

To a greater or a lesser extent expenditures on these noncash programs served to raise the economic well-being or level of consumption of the recipients even though the value of these benefits cannot be directly recorded on the annual Current Population Survey (CPS) March Supplement which inquires into the sources of money income. Thus, these programs were adding to the consumption and economic well-being of the low-income population but, at best, they would have no effect on measures of poverty. "At best" is emphasized because these programs can have the effect of increasing measured poverty when in fact economic well-being, as measured by the level of consumption, has increased (Chiswick (1977) and Browning (1975)).

Consider, for example, a utility maximizing individual or family with low earning potential in the absence of an income transfer program. The transfer program pushes outward the individual's or family's budget constraint or consumption frontier. This "income effect" encourages greater consumption of both goods and leisure, but the greater leisure appears as a reduction in labor supply and hence of earned (money) income. Furthermore, each poverty-oriented program raises the "marginal tax rate" on earnings. An extra dollar of earnings reduces benefits or may end eligibility in the program. This creates a "substitution effect" which encourages a movement away from market work toward leisure and home production. It too tends to lower measured money income.

Thus, compared to "what would have been" in the absence of the growing noncash income transfer programs, current official Census Bureau procedures miss two important sources of "full income." These are the value of the noncash transfers and the value of the additional voluntary nonwork time in response to the incentives created by the transfer programs. While there is disagreement in the literature as to the magnitude of the labor supply responses to permanent income transfer programs, the consensus is that they do have the effect of increasing nonwork time (leisure and home production) at the expense of work time.⁴

Furthermore, the introduction of the noncash programs was presumably, at least in part, at the expense of the expansion of the cash assistance programs. While it may be unlikely that there was a dollar for dollar trade-off, it is reasonable to assume that some fraction of the sums spent on current programs would have otherwise been used to augment existing cash programs or to create new cash programs.

The Census Bureau procedures to estimate the economic effects of noncash or in-kind transfers targeted to the poor and the aged have focused only on the direct effect--that is on adding to money income the "value" of the noncash income. The indirect effect through increasing time in leisure and home production is not yet incorporated into their procedures.

⁴See Anderson (1978); Danziger, Haverman and Plotnick (1981); and Robins (1985).

THE MARKET VALUE APPROACH

The "market value" method of valuing noncash transfers is based on the private sector (or market) price of the benefits received. Thus, if a good or service is provided to a household free of charge, under the "market value" approach the household's income is augmented by the market price of a unit of that good or service multiplied by the number of units provided. For example, monthly income would be said to be augmented by \$10 if \$10 worth of chicken were given each month to a household. This would unambiguously be the correct valuation if the household (a) paid the same market price for chicken as used in estimating the market value, and (b) the household would have otherwise consumed at least \$10 worth of chicken per month.

If the household would have paid a greater or lesser price, but the consumption condition (condition (b)) was still satisfied, then the consumer's actual price should be used for valuation purposes. In general, however, prices paid by particular individuals are not known, and if markets are well functioning variations in price will merely reflect variations in the quality and the service features of the item in question.

Assuming condition (a) to be true is a reasonable first approximation for most goods and services. One exception may be medical care. It has been argued that the cost of purchasing on the private market medical insurance comparable in coverage to that available through Medicaid and Medicare substantially exceeds the "price" computed under the market value approach. Smeeding, for example, estimates that the private market price of a Medicare insurance package would be more than 25 percent greater than the government cost, and he assumes this would also be the case for Medicaid, (Smeeding, 1984, p. 153).

Suppose, however, the household would have otherwise consumed less than \$10 worth of chicken per month. If, for example, the members of the household are all vegetarians and hence chicken is viewed as a "bad" rather than a "good" and a resale market does not exist, the chicken would have no value (or even a negative value) to the household. If there is a resale market, the net price in this market (which is presumably at or below the regular market price) measures the value of a pound of chicken. This analysis shows the obvious advantages from the consumer's perspective of food stamps (vouchers that can be used to buy any type of food, excluding alcoholic beverages) over the old Food Distribution Program and the more recent bulk distribution of particular commodities (e.g., cheese).

Indeed, it is precisely because households might otherwise consume less of the specific commodity or service provided in-kind by the government and because the net resale price of the household's surplus is generally less than its cost of production that economists conclude that the "market value" would exceed the true (but unknown) value of the benefit to the household. The more narrowly defined the commodity or service provided and the smaller the resale market price for the household's surplus of the commodity, the lower the value to the recipient. Thus, a commodity distribution program is of lesser value to the recipient than an equally costly Food Stamp Program, and a nontransferable program (e.g., public housing) is of lesser value than a transferable (voucher) program (e.g., rent subsidy) with the same cost to the public treasury (see De Salvo, 1971). On the other hand, after examining a range of in-kind programs others have concluded that "it seems quite acceptable to continue to account for in-kind transfers at cost (but including capital costs)", (Smolensky, et al., 1977, p. 41).

Food Stamps

The market value approach offers a simple mechanism for measuring the value of food stamps. Currently, the food stamp benefit, that is, the number of food stamp dollars given to program participants, is determined by the difference between the dollar value of the estimated family food requirements and the estimated ability of the family to buy food out of its cash income (whether from work or cash transfers). As a result, for nearly all families the face value of the food stamps is less than what the magnitude of food expenditures would have been in the absence of the program. The primary exceptions would be the poorest of families in which it is deemed that they have no ability to pay and the subsidy is the estimate of the entire food budget. Because food stamps are de facto readily transferable among individuals, the resale value for sales to friends, relatives, and small independent merchants is close to, if not actually at, the face value. Hence, under current program provisions the face value of the food stamps is conceptually and empirically a good measure of the value of the stamps to the family.⁵

For over a decade after its introduction in 1964 the Food Stamp Program had a "purchase requirement." Stamps with a face value equal to the estimated food consumption requirements of the family were "sold" by the family for a price based on ability to pay (as measured by an algorithm which incorporated cash income and the number of family members). The difference between the face value of the stamps and the purchase price was the subsidy. Under this regime families were more likely to have surplus stamps, and hence more stamps entered the resale market. Because food stamp dollars are somewhat less fungible than money, the purchase requirement resulted in a subsidy that was of lesser value to the recipient.⁶

Medicaid

The valuation of Medicaid benefits under the market value procedure is based on an insurance approach. Separate computations of the insurance value are done by age, sex, disability status, and state of residence. The latter is particularly important in that the joint Federal-State nature of the Medicaid program results in eligibility requirements and benefit packages that vary from state to state. The insurance value is estimated as the total dollar value of medical expenditures under the program for those in a demographic group, divided by the number of persons in that demographic group who are enrolled in the program.

The insurance approach has two obvious advantages, one conceptual and the other empirical, over the direct pricing of the medical care received under the Medicaid program. First, major medical expenses are generally not financed out of current consumption, but rather out of private insurance or savings (including debt). To add to "consumption potential" in a year the actual major medical expenditures incurred in that year would be inappropriate. Statistically misleading results would emerge, such as expenditures on a major operation raising a family above the poverty threshold.

⁵This is also the conclusion of a study of "cashing-out" the Food Stamp Program in Puerto Rico. See Fraker, et al (1985).

⁶With the abolition of the purchase requirement there does not appear to be any compelling reason for not "cashing-out" the Food Stamp Program. That is, eliminating the stamps and providing the benefits as cash income.

Second, Medicaid recipients do not know the market cost of their own benefits. They could not be questioned directly on this and an attempt at computer matching of the CPS with Medicaid records would be costly if not also an invasion of privacy.

The insurance approach to valuation of these benefits treats Medicaid as if it were a gift of an all or nothing insurance policy. Enrollees are not provided the option of selecting a less generous insurance policy with the balance received in cash. To the extent that Medicaid is the equivalent of providing a nontransferable Cadillac to someone for whom a Chevy would do just as well, the market value insurance approach overestimates the value of the Medicaid benefit. To the extent that a comparable insurance package would cost more in the private insurance market, the market value approach underestimates the benefit (Smeeding, 1984, p. 153).

There is, however, another problem. Medicaid is a form of insurance that is available without money charge to the medically indigent, as well as those deemed to be medically indigent because of participation in some other public program (e.g., AFDC). A decline in earned income or the occurrence of an accident or illness that sharply increases medical costs can result in the application and receipt of benefits. Thus, the program provides insurance protection for individuals not enrolled in the program. The lower the income and assets of a family, the greater the probability that a particular illness will result in the family enrolling and participating in Medicaid.

Thus, there is some probability that a particular nonbeneficiary family will be a beneficiary in any one year. By ignoring "potential beneficiaries" the Census Bureau's procedures underestimate the value for nonenrolled families by assuming that their expected insurance value is zero and overestimate the insurance value of Medicaid for actual program participants. The effect of these misestimations on the proportion of the population in poverty is difficult to determine a priori. Empirical estimates of the extent to which families enter and exit the program with changes in their health status, medical care requirements and other sources of income would be needed to determine the distribution of potential beneficiaries.

Housing Subsidies

Estimates of the market value of publicly provided housing and of rent subsidies are based on the difference between the private market rental value of a housing unit and the rent paid by the subsidized tenant. Data from the Annual Housing Survey (AHS) and the March Current Population Survey are used to generate estimates of the benefit. In practice, the Census Bureau uses a procedure that is more appropriately described as a matched estimate rather than a market value.

Two approaches were explored by the Census Bureau, a "matched housing" procedure and a "hedonic regression" procedure (U.S. Bureau of the Census, 1982, Chapter 5). Each involved essentially two steps. In the matched housing procedure each subsidized housing unit is matched to two nonsubsidized units with similar housing unit characteristics. Two nonsubsidized units are used to "reduce sampling variability", although why only two are used is not made clear. The difference between the rent for the matched nonsubsidized units and the subsidized unit determines the rent subsidy. Apparently this procedure resulted in higher estimates of the housing subsidy than the hedonic regression equation approach.

Under the hedonic regression equation approach rents for nonsubsidized units are regressed on the housing unit's characteristics.⁷ The characteristics of subsidized units are inserted into this regression equation to obtain predicted market value rents for the subsidized units. The difference between the predicted and actual rents is the estimate of the subsidy.

In the original Census Bureau report the estimated subsidy using the hedonic regression equation approach was negative in about one-quarter of the subsidized housing units (Census 1982, appendix D). (The extent of negative subsidies for the "matched housing" procedure was not reported.) Estimated negative subsidies can arise from sampling variability and from measurement error. Costs of search for housing and the cost of moving, as well as irrationality on the part of public housing residents, may contribute to the apparent existence of negative subsidies. Yet, the frequency and magnitudes seem too large for these to be the primary causes.

The estimates of negative rent subsidies most likely arise from specification errors in the model. Following an established practice in the literature, the Bureau's statistical procedures exclude consumer (tenant) characteristics (Census, 1982, p. 46). This would be appropriate if either of two conditions holds. One is that families are randomly assigned to housing units, whether subsidized or not. The other is that tenant characteristics have no influence on rents.

Neither condition holds. First, there is selectivity bias in who enters and remains in public housing or subsidized private housing. Second, renting a dwelling is different than the purchase of many other goods or services, and tenant characteristics may matter. For example, rent control or housing discrimination may mean that the true minimum market rent faced by some subsidized housing residents exceeds the rent estimated from the equation.⁸ Other household or family characteristics may also influence rental opportunities. Other things the same, larger families may result in earlier housing deterioration, a greater repair bill or higher insurance costs for the landlord and larger families would make a greater use of landlord provided utilities (e.g., water and electricity in multiple dwelling units). Poorer families may be expected to be late more frequently in making rent payments, and hence may have to pay a premium to rent a dwelling. These points suggest that consumer characteristics may be important for understanding price differences in the housing market in a manner that may be irrelevant for most other consumer markets.⁹

In addition, the existence of rent subsidies themselves may create price differences. As is alleged in the medical field, landlords may charge higher rents to those receiving "Section 8" housing subsidies since the additional rent is costless to the subsidized tenant. The maximum rent paid by the tenant is

⁷For an exposition of the hedonic approach to estimating implicit prices, see Rosen (1974).

⁸For example, if the average rental price for a given type of apartment is \$300 per month, but because of rent control or housing discrimination, units occupied by new residents or by minorities rent for \$400 per month, the Bureau's procedures underestimate by \$100 the true private sector market rent relevant for the new resident/minority family in public housing.

⁹Caplovitz (1963) shows that consumer characteristics are also relevant for credit markets. The poor do pay more.

determined by the family's income and size and, as long as this rent is less than the rent the landlord receives, increases in the rental charge have no impact on the family. The ceiling set on the amount the landlord can charge is, in principle, determined by the fair market rent for the dwelling.

These points suggest that it may have been an error to exclude tenant characteristics from the models used to generate predicted rents. Controlling for dwelling unit characteristics, tenant characteristics may be an important determinant of rents. And, those in public housing or in government subsidized private housing are likely to be the very individuals with "adverse" characteristics that are responsible for higher private sector rents. Indeed, it may be these very characteristics which drive them to the public housing sector. If so, the Bureau's "market value" procedure underestimates the value of public housing subsidies. As a result, it overestimates the extent of poverty.¹⁰

RECIPIENT OR CASH EQUIVALENT VALUE APPROACH

The major conceptual deficiency of the market value approach to the estimation of the value of noncash benefits is that the value the recipient places on the item may be far below the cost of production or the market value. The economic welfare of a family is not augmented by \$2,000 if a poor Kansas family is given a \$2,000 surfboard. The recipient or cash equivalent value approach is supposed to be the amount of money (cash) that would make the family as well off (i.e., keep them at the same level of utility) as the in-kind benefit. For the Kansas surfboard example this might be the \$10 worth of firewood in the surfboard. While the cash equivalent approach is a conceptually correct procedure for measuring the value of the benefits to the recipients, there is as yet no robust mechanism for estimating the amount of income that would exactly compensate in a utility sense for a noncash benefit.¹¹ Various studies that have attempted to measure these values find that they are sensitive to the assumption of the functional form of the utility function, see Olsen and York (1984).

Under the rubric of cash equivalent value the Census Bureau uses a technique that is better described as a "matched estimate." The procedure uses household surveys with data on expenditures, demographic characteristics, and income. Families are stratified into cells defined by income and demographic characteristics. In each cell, the families are divided into subsidized and nonsubsidized units. Then, the

¹⁰One of the side effects of the analysis of public housing has been the conclusion that "the variation in benefits among households that are the same with respect to the observed characteristics is substantial, no matter what measure of benefit is used" (Olsen and York, 1984, p. 188). This raises questions regarding the target efficiency and equity of public housing as a means of raising the consumption level of the poor. See also, Burke (1984) and Kraft and Olsen (1977).

¹¹The social objective of providing benefits in-kind rather than in cash may be to maximize a function that includes more than just the utility of the low-income recipients. The objective may also be to increase the utility of the taxpayers by altering the consumption patterns of the poor (Paglin 1980). If so, market value may be a better proxy for the value to society (recipients and taxpayers) than is the recipient value.

expenditures on the good or service by nonsubsidized families are compared with the expenditures of subsidized families. The difference is assumed to be the cash equivalent value of the subsidy.¹²

A problem with this approach is that holding income constant there can be important differences in the permanent and transitory components of income. Among those with low current money income those who are not program beneficiaries are more likely to have a large negative transitory income component, that is, they are likely to be recently or temporarily poor. Their current consumption will show a larger share of income and hence a larger dollar amount devoted to certain nondurables (e.g., food) and long-term contractual arrangements (e.g., rent), and a smaller share of current income expended on items whose purchases are easier to postpone (e.g., household appliances, cars, clothing).

This is a specific example of a more general problem with the matched estimate technique. Individuals are not randomly assigned to participation in various public programs. Participation is a function not only of current money income, but also of assets and of the family's demand for the particular type of benefit.

Medicaid provides a good example of some of the pitfalls of the cash equivalent value approach. Families with a higher demand for medical care, other things the same, are more likely to be Medicaid participants. Using the matched expenditure approach would then underestimate the use and hence the total value of the Medicaid benefit. The 1972-73 Consumer Expenditure Survey (Census 1984a) was used to obtain estimates of average ("normal") medical expenditures for participants (presumably zero or close to zero) and nonparticipants. The difference is assumed to be the value of the Medicaid subsidy for 1972-73. The cash equivalent value of the subsidy in any other year is then estimated by assuming that the ratio of the subsidy to income remains the same for all participants in the same cell, where the cells are defined by constant dollar money income and demographic characteristics.

Out-of-pocket expenditures for medical care by nonparticipants are likely to be low relative to the value of Medicaid coverage, in part because, other things the same, those who would otherwise have greater out-of-pocket expenditures are more likely to apply for and be eligible for Medicaid. Thus, those who are healthier, who have access to more generous employer-financed health insurance coverage, and who "underinsure" (e.g., do not have major medical or catastrophic health insurance) because of the knowledge that if the need arises they can join Medicaid, would show a low share of current out-of-pocket expenditures devoted to medical care or insurance. Low estimates of the cash equivalent value of Medicaid would emerge as a result of this selection bias.

The severity of the selection bias in the matched procedure for estimating the cash equivalent value of Medicaid may be indicated by the 10-fold difference between the market value and cash equivalent (matched) value. The Census Bureau reports, for example, that in 1979 a low-income elderly person in New York would be assigned a market value of \$3,961 but a matched expenditure value of only \$385 for the year (Census, 1984a, P. XIII).

The selection bias problem for participation in the Medicaid program would, of course, not exist for Medicare. But another problem does exist. There is no comparable population of the aged without Medicare coverage that can be used to

¹²If the "normal expenditure" exceeds the estimated market value, the recipient value was set equal to the market value for food stamps and housing subsidies.

develop matched estimates. To use medical expenditures by the aged prior to the introduction of Medicare to obtain these estimates is grossly inappropriate. The purpose of the program was to increase access to medical care by the aged and over the past two decades this increase access has, in fact, taken place. Furthermore, as a result of changes in medical technology and the rise in the relative price of quality adjusted medical care, expenditure patterns in the 1980's are very different from the early 1960's.

Thus, in principle, the cash equivalent value methodology, in which the value of the benefit is measured as the amount of income that would exactly compensate in a utility sense for a noncash benefit, is the most appropriate procedure for measuring the value of the benefit to the recipient. In practice, however, it cannot yet be implemented to obtain robust estimates. Instead, using a similar label the Census Bureau has adopted a very different procedure--a matched estimate procedure. Perhaps the greatest failing of this procedure is that it ignores the reasons for program participation. This selection bias problem is particularly severe for housing and medical benefits.

POVERTY BUDGET SHARE APPROACH

The third procedure developed by the Census Bureau is referred to as the "poverty budget share" approach. This may be more accurately described as a "bounded market value." An upper limit is placed on the market value assigned to a family. The upper limit is the amount usually spent on the good or service by those who are not program beneficiaries but are near the poverty level. This is done under the assumption that "values in excess of this amount cannot always substitute for other needs" (Census, 1984a, p. B-14). The implementation of the procedure, however, treats any benefits above the threshold levels as having no value to the recipients. As a result the poverty budget share approach assigns income to families that are equal to or less than the income assigned under the market value approach.

There are two key assumptions to the implementation of the poverty budget share approach. One is that noncash benefits in excess of an arbitrarily assumed consumption maximum are of no value. The other is that program participants have the same demand for the subsidized goods and services as do near-poverty nonparticipants. Each of these assumptions is seriously flawed, as is demonstrated by the following discussion of the application of the approach.

Food Stamps

There are two conceptual flaws in the application of the poverty budget shares with regards to food stamps. First, one objective of the Food Stamp Program was to increase food consumption above the level it would otherwise attain among low-income families. Thus, the statistical procedure appears to violate one of the intentions of the program by assuming the "excess" consumption has no value. In addition, there is a very good informal resale market for food stamps that a family may have in excess of its expenditures on eligible food items. These stamps are, therefore, readily convertible into cash, and hence can be substituted for other "needs," even if it is on a somewhat less than a one-for-one basis.

Second, the arbitrary nature of the "ceiling" is also demonstrated in the case of food subsidies. The ceiling on the market value is one-third of the poverty threshold for a family of a given size and structure. That is, the ceiling is

reverting back to the analysis of the Department of Agriculture's 1955 Survey of Food Consumption that found that the average of all families spent one-third of their income on food. Because of the rise in real income and the relative decline in the price of food over the past three decades, as well as the low income and price elasticities of demand for food, the share of food in average family consumption is lower now than three decades ago. Near-poverty families would, of course, devote a larger than average share of income to food, so it may happen to be correct that their share is close to 33 percent. In practice, however, the very high ceiling applied to the Food Stamp Program means that few families are bounded by the poverty budget share ceiling. As a result it has little practical effect on the poverty estimates.

Medicaid

Medicaid provides a good example of another conceptual problem with the poverty budget shares approach, self-selection in program participation. Assume that, other things the same, there are two sets of families. One set of families has low or zero out-of-pocket medical expenses because they are very healthy or have access to broad coverage under an employer-financed medical insurance program. The other set has high out-of-pocket expenditures because of illness or the absence of alternative medical coverage. The latter families have a greater incentive to apply for, and are more likely to be eligible for Medicaid. Yet, the poverty budget share procedure places a cap on the value to them of Medicaid based on the low out-of-pocket expenditures of the healthy, heavily privately insured population.

In practice the Census Bureau uses data from the 1960-61 Consumer Expenditure Survey to estimate the ratio of medical expenditures to income for families at the poverty line. These ratios are then used to determine the poverty budget share ceilings that are compared to the combined estimate of the market value for Medicare and Medicaid. Of course, these programs were enacted in 1965, in part, because it was assumed that the aged and the poor were "underconsuming" medical care. And presumably the extent of underconsumption would have been the greatest for those who have become program participants. Furthermore, as a consequence of the rise in the relative price of medical care and of technological changes that increased the quality of available medical care, medical expenditures as a proportion of income have increased sharply over the past quarter of a century. The poverty budget share ceilings for medical care are meaningless.

Again, the poverty budget share estimation procedure seems to be contrary to the intended purpose of the program. Medicaid and Medicare were introduced to provide access to medical care for the medically indigent and the aged, that is, to those with high medical expenses relative to their income and alternative forms of health insurance.

Housing Subsidies

Poverty budget share ceilings on the market value of housing subsidies are determined by housing expenditure to income ratios for families living in nonsubsidized units with income near the poverty level (incomes within 25 percent of the poverty level). The problems discussed above still apply. In particular, program participation is subject to selection bias. Those with a higher demand for housing are more likely to be program participants. Those who have family

characteristics that result in their having to pay higher rents than others for the same unit in the private market are also more likely to be in public housing or to apply for and receive rent subsidies. By essentially assuming away these problems the poverty budget share approach underestimates the value of the subsidies.

Summary

An assumption built into the poverty budget shares approach is that in a utility sense there is no substitution among types of consumption. Yet the theoretical and empirical consumer demand literature is largely devoted to the substitution of one good for another as relative prices change. If the relative price of housing goes down, more of it is consumed and there may be less consumption of other items, including food, clothing, and entertainment. To assume that the consumption of a good or service beyond some (arbitrarily determined) ceiling provides no utility is to deny both conventional economic theory and observed consumption behavior.

VALUATION PROCEDURES AND THE INCIDENCE OF POVERTY

Tables 2 and 3 report the number and proportion of the population living in families below the poverty level from 1979 to 1983. They also report the poverty statistics for the three alternative methodologies for measuring the value of noncash benefits. For each procedure a pyramid approach is used for assessing programs. Poverty data are computed when money income is augmented by the value of (a) food and housing subsidies, (b) food, housing, and for the noninstitutionalized population, medical benefits, and (c) food, housing, and medical benefits for both the institutional and noninstitutional population. As a result, the Census Bureau offers 10 measures of the number and percentage of the population in poverty overall and by demographic group.

Each of the methodologies assumes that the value of noncash benefits is nonnegative. As a result the poverty numbers are smaller when more noncash benefits are included. The procedures differ, however, in the extent to which they lower poverty estimates. As would be expected from the previous discussion, the market value approach consistently has the largest effect on the poverty data. The recipient value and the poverty budget share approaches provide smaller estimates of poverty reduction than the market value, but there is no consistent pattern as to which of the two has the greater impact.

Food And Housing Benefits

It appears that the estimates of the value of food and housing subsidies significantly reduce the poverty rate. The official poverty rate of 15.2 percent in 1983 is reduced by 1.2 to 1.4 percentage points depending on the valuation methodology. Indeed, there is little difference in the estimated contribution under the three valuation methods. Unfortunately, the separate contributions of food and housing are not reported. Thus, the separate marginal contributions of the food and housing programs cannot be ascertained from the Census Bureau reports, even though these data can be produced at a small computer cost by the Bureau. While the degree of poverty reduction may be only one of several programmatic objectives, it is surely a useful index to consider in evaluating the social benefits from these programs. This interest in seeing the separate contributions is heightened by the greater confidence one has in the procedures for estimating the value of the food benefits than the housing benefits.

Table 2. Number of Persons in Poverty, by Valuation Technique and Type of Noncash Benefits Included: 1979 to 1983

(Numbers in thousands)

Type of measure	1983	1982	1981	1980	1979
Official definition	35,266	34,398	31,822	29,272	26,072
Market value approach:					
Including food and housing	31,903	30,688	27,932	25,042	21,698
Including food, housing and medical care for noninstitutionalized persons	24,334	23,563	21,046	18,221	15,696
Including food, housing, and all medical care	23,739	22,885	20,500	17,706	15,099
Recipient value approach:					
Including food and housing	32,528	31,365	28,651	25,633	22,270
Including food, housing, and medical care for noninstitutionalized persons	30,585	29,407	26,784	23,895	20,478
Including food, housing, and all medical care	30,202	29,058	26,500	23,512	20,152
Poverty budget share value approach:					
Including food and housing	32,237	31,111	28,317	25,602	22,409
Including food, housing, and medical care for noninstitutionalized persons	29,935	28,720	26,175	23,299	20,186
Including food, housing, and all medical care	29,935	28,713	26,175	23,299	20,184

Source: U.S. Bureau of the Census, Technical Paper 52, Estimates of Poverty Including the Value of Noncash Benefits: 1983, U.S. Government Printing Office, Washington, D.C. 1984, table C.

Table 3. Percent of Persons in Poverty, by Valuation Technique and Type of Noncash Benefits Included: 1979 to 1983

Type of measure	1983	1982	1981	1980	1979
Official definition	15.2	15.0	14.0	13.0	11.7
Market value approach:					
Including food and housing	13.8	13.4	12.3	11.1	9.7
Including food, housing, and medical care for noninstitutionalized persons ...	10.5	10.3	9.3	8.1	7.0
Including food, housing, and all medical care	10.2	10.0	9.0	7.9	6.8
Recipient value approach:					
Including food and housing	14.0	13.7	12.6	11.4	10.0
Including food, housing, and medical care for noninstitutionalized persons ...	13.2	12.8	11.8	10.6	9.2
Including food, housing, and all medical care	13.0	12.7	11.7	10.4	9.0
Poverty budget share value approach:					
Including food and housing	13.9	13.6	12.5	11.4	10.1
Including food, housing, and medical care for noninstitutionalized persons ...	12.9	12.5	11.5	10.4	9.1
Including food, housing, and all medical care	12.9	12.5	11.5	10.4	9.1

Source: U.S. Bureau of the Census, Technical Paper 52, Estimates of Poverty Including the Value of Noncash Benefits: 1983, U.S. Government Printing Office, Washington, D.C. 1984, table D.

Medical Benefits For The Institutionalized Population

The numerator and denominator of the poverty rate refer to the noninstitutionalized population. This is appropriate as poverty statistics for the institutionalized population, including those in prisons, nursing homes, and mental hospitals, would not be meaningful, whether the institutionalization is voluntary or involuntary. Thus, public expenditures on the food and shelter of the institutionalized population are not included in the valuation of benefits.

Nevertheless, a set of estimates are presented by the Census Bureau for the poverty rate of the noninstitutionalized population which includes the aggregate Medicare and Medicaid expenditures for those who are institutionalized. The procedure implies that the noninstitutionalized aged population in a state are currently better off if there is greater public expenditure on the medical care for the institutionalized aged, because the quality of their care has increased, they are in poorer health or more people are institutionalized. After accounting for food, housing and medical benefits for the noninstitutionalized population, adding the medical benefits provided the institutionalized to the income measure (for those in the same state and "risk class") lowers the poverty rate by 0.3 percentage points for the market value approach. It lowers it by about 0.1 to 0.2 percentage points for the recipient value method and has no effect under the poverty budget shares method.

It is difficult to develop compelling reasons for including the medical benefits for the institutionalized under an insurance value approach. It might be perceived that medical insurance is not separable—one must buy noninstitutional and institutional care packages. In the market place, however, they are separable. In addition, they are separable in the government statistics. Alternatively, it might be viewed that individuals without this protection would set aside funds each year to accumulate a medical fund in anticipation of institutionalization. This seems unrealistic. Furthermore, there is evidence that the large increase in the institutionalization of the aged in the past two decades was largely the result of changes in the demographic characteristics of the aged, the employment opportunities of adult (nonaged) women, and the rise in real family incomes, rather than the introduction of Medicaid per se (Chiswick, 1976). That is, the largest impact of Medicaid on the institutionalized may have been to serve as a substitute for funds from the existing state government programs, charity, and nonaged relatives.

Thus, it appears to be inappropriate to include the value of noncash benefits for the institutionalized population in the income measure for those who are not institutionalized.

CONCLUSIONS

The Census Bureau's efforts to measure the effect of noncash benefits on income and hence on the poverty statistics have been impressive and should be encouraged. At the same time, as with any new effort, considerable reevaluation and reassessment are warranted. On the basis of the foregoing analysis the following recommendations are offered.

For Immediate Implementation

1. Poverty budget shares approach--This procedure is a bounded market value approach where the ceiling placed on the value of the benefit is subject to selection bias and is arbitrary. This approach is conceptually groundless and should be discarded.

2. Recipient value approach--This approach is not a recipient value or cash equivalent value approach, but rather is a "matched estimate" based on the assumption that there is no selection bias in program participation for families with the same current income. Measures which ignore selection bias in program participation are seriously flawed. Research efforts to estimate the nature of the selection bias should be continued and may prove to be quite successful in the coming decade as richer data (particularly the longitudinal data from the Survey of Income and Program Participation (SIPP)) become available. However, publication of these estimates should be delayed until this problem is solved.

3. Market value approach--Of the three approaches the market value estimates are conceptually the most sound, although not perfect. While in general a straight market value approach would be expected to overestimate the value to the recipient of noncash benefits, it is not obvious that this is the result of the implementation of the Census Bureau's procedures. Given the nature of the current food subsidy programs the benefits are virtually the equivalent of cash and the market value approach seems appropriate. The Census Bureau uses essentially a matched estimate approach for valuing the housing subsidies, but because the methodology largely ignores program selection bias and family characteristics, the procedure may underestimate rather than overestimate the value of the subsidies. Nor is it unambiguous that the procedures overestimate the value of the Medicare and Medicaid benefits. Comparable medical insurance purchased on the private market would be more costly. Furthermore, by including in the population base only program participants, the insurance value of Medicaid benefits is underestimated for potential participants and overestimated for actual participants. Clearly, the estimation of the value of the medical benefits is most problematic.

The presentation of the data could be improved. The estimates of the market value of the food, housing and (noninstitutional) medical benefits (Medicare and Medicaid) should be separately identified. The marginal contributions to poverty reduction of each of the four major categories of programs should be presented. This would provide useful information on the relative contributions of each of these programs to poverty reduction.

4. Medical care for the institutionalized population--The inclusion in the income of the noninstitutionalized population of estimates of the value of medical benefits received by those who are institutionalized appears to have no conceptual foundation. It appears to distort rather than enhance the nature of the insurance value of the medical benefits. This element should be dropped.

Research Agenda

Several research topics are suggested in increasing order of complexity.

1. Potential beneficiaries of Medicaid--A conceptual problem in the determination of the insurance value of the medical benefits, particularly Medicaid, is the implicit assumption that there is no mobility in and out of the program in response to changes in income and health status. As a result, the full market value of the benefits are attributed to current year program beneficiaries, while no insurance value is assigned to potential beneficiaries. The "expected insurance value" could, in principle, be assigned to nonbeneficiaries on the basis of the "expectation" that they will be beneficiaries, as well as the benefit if they do participate. Note that this procedure would lower the estimate of the insurance value to current beneficiaries and raise it from zero for nonbeneficiaries. The net effect on the number and proportion of the population in poverty is not clear a priori.

2. Selection bias in program participation--Efforts to develop more reliable estimates of the recipient value require the development and estimation of robust models for the determination of program participation. Current matching techniques do not adequately address the sample selection bias problem. Longitudinal data files, such as Survey of Income and Program Participation (SIPP), may be crucial to the estimation of these models.

3. Value of induced nonwork time--Time spent in leisure and in home production are not without value. An increase in the level of noncash benefits or in the implicit marginal tax rate on earnings in these benefit programs have the effect of decreasing work time, and hence increasing leisure and/or time in home production. Estimates of the effects on poverty of the introduction and modification of noncash benefit programs have ignored the impact on economic well-being from changes in the allocation of time. Research needs to be undertaken to estimate the marginal value of nonwork time among the low-income population, as well as the response of nonwork time to programmatic parameters so as to incorporate this effect. Note that it is only the changes in nonwork time in response to changes in the programs, and not the total amount of nonwork time, that is under discussion.

4. Other noncash benefits--The food, housing and medical programs under investigation are only a small set of the myriad of noncash benefits that have grown or emerged in the past two decades. Employer financed medical, life, and more recently, legal insurance, as well as deferred incomes (pensions) are among the noncash benefits received largely by the nonpoor. Better estimates of the contribution of noncash income to the distribution of income and economic well-being require research on the types of noncash income received through employment. The Census Bureau, among others, has started research on these issues and this research should be encouraged (see Smeeding (1983) and Ryscavage (1985)).

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Comments

Henry J. Aaron

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on the paper by

Barry R. Chiswick

Any examination of statistics should begin with an understanding of why we want them. Such an understanding is crucial because the uses to which we wish to put the statistics influences how we should define them.

We use poverty statistics for three major purposes:

- to compare aggregate poverty over time;
- to compare group poverty over time, where groups are defined by age, race, family type and size; and
- to compare group poverty rates with each other at each point in time.

If a proposed change does not matter for these comparisons, it does not matter for the measurement of poverty, whatever the significance for the measurement of income. The household characteristics issues that Chiswick raises may be very important for measuring individual household income, but absent a showing that they have a significant impact on these comparisons, I do not think they matter. Ditto, his comments on selection bias.

We make limited use of poverty statistics for allocating funds through grants-in-aid and for planning the focus of governmental programs. We do not use the concepts underlying poverty statistics for determining eligibility of individuals or households for government benefits, although we do occasionally use the income levels generated by those concepts as thresholds for program eligibility (e.g., food stamps or energy assistance). The last point means that details of measurement that may be important for comparing the income of individual households may be unimportant for measuring poverty if the effects average out for purposes of the relevant comparisons. That means that certain questions, which are central for measuring household income--for tax purposes, for example--such as capital gains, may be of no significance in the measurement of poverty. Capital gains could be disregarded, for example, if it could be shown that they do not materially affect the rate at which poverty changes over time or on the relative rates of poverty among different groups.

In making such determinations, it is central to recall that the poverty thresholds are arbitrary indexes and nothing more. The absolute income numbers that we choose have no significance whatsoever except that they divide the population into two groups, one of which is "poor" and one of which is "nonpoor." The index is adequate if it marks off groups which strike us as poor, not just on the basis of this particular index, but on the basis of whatever socioeconomic criteria enter our evaluations of who is -- dare I say it -- truly needy.

Thus, if we conclude that a particular index divides the population in a way we regard as sensible on the basis of broad criteria, and if we then change our index because we think it gives a misleading impression of how poverty has changed over time or of the relative levels of poverty among different groups, we should not feel that we must consider as mistaken our judgments about the amount of poverty at the time the initial index was created.

To make the preceding rather cumbersome sentence more specific: the Orshansky thresholds defined a portion of the population as "poor." Many of us now think that the Orshansky definitions give a misleading picture of the trends in poverty because they exclude in-kind benefits of various kinds. Suppose we decide to augment the current definition of poverty, which is based on cash income, with an imputation for the value of certain in-kind benefits, a change that will alter the rate at which poverty changes over time and may affect the relative amounts of poverty among various groups. That change creates a problem: either we must reduce the amount of poverty today; or, if we think the current index is a good measure of the aggregate amount of poverty today, we must acknowledge that more were poor in the past than we had counted. Which of these two conclusions we reach is not a measure of objective science; it is a matter of subjective social and political judgment.

COMMENTS ON MEASURING POVERTY

The index that we use for measuring poverty rests on a number of assumptions, some of which are seldom examined, that are central to the resolution of the difficult puzzle concerning the valuation of income in-kind. I shall focus on four.

First, the poverty index is based on the assumption that all commodities sell at a single price, or that any differences that may exist are small enough not to affect the information that the index gives us for the relevant comparisons I sketched. This assumption is embodied in our willingness to use the same dollar cut-offs for all geographical areas and socioeconomic groups. If prices varied systematically along them, it would be necessary to adjust the thresholds accordingly.

Second, we ignore consumer surplus, and that means we ignore utility. We value income at $\sum p_i q_i$, where p_i is the price of the i^{th} good and q_i is the number of units of the i^{th} good that each person buys. The price, p_i , represents both the market valuation of the good and, according to consumer theory, the marginal valuation placed on the good by the consumer. Inframarginal consumer surplus is ignored. We do not value food at the amount a person with no access to food would pay for a year's ration, but multiply the market price (which equals) times the quantity consumed, and by consumer theory (that equals the consumer's marginal valuation of food) multiply by the quantity consumed. The point that I am making is as old as the diamond-water paradox that is commonly presented in elementary economics to illustrate the difference between total and marginal values. (We cannot live without water, while most of us can manage quite easily without diamonds, but the marginal value of water is negligible and the marginal value of diamonds is high.)

This argument leads to a third assumption. In using income as an index of well-being, we implicitly treat the marginal social utility of income as equal across persons. For purposes of measuring poverty, we may allow differences in the marginal utility of income by income level; but we assume that the marginal utility of income

is the same for all households at the poverty thresholds. Finally, we treat the index-number problem as unimportant, as indicated by the fact that we deflate by a single aggregate price index and treat the resulting relatives as unambiguous indicators of the relative thresholds in different years.

Given these conventions, we developed and amended a set of income thresholds derived by multiplying some flawed food survey data by an integer that happened to be midway between 2 and 4. But I regard the particular method of derivation as an historical curiosity for present purposes. What counts is the proportion of the population and its subgroups we happened to designate as "poor" and "nonpoor."

We now realize that we omitted from the construction of our index certain items that both are important to well-being and that this omission distorts the comparisons I described above. If the omission didn't cause distortions in these comparisons, we would not care any more about them than we do about, say, the mismeasurement of capital income in official statistics.

COMMENTS ON MEASURING IN-KIND INCOME

I turn now to a number of comments on the measurement of in-kind income, some of which bear on Chiswick's paper. My initial remarks will concern medical benefits.

To begin with, the only way of measuring the value of in-kind income that is consistent with the conventions used in treating cash income as a measure of well-being is the recipient value approach. In principle, the value of in-kind benefits to each person is $\sum p_j q_j^*$, where q_j is the number of units of the in-kind benefit of type j that the person or household receives multiplied by p_j^* , the marginal valuation of the j^{th} in-kind benefit.

Unfortunately, this method of valuation suffers from crushing practical and conceptual problems. First, p_j^* differs for each person, depending on the amount of the in-kind benefit the person receives. About all that we know is that for all persons who would have purchased less of the in-kind benefit than they are given, had they been given the market value of the in-kind benefit in cash, is that $p_j^* < p_j$, where p_j is the market price per unit of the in-kind benefit. Hence, about all that we know is that the market value approach is wrong. This judgment flatly contradicts one of the key propositions in Chiswick's paper.

In addition to this conceptual problem with using p_j^* , however, there are equally serious practical problems. How should we define the units into which the package of Medicare or Medicaid benefits is divided? How can we come close to defining how households would value that marginal unit? The variation in the generosity of public program could easily lead to nasty paradoxes. If health care is provided to satiation in one place, the marginal valuation may equal or approach zero. The value of $\sum p_i q_j^*$ could then equal or approach zero. The marginal value in other states that provide small benefits would be considerably higher, and the total benefit might well be larger. Valuing generous benefits below stingy ones is

silly, but this is what consistent application of the recipient value approach implies. The fact that private insurers manage to offer insurance packages with diverse benefits and to settle on prices for them, and that people buy these packages takes us nowhere, I think. Most private insurance is paid for by employers and individuals receive this insurance without having to pay taxes. If consumers are optimizing and face positive income tax rates, we know that the marginal value of health insurance is less than that of privately purchased goods. But we have no idea how much less, because most plans serve people with different marginal tax rates. Unless employees sort themselves among employers solely on the basis of health insurance, not all employees can be optimizing at the same time, and hence some employees may be in an intra- and some in an extra-marginal position. I conclude that the recipient value approach cannot be used either.

Which brings me to the poverty budget shares approach. Chiswick criticizes this approach to the evaluation of medical benefits on several grounds. Among the most persuasive are that access to Medicaid or, for that matter, Medicare is not the same as receipt of benefits under these programs. Some people have effective protection who are not now on the roll. This category includes, for example, all persons in states with programs for the medically indigent (that is, for persons who are not categorically eligible because they are not on the welfare rolls, but who can gain eligibility for Medicaid if their medical expenditures when subtracted from income yield a residual that is below specified thresholds. It is not clear how such benefits should be measured. Of perhaps greater importance is the point that Ellwood and Summers make; the appropriate share is undefined because many people, not all of them poor, receive uncompensated care from hospitals or physicians.

In short, I find inadequate all three of the methods that the Census Bureau has used for evaluating health care not paid for by households. None is sufficiently reliable. Use of any one of them is likely to lead to misleading comparisons of the rate of poverty at different points in time, among geographic areas, and among different family types.

Should we follow the course recommended by Ellwood and Summers of ignoring in-kind health benefits and subtract direct payments for health care by individuals and families? I am not sure what course I would recommend for general statistics on the distribution of income. But I do not think that their recommendation should carry over to the measurement of poverty. Few commodities are more salient to the definition of abject want in modern society than a lack of access to "adequate" health care. To ignore it altogether in defining poverty would exclude from the definition an item, like food, that is often essential for life and is certainly necessary for freedom from gross economic insecurity.

I would suggest that a person is poor if he or she lacks access both to a minimally adequate menu of health benefits and sufficient quantities of other goods and services.¹ One would measure each spending unit's cash income (with imputations, as noted below); if that amount of cash fell below stipulated poverty thresholds, the person would be defined as poor. If that person had even a munificent health coverage through Medicare, Medicaid, or employer-purchased health insurance, the person would still be defined as poor, because the health benefits are not at all fungible. If that spending unit was not defined as poor on the basis of income, it

¹Gary Burtless suggested this two-index method of defining poverty.

would still be classified as poor if it lacked "adequate" health coverage and if the direct purchase of such coverage would cost enough to reduce residual income below the stipulated thresholds. Clearly, what is "adequate" is a matter of judgment—but so is the "adequate" food budget that historically has served as the basis for defining "adequate" income—in other words, for defining the poverty thresholds. People are poor if they don't have enough to eat. They are poor if they lack means to get adequate health care.

Moving from health care, the hardest case, to food stamps, the easiest, Chiswick argues, correctly in my judgment, for including food stamps at their market value. This course is justified for two reasons. For most recipients households, food stamps are inframarginal and hence cause no distortion in consumption; hence, they simply augment purchasing power. In addition, a good market exists on which stamps may entail some stigma, but since poverty statistics measure command over material consumption, stigma is irrelevant.

So is leisure, for reasons that Ellwood and Summers state. Leisure certainly is an important argument in utility functions, as Chiswick argues, but income does not measure utility—remember the point about consumer surplus—and our poverty definitions are based on material resources, within which class leisure does not fall. Chiswick might prefer a poverty definition that includes more than material resources, but the practical obstacles to creating such a definition and implementing it are overwhelming.

Housing subsidies constitute a conceptually difficult intermediate case. I share Chiswick's frustration at the lack of information on how much difference the three valuation methods used by the Census Bureau for valuing housing benefits matter in measuring poverty. On the merits, the facts that housing benefits are not fungible and in many cases the benefits are not inframarginal militate against using the market value approach, whether measured by market surveys or hedonic estimation. Chiswick scores some good points against each of the other valuation methods. My inclination is that very little is at stake in any of the comparisons in which we are interested. If that is the case, I would opt for the procedure that can be carried out most easily. Note that this position hinges on the relative smallness of housing subsidies; it is based not on theory, but on practicality. If housing subsidies were larger or highly concentrated, this dodge would not be available.

CONCLUSION

Although the number of issues in measuring income is unending, I will conclude with only two other observations. The first is that Chiswick makes a strong case for excluding the long-term institutionalized population from calculations of poverty. They have been removed by antisocial behavior, illness, or infirmity from the usual economic processes. We may legitimately enquire whether the policies we adopt toward them are humane and effective. But there is little point in distorting measures either of population or of the poor by including them. And there is little point in including the expenditures devoted to their care or incarceration. Those institutionalized for a short period pose a harder problem. They will return to the general population, and their benefits reflect the finite probability each noninstitutionalized person will receive institutional care in the next year. Distinguishing the short-term from the long-term institutionalized population would be extremely burdensome, however; for practical reasons, therefore, I would side with Chiswick in excluding all institutionalized persons from poverty counts and the services they receive from income.

The second point is that Ellwood and Summers are surely correct in arguing for the exclusion of taxes in measuring resources available to households for material consumption. Specifically, we should exclude direct personal taxes--the personal income tax and the employee's portion of the payroll tax. If these items are excluded, the poverty thresholds would have to be adjusted accordingly. Taxes are important because excluding them would have an important bearing on relevant comparisons of poverty rates. It would influence comparisons of aggregate poverty rates over time, as the burden of direct personal taxes on the poor has changed--the income tax threshold for a family of four, which was 22 percent above the poverty threshold in 1975, fell to 17 percent below it in 1984. And it would influence comparisons of poverty rates among age groups, because payroll taxes, which fall far more heavily on the nonaged than on the aged, have grown considerably in importance. I wouldn't bother about sales taxes, because they are--or should be --incorporated in the deflator.

ACKNOWLEDGMENT

I wish to thank Gary Burtless for a number of ideas which I have freely plagiarized.

Comments

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on the paper by

Barry R. Chiswick

I find myself in agreement with most of what Professor Chiswick says in his interesting paper, but there is one fundamental issue that he touches on only briefly where I do disagree. That issue is whether in-kind transfers should be counted at their market value or their subjective value to recipients in measuring income. As I understand his remarks, Chiswick believes the recipient value approach is appropriate in principle, but he has reservations only because of the technical problems in measuring the value to recipients accurately. I agree that our inability to estimate recipient values accurately weakens the case for this measure. However, I believe the technical problems are even greater than Chiswick suggests, and that a consideration of these problems raises other issues that further undermine the case for the recipient value measure. Furthermore, it is not clear to me that we should choose the recipient value measure over the market value measure even if we could measure recipient value perfectly. In my comments, I would like to concentrate on the important question of whether market value or recipient value is the appropriate valuation method.

One of the defects of the recipient value approach is that it is difficult to estimate recipient values accurately, as Chiswick emphasizes. Chiswick stresses, in effect, that we need to know a lot about the preferences of recipients to estimate recipient values. But problems of accurate estimation extend beyond the difficulties of knowing the underlying preferences of recipients. A further difficulty is that the economic decisions of low-income households are distorted in many ways. Not only do in-kind transfers affect consumption patterns, but cash transfers affect labor supply and consumption decisions (consumption decisions are affected by the incomplete income definitions used in cash transfer programs). Taxes paid by low-income households distort various economic decisions, as do minimum wage laws, tariffs, agricultural price supports, rent controls, and many other policies and institutions. Each of these distortions makes the recipient value of disposable market incomes less than the market value of those incomes. In this setting of many distorting influences, as we know from the theory of second best, it is far more difficult to identify, much less measure, the distorting effect of some single, or small set, of policies like in-kind transfers.

Recognizing that there are many distortions of the economic decisions of low-income households raises another question. Since all of these distortions make recipient value less than market value of income, why should we use recipient value only for in-kind transfers? Why not also measure the recipient value of income after the distorting influences of the numerous other policies that affect low-income households? Logically, there is no difference between the welfare cost of in-kind transfers (which makes recipient value less than market value) and the welfare cost of cash transfers (as they affect labor supply, for example); both introduce inefficiencies that reduce the recipient value of income. So, is it reasonable to pick one distorting factor in the economy--in-kind transfers--and adjust incomes for this alone, ignoring all the other distorting factors? This seems to me to be an inconsistent position.

Consistency calls for using market values or recipient values in all cases. Once we recognize the multitude of distortions involved, it is clear that we lack the knowledge to estimate recipient values with any degree of accuracy at all. But we can consistently measure all incomes at market value; that is basically what the Census Bureau now does with its data on money incomes. In the interest of consistency with the way other incomes are measured, we should evaluate in-kind transfers at their market value.

A particularly clear instance of inconsistency arises when the Census Bureau measures all incomes after payment of taxes. Taxes have excess burdens, or welfare costs. The recipient value of the taxpayer's income is not the after-tax income reported by the Census Bureau; this is just the market value of after-tax income. Recipient value would be this figure less the excess burden of the tax. What sense does it make to use the market value of after-tax income for middle- and upper-income households, but recipient value of income for low-income households that receive in-kind transfers? It cannot be argued that the excess burdens of taxes are more difficult to estimate than the welfare costs of in-kind transfers; there has been more research on the excess burden of taxation than on the inefficiencies of in-kind transfers.

The practical difficulties of estimating recipient value and the inconsistencies of treatment if they are used for in-kind transfers and not for other types of income represent strong reasons for favoring the market value approach over the recipient-value approach.

There is another reason for favoring the market value approach, however. Let us assume that we can measure recipient values of all kinds of income, including in-kind transfers, with complete accuracy. Should incomes then be measured in terms of recipient value in determining the number of poor persons? To many economists, it appears self-evident that this is proper. But even in this case, the argument for the use of recipient value is not compelling in my view. I do not have time to discuss all the relevant points adequately, but let me refer you to Chapter 1 of Morton Paglin's book, Poverty and Transfers In-kind, where he discusses the issues and concludes in favor of the market-value approach even if recipient values could be measured.

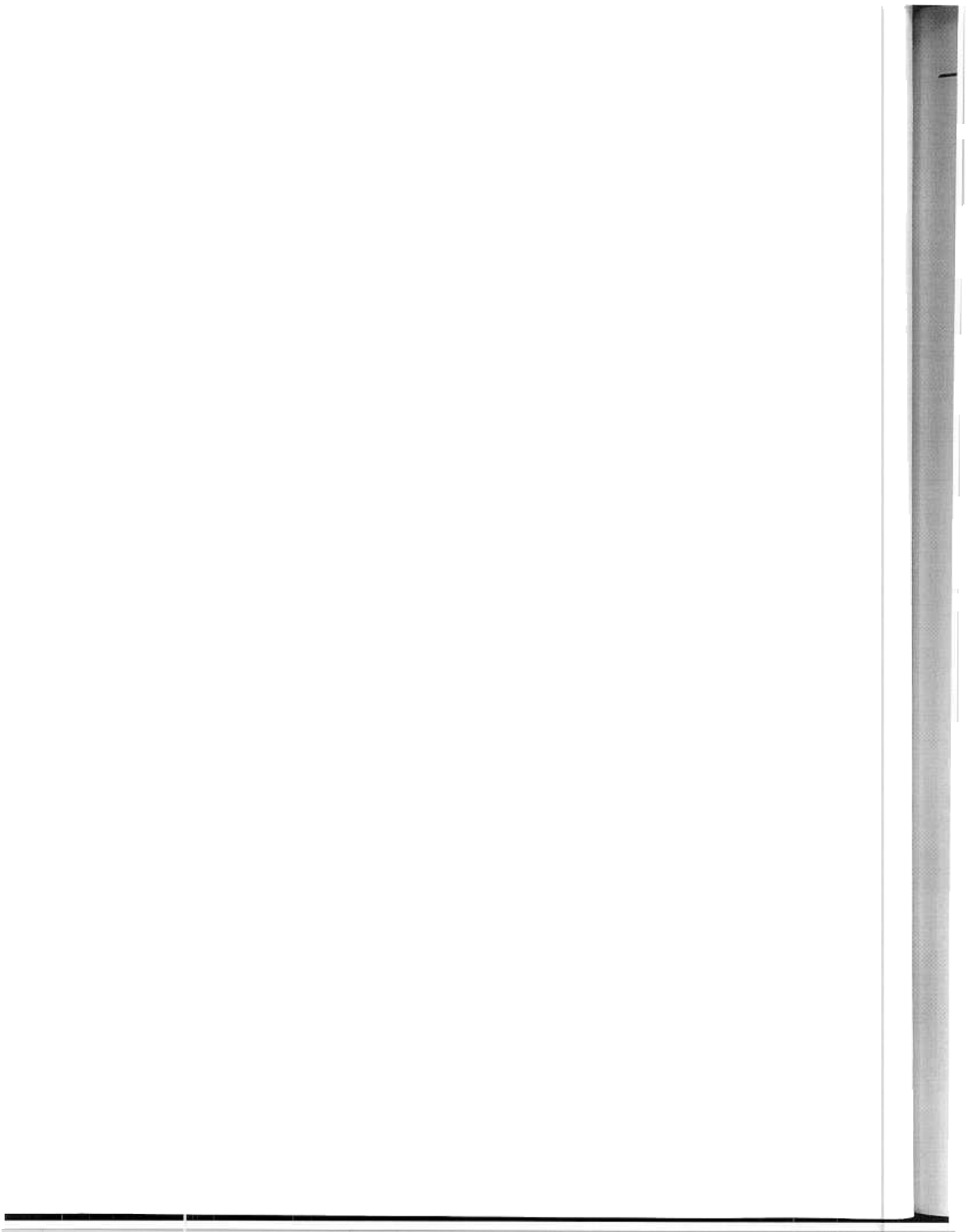
One of Paglin's points is that the official conception of poverty is an objective one based on a family having the purchasing power necessary to purchase certain minimum quantities of basic necessities. He uses an example similar to the following. Suppose that a nutritionally adequate diet costs \$3,000, and with a multiplier of three, the poverty line is set at \$9,000. Now let us give this family \$3,000 in food stamps and \$6,001 in cash; assume it has no other income. Paglin argues that according to the official conception of poverty, this family is not poor; it has, we may assume, purchased a nutritionally adequate diet and enough of other basic necessities. Even if the \$3,000 in food stamps was worth less than \$3,000 to the family because it doesn't care much about nutrition, the family is not poor according to the official concept of poverty. The point is that the poverty threshold is not defined as the utility level that would be achieved if the family could freely spend \$9,000 at competitively determined prices. If that were the case, it would indeed be appropriate to use recipient value in measuring in-kind transfers. But that is not the way the poverty thresholds were originally arrived at, and it is not the way the general public views poverty.

The very existence of in-kind transfers would seem to be good evidence that poverty is not conceived of in terms of utility levels, but as inadequate quantities of certain goods regardless of the preferences of recipients for these goods. If

this is correct, then it is presumptuous of economists to argue for the Census Bureau to use recipient values because that's the way economists think standards of living should be measured.

If recipient values are used in defining poverty, then we could reduce the number of poor people by (perhaps) several million just by cashing out in-kind programs, and at no cost to taxpayers. Outside the economics profession, is this policy of converting all in-kind programs to cash widely favored? If it is not, then this is a further indication that people think alleviating poverty is not the same as increasing the utility levels of low-income persons.

My tentative conclusion is that there are several reasons for favoring the market value approach to measuring the benefits of in-kind transfers. Although I have not had the time to go into these reasons in great detail, I hope enough has been said to suggest that the case for the recipient value measure is not as strong as might be suggested by the number of economists who favor it.



**STATISTICAL
COMPARABILITY
USING
ALTERNATIVE
METHODOLOGIES**

Author

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Discussants

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The Statistical Measurement of Poverty

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INTRODUCTION

In early 1964, as part of President Johnson's announced War on Poverty, the Council of Economic Advisers in its Annual Report defined as poor any family of two or more related persons whose income was below \$3,000. Drawing heavily on the work of Mollie Orshansky¹ the Council codified the working principles that guide, even today, administrative and statistical definitions of who is poor and who is not. Guide is perhaps too weak a word since the definitions in use in 1964, and refined by Miss Orshansky in 1965 have remained essentially unaltered for the last twenty years.

The poverty definition relies on studies of food requirements for families of various demographic characteristics. Food requirements are determined and prices assigned to the commodities to construct a minimum food budget. In principle, a family spending this amount of money on food in each accounting period would be able to consume an adequate diet. The mapping from minimum food requirements to minimum income requirements consists of multiplication by the inverse of the average food budget share in total after-tax income. It was determined from the Department of Agriculture's 1955 Survey of Food Consumption that families of three or more persons spent approximately one-third of their income on food--the poverty level for these families was, therefore, set at three times the cost of the Economy Food Plan. For smaller families and persons living alone, the cost of the Economy Food Plan was multiplied by factors that were slightly higher in order to compensate for the relatively larger fixed expenses of these smaller households. The nominal dollar numbers have, ever since been updated using the Consumer Price Index (CPI).

The Census reports poverty rates based on these thresholds and on the income distribution as measured in the Current Population Survey (CPS). The CPS measure of annual cash income includes the items in table 1. Income is measured after expenses but before taxes. Poverty rates are calculated by counting the number of people whose families are below their respective cash income thresholds. Poverty has fallen over time as incomes have risen and as cash transfers have increased. Missed in the trend has been the rise in noncash transfers which now account for 64 percent of all Federal means-tested transfers to the needy and 73 percent of all benefits.

Government noncash transfers to the poor are only part of the story of the growth of noncash income. Between 1972 and 1983 real hourly earnings in the nonfarm business sector fell by 10.2 percent. In the same period total compensation rose by 0.4 percent.² Bureau of Labor Statistics surveys of medium and large firms in 1982

¹Orshansky, M. "Children of the Poor," Social Security Bulletin, July 1963.

²Statistical Abstract of the United States: 1984, 104th Edition, p. 432, table no. 712.

showed that 97 percent of employees have employer-provided health insurance (71 percent noncontributory), 84 percent have pension plans (78 percent noncontributory) 96 percent have life insurance (81 percent noncontributory) and 43 percent have long-term disability (33 percent noncontributory).³ Excluding employer contributions for Social Security, nonwage compensation stood at 20 percent of wages and salaries in 1980. It was approximately 14 percent in 1959.⁴ Still, this growth is dwarfed by similar government transfers. By comparison, means-tested noncash benefits were 31 percent of cash public assistance in 1964 but had grown to 181 percent by 1980.⁵

The survival of the original poverty definitions owes more, I think, to the huge political costs of changing it than it does to the appropriateness of either the methodology or the statistics which gave rise to those first calculations. The concern over the growth in noncash benefits, and the possible bias in the poverty definition, is only one of many weaknesses in the official definition of poverty. These criticisms have been leveled many times over the years by researchers inside and outside of government, on either side of the political spectrum and especially by the original designer of the methodology.⁶ What we have is a metric that no one likes, but no one seems able to change.

In this conference we have been asked to consider ways of adjusting the poverty statistics so as to incorporate this shift in the composition of compensation and in transfers away from cash. As will be clear, the quantitatively important transfers are medical benefits. These are not only the largest dollars involved but they are also the hardest to think about conceptually as an income source. Moreover the treatment of medical benefits raises other hard questions about how "needs" should be defined. The original definition of the poverty line is agnostic about what goes into the bundle of goods which the poor should be able to afford. The use of the simple multiplier of food cost, based on 1955 data, assumes that all other needs are reflected in the average 1955 family's nonfood consumption. But changes in relative prices, especially for medical care have been enormous and, even within the medical care bundle of services, the cost of caring for the elderly has risen relative to that of the average. As a practical matter, relative to 1985, health care needs are greatly underrepresented in the use of the current food cost multiplier.

Valuing these noncash transfers on the income side of the accounting but not on the needs side forces a reconsideration of the poverty threshold methodology as well. Minor tinkering with the statistics will reduce some of the obvious inconsistencies but the principle problems, not to be solved easily or quickly, is to revamp a statistical concept in ways that will more closely reflect the resources both needed and transferred to the low income population.

³Statistical Abstract of the United States: 1984, 104th Edition, p. 437, table no. 722.

⁴Ehrenberg, R. and Smith, R., Modern Labor Economics, 2nd Ed., 1985.

⁵U.S. Department of Commerce, Bureau of the Census, "Estimates of Poverty Including the Value of Noncash Benefits: 1983," Technical Paper 52, August 1984.

⁶Fendler, C. and Orshansky M., "Improving the Poverty Definition," paper presented at the 1979 Annual Meeting of the American Statistical Association, Washington, D. C., 1979.

In what follows I have tried to touch on some broader issues of methodology which are now being raised. The growth of noncash benefits, both as transfers and as a form of income for the poor, means that the traditional measure of cash income and poverty thresholds are probably outdated. The growth in the relative price of medical care, and the associated rise of in-kind transfers of medical care, can be interpreted as parallel growth in the perceived minimum bundle of requirements which define poverty, along with the transfers to meet that requirement. If that is true then part of noncash transfers are awash with the increased needs of the poor. This raises broader questions, addressed in the section entitled "Relative or Absolute Scales: Poor: Compared to What?" of whether poverty is a relative or absolute concept.

Another problem raised by the imputation of medical transfers is that, unlike cash income transfers, their transfer value depends as much on health status as it does on income. Treating health care as an insurance policy may be the only tractable approach but there are other transfers that are like insurance policies as well. Means-tested cash transfers are available to us all, whether we are currently poor or not. The fact that we are all implicitly eligible means that we are all enjoying higher income, in an insurance valuation sense. I try to come to grips with this problem in the section entitled "Comparing Income to Requirements."

Insurance valuation also raises, again, questions about the appropriate accounting period to use in defining resources and requirements. The introduction of the Survey of Income and Program Participation (SIPP) with its multi-year quarterly income measures means that these questions are no longer academic but could be addressed in the Census Bureau's definition of poverty. Using matched CPS files I contrast income mobility and show the effect on the official statistics of poverty.

In the section on "Alternative Poverty Statistics," using the first wave of the SIPP, I compute alternative poverty statistics which reveal the uneven impact of noncash transfers in raising the income of the poor. These results suggest that the use of the head-count rate to measure program effect, or alternatively the imputation method combined with a fixed poverty line are giving rise to peculiar changes in the income distribution of the poor.

Finally, I close with some remarks about problems of comparability over time and across data sets where noncash transfers to be counted in the income definition.

THE OFFICIAL POVERTY STATISTICS

The poverty line calculated by Miss Orshansky estimates the minimum level of income necessary to meet dietary needs assuming that income was allocated to food expenditures based on an average budgetary share. The original poverty line was based on the United States Department of Agriculture's (USDA) 1961 Economy Food Plan and reflects the different consumption requirements of families based on their size and composition. The Orshansky index provided a range of income cutoffs adjusted by such factors as family size, age and sex of family head, number of children under 18 years old and farm and nonfarm residence. The thirty-one cutoffs were estimated separately for farm and nonfarm as well as female and male headed families.

Additional income needed for other necessities was estimated by using the average food budget share estimated in the Department of Agriculture's 1955 Survey of Food Consumption. This was approximately one-third, so that the final set of poverty cutoffs was simply three times the cost of the Economy Food Plan. It should be noted that the income definition used in the Household Food Consumption Survey is income

after taxes. The poverty cutoffs, however, are applied to before-tax income. At the time the poverty definition was developed, the poor generally did not pay Federal income taxes. Higher multiples were used for small families to allow for economies-of-scale in nonfood consumption.

The differential for farm families was originally set at 70 percent of nonfarm poverty levels on the argument that home produced food escaped cash income measurement. This ratio was revised upward to 85 percent in 1969 because of the growth of off-farm income in the total income of the farm population.

The only revisions in this estimation method occurred in 1967 when the USDA 1965-66 Food Consumption Survey was substituted for the earlier 1955 base. Therefore, the poverty thresholds have only been adjusted for changes in prices. In 1969 the inflation adjustment to the poverty levels was changed from the cost of the food plan itself to the CPI.

Poverty rates are estimated by counting individuals whose family income falls below their respective threshold. Income is taken from the March Supplement to the Current Population Survey and includes the sources shown in table 1. Families falling below the poverty line, however, are not necessarily poor by administrative standards of any transfer program. Assets are not counted except insofar as they contribute to asset income, which is notoriously underreported.

Table 1. Income Sources in the March Current Population Surveys (CPS)

EARNINGS

- Wage or salary income
- Nonfarm self-employment income
- Farm self-employment income

PROPERTY INCOME

- Interest
- Dividends
- Estates or trusts
- Net rental income
- Royalties

OTHER INCOME SOURCES

- Social Security income
- Railroad retirement income
- Supplemental Security income
- Public assistance or welfare payments
- Veterans' payments
- Unemployment compensation
- Worker's compensation
- Retirement income
 - Private pensions or annuities
 - Military retirement pensions
 - Federal employee pensions
 - State or local employee pensions
- Alimony
- Child support
- Regular contributions

The poverty rate calculation has been subjected to numerous criticisms over the years. We can divide these into roughly four categories: (1) failure to include noncash benefits; (2) failure to pick an appropriate accounting period; (3) failure to maintain a consistent multiplier of food cost; and (4) technical criticisms of accounting inconsistencies. Before reviewing these criticisms we will need some kind of conceptual framework within which to judge the success or failure of the existing measure. I will only attempt a cursory review.

An ideal poverty measure would be the cost of consuming a minimum standard bundle of all goods: food, housing, clothing, etc. Absent the scientific know-how to calculate all of these minimum standards, food requirements provide at least a starting point. If we gave a family just enough income so that they would choose to consume this minimum standard in food it seems reasonable to suppose that they would also consume a minimum standard in other dimensions as well.⁷

How much income is required? We know that the food share of the budget falls with income and we also know that the average family consumes the minimum standard diet. It follows, absent other information about the income levels of families that consume very near this minimum standard, that the average income to food cost ratio multiplied by the cost of the standard provides an upper bound on the minimum necessary income. Thus, the poverty line is too generous in this framework but by an unknown amount.⁸ The use of smaller multiples can be justified by inspection of detailed food consumption patterns and the income of the consuming families.

It has been argued that the food share for families near poverty ought to establish the appropriate multiple. Food shares would be lower, and poverty lines higher. This would be correct only if we could also establish the adequacy of their unsubsidized diet. I think the methodology for estimating poverty thresholds probability errors are on the high side. On the other hand, given limited information and differential cost of erring on the high side rather than the low side, the method used is at least defensible.

RELATIVE OR ABSOLUTE SCALES: POOR COMPARED TO WHAT?

Whether or not it was intended so at the beginning, the poverty definition we now use has become an absolute scale. That is, as real incomes rise we fully expect that the poverty will fall unless the distribution of income behaves rather strangely. The poverty thresholds are only adjusted for inflation so that as long as real income grows poverty should decline. The use of an absolute scale is not without criticism and this underlies point (3) above.

Because the multiplier of minimum food costs has not changed, the poverty threshold does not reflect the falling share of food in total consumption. If the same logic were to be applied today to the poverty definition the multiplier would not be three but rather something over four. The fraction of total consumer

⁷If fact: the Stone-Geary utility function with its subsistence levels of all commodities has exactly this property.

⁸See Friedman, Rose D., Poverty: Definition and Perspective, American Enterprise Institute, Washington, D. C., February 1965.

expenditures on food, including food eaten out, has fallen from about 20 percent in 1960 to 15 percent in 1982. While these fractions are not quite the same concept as the expenditure survey results they do show the right trend. The multiplier therefore would have risen by one-third.

The income elasticity of food expenditures has been estimated in cross-sections by the Bureau of Labor Statistics (BLS) to be between 0.51 and 0.65 percentage points depending on family type.⁹ The elasticity of the multiplier with respect to income will be one minus the food income elasticity, or something less than one-half. Thus, consistent revisions of the poverty definition would require that the poverty threshold have an income elasticity of about one-half. While arguments for this kind of adjustment are usually made in terms of consistency the real issue is whether poverty should be defined in an absolute sense or whether it is a relative concept.

The standards against which we judge deprivation play an obvious role in defining both the level and composition of income below which most individuals feel an ethical obligation to transfer resources. The argument for a relative definition of poverty, say 50 percent of the median income or some other function of the central tendency of the income distribution, starts from the observation that the officially poor today are rich by standards in many other countries or even in the United States many years ago. It follows from this argument that poverty is a property of one's relative position in the income distribution. Attempts to quantify a workable absolute definition of poverty are therefore bound to be frustrated and the best course, so the argument goes, is to give up and acknowledge the arbitrariness of the definition.¹⁰ However, simple statistics which are purely functions of the median or mean have the curious property of yielding a stable poverty fraction even during downturns when, I think, most people would agree that poverty must have increased. In addition, definitions that are purely relative also make it difficult to judge progress or efficacy of programs since the target is moving.

Persuasive arguments that poverty has an absolute component have been put forth by A. Sen,¹¹ and, not surprisingly, the data seem to agree. As described by William Birdsall¹² the Gallup poll since 1947, has asked "What is the smallest amount of money a family of four needs each week to get along in this community?" While "getting along" has no exact definition it has run from about 140 to 160 percent of the poverty line since 1959. There is a clear upward trend in this ratio from 1959 to 1973 after which it has remained more or less constant. Real incomes have

⁹U.S. Department of Labor, Bureau of Labor Statistics, "Revised Equivalence Scale," Bulletin No. 1570-2, November 1968. The lower number corresponds to a husband-wife family with a child 6 to 17 years old while the higher number is for a single consumer.

¹⁰ See Orshansky, M., "How Poverty is Measured," Monthly Labor Review, 1969; Fuchs, Victor, "Comment on Measuring the Size of the Low-Income Population" in L. Soltow, ed., Six Papers on the Size Distribution of Wealth and Income, NBER, Columbia University Press, 1969.

¹¹Sen, A. K., "Issues in the Measurement of Poverty," Scandinavian Journal of Economics, and "Poor, Relatively Speaking," Oxford Economic Papers, Vol. 35 (1983), pp. 153-169.

¹²Birdsall, W., "The Value of the Official Poverty Statistics", paper presented at the Sixth Annual Research Conference of the Association for Public Policy and Management, October 1984.

followed about the same path. Using the same Gallup poll data through 1971, Kilpatrick¹³ estimates that the income elasticity of poverty is between 0.5 and 0.6 percent, depending on the definition of income that is used--remarkably close to the income elasticity of the poverty line if food multiples were used consistently.¹⁴

I think there is something more here than coincidence. Income elasticities for necessities like food, are below one. If people have in mind a bundle of these necessities when they are thinking about "getting along" then it is plausible that the income elasticity of the bundle might be in the 0.5 percent range. I do not know of evidence on this point but it certainly supports the notion that poverty is, at least in the public's opinion, a relative concept that would be better approximated with consistent revisions of the food multiplier.

The use of an absolute scale for poverty means, I think erroneously, that we will one day have statistically defined away the problem. The use of the changing food multiple offers a simple way of making adjustments and capturing the changing bundle of goods which are perceived to be requirements.

COMPARING INCOME TO REQUIREMENTS

The second issue of comparability is one of conceptual equivalence between income and requirements. I want to argue that the current procedures for determining poverty rates are a mixture of contemporaneous and long-term needs. To a lesser extent the measures of income are also a mixture and the proposals for evaluating noncash benefits may mix them even more. Throughout this discussion I am going to ignore the endogeneity of income in the presence of a transfer program. There is abundant evidence that labor supply and family composition respond to the incentives implicit in the transfer programs but the magnitude of these effects are difficult to measure and are the subject of considerable controversy.

Long-term or permanent income measures the ability to consume without running down one's assets. As income fluctuates around this level, higher in some periods and lower in others, people would save and dissave yielding consumption levels which are less variable than income. Over the life-cycle, average annual income is probably a good measure of this concept. In any one year, income will be a good or poor measure of this permanent concept depending on the variability of an individual's income over time. Ability, training, industry, occupation, and luck will all play a role in determining the level and variability of income. The common sense notion is that a person who is temporarily without income because of unemployment or bad health is not in the same circumstances as someone who is permanently unable to earn. Many transfer programs acknowledge this distinction through asset tests in the case of food stamps, strict medical interpretation in the

¹³Kilpatrick, R. W., "The Income Elasticity of the Poverty Line," Review of Economics and Statistics, August 1973, pp. 398-402.

¹⁴By contrast, in England, the poverty line most often used is the Official Supplementary Benefit scale which has risen twice as fast as average income since the end of World War II. This has been more of a way to expand social services than a reflection of changing needs for low income families.

case of Social Security disability insurance, waiting periods and interviews in the case of most cash assistance programs. For the poverty statistics, no distinction is drawn. Income is income and the timing of receipts is irrelevant as long as it occurs within the CPS calendar year accounting period.¹⁵

The poverty level, however, is developed under an entirely different methodology. As described earlier, the use of a food bundle multiple has the desirable property of measuring long-run needs. Short-term needs will change with weather, price variations, family illness, and job expenses. When averaged across many families (though not necessarily the same family at different points in time) the poverty level averages out these variations. However, the disadvantage with this measure of poverty is that it is incongruent with the income concept which focuses on short-term resources.

This problem has been recognized for a long time.¹⁶ We have learned to live with it because, for the most part, there is not much that can be done about it. The CPS income series is an annual one and there is no way of developing a longer-run measure of income from these data. The advent of SIPP, as well as the desire to include noncash benefits, changes all this and our options ought to be reconsidered more carefully.

Consider the following income distribution in a society composed of three types of individuals or families. One-third of the families have \$1,000 in income, one-third have \$200 and the last third vary between \$500 and \$200, spending half the time at each income level. Suppose that the poverty line is \$300 so that transfers will always be made to the one-third who have \$200 income. Treatment of the group with varying income is problematic. Their average income is \$350, in excess of the poverty line. However their reported income in cross-sectional data will reflect the year-to-year variation. In some years they will be poor and in other years not. A second problem is raised by the possibility that they might receive transfers during years in which their income is low.

At this point we introduce a transfer system that taxes those with high current income and redistributes it to those below the poverty line. Eligibility for transfers is based on permanent or average income.

Suppose that the transfer system requires enough revenue to bring those who permanently have \$200 income up to the \$300 poverty line. The tax is progressive, taxing only those above \$300 per year. A tax rate of 8 percent will balance the budget. Those with a permanent \$1,000 income will always pay \$80 in tax while those with the variable income will pay the tax half of the time, \$40 when their income is high. Alternatively, with enough people in the economy, half of them will pay the tax while the other half will not.

¹⁵The section on "Income Transitions and the Accounting Period" addresses the issue of the timing of income receipts.

¹⁶See the citations in the following section.

The pre- and post-transfer income distribution is shown in the top block of table 2. Because there are no transfers to those whose average income is above the poverty line they will appear below the poverty line in the years in which their income is low. The statistics show a reduction but not an elimination of poverty: the poverty rate is one-third of its pre-transfer level.

The permanent consumption distribution is shown in the bottom block of table 2. Families with stochastic income streams are shown at their average value, assuming implicitly that self-insurance, or savings, allows them to smooth out the variations in their income. In terms of families' ability to consume, the poverty rate has been brought to zero and this conforms with our common sense notion of the efficacy of the transfer program.

There is another interpretation for this latter program. Suppose that those with the varying income belonged to perfectly experience-rated unemployment insurance programs.¹⁷ In smoothing income over various statuses their unemployment insurance premiums would be \$150 during high income statuses with unemployment insurance income of \$150 when their income falls. Assuming that unemployment insurance is paid by employers these individuals will report income of \$350 when employed all year and \$350 when unemployed (\$200 earnings and \$150 unemployment insurance benefits). The consumption distribution will match the insured income distribution and, consequently, will give the correct inference about the efficacy of the pure income redistribution program. Thus, public income insurance but not private (own) income insurance will lead to CPS-type income distributions with the right indicators of program effects.

Table 2. Pre- and Post-Transfer Income Distribution Eligibility Based on Permanent Income and Consumption Distribution

Pre- and Post-Transfers Income Distribution
Eligibility Based on Permanent Income

Pre-transfer	Post-transfer
One-third @ \$1,000.00	One-third @ \$920.00
One-sixth @ 500.00	One-sixth @ 460.00
One-half @ 200.00	One-third @ 300.00
	One-sixth @ 200.00

Pre- and Post-Transfer Consumption Distribution

Pre-transfer	Post-transfer
One-third @ \$1,000.00	One-third @ \$920.00
One-third @ 350.00	One-third @ 330.00
One-third @ 200.00	One-third @ 300.00

¹⁷I am assuming that the income variation is exogenous and that any incentive or adverse selection effects are absent. All considerations of interest cost or insurance loads are also ignored for simplicity.

The next example follows the first except that I want to allow transfers to be made to the families that are only temporarily below the poverty line. I am not doing this to show errors in program eligibility but to illustrate a methodological point about how we should value benefits and which are status dependent. In the example, the families who fall below the poverty line on a random basis will be receiving transfers half the time and paying taxes the other half. A tax rate of 12 percent will balance the budget. Families with variable income will pay \$60 when their income is \$500 and will receive \$100 when their income is \$200.¹⁸ Table 3 shows the pre- and post-transfer income distribution, as well as the consumption distribution.

As before, the consumption distribution is given by the average post-transfer income for the group with varying income. We can think of this as the outcome of income insurance in which premiums of \$60 are paid when income is high and benefits of \$100 are paid when income is low. For that group the effect of the transfers is to increase consumption by the net value of the insurance. The other family types can also be considered members of insurance plans, though the probability of a payout is either zero, for those who always earn \$1,000, or one, for those who always earn \$200. For all three family types the change in consumption due to the transfer is equal to the insurance value.

There are two critical assumptions that make the use of insurance values an appropriate way to evaluate transfers which are state dependent. First, the insurance values should be added to conceptually similar income concepts. Insurance values are expectations struck over the various states of nature that give rise to within-person income variation. Their addition to the pre-transfer distribution of consumption is sensible because consumption is also based on expectations across the

Table 3. Pre- and Post-Transfer Income Distribution Eligibility Based on Current Income and Consumption Distribution

Pre- and Post-Transfer Income Distribution Eligibility Based on Current Income	
Pre-transfer	Post-transfer
One-third @ \$1,000.00	One-third @ \$880.00
One-sixth @ 500.00	One-sixth @ 440.00
One-half @ 200.00	One-half @ 300.00

Pre- and Post-Transfer Consumption Distribution	
Pre-transfer	Post-transfer
One-third @ \$1,000.00	One-third @ \$880.00
One-third @ 350.00	One-third @ 370.00
One-third @ 200.00	One-third @ 300.00

¹⁸With a progressive net transfer system income variance is rewarded, i.e. those with higher variation in income but with the same expected value receive higher after-transfer expected income.

same states of nature. We are adding "apples to apples." If we were to add insurance values to the contemporaneous income distribution we would be mixing "apples and oranges."

The second assumption is that the insurance value reflects differences in the value of the insurance to different risk groups. In the previous example the value of the insurance to the permanently poor was \$100 because that was their net benefit in all states. Likewise the permanently wealthy have a permanent benefit of -\$120. The variable income group receives an insurance value of \$20.

Suppose instead that we ignored the difference in the risk groups and determined the value of the benefits over the entire eligible population. If we restrict the eligible population to be those permanently at \$200 as well as those whose income varies then two-thirds of the population is eligible. The average payment to this two-thirds of the population is \$60, including the taxes paid by those who are eligible but do not fall below the poverty level. Table 4 shows what the income distribution would look like, if we were to add back this average insurance value to those eligible.

Those who are permanently at \$200 get their insurance valuation added as do those who are temporarily at \$200. The other eligible one-sixth who are having good luck this year are also receiving their imputed \$60 insurance value. The post-transfer distribution looks nothing like either of the previous ones. It understates the transfer going to the permanently poor and overstates the value going to those with transitory high income. This follows from the use of average risk of poverty for the eligible group rather than the group specific risk.

In practice, the valuation of noncash benefits is really a question of how to value medical benefits. Over 80 percent of noncash transfers, by one accounting, are health expenditures, primarily to the elderly and to the AFDC population. As is well documented in Smeeding¹⁹ most of the important changes in the poverty rate result from imputations of these transfers. Health care benefits, like other income contingent transfers, are state dependent. Whereas cash transfers are contingent on income outcomes, health care benefits are contingent on health status, as well as income. The accounting issues, however, are the same as those described above for income insurance.

Table 4. Income Distribution With Insurance Value Imputation Eligibility Based on Potential Reciprocity

Pre-transfer	Post-transfer
One-third @ \$1,000.00	One-third @ \$880.00
One-sixth @ 500.00	One-sixth @ 560.00
One-half @ 200.00	One-half @ 260.00

¹⁹Smeeding T., "Alternative Methods for Valuing Selected In-Kind Transfer Benefits and Measuring Their Effect on Poverty," Bureau of the Census, Technical Paper 50, March 1982.

When an insured person receives subsidized health care their income rises by the amount of the subsidy. With a fixed poverty level, insensitive to changing needs, this rise in income will lead to an anomalous reduction in poverty. One solution, adopted by Smeeding is to compute insurance values for those covered by Medicare and Medicaid. The insurance value estimates the cost of a medical insurance policy which paid the same benefits as the health care programs to which the person is entitled.

But, the fact that the benefit is paid in-kind is not really relevant to the valuation problem. The principle difficulty is that the benefit is contingent upon health care requirements. If the transfer were paid to the recipient in cash after incurring the medical expense the same conceptual problems would remain. How do we value income transfers that are contingent upon need? The most straightforward approach is to recognize that needs have risen when health care is required. Like the examples with variable incomes, there are at least two ways to quantify this increase. First, theoretically at least, we could measure the medical expenses incurred by all individuals and offset this by contingent income, i.e., insurance benefits. Those who were not covered by medical insurance, public or private, and who therefore received no contingent income would show a net decrease in income net of needs, i.e., they would be more likely to be poor. The poverty statistics would then reflect this increased source of variation and the effect of Medicare and Medicaid in reducing it. Those covered by these programs would have their medical needs offset by the benefits provided. Those covered by private insurance would likewise be offset. Only individuals not covered by insurance would show significant variation in needs not offset by contingent income.

The second approach is to adopt the insurance valuation for income but, in addition, to also add health insurance as an explicit component of poverty income levels. This does not solve all of the problems of mixing current with long-term income and current and long-term needs but at least the introduction of noncash benefits will not add further to the mixing.²⁰

INCOME TRANSITIONS AND THE ACCOUNTING PERIOD

Poverty rates calculated in the CPS are based solely upon annual income. Variations within the year and variations across years are not considered. Families whose annual income exceeds the poverty line but whose monthly income falls below this line for a short period are not considered poor in the Census definitions. Likewise individuals whose annual income is low but whose income in future or past years was high are counted among the poor in that calendar year.

To get some idea of the nature of poverty transition in the CPS, I have calculated cash incomes for 1983 and 1984 using matched CPS files.²¹ For each family type, total cash income is measured against the Census poverty threshold for

²⁰Operational definitions for coverage are not easy to come by since those who by statute are eligible for coverage but are not enrolled may still be given the medical subsidy if a medical provider chooses to enroll the individual at the time of the medical expenditure.

²¹The match CPS files are generated by linking household identifiers for CPS rotation groups which appear in consecutive March surveys. Because of the CPS design, these matches are made only for households who do not move between the two surveys dates. As such they do not necessarily represent the population.

that family type. Table 5 shows the conditional probability of moving from a 1983 relative poverty position to the indicated 1984 relative poverty position. The 1983 poverty rate for this population of nonmovers is 14.1 percent. The official poverty rate for 1983 was 15.2 percent. The difference is due to the counting of families rather than individuals in this statistic as well as the inclusion of only nonmoving families. Nevertheless the figures show significant mobility across the poverty threshold. Thirty-nine percent of those who are poor in 1983 are not poor in 1984. The poverty rate overall in 1984 is shown as 13.7 percent. The 39 percent who exited the poverty status in 1984 were replaced by those who entered it from above the poverty line. Not surprisingly, this mobility is a characteristic of those who are close to the poverty line to begin with.

Table 6 shows transitions between poverty statuses for different family types in 1983. Most transitions occur among non-Black, male headed households. Black and female headed households show much less mobility, a function of their lower position in the income distribution.

If poverty rates were calculated on a longer term basis not only would the rates decline but, more importantly, the demographic composition of the poor would change. In table 7 average income in the two years is compared with the average poverty level in the two years and tabulated next to the average annual poverty rate. Inter-year income variation raises the poverty rate by 20 percent above what it would be if measured on a two-year basis. The change however is concentrated in non-Black, male headed households.²²

For most families, crossing the official poverty threshold is a transitory event. Among families who receive AFDC more than half exit the program within two years (Bane and Ellwood, 1983). Those who receive most of the transfer income, however, are in the poverty state for many years.

The poverty statistics can better reflect both the rate of and constituency of those who are most in need by moving away from a focus on annual income. In the past this was not possible because the CPS is not designed as a longitudinal survey. With the advent of SIPP two-year income averages are now possible. It remains to be seen, however, whether the two-year averages are better predictors of program eligibility and, by inference, longer run need.

ALTERNATIVE POVERTY STATISTICS

The principal purpose served by the Census poverty statistics is as a barometer of society's progress in eliminating deprivation. It is monitored overtime and across regions to gauge the efficacy of existing programs and to serve as a reminder

²²The role of the accounting period and income variability in affecting poverty rates has been studied by Kohen, Parnes and Shea, "Income Instability Among Young and Middle-Aged Men," in James D. Smith, ed., The Personal Distribution of Income and Wealth, NBER Studies in Income and Wealth, Vol. 39, 1975, Benus and Morgan, "Time Period, Unit of Analysis, and Income Concept in the Analysis of Income Distribution," in James D. Smith, ed., The Personal Distribution of Income and Wealth, NBER Studies in Income and Wealth, Vol. 39, 1975, and Lillard, L., "The Distribution of Earnings and Wealth in a Life-Cycle Context," in F. Thomas Juster, ed. The Distribution of Economic Well-Being, NBER Studies in Income and Wealth, Vol. 41, 1977.

Table 5. Percent of Income Transitions, by Fraction of Poverty Line and Selected Characteristics: 1983 and 1984

Fraction of poverty line in 1983 and characteristic	Fraction of poverty line in 1984									
	Negative income	0.00 to 0.24	0.25 to 0.49	0.50 to 0.74	0.75 to 0.99	1.00 to 1.24	1.25 to 1.49	1.50 to 1.74	1.75 to 1.99	2.00 or more
All Families										
Negative income.	2.80	3.98	7.86	14.11	16.18	5.51	1.08	5.62	3.30	39.57
0.00 to 0.24....	0.31	32.91	13.35	8.40	9.03	7.46	5.44	3.96	1.99	17.15
0.25 to 0.49....	0.18	11.98	31.95	15.26	11.83	5.71	4.16	3.54	2.05	13.35
0.50 to 0.74....	0.37	6.30	12.28	27.49	16.56	8.56	6.49	4.56	2.09	15.31
0.75 to 0.99....	0.09	2.68	6.00	10.50	34.71	14.74	6.84	5.82	3.38	15.25
1.00 to 1.24....	0.44	1.60	2.46	5.34	13.41	28.91	13.54	8.01	5.02	21.26
1.25 to 1.49....	0.11	1.63	2.31	4.08	6.09	13.51	23.10	12.68	9.47	27.03
1.50 to 1.74....	0.07	1.20	1.19	2.67	4.81	7.33	11.98	20.48	13.68	36.59
1.75 to 1.99....	0.15	1.76	1.16	1.88	3.86	6.12	7.14	11.98	15.50	50.46
2.00 or more....	0.09	0.51	0.53	0.79	1.34	1.41	1.99	2.79	3.52	87.03
Black Families										
Negative income.	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00 to 0.24....	0.00	46.79	21.19	12.83	5.52	2.61	3.91	2.03	0.88	4.24
0.25 to 0.49....	0.00	14.59	41.53	19.49	11.73	3.52	2.12	3.50	0.96	2.55
0.50 to 0.74....	0.45	9.69	18.93	30.53	20.94	3.73	4.56	3.99	0.72	6.46
0.75 to 0.99....	0.00	4.63	5.75	16.83	39.37	11.97	5.21	4.35	1.76	10.14
1.00 to 1.24....	0.00	2.77	2.33	12.47	17.50	30.41	14.70	4.39	3.72	11.70
1.25 to 1.49....	0.00	2.15	4.30	6.21	9.44	17.77	25.35	8.43	7.17	19.19
1.50 to 1.74....	0.00	0.00	2.39	5.32	8.51	6.87	14.11	14.29	17.35	31.15
1.75 to 1.99....	0.00	2.88	2.76	2.33	6.98	7.64	4.44	12.16	16.50	44.31
2.00 or more....	0.00	1.04	1.47	1.57	3.16	2.34	2.41	3.49	5.73	78.79
Non-Black Families										
Negative income.	0.25	4.08	8.06	14.48	16.61	5.65	1.11	5.77	3.38	40.61
0.00 to 0.24....	0.45	26.53	9.74	6.36	10.64	9.68	6.15	4.85	2.50	23.08
0.25 to 0.49....	0.31	10.18	25.35	12.34	11.89	7.21	5.55	3.58	2.80	20.78
0.50 to 0.74....	0.33	4.71	9.15	26.06	14.50	10.82	7.40	4.83	2.73	19.46
0.75 to 0.99....	0.12	2.12	6.07	8.68	33.37	15.54	7.30	6.24	3.84	16.71
1.00 to 1.24....	0.52	1.38	2.49	4.00	12.64	28.62	13.32	8.69	5.27	23.07
1.25 to 1.49....	0.13	1.54	1.96	3.70	5.49	12.74	22.69	13.44	9.88	28.44
1.50 to 1.74....	0.08	1.41	0.98	2.22	4.19	7.41	11.62	21.53	13.06	37.51
1.75 to 1.99....	0.16	1.61	0.95	1.82	3.44	5.92	7.50	11.96	15.36	51.28
2.00 or more....	0.09	0.47	0.47	0.73	1.21	1.34	1.96	2.74	3.37	87.61

Table 5. Percent of Income Transitions, by Fraction of Poverty Line and Selected Characteristics: 1983 and 1984 -- Continued

Fraction of poverty line in 1983 and characteristic	Fraction of poverty line in 1984									
	Negative income	0.00 to 0.24	0.25 to 0.49	0.50 to 0.74	0.75 to 0.99	1.00 to 1.24	1.25 to 1.49	1.50 to 1.74	1.75 to 1.99	2.00 or more
Female Head With Children Under 18 Years Old										
Negative income.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
0.00 to 0.24....	0.26	37.38	19.70	11.06	7.16	5.80	3.93	3.82	1.02	9.87
0.25 to 0.49....	0.00	15.73	39.54	16.97	9.57	4.46	3.49	2.76	2.52	4.96
0.50 to 0.74....	0.00	9.20	21.19	30.75	14.21	5.61	4.58	2.94	1.81	9.71
0.75 to 0.99....	0.00	7.33	10.67	19.21	24.57	15.70	2.80	5.06	2.78	11.89
1.00 to 1.24....	0.71	2.77	3.88	12.43	13.98	19.03	19.36	6.23	2.73	18.88
1.25 to 1.49....	0.00	0.62	6.98	4.87	5.81	16.12	18.20	16.77	8.65	21.98
1.50 to 1.74....	0.00	0.99	1.55	2.81	5.18	5.00	13.40	28.10	15.21	27.75
1.75 to 1.99....	0.00	2.79	2.66	4.17	2.91	6.55	5.53	13.62	12.18	49.59
2.00 or more....	0.00	0.88	1.69	1.61	2.31	1.98	2.63	2.61	6.03	80.26
Head 65 Years Old And Over										
Negative income.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
0.00 to 0.24....	0.00	15.68	4.38	6.56	7.34	21.20	8.08	3.64	7.19	25.92
0.25 to 0.49....	0.00	5.74	28.90	12.84	23.30	5.31	3.00	10.17	0.00	10.74
0.50 to 0.74....	0.00	3.39	4.43	28.17	31.26	9.84	5.14	5.19	2.06	10.52
0.75 to 0.99....	0.00	1.26	2.80	8.26	48.89	15.44	6.75	5.54	3.21	7.85
1.00 to 1.24....	0.30	1.42	0.74	2.58	14.92	38.03	14.66	8.26	4.38	14.71
1.25 to 1.49....	0.00	1.50	0.91	3.94	6.35	13.72	31.24	10.56	8.13	23.64
1.50 to 1.74....	0.00	0.55	0.27	2.68	5.69	9.75	16.16	25.69	11.50	27.71
1.75 to 1.99....	0.00	0.83	0.14	1.39	4.57	7.16	9.98	18.66	20.49	36.78
2.00 or more....	0.06	0.49	0.51	0.64	1.92	2.65	3.43	4.89	6.34	79.07

Source: Matched 1983-84 Current Population Files.

that national affluence is not equitably shared. The poverty statistic that is used, the head-count measure, does not always do a good job at either of these functions. In particular, the income of the poor, once they fall below the poverty threshold does not enter into the statistic at all. Transfers made to the poorest of the poor, which fail to move them over the threshold, will not show up as measured progress. Conversely, families that are missed entirely by transfer programs are counted the same as families that pass just below the cut-off.

Table 6. Percent of Income Transitions, by Mobility Across Poverty Threshold and Selected Characteristics: 1983 and 1984

Threshold in 1983 and characteristic	Threshold in 1984		
	Below poverty	Above poverty	Total
All Families			
Below poverty	8.60	5.51	14.11
Above poverty	5.09	80.80	85.89
Total	13.70	86.30	100.00
Black Families			
Below poverty	28.80	7.49	36.29
Above poverty	8.73	54.97	63.71
Total	37.54	62.46	100.00
Non-Black Families			
Below poverty	6.00	5.25	11.24
Above poverty	4.62	84.13	88.76
Total	10.62	89.38	100.00
Female Head With Children Under 18 Years Old			
Below poverty	33.20	11.50	44.70
Above poverty	6.94	48.36	55.30
Total	40.15	59.85	100.00
Head 65 Years Old And Over			
Below poverty	9.84	6.25	16.09
Above poverty	6.17	77.75	83.91
Total	16.01	83.99	100.00

Source: Matched 1983-1984 Current Population Files

There is a considerable technical literature on these aspects of poverty statistics.²³ Starting from an axiomatic approach to defining poverty Sen derives measures which combine both the number of the poor and their income distribution. A simplified version of these measures combines the head-count ratio, the fraction of the population in poverty, with the income-gap ratio. The latter is the total short-fall of income for those who are below the line, divided by the total income that would be received by the poor were they to be brought to their poverty threshold income. It is a normalized version of the poverty gap used by the Social Security Administration. A value of one means that the average income of the poor is zero, a value of zero means that the average income of the poor is equal to the poverty line.

The product of the head-count ratio and the normalized gap has the property of measuring both the severity and the extent of poverty. Following Sen's approach, I call this the Normalized Poverty Value. Implicit in this statistic is the judgement that a 10-percent increase in the average income of the poor, keeping the number of poor constant, is equivalent to a 10-percent reduction in the number of poor, keeping the average income of those still poor constant. There are weaknesses to this statistic as well.²⁴ For example, it fails to count income transferred to the poor which raises them above the poverty threshold. Still, it does capture more completely the nature of the income shortfall of the poor. Moreover, the inferences to be drawn as the efficacy of various transfers is considerably different from those revealed in the head-count statistic.

The data are based on family income components reported in the SIPP. I have used the third quarter of 1983, a portion of the data given in Wave 1 of the SIPP. Table 8 shows the elements of family income included in three groupings of income sources. The first includes earnings, nonwage income, and what I have called earned benefits. The last includes Social Security and private retirement income, unemployment benefits, and worker's compensation. Some fraction of these benefits

Table 7. Poverty Rates Based on Annual and Two-Year Average Income, by Selected Characteristics: 1983 and 1984

Characteristic	Annual average poverty rate	Poverty based on two-year average income
All families	13.9	11.6
Black families	36.9	34.0
Non-Black families	10.9	8.7
Female head with children under 18 years old	42.4	40.2
Head 65 years old and over	16.1	13.4

Source: Matched 1983-1984 Current Population Files.

²³See Sen, A. K., 1976, "Poverty: An Ordinal Approach to Measurement," *Econometrica*, Vol. 44, pp. 219-231, and Kakwani, N., "On a Class of Poverty Measures," *Econometrica*, Vol. 48, pp. 437-446, 1980.

²⁴See Sen, op. cit.

Table 8. Income Sources in the Survey of Income and Program Participation (SIPP)

EARNINGS

- Wage or salary income
- Nonfarm self-employment income
- Farm self-employment income

PROPERTY INCOME

- Regular/passbook savings accounts in a bank, savings and loan or credit union
- Money market deposit accounts
- Certificates of deposit or other savings certificates
- NOW, Super NOW or other interest-earning checking accounts
- Money market funds
- U.S. Government securities
- Municipal or corporate bonds
- Other interest-earning assets
- Stocks or mutual fund shares
- Rental property
- Mortgages
- Royalties
- Other financial investments

OTHER INCOME SOURCES

- Social Security income
- U.S. Government railroad retirement
- Federal Supplemental Security income (SSI)
- State administered Supplemental Security income
- State unemployment compensation
- Supplemental unemployment benefits
- Other unemployment compensation (Trade Adjustment Act benefits, strike pay, other)
- Veterans' compensation or pensions
- Black lung payments
- Worker's compensation
- State temporary sickness or disability benefits
- Payments from a sickness, accident or disability insurance policy purchased on your own
- Aid to Families with Dependent Children (AFDC, ADC)
- General assistance or general relief
- Indian, Cuban, or refugee assistance
- Foster child care payments
- Other welfare
- Child support payments
- Alimony payments
- Pensions from a company or union
- Federal Civil Service or other Federal civilian employee pensions
- U.S. Military retirement
- National Guard or Reserve Forces retirement
- State government pensions
- Local government pensions
- Income from paid-up life insurance policies or annuities
- Estates and trusts
- Other payments for retirement, disability or survivors
- G.I. Bill/VEAP education benefits

Table 8. Income Sources in the Survey of Income and Program Participation (SIPP) -- Continued

OTHER INCOME SOURCES -- Continued

- Income assistance from a charitable group
- Money from relatives or friends
- Lump sum payments
- Income from roomers or boarders
- National Guard or Reserve pay
- Incidental or casual earnings
- Other cash income not included elsewhere

are pure transfers but by no means all. Aside from the intergenerational wealth transfer associated with the first generations of recipients Social Security benefits are, at least in the aggregate, financed from individuals' wages both directly and indirectly through the firm's share. Other transfers in this class are more or less on the same footing. Unemployment benefits contain progressive features also and a more careful division of these benefits would probably assign only a portion of them to the category of earned benefits.

In the second income category I have included food stamps, which are officially a noncash transfer, because they have always been estimated to have a value which is a high fraction of their cost and because they are so readily fungible over time.

In the third category I have added the insurance value of Medicare and Medicaid, as well as public housing subsidies as estimated by Smeeding (1982). Table 9 shows the income distribution using these three measures of income expressed as a fraction of the poverty line. The distributions are given for Black families, female headed households with children under 18 years old, and for the elderly.

Table 10 gives the poverty statistics for these three income sources as well as the alternative poverty measure. These measures are based on counts of families and are based on annualized versions of quarterly income so that they do not correspond to the usual Census definition. Nevertheless, their relative change across groups and by income definition compare closely to those obtained by Smeeding.

Looking first at the figures for all families, the inclusion of cash transfers lowers the poverty rate (the head-count ratio) from 15.5 percent to 13.7 percent or a decline of about 12 percent. The distribution of income among the poor, however, shows a sharp increase. The transfers improve the income distribution principally by increasing the income of the very poor and moving them closer to the poverty line. Before cash transfers over eight percent of all families were below one-half of the poverty line. After the transfers 3.7 percent are below this level. For Black families the movement is even more dramatic. Fourteen percent of all Black families are below one-quarter of the poverty line before cash transfers. This drops to 6.6 percent after that income source is added in. While the poverty rate only drops from 32.9 to 28.7, a 13-percent decline, the fraction that are below three-quarters of the poverty line falls from 26.2 percent to 16.0 percent, a 39-percent decline. These results are no reason to be sanguine over government transfers but they do emphasize that much of the effect of these programs is being hidden in the head-count statistics.

Table 9. Percent Income Distribution, by Measures of Income, Fraction of Poverty Line and Selected Characteristics

Fraction of poverty line and characteristic	Earnings plus earned benefits	Cash income	Cash plus imputed transfers
All Families			
Negative income	0.06	0.05	0.05
0.00 to 0.24	5.82	2.02	1.84
0.25 to 0.49	2.18	1.62	1.18
0.50 to 0.74	3.23	3.93	1.93
0.75 to 0.99	4.18	6.04	3.73
1.00 to 1.24	5.01	5.63	5.09
1.25 to 1.49	5.34	5.67	5.74
1.50 to 1.74	5.13	5.21	6.04
1.75 to 1.99	5.13	5.28	6.09
2.00 or more	63.92	64.54	68.29
Black Families			
Negative income	0.05	--	--
0.00 to 0.24	14.58	2.87	2.22
0.25 to 0.49	5.55	3.78	2.38
0.50 to 0.74	5.98	9.38	3.53
0.75 to 0.99	6.85	12.73	7.40
1.00 to 1.24	7.12	8.80	10.05
1.25 to 1.49	6.68	7.96	10.00
1.50 to 1.74	6.09	5.99	8.52
1.75 to 1.99	5.58	5.63	7.25
2.00 or more	41.54	42.86	48.65
Non-Black Families			
Negative income	0.06	0.06	0.06
0.00 to 0.24	4.74	1.92	1.79
0.25 to 0.49	1.77	1.36	1.04
0.50 to 0.74	2.89	3.26	1.74
0.75 to 0.99	3.86	5.22	3.28
1.00 to 1.24	4.75	5.24	4.48
1.25 to 1.49	5.17	5.39	5.22
1.50 to 1.74	5.02	5.12	5.74
1.75 to 1.99	5.07	5.24	5.95
2.00 or more	66.67	67.21	70.71

Table 9. Percent Income Distribution, by Measures of Income, Fraction of Poverty Line and Selected Characteristics -- Continued

Fraction of poverty line and characteristic	Earnings plus earned benefits	Cash income	Cash plus imputed transfers
Female Head With Children Under 18 Years Old			
Negative income	0.05	0.05	0.05
0.00 to 0.24	22.64	2.14	1.56
0.25 to 0.49	6.55	4.10	2.28
0.50 to 0.74	5.60	14.65	4.67
0.75 to 0.99	5.87	14.53	12.15
1.00 to 1.24	5.92	7.92	13.78
1.25 to 1.49	6.87	8.39	11.36
1.50 to 1.74	6.89	7.56	8.77
1.75 to 1.99	4.94	5.07	7.24
2.00 or more	34.67	35.58	38.13
Head 65 Years Old and Over			
Negative income	0.08	0.05	0.05
0.00 to 0.24	1.60	0.21	0.15
0.25 to 0.49	2.28	0.84	0.12
0.50 to 0.74	5.07	3.34	0.53
0.75 to 0.99	7.57	9.53	2.15
1.00 to 1.24	9.87	10.85	4.43
1.25 to 1.49	9.19	9.55	7.98
1.50 to 1.74	7.55	7.70	10.18
1.75 to 1.99	5.76	6.19	9.00
2.00 or more	51.04	51.73	65.42

Including imputed values for Medicare, Medicaid, and housing subsidies further lowers the poverty rate to 8.7 percent. However the percentage shortfall actually increases! (See table 10.) Those who are not lifted above the poverty line are poorer on average than those to whom the insurance values are directed. The insurance values are so large, averaging over \$1,600 (in terms of 1983 dollars) for a non-elderly recipient of Medicare and over \$900 for non-elderly Medicaid eligible families, that most eligible families cannot be poor when these values are added in. For the elderly, the figures are \$1,357 and \$2,900, respectively.²⁵

In table 10 the alternative poverty statistics confirm the uneven distribution of medical and housing benefits among the poor. The percentage shortfall for all families rises when these imputed transfers are added for all except female headed households. Consequently, the normalized poverty values show their greatest decline when cash benefits are added and, except for female headed families, relatively modest additional reductions when medical and housing benefits are added. AFDC eligibility automatically brings with it eligibility for Medicaid benefits so that the changes for female headed families is not unexpected.

I think that the peculiar movement of these poverty statistics when noncash values are included confirms the conclusions reached in the section entitled "Comparing Income to Requirements." Because the "needs" side of poverty accounting does not include medical care, either current requirements or insurance value, the net statistical effect is quite misleading.

DATA COMPARABILITY

Estimates of the value of noncash benefits and implied estimates of poverty have all been based on imputation using information from the March Current Population Survey income supplement. Question about the receipt but not the amount of noncash benefits have been a regular part of the CPS since 1980. Before then, there are only episodic special surveys (e.g., Survey of Economic Opportunity) or the much smaller panel surveys (National Longitudinal Survey and Panel Study of Income Dynamics) with which to fill in the historic holes. Program records can tell us how much money was spent but not who it went to nor the economic circumstance of those recipients.

The switch to valuing noncash benefits will make the historic record difficult, but not impossible, to reconstruct. If we assume that the distribution of means-tested noncash transfers has been, conditioned on cash income, about the same over time, then variance preserving imputations could be made to CPS cash income. More serious is the problem of maintaining comparability in the measurement of noncash benefits themselves.

Addressed in a separate conference paper, valuing noncash benefits at other than market cost brings with it a host of difficult estimation problems. Differences in statistical and economic methodology have already led to nine estimates of the poverty rate implied by combinations of benefit types and valuation methodologies. And more are certainly on the horizon.

²⁵These figures include institutional care and will therefore overstate net transfers because of the deduction of other benefits when this care is provided.

The advent of SIPP will open up even more options for valuation. Asset and detailed income data will be available as well as a full two-year income series on each family. Family demographics can be followed monthly and will allow for more accurate determination of program eligibility. The CPS on the other hand, reports household membership at the time of the March survey, while income, and income sources, refer to the preceding calendar year.

The 1980 decennial census, which provides geographic detail on poverty rates, asked no questions about noncash transfers or other forms of noncash income. Since the census is basically self-reported and has a limited number of data items, it is

Table 10. Alternative Poverty Statistics, by Measures of Income and Selected Characteristics

(Percentage of pre-transfer level in parentheses)

Characteristic	Percentage shortfall	Poverty rate	Normalized poverty value
All Families			
Earnings plus earned benefits.....	58.1	15.5	9.0
Cash income.....	37.6 (64.7)	13.7 (88.4)	5.2 (57.3)
Cash plus imputed transfers.....	40.4 (69.5)	8.7 (56.1)	3.5 (39.0)
Black Families			
Earnings plus earned benefits.....	62.8	33.0	20.7
Cash income.....	34.0 (54.1)	28.8 (87.3)	9.8 (47.3)
Cash plus imputed transfers.....	33.3 (53.0)	15.5 (47.0)	5.2 (24.9)
Non-Black Families			
Earnings plus earned benefits.....	56.5	13.3	7.5
Cash income.....	38.9 (68.8)	11.8 (88.7)	4.6 (61.0)
Cash plus imputed transfers.....	42.2 (74.7)	7.9 (59.4)	3.3 (44.4)
Female Head With Children Under 18 Years Old			
Earnings plus earned benefits.....	70.9	40.7	28.9
Cash income.....	32.9 (46.4)	35.5 (87.2)	11.7 (40.5)
Cash plus imputed transfers.....	27.4 (38.6)	20.7 (50.9)	5.7 (19.7)
Head 65 Years Old And Over			
Earnings plus earned benefits.....	37.1	16.6	6.2
Cash income.....	24.0 (64.7)	14.0 (84.3)	3.4 (54.6)
Cash plus imputed transfers.....	27.7 (74.7)	3.0 (18.1)	0.8 (13.0)

Source: SIPP Wave 1, Third Quarter Income Data.

unlikely that it could be designed to give anywhere near the detail of the SIPP. Perhaps limited data on Medicare and Medicaid eligibility as well as private health care coverage, could be added to adjust for the principal noncash income source. Absent this, imputations could be made to cash poverty rates using known differences between the cash and cash plus noncash income from either the SIPP or the CPS. Using demographic, socioeconomic, geographic and income data from the census, group poverty rates could be estimable from models estimated from annual microdata files. These problems of comparability should not deter proper accounting of noncash transfers. As it stands, the historic data are already non-comparable because of the rise of noncash benefits.

CONCLUSIONS

This has been a rather eclectic survey of issues surrounding the statistical measurement of poverty. I have tried to raise several methodological issues that have been raised many times over in the past. I think that all of these important issues are being brought to a head again by the census' proposed methods of counting noncash benefits so that a review, even of old material, is probably in order. The original methodology which gave rise to the poverty thresholds had, I think, some merit, even though it was and still is arbitrary. The enormous growth in medical care expenditures, both in terms of quantity and price, has made that original threshold obsolete. I would argue that Medicare and Medicaid programs themselves are evidence that we, as a society, consider health care to be a necessity, alongside food and shelter. The poverty lines, however, do not recognize this fact. They are static, absolute standards, which cannot, accommodate the changing definition of minimal economic standards.

Because health care is effectively excluded from the official definition of the poverty line it makes little sense to begin counting it as income in-kind. To be consistent, health care should be accounted for explicitly in the definition of the minimal poverty-level bundle of goods and services. Either that, or we should not count it on the income side. Whatever we do it ought to be consistent.

The use of insurance values for health care transfers does not solve the problem. In some ways it compounds it because it fails to show that resources are being transferred to those who need it most--the sick. I think also that the inclusion of insurance values raises some more general problems since most transfers, cash and noncash, have insurance aspects to them. Perhaps we should all have our incomes raised because we all receive insurance value from the existence of an economic "safety-net."

Finally, I think that many of the data conventions used in the official poverty statistics could be reconsidered. In particular, the availability of SIPP, in addition to allowing measurement of noncash benefits, assets and a variety of expenditure components, will allow for income measurements for as long as thirty months. The data constraints, which led to the focus on annual income as a measure of well-being, are now irrelevant. If it is new data that will allow the poverty statistics to be "tinkered" with, I think that we should broaden the agenda to consider a major overhaul.

ACKNOWLEDGMENT

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REJOINDER

Let me begin by addressing Eugene Smolensky's two principal comments. These address his concern about what the poverty threshold ought to be and how we ought to measure poverty given we have a threshold. Let me take them in reverse order. First, Smolensky is right when he points out that the competing requirements placed on a statistical definition of poverty will render any single definition at least partly conflicting. This is, however, only proper. After all, if we think of poverty, or anything else for that matter, as multi-dimensional then rankings of any one dimension will almost never suffice to rank the other dimensions.

His extracts from my paper, however, are misleading since I spend a good deal of time saying exactly that--all of the things that we want a good poverty measure to be are not perfectly reconcilable. I think a poverty definition should measure long-term need. Asset tests for program eligibility try to get at exactly this notion. I also think that a poverty measure should decline when either the number of poor declines or the incomes of those who lie below the threshold go up. As I tried to show, these are not necessarily conflicting views.

Contrary to Smolensky's inference the situation is not quite so hopeless. There exists a substantial body of economic literature that has done a lot to reconcile these conflicts, at least at the theoretical level.¹ The unfortunate fact is that empirical researchers in this area have tended not to apply these notions. I think in large part, that is because any new measure particularly one that becomes "official," will either show more poverty or less poverty than before, and will show either faster or slower changes than the existing rate. This will inevitably entail a political battle no matter which way it moves.

This brings me to Smolensky's second criticism, which, as near as I can tell, is a registration of cynicism about the original poverty threshold. Almost anyone first hearing of how the food share was used to determine the poverty line will scoff. This is especially true if one tries to take the measure literally and to criticize it as if it were measuring an absolute indication of being poor. I tried, instead, to take an empirical view of the definition. What I found most interesting, and convincing, was that, if this measure had been adjusted over time in a consistent fashion, it would track quite accurately public perceptions of what the "poverty line" means to them. Moreover it has some theoretical underpinnings which, given data constraints, make it a reasonable candidate. To think we can ask for more is, I think, asking for too much.

Smolensky and I agree, however, as to the main conclusion. That suggestion was to acknowledge that health care expenditures have become a part, perhaps a dominant part, of the bundle of goods that are considered necessities. It matters less whether this is evaluated as an insurance value or as actual expenditures. What is more important is that they should be added to both the "need" and the expenditure side of poverty accounting.

¹See the references in the section of my paper entitled "Alternative Poverty Statistics."

This brings me to June O'Neill's comments. O'Neill makes a good point in noting that my suggestion to count health expenditures on both sides of the ledger distorts the progress that we have made in reducing poverty. I think that that is right, and I would modify my proposal to incorporate measures of poverty before and after the transfers. Smolensky too argues this same point, that transfers to the ill ought to be acknowledged. We would all agree, however, that these tremendous amounts of money cannot simply be added to the income of the poor without acknowledging that our notion, as a society, of the minimum bundle of goods has changed significantly in the last twenty years.

Comments

June O'Neill
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on the paper by

Michael P. Ward

Mike Ward's paper addresses issues of data comparability in the measurement of poverty and income. Much of the paper is devoted to an analysis of some difficult issues related to income measurement. For example, there is a discussion of stochastic problems arising from the variability of income and needs.

My comments will focus on what I see to be a key issue of the paper and of the conference -- the implications for the poverty measure of including medical and other noncash benefits or of otherwise changing the way we measure income.

First - it is well to keep in mind why we keep measuring poverty at all. I believe its main use is as a way to assess changes over time in the proportion of the population falling below some agreed upon standard as the economy progresses. The poverty measure has also been used to make comparisons between broad groups, although this use of the poverty measure is questionable, as I show later. However, the poverty measure is too crude to be used to measure interpersonal differences which is why individual eligibility for programs is seldom based literally and exclusively on the poverty measure. Ward's paper gets stuck in places because it seeks a way to make interpersonal comparisons (and at some points intrapersonal comparisons over time).

Because its primary use is to assess change over time, the poverty line is appropriately an absolute standard. It is also an arbitrary standard, based on value judgments. The method used by Mollie Orshansky to derive what has come to be the poverty thresholds was essentially arbitrary. It was based on a kernel of objectivity -- one measure of a nutritionally adequate diet. Needs other than food were not and probably can not be specified in any scientific manner. Orshansky's decision to derive these nonfood needs by the use of a multiplier based on the share of food in the average family's budget was a value judgment. Ward is quite right that this method led to a poverty estimate on the high side. Rose Friedman, performing a similar calculation for the same time period, used a multiplier based on the share of food in the budget of the family that actually achieved the nutritionally adequate diet.¹ Such a family had a lower income than the average family. Food made up a larger share of their incomes, so the resulting multiplier was smaller and the poverty threshold lower under the Friedman method. The number of poor counted by Friedman was roughly half the number of poor found using the Orshansky method.

¹See Rose D. Friedman, Poverty: Definition and Perspective, Washington, D.C., American Enterprise Institute, 1965.

The Orshansky method, however, resulted in a count of poverty that turned out to be very close to that determined by the Council of Economic Advisers in 1964. They had arbitrarily used a poverty standard of \$3,000 for a family; \$1,500 for an individual. From this coincidence one might conclude that the poverty threshold, based on the Orshansky calculations, reflected the majority views of the 1960's - or at least the views of the Johnson Administration - about what constituted an acceptable minimum level of living. The particular method used to derive this arbitrary measure is not really relevant.

From time to time there have been moves to "update" the poverty thresholds, and the argument to do this is based on the observation that, over time, the average family spends a smaller share of their rising incomes on food. As Ward correctly points out, raising the multiplier and updating the poverty line really means adopting a relative concept of poverty. If a new consensus is reached that the poverty level should be higher, the change should be made explicitly by Congress or the President. It should not be slipped through as a mere technical adjustment.

Given that the main purpose of the poverty measure is to chart the success of the economy in reducing poverty over time, it follows that any resource - whether it be food, medical care or something else - that has contributed to increases (or decreases) in the well-being of the population in principle should be included in the definition of income used to measure poverty. (Of course, measurement problems may make it difficult to include a particular income source.)

Health expenditures have increased enormously over time rising to about 10 percent of GNP. By no means can this increase be attributed solely to inflation of medical prices. It represents a large increase in the real amount and quality of medical care. Moreover, there has been a substantial transfer of these health resources to the poor. Income measures that do not register this change in medical resources are highly misleading. Medical care has been increasingly paid for with fringe benefits and noncash transfers, which should then be measured and added to income.

Mike Ward proposes two ways of treating health benefits in income measurement. One method would deduct out-of-pocket medical expenses from income, but would not add any noncash health benefits to income. The reason for doing this is motivated by a concern running through the paper that health expenditures are contingent on special needs and that these needs elude exact measurement. The concern, however, is misplaced since it arises from a preoccupation with interpersonal comparisons which as I noted at the outset is not the best use of the poverty statistics.

There are important distinctions to be made here. An individual has different needs at different times and individuals differ in their permanent health levels as well. Over time, however, there is no reason to believe that the underlying health needs of the population as a whole change in any major way. It is unlikely that the nation is spending more on health because its health is deteriorating over time. Ward's first alternative for handling medical expenditures and benefits would give us the wrong answer for assessing change over time since it would completely miss the increase in income in the form of health benefits.

To my mind the more sensible approach is the insurance valuation method which is the second alternative proposed in the Ward paper. This method leads to the common sense result: that income has increased by more than cash income would suggest - because health care is more and more a noncash fringe or transfer benefit. Insurance valuation of medical expenses paid for with public transfers does raise measurement

problems. For example, the population at risk is sometimes hard to define. It may be larger than the current Medicaid or Medicare population depending on the chance the broader population has of becoming sufficiently ill or disabled to qualify.

There also remains a problem of cross group comparison which is not easily resolved because we do not have good measures of group health status. We do know that the elderly and the disabled generally have greater health needs than other groups, and therefore, lower real incomes. To attribute to these groups their own health transfers as income could be misleading for cross-group comparisons. However, for each group separately, valuing health benefits does provide a way of assessing how their real incomes have changed over time.

Should the poverty threshold be changed if noncash benefits are added to income? It all depends if the thresholds were believed to include all "adequate" medical care. Since free medical care was not unheard of in the 1960's it is likely that the thresholds were not expected to cover medical costs fully. Therefore if noncash benefits are included in income the poverty thresholds should probably be raised, at least by the value of charitable care available in the 1960's. However, the amount of the change in thresholds likely to be required is probably small.

One last comment pertains to the treatment or lack thereof of sources of income other than the standard fringe and noncash benefits, such as leisure or work in the home which are admittedly hard to value. The assumption that these items yield zero income, however, may be much worse than valuing them at an arbitrary figure. Over time more women entered the paid workforce, thereby reducing their home work. The elderly and the poor have less and less market work time and more leisure and home work. It would be worthwhile to at least find out what the implications would be of including these currently unmeasured sources of income.

Comments

Eugene Smolensky
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on the paper by

Michael P. Ward

Let me say right at the outset that I really like this paper. It has some conceptual inconsistencies, and some factual errors but it also has the clear ring of simple truth. In my comments I will first briefly touch on some of the factual and conceptual problems to make a larger point. I will then turn to its crisp resolution of Census's problem.

The conceptual problems begin at the beginning--with Ward's conception of what a poverty measure should be. We are told first that the poverty threshold "ought to measure long-term need." It also ought to be a predictor second "of program eligibility", which also ought to be (but I add is not) an indicator of long-run need. Passing the poverty thresholds should, furthermore, third "be a barometer of progress in eliminating deprivation." But, to quote again, "Statistics which are purely functions of the median or mean have the curious property of yielding a stable poverty fraction even during downturns when, I think, most people would agree that (fourth) poverty must have increased." Obviously then, there are at least four partly conflicting views of what a poverty measure should signal in this paper.

To move on to a factual problem, Ward asserts that we "know that the average family consumes the minimum standard diet." We know no such thing. Ward may be confusing meeting the minimum daily nutritional requirements with spending a thousand dollars a year on "the minimum standard diet." As far as I know the only people who consume the minimum standard diet are poor folk told by social workers that that's what they must eat. Nor do I believe as Ward believes, that poor folk spent one-third of their income on food even in 1962. So, most importantly, we do not know that the original poverty line "erred on the high side."

Turning next to a mix of factual and conceptual problems, we have the following. "As will be clear, though, the quantitatively important transfers are medical benefits. These are not only the largest dollar involved but they are also the hardest to think about conceptually as an income source. Moreover, the treatment of medical benefits, raises other hard questions about how 'needs' should be defined." All sort of true. Sort of true, because they are only true by convention--the convention that excludes primary and secondary education from the class of activities we label transfers. There are important lessons for Census that could be learned from the fact that we omit education, and they ought be discussed at this conference -- but not now.

Finally, Ward thinks that the key problem posed by in-kind transfers is that the key to such transfers--health benefits--are contingent claims based on an obvious associated decline in utility. The contingent nature of in-kind benefits is not of compelling significance, however. All of the United States transfer system is conditioned on there being an associated catastrophe--retirement, unemployment, widowhood, abandonment, pregnancy, other medical catastrophes. AFDC, after all,

originates in the Social Security Act and was a contingent claim--contingent, most people thought then, on widowhood. In my view, what makes medical benefits so special is that, as they are customarily viewed, they are so large. Being large is important because large transfers open the wedge between the cost to the government and the cash equivalent value to the recipient to such a degree, that the convenient accounting convention that expenditures equal benefits loses all credibility.

These small errors and inconsistencies in no way lessen the contributions of this paper. In fact, as I see it they are part of its contribution. They make the point, in the most telling way, that there is no single consistent way to conceptualize the poverty thresholds. The concept is expected to serve so many purposes it must seem inconsistent for some. Their defense comes from so many different perspectives--the perspectives of the different social science disciplines, of the different interest groups, of the different ideologies toward social policy--that a responsive and responsible author is bound to mix them up. It is inevitable for example that the parable of the food share will be told, if only for the amusement of the hostile. But the fact is, that no technician can do better. To believe that the food share is really telling would imply that we really do not need the CPS. We can do away with all the problems plaguing us at this conference, and satisfy Gramm-Rudman at the same time. What we need to do, if you will pardon the pun, is to beef up the food consumption surveys and get a good count of the anorexics. Nevertheless, they could not do better then, nor can they do better now.

Ward tells us that "The survival of the original poverty definitions owes more, I think, to the huge political costs of changing it than it does to the appropriateness of the methodology or the statistics which gave rise to those first calculations. ... What we have is a metric that no one likes but no one seems able to change." True enough as far as it goes, but it misses the point that, when first created the poverty thresholds had also to pass the test of political acceptability. Part of that acceptability came from the level and part from the demonstration that the level was "scientifically" arrived at. We should make no mistake about the fact that we are now engaged in the same kind of "science." Just remember that this conference started out two years ago to be a select committee of 12. It is not irrelevant that we are now a not so select assemblage of 130.

Let me turn finally to Ward's resolution of the problem. "... the principal problem," he tells us, "is to revamp the statistical concept in ways that will more closely reflect the resources both needed and transferred to the low-income population." Note the key words, both needed and transferred. He continues, "The most straightforward approach is to recognize that needs have risen when health care is required." Of those then who get ill, "only individuals not covered by insurance would show significant variation in need not offset by contingent income." In other words, my words now, for the measurement of poverty, all but ordinary health maintenance costs are irrelevant--unless illness propels someone into poverty in some way that keeps them out of Medicare or Medicaid, say via an asset test. I would add that nursing home costs are also irrelevant, since the institutional population is not in the statistical base of the poverty rate. That leaves routine health care, evaluated as an insurance policy, available to an eligible population of all the elderly, and say those up to twice the poverty line. Now we are talking about a relatively small number, one for which expenditures may be somewhere in the neighborhood of cash equivalent benefits, and these should be added, as Ward suggests, explicitly to the poverty thresholds.

In the draft of Ward's paper that I have, reconciliation of the various income distribution statistics and the poverty statistics, whatever is done with them, is not discussed. I would like to say here, that expenditures on medical care and other in-kind transfers should be accounted for, attributed to those who benefit from them at cost, in the personal income distribution statistics. It is not relevant for poverty, but it is relevant for a full understanding of the distribution of income in the United States that enormous sums are spent on behalf of those who are ill, whatever their income level. We want to know who gets the resources. How these resources are distributed to the sick, classified so as to add those resources to all the other resources available to the sick, is an important fact about our economy. This is not to mean that the sick are "better off" for any practical purposes, only that the sick make a particular claim on resources that needs to be acknowledged. Here Census should follow Lampman's accounting framework, and also include as private transfers expenditures by insurance companies on behalf of those who receive treatment at their expense.

In fact, here and also with regard to the poverty thresholds, the Census and the Office of Budget Management (OMB) would do well to follow the example set for them by the Office of Tax Analysis (OTA) in the drafting of Treasury I. After all, taxes are merely negative transfers. Treasury I insisted on the consistent treatment of all income, regardless of source or use. Income was taken to be Hague-Simons' income--that is, consumption plus the change in net wealth. It is important to start from Hague-Simons' income, because, even though it is impractical, and perhaps even undesirable, when we retreat from it as the data are collected and tabulated, the concept allows us to enumerate precisely what has been omitted, so that anyone can decide for himself whether the data report on something meaningful in an unbiased way. It was also a fundamental premise that it was important now to get horizontal equity right--that there be equal treatment of equals--and that issues of vertical equity were therefore to be avoided now. For vertical equity the principal was neutrality, and that is the principal that Census and OMB will have to follow now if it is going to be able to make a change now. That is for now, it should be a principal that the change in measurement leaves the incidence of poverty unaffected, for now. Ward's proposal, to add the insurance value of health programs to the need and expenditure sides, and as I have amended it, to include only the insurance value of routine care, does that. The difference that would then appear between the Census series on poverty and the series I would like to see on inequality would be akin to the difference between adjusted gross income and taxable income, with the exclusion of acute health care expenditures being the difference. In fact the analogy to Treasury I is exact here, since expenditures on health insurance up to some limit, is not an exclusion from taxable income in Treasury I, but becomes an exclusion at higher expenditure levels. Since the changes I envision are not large, the new series and the old should be overlapped for a few years permitting statisticians to tie them together with some chain procedure. Census need not take the data back to earlier years. Nor need these data be collected in the decennial censuses.

Now is there anyone who wants to talk about education?



**USE OF
POVERTY
STATISTICS
IN
FEDERAL LAWS
AND
PROGRAMS**

Authors

**Eric A. Hanushek
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Alternative Poverty Measures and the Allocation of Federal Benefits

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INTRODUCTION

As Federal budgetary pressures increase, the idea of more precise targetting of outlays becomes increasingly attractive. The notion is that by refining the distribution of outlays to skew benefits toward the more needy, the harm of any program reduction can be minimized. Of course, this presumes that it is possible to define and measure "most needy" in some reasonable manner related to the program under consideration.

While a range of eligibility criteria are used to target Federal benefits those involving income and poverty measures are the primary focus here.¹ Low income may be used either as a direct indicator of who the program is intended to aid, or as a proxy for more relevant characteristics that are difficult to measure. At the individual level, assessing whether families have incomes below fixed limits--such as the poverty thresholds--allows the use of a single measure to compare families of different types in different areas, although such comparisons may be open to question because income sources differ across family types and because the cost of living varies across locations. At the aggregate level, an income criterion permits funds to be directed to areas in which low-income people are concentrated, either to compensate for the resulting low tax base or on the explicit assumption that local agencies will use the money for programs aimed at the most needy.

The government's official poverty measure compares cash income with poverty thresholds based primarily on family size. It does not include in-kind benefits, although noncash benefits almost certainly improve a family's well-being. For most uses of poverty measures--where the explicit purpose is comparing the well-being of different families--acknowledging the value of in-kind benefits is noncontroversial and would represent an obvious improvement in poverty statistics.² The issue, as

¹Much of the discussion in this paper deals with poverty as a criterion for program eligibility, but most of what is said would apply equally well to nearly all criteria based on income measures. In fact, the official poverty measure is used to determine eligibility for few programs, essentially only for food stamps and child nutrition programs. Most programs that are income--conditioned have their own eligibility thresholds.

²There is controversy, however, about how much in-kind income ought to be included in income measures. Most attention has focused on transfer benefits going to low-income people, but many argue that comparisons between the poor and the nonpoor would be invalid unless other in-kind income such as employer-provided health insurance is also included.

discussed extensively over time and at this conference, is how to measure adequately the economic benefits of in-kind goods and services. On this there is much less agreement.

The measurement of noncash benefits is one of several major issues that could affect the calculation of poverty status. Others such as whether or not to include taxes or the proper treatment of assets are very similar: there is consensus on the desirability of incorporating them into poverty measures, but this has not been done because of measurement and valuation difficulties or lack of readily available data.

The central concern of this paper is the effects of allocating program benefits on the basis of income measures that include noncash benefits. The first section deals with the targetting of program benefits to individuals, examining how basing program eligibility on both cash and in-kind income would affect the distribution of benefits along with some more general measurement and implementation issues. The subject of the second section is "aggregate targetting," including various formula grants and programs that distribute monies to states and localities on the basis of area poverty rates.

The paper concludes with a discussion of two major policy issues that would arise if cash plus in-kind income measures were substituted for cash only measures in the distribution of Federal assistance. First, would locational differences in the cost of living be explicitly incorporated in the calculation of poverty measures? The answer has obvious implications for the distribution of aid among high-cost and low-cost areas. Second, how would aid distribution take into account the level of effort of states and localities in providing benefits for low-income families and individuals? How this issue is resolved directly affects the incentives for local governments to offer in-kind aid.

TARGETTING PROGRAM BENEFITS TO INDIVIDUALS

Programs that provide benefits to individuals use eligibility criteria to determine who gets aid. In principle, these criteria direct benefits to those whom the programs are intended to help, while denying assistance to others. This targetting serves a number of purposes. First, it is a means of allocating scarce Federal funds "efficiently," not in the economist's sense of the word but rather in the sense of getting funds to where they will be most effective in meeting the program's aims. The asset test in the Food Stamp Program, for example, focuses aid on the most needy by denying benefits to households that are otherwise eligible but whose assets could be used to buy food. Second, targetting can be used to exclude people who might change their behavior in undesired ways if they were eligible for benefits. This is the case in the Supplemental Security Income (SSI) program where participation is restricted to people who are aged, blind, or disabled; because these groups are not expected to work, these categorical criteria limit reductions in work effort that the program might otherwise cause. Third, at least for appropriated programs, targetting criteria determine the distribution of benefits, at least in the short run; in the longer run, targetting may influence the level of program support, since funding may depend on the program's image in terms of getting aid to those for whom it is intended.

Alternative Targetting Devices

A wide range of characteristics can be used as targetting devices. Some programs base eligibility on physical status, offering aid, for example, only to those nonelderly who are blind or disabled. Others specify age: Medicare, for example, is available to essentially all Americans age 65 or older. Family composition can determine who is helped, as in the Aid to Families with Dependent Children (AFDC) Program which, in half the states, assists only those families with children in which either there is only one parent or one parent is incapacitated. Veterans' benefits are distributed on the basis of prior military service. And many programs direct aid to those whose economic well-being is below some threshold, defined in terms of income or some other dimension of need. Moreover, programs often use combinations of these characteristics to assess eligibility; for example, SSI is available to people over age 65, but only if both their incomes and their liquid assets are below fixed limits.³

Targetting criteria are often determined by the nature of the specific programs. Participation in programs intended to assist the elderly is naturally limited to people at least 62 or 65 years old, while programs aimed at children generally restrict benefits to families with members under 18 years of age. Other programs may have less obvious bounds, and their eligibility criteria may seem to reflect this. For example, some veterans' benefits are available only to people who served in the Armed Forces during specified periods. Income and other resource limits on program participation may also appear to be arbitrarily determined.

Poverty and Income as Targetting Criteria

Programs for which eligibility is based on poverty or low-income criteria have two general purposes. First, they are designed to alleviate current problems such as hunger, lack of shelter, or medical needs. In this sense, assistance treats the symptoms of poverty but not its root causes. Dealing with the latter forms the second aim: helping the poor to support themselves in the future. Some programs--such as job training--are aimed at poor adults with the goal of providing them with skills that will make them self-sufficient. Others--such as Head Start--focus on poor children, trying to help them past the barriers that being poor establish and on to adult lives out of poverty. Straddling the line between these two general aims--helping with current needs and curing long-term problems--are programs for the elderly, who are not expected to become independent but will have specific daily care needs that are likely to last for the rest of their lives.

³Another way in which benefits can be targetted is through the Federal personal income tax. If some or all benefits are made taxable--as is now the case for Social Security payments to those with high enough incomes, for example--existing progressive tax rates will skew net benefits toward those with lower incomes. This effect can be increased by making larger percentages of benefits taxable for those with higher incomes. This approach is not considered in detail here.

Programs that address these problems--both short-term and long-term--use income criteria for eligibility, not so much because income is necessarily the correct measure of need, but rather because low income serves as a proxy for other conditions. Ideally, targetting ought to be done through a general specification of social priorities and choices. It is not always possible, however, to find operational indicators that assess directly whether or not to aid a particular person or family. We might want to offer job training to people whose work skills are too limited for them to earn non-poverty wages, but we identify eligible candidates through observing their incomes and not by examining their skills.⁴ We might want to help disadvantaged children to be able to escape poverty when they grow up; yet we target cash, food, housing, and educational aid based on their parents' incomes, not on more direct measures of specific deprivation or on whether they are unlikely to make it on their own as individuals.⁵ Of course, some programs with income eligibility criteria are intended for people with low incomes, regardless of cause. Food stamps are available, at least in part, because we as a society feel that no one should go hungry.

Whether or not a poverty measure--as opposed to some simple income limit--is needed or appropriate as an eligibility criterion depends on the nature of the program in question. Programs for which only specific kinds of families can qualify may not need an aggregate measure of well-being across family types; for example, SSI for the elderly offers benefits only to single people or couples age 65 and over, so there is no need for the more complex set of poverty thresholds that provide comparisons across family groupings.

At the same time, when low income is chosen as a criterion because it is a proxy for other characteristics that are harder to assess, we must consider how good a proxy it is. For example, if low income is to be used as an entry requirement for job training programs on the assumption that it is a good measure of a lack of work skills, we would like to be sure that not having appropriate skills is the usual cause of low incomes and that other factors such as too few jobs or an unwillingness to work are not dominant. Unfortunately it may not be possible to determine how good a proxy low income is; we generally have to turn to income as a criterion because it is difficult to get accurate information about other relevant characteristics--the need for job skills in this example.

A major--but generally unrecognized--issue in using income or poverty status to target program benefits is the choice of an appropriate accounting period. The official poverty measure compares a family's annual income against thresholds designed to show annual need. Use of an annual accounting period averages variations in income that occur within a year, and thus ignores the possibility that families may have extremely low incomes over shorter periods of time, even though they are nonpoor for the year considered as a whole. Many programs, on the other hand, have monthly accounting periods; eligibility and benefit levels are based on income during

⁴Income criteria for job training programs may have a quite different purpose, identifying not those with inadequate skills, but rather those least able to finance their own training. It may also be the case that job training is more acceptable than transfer programs as a means of aiding the poor.

⁵Providing for the immediate needs of children through food or shelter is, of course, an additional motivation independent of any long run goals.

the preceding month. In these programs, a family with income above the poverty threshold for a year could receive assistance for at least part of the year. To some extent, asset tests mitigate this problem: by denying benefits to families with significant savings, asset limitations may distinguish between families that have low incomes for brief periods and those whose incomes are generally low.⁶

Table A-1 of appendix A shows the magnitude of fluctuations in poverty throughout the year for the population as a whole and for different family types. Fluctuations in income and poverty status differ systematically by source of income; Social Security benefits and pension benefits tend not to change from month to month, while earnings are much more variable. Therefore, while targetting benefits on the basis of common income measures or poverty status is designed to treat different families "equally," the simple choice of accounting period can have important, and perhaps unintended, effects on the distribution of program money across groups. For example, the elderly and single parent families with children tend to have relatively fixed income sources and thus relatively small differences between monthly and annual poverty rates, while married couples with children are more likely to have variable income streams and hence greater divergence in poverty rates measured over different time periods.

Strengths and Weaknesses of the Official Poverty Measure

Many issues that have to be considered in assessing the usefulness and validity of income criteria for program eligibility can be illustrated by examining the strengths and weaknesses of the official poverty measure as an indicator of need. Poverty, per se, is used to determine eligibility for only a few individual programs—essentially only the Food Stamp and Child Nutrition Programs.⁷ Because it compares a measure of income against fixed thresholds, however, it is representative of income eligibility criteria in general. The following points apply in varying degrees to all such criteria.

The official poverty measure has two basic strengths in assessing financial need.⁸ First, it provides a way to compare the well-being of families of different

⁶Note that asset tests can be readily used as program eligibility criteria to distinguish between those whose incomes are low only briefly and those who are poor for longer periods. Because it is not obvious how assets should be counted, their inclusion in the measurement of poverty is more problematic, however.

⁷In practice, income limits may not matter as much as other program rules in determining eligibility. For example, current rules in the Food Stamp Program require that gross income be less than 130 percent of poverty thresholds and that income after allowable deductions ("countable income") be less than 100 percent of the thresholds. Moreover, for some families that satisfy these income criteria, actual benefit amounts may be zero.

⁸There are actually two "official" poverty measures. The Census measure is used to calculate aggregate statistics such as the national poverty rate. The Office of Management and Budget (OMB) measure—which is derived from the Census measure—is used to determine program eligibility. Differences between the two measures are not relevant for this paper.

types and sizes or in different circumstances. Because there are separate income thresholds for families with varying numbers of adult and child members, we can aggregate poverty status across families.⁹ Second, because it is defined at the national level, the poverty measure is consistent across states. While this is also a shortcoming as discussed below, it does allow program eligibility to be defined uniformly throughout the country.

The weaknesses of the official poverty measure have been frequently discussed. The omission of in-kind income is the focus of this conference. Statistics indicate that a growing percentage of income comes not in cash but rather in goods and services; further, this is not the case only for transfer program recipients, but also for workers in both the private and the public sectors. Including in-kind benefits in income measures would be problematic, however, because it may be difficult both to obtain accurate data on benefit receipt and to value in-kind income. Yet the problems are not beyond those we deal with in providing other government statistics.

Poverty assessment also faces measurement problems. It is difficult to determine accurately what a family's income is during a particular period, in part because the family may not know or be willing to report its income correctly. At the aggregate level, survey data on which Census poverty statistics are based suffer from problems of underreporting of income, even after imputations are made where feasible. While the Current Population Survey (CPS)—after imputations—shows nearly all wage and salary income, it is estimated to include only about 90 percent of Social Security income, 85 percent of SSI payments, and three-fourths of AFDC benefits and unemployment compensation. For property income the case is even worse: less than half of all interest, dividend, and rental income is reported. This problem of inaccurate income information would be compounded if in-kind income were also counted.

The situation is worse at the individual level. The same underreporting of income exists, but it is not possible to correct for this shortcoming by imputing additional income since imputations are based on expected, not actual, values. Accuracy of poverty statistics for specific persons is important when benefits are allocated to individuals.

A third weakness of the poverty measure is the exclusion of wealth. Except to the extent that assets generate cash income, the measure recognizes no difference between two otherwise identical families, one of which has \$100,000 in assets and the other none. Omitting assets in determining a family's poverty status misstates their well-being. Lack of data is again a problem in terms of doing anything about this issue: not only are few data now gathered, but it is likely that many people would not know with accuracy the value of their assets, even if they were asked.

⁹This aggregation can be significantly affected by how income is defined. The distribution of poor across family types is quite different, for example, if in-kind benefits are counted as income than if only cash is included.

How taxes are treated in measuring income is important when families with different income sources are compared. The current definition of poverty is based on before-tax income, and thus ignores the fact that families can have very different disposable incomes—and hence very different levels of well-being—even though their pre-tax incomes are the same.¹⁰ Because families have relatively little control over income that goes for taxes, it would seem more appropriate to consider income net of taxes. For example, one family might receive its income only from earnings, which are subject to payroll taxes and possibly to income taxes, while another family might get the same amount of pre-tax income in the form of untaxed government transfer payments; because the first would have less disposable income, it would be inaccurate to say that they were equally well off.

Further, the poverty thresholds were constructed on the basis of after-tax expenditures, and thus should logically be compared with after-tax income. In the past, it made little difference whether income was measured before or after taxes, since taxes were only a small fraction of the income of the poor and near-poor, but rising payroll taxes and bracket creep in the Federal income tax have increased the tax liabilities of low-income households, so that the difference between using pre- and post-tax income is much greater now. In 1984, for example, families with four members and with earnings at the poverty level owed more than 10 percent of their income in Federal taxes, up from 4 percent in 1978.¹¹

Among other weaknesses of the poverty measure, one that deserves final mention is the failure to adjust for geographic differences in the cost of living. Even though living costs can vary widely, poverty thresholds are the same throughout the country. This is a problem that, as discussed below, assumes greater importance when noncash benefits are counted as income.

These weaknesses of the official poverty measure are roughly based on the concepts of horizontal and vertical equity, that people in similar circumstances should be treated similarly and that people in different situations ought to be treated differently. The inability to measure or value income adequately means that we cannot correct the shortcomings, so we are left with them. It is hard to say in general just how important they are, however, since that depends on the use to which poverty statistics will be put. If poverty status is one criterion used in conjunction with an asset limit—as is the case with food stamps, for example—it may make little difference in terms of targetting accuracy that wealth is ignored in measuring poverty. On the other hand, if living costs vary widely across areas, using the same poverty thresholds everywhere can mean that some families getting food stamps in low-cost areas will enjoy higher standards of living than families in high-cost locations with incomes too large to qualify for food stamps.

¹⁰In addition, if income is measured before taxes and transfers are counted as income, poverty could be "eliminated" simply by taxing the poor and then giving back as transfers the taxes paid. Income compared against poverty thresholds would increase, even though no one would have more or less than before.

¹¹See U.S. Congress, Joint Committee on Taxation, Federal Tax Treatment of Families Below the Poverty Line, April 9, 1984.

Expanding the Definition of Income

It is generally recognized that ignoring in-kind benefits in measuring income understates the well-being of families. Less well understood are the effects of expanding the definition of income to include in-kind benefits. Much attention has been directed to the fact that changing the definition of income to count in-kind benefits and leaving any set of thresholds—such as those used for the official poverty measure—unaltered would lead automatically to significant reductions in the number of families with incomes below the thresholds. Data published by the Bureau of the Census, for example, show that the overall poverty rate would have been between 2.0 percentage points and 4.6 percentage points lower in 1984, depending on how in-kind income is valued.¹² This would reduce the number of people qualifying for programs that have poverty status as an eligibility criterion, as critics often complain. The complaint, however, is not directly relevant to the issue; any poverty measure comparing income against fixed thresholds is necessarily an arbitrary statistic which can be driven to any given value by the appropriate choice of thresholds. For the purposes of program targeting, the more relevant question to ask is whether a particular poverty measure directs benefits toward those people for whom aid is intended. As noted above, the answer depends on which program is being considered.

What is clear is that the definition of income can determine the distribution of benefits among families. Table 1 and figures 1 and 2 show the effects on poverty rates of using alternative income measures. Because they are less likely to get noncash benefits, married couples with children would experience a relatively small drop in their poverty rate—13 percent or 25 percent, depending on how in-kind income is valued. The effects would be greater for family types that participate in noncash

¹²The in-kind benefits included were food stamps, housing assistance, medical benefits, and school lunches. See U.S. Bureau of the Census, Technical Paper 55, Estimates of Poverty Including the Value of Noncash Benefits: 1984. U.S. Government Printing Office, Washington, D.C., 1985.

Difference Between Official and Expanded Poverty Rates

(In percentage points)

Year	1979	1980	1981	1982	1983
Range of Estimates					
Low.....	2.5	2.4	2.2	2.2	2.0
High.....	4.7	4.9	4.7	4.7	4.7

assistance programs more often: the poverty rate of single-parent families with children would fall by 19 percent or 34 percent, while that of elderly families would be reduced by 41 percent or 79 percent.¹³ Allocating program benefits on the basis of cash plus in-kind income would, therefore, provide less for the elderly and for single-parent families, while a greater share of assistance would go to married couples with children, if no other changes were made.¹⁴

At the same time, counting in-kind benefits as income would not necessarily lead to large or inadvertent changes in the distribution of program benefits. In the first place, Congressional action would generally be required to alter eligibility criteria to include in-kind income; such action would signal revised intent in terms of who should receive assistance. Further, because most programs have multiple eligibility criteria, changing the definition of income may have little effect on who qualifies for benefits; other criteria may be more important in restricting the eligible population.

Two other issues must be considered if program eligibility is to be determined by an income criterion that includes in-kind benefits. First, what additional information do we need to determine the value of in-kind income a family receives? Second, if families may be eligible for benefits from multiple programs, how should benefits of one program be considered in assessing their eligibility for others? We address these in turn.

What additional information is needed to value in-kind income? If in-kind benefits are to be counted when income is measured, two pieces of information about those benefits are needed for each family. First, we must know how much of each good or service the family receives. For area estimates such as national averages, survey data could be used; the usual problems of misreporting would occur, made worse in those situations where recipients do not know how much of a particular in-kind benefit they were given, such as in the case of public housing or energy assistance in the form of third-party payments. For eligibility determination, information could be obtained either from program records or from applicant reports. The former would be administratively complex, given the many types of assistance provided by different agencies, while the latter would be subject to underreporting, either intentional or out of ignorance.

¹³Table 1 and figures 1 and 2 reveal significant differences in poverty rates, depending on the method used to value in-kind benefits. The market value is generally greater than either the poverty budget share value or the cash equivalent value (not shown in the table or graphs), and the difference is greatest for health care benefits. This is particularly evident for the elderly, for whom counting in-kind income at market value lowers the poverty rate to 3.6 percent, while using the poverty budget share value--which limits the dollar value of in-kind benefits--causes the poverty rate to fall only to 10.3 percent. There is little agreement on what the appropriate valuation method is.

¹⁴If income were also measured after taxes, this effect would be even greater. Using the poverty budget share valuation of in-kind income, the combined effect on poverty rates of counting noncash benefits and excluding taxes would be essentially zero for married-couple families. On the other hand, because other family types pay less taxes, their poverty rates would fall more: poverty rates would decline by 17 percent among single-parent families, and by 41 percent among elderly households.

The second and perhaps more difficult need is a means of valuing in-kind benefits. The seminal work of Smeeding and subsequent refinements by the Bureau of the Census demonstrate that valuation methods can be devised.¹⁵ There is, however, much disagreement on what method is appropriate, best indicated by the fact that the Census Bureau publishes data based on three alternatives. Reasonable arguments can be offered for each of the three—and for other possibilities as well—and consensus is unlikely to be obtained on any one.

Table 1. Poverty Rates Using Alternative Definitions of Income, by Family Type:
1984

In-kind benefits by income measure	Married couples with children under 18 years	Single parents with children under 18 years	All families	Elderly units	Unrelated Individ- uals	All persons
Measured at: Market Value						
Premeans-tested...	9.7	45.0	12.7	19.5	23.0	16.0
All cash.....	9.4	42.8	11.9	17.5	21.8	15.1
Cash plus in-kind.	7.2	28.3	8.1	3.6	14.2	10.1
After taxes.....	8.5	29.0	8.9	3.6	15.4	11.0
Measured at Poverty Budget Share Value						
Premeans-tested...	9.7	45.0	12.7	19.5	23.0	16.0
All cash.....	9.4	42.8	11.9	17.5	21.8	15.1
Cash plus in-kind.	8.2	34.7	9.9	10.3	18.5	12.7
After taxes.....	9.4	35.5	10.6	10.3	19.8	13.6

NOTE: For a discussion of alternative ways to value in-kind benefits, see U.S. Bureau of the Census, Technical Paper 55, Estimates of Poverty Including the Value of Noncash Benefits: 1984. U.S. Government Printing Office, Washington, D.C., 1985.

SOURCE: Congressional Budget Office analysis of March 1985 Current Population Survey.

15U.3. Bureau of the Census, Technical Paper 50, Alternative Methods for Valuing Selected In-Kind Transfer Benefits and Measuring Their Effect on Poverty. U.S. Government Printing Office, Washington, D.C., 1982. See also Technical Papers 51, 52, and 55 in the same series.

Figure 1
Poverty Rates by Income Measure
InKind Measured at Market Value -- 1984

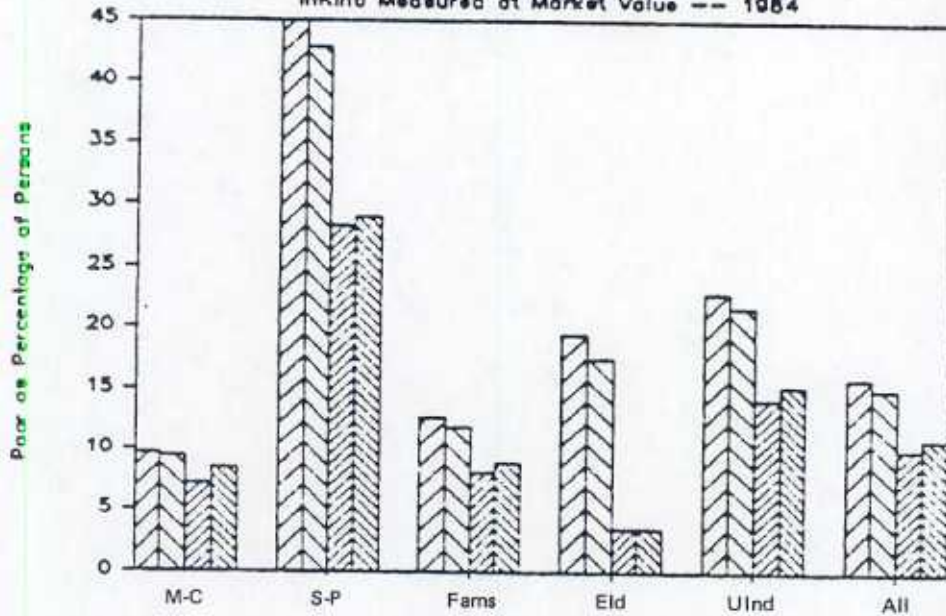
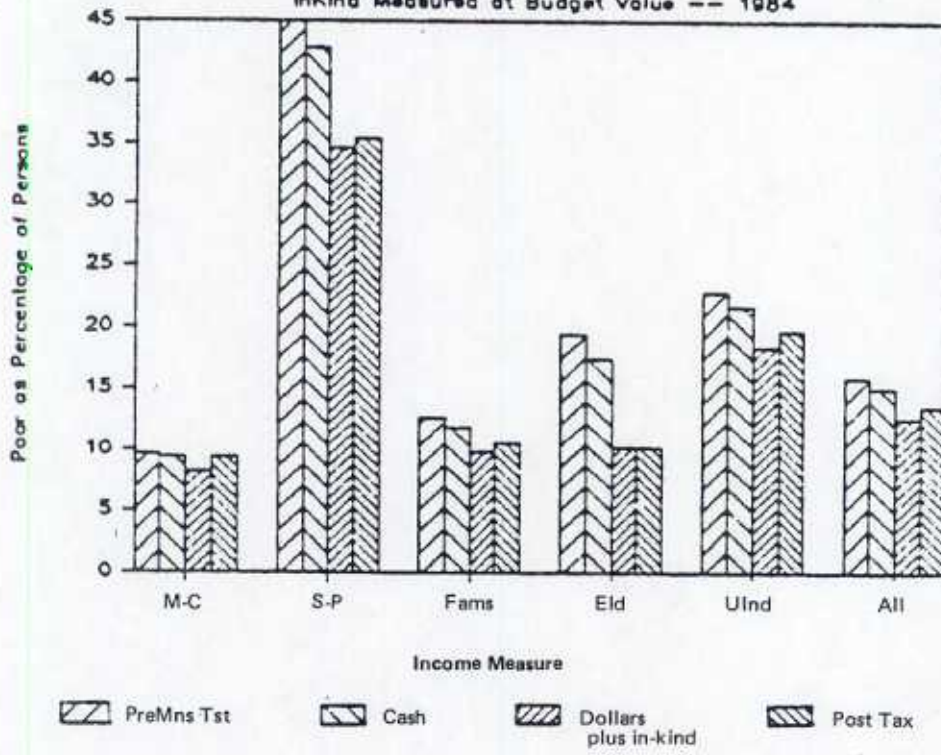


Figure 2
Poverty Rates by Income Measure
InKind Measured at Budget Value -- 1984



Income Measure

- PreMns Tst
- Cash
- Dollars plus in-kind
- Post Tax

Population Subgroups

- M-C : Married couples with related children under 18 years of age.
- S-P : Single parents with related children under 18 years of age.
- Fams : All primary families and unrelated subfamilies.

- Eld : All families and unrelated subfamilies with all members age 65 or over, plus all people age 65 and over not living with relatives.
- UInd : All unrelated individuals.
- All : All persons.

Source: Congressional Budget Office analysis of March 1985 Current Population Survey.

How should benefits from one program be used in determining eligibility for another program? If in-kind benefits are counted as income in determining program eligibility, a hierarchical order in which such benefits are considered must be established to avoid circularity in setting benefit levels. Consider what would happen if such an ordering were not made, but instead every program counted as income the benefits obtained from all other programs. Suppose a family of four persons with no income first applies for food stamps; they are awarded the maximum allotment of \$264 per month. They next apply for housing assistance, and based on their food stamp income of \$264, they are given a Section 8 rent subsidy of, let us suppose, \$300 per month. But now the Food Stamp Program must recompute their benefits because of the housing aid; their food stamp allotment is lowered to \$202 per month. This reduction qualifies them for a larger housing subsidy, now \$319 per month. The cycle would continue with benefits being raised and lowered until they stabilized. The process would be worse if there were more than two programs, and any equilibrium would hold only as long as nothing changed. If a family member got a job, the whole sequence would start anew and move to a new set of benefits.

Establishing a program hierarchy would avoid these difficulties. If, for example, food stamp allotments were based only on cash income, while housing aid levels were set on the basis of cash and food stamp income, the cycle described above would have been short-circuited after no more than one round. Food stamp benefits would have been fixed at \$264 per month, while the monthly housing subsidy would have been \$300. Things would be slightly more complicated if the family applied first for housing aid--it would have been given about \$380--and then gone for food stamps: it would be given the same \$264 in monthly stamps (because housing aid is not considered), and then would have its housing benefit revised downward to \$300 because of the food assistance. Any change would still upset the equilibrium, but a new balance would be easily restored.

The remaining question is in what order incomes from different sources should be counted. There is no obvious answer, although it might be logical to consider entitlements ahead of other benefits, simply because all eligible families and individuals will receive entitlements if they apply for them.

FORMULA GRANTS AND AGGREGATE TARGETTING

The rationale for using various targetting criteria such as median income or poverty rates at the aggregate level remains much the same as that for individual level programs. Allocation criteria are presumably designed to guide resources to areas most in need of a given program or activity of government. Given the total level of the program, targetting criteria merely set the distribution across areas and thus across individuals.

There are a variety of formula grant programs that link disbursements to states or localities to income and poverty, reflecting the intent of the Federal program. For example, several urban and rural housing assistance programs for low-income families and individuals base grants on the size of the local poverty population. In education, the allocation to states of Head Start funds for preschoolers and Chapter I funds for education of the disadvantaged are related to local poverty rates on the presumption that poverty is a good proxy for educational need.¹⁶

¹⁶While Chapter I funds are allocated, in part, on the basis of local poverty rates, the program is intended for all educationally disadvantaged children, regardless of their family incomes.

These programs appear to be the aggregate analog to individual programs that use income or poverty status in their eligibility criteria. They differ from the individual programs discussed previously in that funds go to a state or local agency that decides exactly how the funds are used and the funds therefore may ultimately be targeted in a manner different from that intended by the aggregate funding criteria.

Two other factors appear to underlie the use of area income or poverty measures in the distribution of Federal funds. First, certain Federal programs may be designed to take into account local ability to pay for services. Federal programs which supplement those of local areas might be less generous in areas where the local ability to support such programs seems relatively high, and more generous when the opposite is true. Second, the explicit linkages of the allocation criteria and the program purpose may be relatively unimportant; instead, the targeting criteria might be designed simply to identify areas that are deserving of Federal support for some other reasons. Community Development Block Grants are an example of a program in which poverty rates are used to allocate moneys, even though higher poverty does not necessarily imply more demand for services. The distribution of funds by poverty rates in this and other programs could be consistent with a Federal purpose of compensating areas with poverty for the extra costs they incur in general and for the local income redistribution efforts that they undertake.

If this last explanation holds--that the specific program purpose is not primarily important in choosing the distribution criteria--there is ambiguity with respect to how one evaluates the effectiveness of the criteria. With individual programs, for example, it was suggested that the temporal instability of the poverty measure for an individual family might be a disadvantage to the extent one was attempting to proxy more fundamental conditions (that were not subject to the same degree of variation over time). At the aggregate level, particularly if the targeting criteria are not explicit measures of program goals in terms of specific groups of interest, it is more difficult to assess how well the targeting measures might match the desired characteristics. For example, while the month-to-month variations in poverty rates at the aggregate level are undoubtedly smaller for geographic areas than for individuals, it is not really possible to judge the conceptual desirability of using monthly poverty rates to target program expenditures.

It is true that individual areas will differ from each other in terms of overall secular trends in income and poverty, in terms of overall sensitivity to the business cycle, and perhaps in terms of their sensitivity to the fortunes of a dominant firm or dominant industry. These factors may cause differing degrees of temporal instability across areas, and thus justify using shorter time periods to assess poverty status and hence need for Federal assistance. Again, however, even if the relationship of area income and poverty measures to these factors is well understood, it is not at all obvious what one should do with respect to them.

SUBSTITUTION OF IN-KIND POVERTY MEASURES

The purpose of this entire conference is to consider how income should be measured, and the subsidiary question of what income should be counted in assessing poverty status. These topics, matters of lively debate at least since our current cash income measure became commonly used, will probably never be fully resolved. Part of the reason for lack of resolution is clearly that no single answer satisfies all of the demands and potential uses of income and poverty measures.

Here, we want to focus on some of the implications of changing from the current cash measure to one that includes valuations of major in-kind components. For this discussion, it does not matter which of the alternative ways of valuing in-kind benefits is used.

The central issue, at least in the short run, is the distribution of benefits across individuals and areas.¹⁷ Federal programs generally involve annual appropriations of funds; the level of funding does not automatically change if eligibility criteria are altered.¹⁸ The eligibility criteria thus serve as distributional parameters that guide the division of benefits among individuals and communities.

One indication of the potential magnitude of distributional changes that would arise from inclusion of noncash benefits is found in the correlation of poverty rates under different measures across geographic areas. Table 2 shows such correlations for 1984 for the 23 largest Standard Metropolitan Areas (SMAs) and for the 50 states and the District of Columbia. The "market value" approach yields quite different geographic poverty distributions than the others (including cash only method), primarily because housing and medical assistance valuations vary markedly across areas.¹⁹

From the standpoint of program distributions based upon the calculation of poverty after noncash benefits, two factors seem most important to consider. First, if the valuation methods for noncash benefits incorporate local expenditures and if the local expenditures vary with local differences in living costs, these cost of living differences become imbedded in the poverty measures--and thus in the distribution of Federal program benefits. Second, local governmental choices about services would have immediate feedback built into them to the extent that the local programs enter into the poverty measure and program distribution: higher local benefits would lead directly to lower levels of aid from the Federal government.

¹⁷In the longer run different eligibility criteria may affect more than just distribution--they may also influence appropriations decisions. If, for example, new and more stringent eligibility criteria were employed and program participation fell sufficiently, funding in future years might be lower.

¹⁸This is not strictly true for entitlements. It is still the case for entitlements, however, that eligibility criteria determine the distribution of program benefits across both individuals and geographic areas.

¹⁹Three alternative methods are used by the Census Bureau to value in-kind benefits. The "market value" assigns the estimated cost of obtaining the benefit in private markets or the government cost of providing the benefit. The "cash equivalent value" uses the lesser of the market value and the amount that a given family would be expected to spend for a particular good or service if it were not provided in kind. The "poverty budget share value" assigns the lesser of the market value and the amount normally spent by unassisted--but otherwise similar--families with cash incomes at the poverty line. For further detail, see U.S. Bureau of the Census, Technical Paper 55, Estimates of Poverty Including the Value of Noncash Benefits: 1984. U.S. Government Printing Office, Washington, D.C.

Much of the attention given to counting in-kind benefits as income has focused on measuring poverty and on the absolute levels of poverty rates. As noted above, if no adjustments are made in threshold levels, in-kind benefits raise the value of resources available to individuals and thus lead to automatic reductions in poverty levels. Because there is no absolute standard by which one can judge poverty rates, this objection is in large part a red herring.²⁰ Indeed most analyses of poverty

Table 2. Correlations Among Alternative Poverty Measures: 1984

Area	Cash income	Cash plus in-kind income		
		Market value	Cash equivalent value	Budget share value
23 Standard Metropolitan Areas (SMAs)				
Cash income	1.000			
Cash plus in-kind market value.....	0.856	1.000		
Cash plus in-kind cash equivalent value	0.973	0.913	1.000	
Cash plus in-kind budget share value	0.971	0.923	0.994	1.000
50 States and the District of Columbia				
Cash income	1.000			
Cash plus in-kind market value.....	0.931	1.000		
Cash plus in-kind cash equivalent value	0.986	0.953	1.000	
Cash plus in-kind budget share value	0.984	0.963	0.996	1.000

SOURCE: Congressional Budget Office analysis of data from the March 1985 Current Population Survey.

The SMAs included were Atlanta, Baltimore, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Houston, Kansas City, Los Angeles, Milwaukee, Minneapolis, New York, Philadelphia, Pittsburgh, St. Louis, San Diego, San Francisco, Seattle, and Washington, D.C.

²⁰This is not the case if poverty status is used to determine program eligibility. If the definition of income is expanded and poverty thresholds are not changed, fewer people will qualify for benefits. The issue then becomes whether this change in the eligible population is consistent with legislative intent in terms of who should be assisted.

rates compare them over time, and there is no presumption that changes in poverty rates that include noncash income would necessarily lead to any different conclusions than changes in poverty rates based on cash income only.

However, the levels in poverty rates are not the important aspect in considering the use of poverty rates for targetting of programs. The important issue is how the distribution of poverty rates changes and in particular whether newly eligible or ineligible individuals match the intent of the program or whether the new distribution of resources across areas reflects the intent. On these grounds there is reason for concern.

Table 3. Adjusted Poverty Thresholds for 23 Standard Metropolitan Areas, For Four-Person Families: 1984

Geographic area	Poverty threshold	Ratio to national threshold
United States	\$10,609	1.000
Standard Metropolitan Area		
Atlanta	10,088	0.951
Baltimore	10,608	1.000
Boston	11,342	1.069
Buffalo	10,192	0.961
Chicago	10,893	1.027
Cincinnati	10,860	1.024
Cleveland	11,061	1.043
Dallas	10,020	0.945
Denver	10,946	1.032
Detroit	10,143	0.956
Houston	10,132	0.955
Kansas City	10,456	0.986
Los Angeles	11,362	1.071
Milwaukee	10,759	1.014
Minneapolis	10,670	1.006
New York	11,078	1.044
Philadelphia	10,683	1.007
Pittsburgh	10,728	1.011
St. Louis	10,511	0.991
San Diego	11,061	1.043
San Francisco	11,869	1.119
Seattle	11,650	1.098
Washington, D.C.	11,701	1.103

SOURCE: Bureau of Labor Statistics, Autumn 1981, Urban Family Budgets and Comparative Indexes for Selected Urban Areas, April 1982; various Consumer Price Index data for Standard Metropolitan Areas; and U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 149, Money Income and Poverty Status of Families and Persons in the United States: 1984. U.S. Government Printing Office, Washington, D.C., 1985.

Variations in Costs

Local living costs and incomes are known to vary, sometimes by considerable amounts. This can be seen quite directly on the consumption side by comparing Bureau of Labor Statistics (BLS) estimates of the cost of lower budgets for four-person families in different areas.²¹ For example, in 1984 this modest consumption bundle would have cost about \$16,500 in Dallas compared with roughly \$19,600 in San Francisco, nearly 20 percent more.

On the income side, previous work has shown that income levels (crudely standardized for differences among individual workers) vary systematically with the characteristics of areas. While income differences can arise from a variety of factors, the key element here is that the differences across geographic areas are systematic.²²

But, typically, neither income criteria in grant formulae nor poverty thresholds vary across the Nation. All other things being equal, poverty rates will vary inversely with costs of living, since the poverty thresholds are the same nationally. At either the individual or the aggregate level, program eligibility criteria not including cost differences implicitly make judgments about the treatment of such differences. These may or may not represent the underlying intent behind using such targeting methods.

In terms of simple income measures of poverty, variations in poverty rates resulting from differences in living costs across areas raise immediate questions. Everything else equal, higher incomes that simply compensate for higher (exogenously determined) living costs do not reflect true variations in well-being, and thus poverty measures would tend to distort the distribution of Federal funds. This problem cannot be compensated for simply by using multiples of the poverty line (say 1.5 times the poverty line); such adjustments merely change levels of poverty, not distributions among individuals or areas.

This problem becomes increasingly important when inclusion of in-kind benefits is being considered. The cost of in-kind benefits will vary dramatically across areas, more so than costs for other consumption items. Major in-kind benefits, especially housing and medical services, almost certainly have greater cost variation

²¹The BLS attempted, when still collecting these data, to price a standard consumption bundle. Therefore, it attempted to eliminate taste differences that might exist. This is not perfect since individuals would be expected to react to relative price differences by modifying their consumption bundles. Any given individual would be observed consuming different bundles (in the face of price differences) even if utility remained constant. For further discussion, see Bureau of Labor Statistics, Bulletin 1570-5, Three Standards of Living for an Urban Family of Four Persons, Spring 1967.

²²See, for example, Sherwin Rosen, "Wage-Based Indexes of Urban Quality of Life," in Peter Mieszkowski and Mahlon Straszheim, eds., Current Issues in Urban Economics (Baltimore: Johns Hopkins University Press, 1979); and Eric A. Hanushek, "Alternative Models of Earnings Determination and Labor Market Structures," The Journal of Human Resources, Vol. XVI, No. 2, Spring 1981.

than do other consumption items. The immobility of housing and differences in health care regulations and institutions lead to wide dispersion in the cost of comparable levels of service.

In the case of housing, the issues are perhaps easiest to trace through (although the actual valuation of medical benefits is perhaps most difficult). Within and across areas, housing costs differ for a wide variety of reasons--size of unit, quality, location and neighborhood characteristics all enter into the determination of rents for specific units. Now consider a public authority providing subsidized housing units where individual families pay rents that are a fixed proportion of their income (and below prevailing market rents for comparable units). Should subsidy values be calculated from the local rents of comparable units or from national averages? from local housing expenditure patterns or national?

If we compare families across housing markets, locally based calculations of in-kind housing benefits would indicate that a family living in a high-price market would be better off than an otherwise identical family living in a low-price market. That is, two families with identical incomes living in identical units but in different housing markets might be judged to have different housing subsidies and hence noncash income. The precise interpretation of such differences is open to dispute, but it is doubtful that many would intend that to be an outcome of Federal formulae.

Some idea of the order of magnitude of changes can be obtained by comparing alternative poverty measures across SMAs. A relative price index based on 1981 BLS budget data--inflated to 1984--was used to create poverty thresholds specific to each of 23 SMAs.²³ From these, poverty rates were calculated based on cash income only and based on cash income plus noncash benefits valued by the three alternative Census Bureau techniques. Table 4 displays the simple correlations of the different poverty estimates for the 23 areas.

The main diagonal of table 4 shows the correlations of adjusted and unadjusted poverty rates. The highest correlation is, as expected, between the two versions of cash poverty rates. The lowest correlations refer to the "market value" method of including noncash benefits; this follows directly from the use of local costs for valuing benefits in different housing and medical care areas.

State and Local Choices and Fiscal Federalism

The second issue to consider is the relationship between the targetting of program benefits on the basis of income measures and choices of state and local governments. If a local government provides greater assistance to its low-income residents, its Federal payments would be reduced in programs that count that assistance as income. This is now the case, for example, with AFDC, where increases in state payment levels result in lower food stamp allotments, thus partially offsetting the rise in AFDC benefits. This situation would be exacerbated if Federal aid were based on an expanded income measure that incorporated noncash benefits. Consider housing subsidies again. If there are two equal cost housing markets with

²³Budget costs for each area were normalized by dividing by the national urban average budget. These relative values were then used to inflate (or deflate) the cash income thresholds to arrive at an area specific threshold. Budget data for 1981 were inflated to 1984 using SMA price indices. The SMAs and the implied thresholds for four-person families are shown in table 3.

the same distribution of cash income, the area providing better quality housing for those with low incomes will have fewer low-income residents under an expanded definition of poverty.

There are two principles that come into conflict in judging this issue. On the one hand, there is no doubt that low-income residents in the area with better public housing are better off than those in the area with less generous housing programs. Thus, the notion that targetting should direct money to the most needy implies that incorporation of the expanded income definition is appropriate. On the other hand, state and local governments would effectively be "taxed" for their efforts to support those with low incomes (since their Federal payments would go down with increased local expenditures).²⁴ This introduces an incentive for local governments to do

Table 4. Correlations Among Alternative Poverty Rates Using Thresholds Adjusted for Living Cost Differences Across SMAs: 1984

Poverty measures based on adjusted thresholds	Poverty measures based on official thresholds			
	Cash income	Cash plus in-kind income		
		Market value	Cash equivalent value	Budget share value
Cash income .....	.978	.847	.958	.953
Cash plus in-kind market value .	.808	.929	.864	.858
Cash plus in-kind cash equivalent value .....	.942	.871	.963	.952
Cash plus in-kind budget share value .....	.941	.890	.960	.960

NOTE: See text for explanation of how poverty thresholds were adjusted for cost of living differences. See U.S. Bureau of the Census, Technical Paper 55, Estimates of Poverty Including the Value of Noncash Benefits: 1984, for a discussion of the alternative techniques of valuing in-kind income.

SOURCE: Congressional Budget Office analysis of data from the March 1985 Current Population Survey; Bureau of Labor Statistics, Autumn 1981 Urban Family Budgets and Comparative Indexes for Selected Urban Areas, April 1982; various Consumer Price Index data for Standard Metropolitan Areas.

²⁴This is currently the case for all cash transfer programs in which benefit levels are determined at the state or local level. The most important of these are AFDC, SSI, and general assistance.

less; the magnitude of the incentive depends directly upon the size of effects in other Federal programs. This would be inconsistent with "new federalism" notions of returning responsibilities to state and local governments.²⁵

SUMMARY

The use of eligibility criteria for targetting program benefits is very common, and the use of income measures or poverty calculations frequently enters in determining the distribution of benefits. Problems with geographic differences in living costs affecting income eligibility criteria enter in both currently used cash measures and the expanded measures being considered.²⁶ However, inclusion of noncash benefits magnifies the importance of variations in living costs. In using these criteria to allocate funds across jurisdictions, a movement toward inclusion of noncash benefits would immediately raise important issues about what policy goals are being chosen. To the extent that noncash programs vary across areas solely because of cost differences, inclusion of noncash benefits in determining Federal resource allocation would tend to penalize individuals living in high cost areas. This may be justified by some to the extent that high costs may reflect other desirable aspects of an area or that it may be desirable to discourage poor people from living in high cost areas. But, in general, one would probably conclude that differences in living costs lead to misclassifying some people in terms of their incomes.

The second important eligibility issue in considering substituting an income definition that includes noncash benefits for current cash measures is the implications for fiscal federalism. Areas providing more benefits for low-income residents would be penalized to the extent that Federal dollars flowing into the area were reduced by such a move. This may be appropriate when one concentrates on the most needy, but it would increase incentives for localities to cut back on support of low-income families and individuals.

²⁵Conceptual thoughts about the proper role of governments in a federalist system imply that income redistribution should be done at the highest level. The Federal government's "taxing" of income redistribution by local governments could be interpreted as being consistent with these notions. There is, however, little direct evidence suggesting that such intentions have been important in developing Federal grant programs.

²⁶As noted, the problems are most severe in the case of market value method of including noncash benefits.

APPENDIX A

Targetting and Variations in Poverty Within a Year

The appropriate accounting period is a targetting issue for policymakers to decide, depending on their views about the responsibilities of families near poverty to save for periods when their income falls. If families smooth their expenditure patterns to allow for fluctuating incomes, accounting periods longer than a month could be used to establish program eligibility without denying help to those in need. On the other hand, if low-income families choose not to save or cannot save, longer accounting periods may mean that families requiring assistance for a short time will not get it.

The length of the accounting period has a marked effect on the number of families or persons that would qualify for program benefits based on poverty status.²⁷ Data from the Survey of Income and Program Participation (SIPP) indicate that many fewer families are below poverty over an entire year than are poor during a single month (see table A-1). While the average monthly poverty rate for all people between July 1983 and June 1984 was 15.1 percent, only 12.2 percent of the population was poor on the basis of total income over the full 12 months. For no family type was the poverty rate in any single month as low as that for the entire year. This indicates that in determining income eligibility for benefits, lengthening the accounting period would tend to reduce the number of people or families who would qualify for aid. It does not, however, imply that longer accounting periods would necessarily lead to much reduction in program participation. First, not all eligible families apply for assistance; if they are the families made ineligible by using a longer accounting period, no fewer families would be aided. Second, many existing programs use a variety of criteria and different standards of countable income so that income limits, per se, even though they are formal criteria, are not binding constraints.

Furthermore, while we often implicitly assume that by using the official poverty measure we treat all families the same--enabling us to aggregate across family types and ignore differences--the time period used affects various family types differently. Families with incomes that fluctuate are more likely to be poor over short periods but not over longer periods than are families whose income tends not to change over time. Social Security benefits, pensions, and welfare payments often are fixed for a year or more, while earnings and asset income are more likely to vary. Families with income from the former sources--the elderly and single parents with children--show smaller differences between monthly and annual poverty rates as indicated by the ratios between the two measures shown in table A-1. Families that tend to rely on earnings--married couples with children and other persons--experience greater divergence in poverty rates depending on the length of the accounting period.

²⁷If the accounting period is made short enough--say, an hour--the incidence of poverty would be extremely high, since few people would receive income during that time period. But no one would argue that such a measure would be meaningful in assessing need. Even a monthly accounting period would yield misleading results for farm families, for example.

Table A-1. Monthly and Annual Poverty Rates of Individuals, by Population Subgroup:
July 1983 - June 1984

(In percents of all people in subgroup)

Accounting period	Population subgroup					
	Persons 65 years and over	Married couples with children	Single parents with children	Unrelated individ- uals	Other persons ¹	All persons
Annual ²	10.5	8.1	42.2	19.0	5.7	12.2
MONTHLY						
1983						
July	13.4	13.2	45.1	25.1	8.7	16.3
August	12.9	12.0	45.4	24.1	8.4	15.5
September	12.7	11.7	45.5	24.3	8.4	15.4
October	12.5	12.1	45.4	25.2	8.6	15.8
November	12.4	11.3	45.0	24.2	8.3	15.2
December	12.0	11.4	44.5	23.8	8.5	15.2
1984						
January	12.1	12.4	45.6	24.4	8.6	15.8
February	12.1	11.3	44.6	23.1	8.3	15.0
March	11.8	10.6	43.7	22.8	7.4	14.4
April	11.7	11.3	44.7	23.0	7.8	14.9
May	11.9	10.6	43.2	21.8	7.3	14.2
June	11.9	10.4	42.6	22.0	7.7	14.0
Simple average of monthly poverty rates	12.3	11.5	44.6	23.6	8.2	15.1
Ratio of annual to average monthly poverty rates	0.85	0.70	0.95	0.81	0.70	0.81

¹Other persons include married couples without children and other groups of related people living together without their own children.

²Calendar months used to determine annual poverty rate varied across the surveyed population. Annual poverty rates are based on three periods—June 1983 - May 1984; July 1983 - June 1984; and August 1983 - July 1984—with roughly one-third of the sample in each period.

SOURCE: Congressional Budget Office tabulations of Survey of Income and Program Participation data.

Comments

Kenneth W. Clarkson

University of Miami

on the paper by

Eric A. Hanushek and Roberton Williams

The topic before us is Alternative Poverty Measures and the Allocation of Federal Benefits. I agree with much of what the authors (Hanushek and Williams) have put forth in their paper and will highlight some of those points as I make my remarks. My comments reflect both general methodology approaches in any analysis of poverty measures and Federal programs, and specific problems associated with the authors' paper and other discussions in this conference.

MARKET FORCES AND POVERTY MEASURES

In considering poverty measures, the first element of analysis should be directed toward an understanding of the pre-transfer position of potential program recipients. The Hanushek and Williams' paper, however, focuses on the more commonly addressed transfer program analysis: transfer programs encompass a wide variety of specific services and objectives and our existing measures of "income" are often inadequate for determining eligibility and evaluating the effectiveness of these programs. Thus, the authors fail to take into account the pre-transfer position of program recipients. The omission of this critical element makes it difficult, if not impossible, to effectively target Federal benefits or recommend alternative measures to alleviate the income deficiency. When considering consumption-based transfers, it is necessary to look not only at the impact of those programs, but also to focus on factors resulting in the initial income distribution. From this standpoint, poverty statistics should reflect the results of pre-transfer market outcomes prior to any transfers. In this regard, I would go so far as to recommend that pre-transfer poverty statistics exclude taxes and all cash transfers, such as AFDC and other cash assistance, as a means of understanding the economic consequences of markets on those that are classified as being poor.

EFFECTS OF CONSUMPTION-BASED TRANSFERS

The second element of analysis should focus on the development of poverty measures and other statistics that reflect the total change in well-being after taxes and consumption-based intervention. Most of the comments in the morning session and the paper before us have concentrated on these points and I will address these issues briefly.

MONITORING PROGRAM RESULTS

The third purpose of utilizing poverty statistics in the allocation of Federal benefits relates to program evaluation and monitoring results — aspects many of us at this conference have incorporated into our own research. Thus, poverty statistics should permit an analysis of the relative efficiencies of programs.

IMPROVING STATISTICAL OUTCOMES

With respect to the second element of analysis, well-being after taxes and consumption-directed intervention, the authors make several important points that I generally support. In fact, they do not have a monopoly on those points, as the earlier papers and commentaries have noted.

Accounting periods--Utilization of appropriate accounting periods is an important and often overlooked element in examining poverty statistics. I concur that poverty statistics should be collected and evaluated as they relate to the applicable accounting period for benefit determination or analysis.

Wealth benefits--I am also very much in favor of including measures of wealth, particularly as they relate to the stream of nonmarket income that generally is excluded from traditional poverty and other income measures.

Tax consequences--As most participants have concluded, an analysis of the allocation of transferred benefits should take into account the effects of taxes.

Correcting underreporting--It is hard to disagree with any type of systems that corrects for underreporting or encourages better measurement of income and other well-being. I concur with the authors with respect to including those elements.

Many of the resources involved in increasing the well-being of individuals below the poverty level have not been included in our discussion. I think there is a good reason to consider these benefits as well. In figure 1, we observe intertemporal changes in Federal payments to individuals and related resources when Social Security, railroad and other Federal retirement programs are excluded from the totals. Expressed in constant 1984 dollars, these disbursements, which were under \$40 billion throughout the first part of the 1960's, expanded rapidly from 1967 through 1977 before leveling at an amount about four times that experienced in the sixties. This graph also provides us with a comparison of the levels of transfer payments that are utilized and presented in the U.S. Bureau of the Census publications.

Expressed in constant 1984 dollars, the value of resources counted by the Census as transfer payments, including cash assistance, food stamps, school lunches, housing, Medicaid and Medicare, was \$24.7 billion in 1965. This contrasts with an actual expenditure of \$36.4 billion for all payments and other resources made available to individuals, excluding Social Security, railroad and other Federal retirement benefits.

In 1984, the total value of transfer payments reported in the Census definition was \$141.9 billion as compared with an actual expenditure of \$187.8 billion in transfers, excluding retirement benefits. Inclusion of these resources in the Census definition would, of course, further reduce the number of individuals falling below poverty thresholds.

Figure 1 also examines the impact of excluding such payments by comparing the Census defined poverty income deficit to the total dollar value of nonretirement cash assistance and other resources made available to individuals. Thus, in 1959, it would have taken \$48.7 billion, expressed in constant 1984 dollars, to alleviate all poverty. In that year, \$33.7 billion represented the total value of transfers in 1984 dollars made available to the population. By 1970, incomes had risen to a level where the poverty income deficit had fallen to approximately \$30.9 billion in constant 1984 dollars. This was roughly \$54 billion less than the total

Figure 1. Federal Payments to Individuals: 1959 to 1984

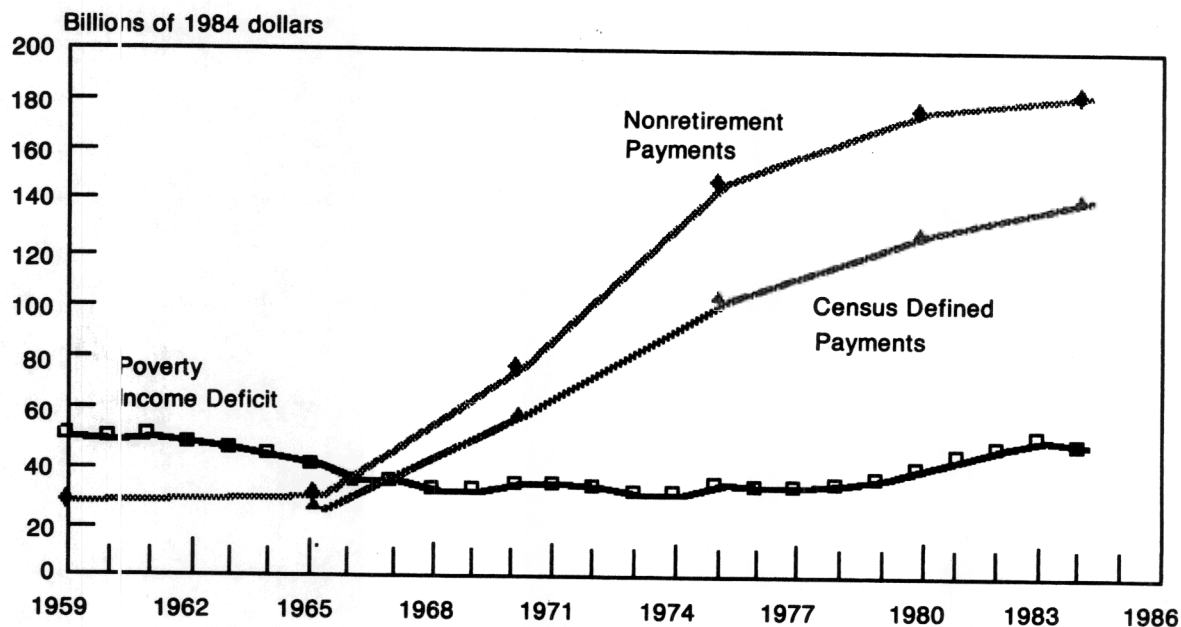


Table 1. Federal Expenditures: 1965 to 1984

(In billions of 1984 dollars)

Federal expenditures	1965	1970	1975	1980	1984
Nonretirement payments ¹	36.4	84.7	154.3	181.8	187.7
Social Security & other retirement (excluded in figure 1)	(75.2)	(105.4)	(165.3)	(195.4)	(228.7)
Census defined payments ²	24.7	59.7	103.7	129.3	141.9
Poverty income deficit	38.2	30.9	31.0	37.5	46.3

¹Payment to individuals excludes Social Security, railroad and other Federal retirement. This total also includes resources that provide indirect benefits to individuals, such as social services, through grants to states and localities.

²Includes cash assistance plus estimated value of Medicare, Medicaid, food stamps, public housing and school lunch subsidies.

SOURCE: Calculated from Historical Tables, Budgets of the United States Government, Fiscal Year 1986; Bureau of the Census, Characteristics of the Population Below the Poverty Level: 1983; Money Income and Poverty Status of Families and Persons in the United States: 1984; and Estimates of Poverty Including the Value of Noncash Benefits: 1979-1982, 1983 and 1984.

nonretirement payments and other resources made available to individuals that year. In 1984, the total poverty income deficit had risen to \$46.3 billion; however, total resources transferred to all individuals, excluding Social Security and other Federal retirement programs, had risen to \$187.7 billion. Thus, in 1984 the Federal government provided nonretirement resources worth four dollars for each dollar of resources that would have been necessary to alleviate poverty had these funds been provided to the states. Since measured poverty still has not been eliminated, one might suggest that considerable resources are transferred to individuals above the poverty level.

This may be the time to consider some of those benefits excluded from current measurements, particularly if we are to protect ourselves against a benefit and poverty measurement series that does not reflect accurate accounting of transfers over time.

Measurement consistency--I agree that poverty measures and other statistics that gauge well-being should be consistently applied to all measured units, not just to those at or near the poverty level. A consistent method of reporting, even though the estimated amounts would be subject to significant error and variation, is preferred to the current system. As Al Rees pointed out, some number is better than zero.

In-kind benefits in determining eligibility--The authors discuss variations in the distribution of benefits within groups, and the problems associated with including multiple in-kind benefits in determining program eligibility and benefit levels. I support the incorporation of benefits received from one or more programs in determining eligibility for and benefit levels of additional programs. Those experienced in working with poverty statistics know that there are considerable inequities across various measured levels of income; such inclusion would assist in evaluating the impact of multiple-program participation as well as improve horizontal equity. It should be noted, however, that some redefinition or alternative measures of benefit levels may be necessary to correct problems, such as valuation of health benefits, associated with multiple-benefit measurement and eligibility determination.

Cost-of-living adjustments--I disagree with the authors' focus on geographic cost-of-living differences, particularly as they might relate to poverty statistics or program eligibility. Often such variations are more a consequence of nonuniform wealth than other factors. Because income levels usually affect land prices, higher housing costs may merely reflect variations in the distribution of wealth. But higher wealth in a particular jurisdiction places that community in a much better position to aid its population. And so there seems little gain to be made by elaborate procedures to differentiate based on costs. We also know that geographic statistics are subject to considerable error; unemployment statistics at state and local levels, for example, have significant error problems. Even in the absence of significant wealth differences, the problems associated with measuring geographic cost-of-living differences as they might relate to the distribution of in-kind benefits would probably exceed any benefits that could be achieved.

State and local program inclusion--Another element that I think would be important in the poverty measurement is some measure of state, local and nonprofit benefits. Most of the discussion has dealt with Federal programs, but a number of other institutions provide in-kind benefits to individuals. I am, however, concerned about the incentive effects that could result from such measurement, particularly if Federal program dollars were directly tied to local efforts in the allocation of Federal funds.

CONCLUSIONS

In summary, I agree that poverty statistics and measures should be revised to provide better information on the distribution of benefits from Federal transfers, but believe that the statistics should be broadened to permit an investigation of well-being both before and after consumption-directed intervention; they should also provide us with the ability to evaluate programs with respect to their overall effectiveness, including some elements not touched upon here at this conference. In-kind programs, for example, have different administrative costs that often depend on eligibility criteria and other factors. Information obtained in determining poverty measures should facilitate complete analyses of the outcome and effectiveness of transfer programs.

Comments

Patricia Ruggles

The Urban Institute

on the paper by

Eric A. Hanushek and Roberton Williams

Hanushek and Williams' very useful paper does an excellent job of summarizing the major issues relating to income definition and the allocation of Federal benefits. If the comments presented here seem to focus primarily on what the authors do not say as opposed to what they do, it is only because they have covered their chosen topics so well that I can raise only a few minor quibbles. Indeed, my major reservation with regard to this paper is that I wish the authors had chosen to interpret their mandate a bit more broadly. Specifically, I would have liked to have seen some discussion of the uses of different income and poverty measures for program analysis in general, as well as of their use in the actual benefit determination process.

If this paper has a moral, it is that no single measure of income, including or excluding noncash benefits, can be appropriate for all purposes—or even, for determining benefits under all Federal programs. The paper considers the impacts of differing income definitions, first for programs using individual income eligibility criteria, and second for those using aggregate criteria. My comments will also take up each of these areas in turn.

PROGRAMS PROVIDING BENEFITS TO INDIVIDUALS

The section on programs providing benefits to individuals focuses on the specific income measures used to determine program eligibility, and the potential program impacts of including in-kind income in these measures. The authors bring up many specific issues that are important in constructing such measures, which I will discuss briefly.

As the authors themselves note, however, very few individual benefit programs actually use either the Census or the Office of Management and Budget (OMB) poverty thresholds in determining eligibility, so changes in the measurement of income leading to changes in poverty thresholds would have very little direct impact on program eligibility. In discussing this point, the authors argue that while these changes might have few direct program impacts, any fixed income threshold for eligibility will present similar measurement problems, and so the problem can be discussed generally, without reference to specific program criteria for each program.

There is undoubtedly some validity to the authors' argument—it is fairly likely, for example, that if noncash benefits were routinely incorporated into income for the purpose of producing poverty statistics, they would also be included in income measures used to determine program eligibility. It seems to me, however, that Hanushek and Williams neglect a much more immediate and obvious impact of changes in the treatment of noncash benefits—the impacts of these changes on our ability to assess the income-related effects of public programs.

Currently, Census poverty statistics and income measures are most often and most prominently used not to determine program eligibility, but to analyze program impacts--for example, to assess the extent to which transfer programs serve those in different income categories. These measures are also crucial in analyzing proposed legislative changes, such as the addition of new programs or the re-targetting of old ones. A major issue with regard to possible changes in income measures and poverty standards, therefore, is, how would such changes affect our ability to assess program impacts? Specifically, what effect would these changes have on our ability to compare benefits and needs across regions, income categories, age groups, family types, and so forth?

It is clear that the specific poverty measure or income definition chosen can have important impacts both on our ability to analyze program impacts, and on the outcomes of these analyses. For example, to consider briefly a commonly discussed case: if medical benefits are included in income, and are valued using a market-value approach, it is almost impossible for certain categories of aged persons to have below-poverty level incomes. In fact, I have heard it said that under such a definition there would be no poor persons over the age of 65 in the whole of New York City. Since many of these persons would still have resources too low to allow them to meet basic needs such as food and shelter, however, they would still be considered poor by most noneconomists. At the least, it seems clear that such an approach to measuring income could obscure rather than clarify the economic status of many beneficiaries, and could make any meaningful analysis of the distributional impacts of Medicare options, for example, very difficult to conduct.

This is an extreme example, but it illustrates the fact that different income measures, poverty thresholds, and valuation techniques may have very different implications for program analysis, as well as for our perceptions of program impacts, and it would have been helpful if Hanushek and Williams had discussed this point. At a minimum, it is useful to distinguish between relatively fungible noncash benefits such as food stamps, and relatively nonfungible ones such as medical care. The inclusion of non-fungible goods, which may not actually increase recipients' resources available for general consumption, in an income or poverty measure may substantially reduce the usefulness of such a measure in analyzing policy outcomes.

In fairness to Hanushek and Williams, aspects of this topic are covered in other papers, and the authors may have considered it outside their mandate. The importance of this issue, however, is illustrated by the comments made on several of the other papers discussed here, and most notably, on the Ellwood and Summers' paper. Ellwood and Summers proposed an income definition that would include most relatively fungible noncash benefits, as well as those benefits that clearly substitute directly for a recipient's own necessary consumption, but that would exclude relatively non-fungible benefits such as medical care. Among other considerations, they were concerned about our ability to arrive at a realistic assessment of the recipient value of these benefits, and they felt that use of insurance values could significantly overstate the actual resources available to recipients for their own general consumption. Both of the discussants of the Ellwood and Summers' paper, however, objected to the exclusion of medical benefits on the grounds that such a narrow definition of income leaves out some real sources of material well-being, and thus distorts the estimated distribution of income.

This comment implicitly assumes that the major reason for measuring income is to examine the overall distribution of general economic well-being. If instead, however, one's purpose is to assess the adequacy of benefits from specific programs, it is clearly useful to be able to relate the income received to the needs to be met. Indeed, Ellwood and Summers' more general point, that it is important to be able to

assess not only total income but also the implications of any given income for the recipients' consumption possibilities, is even more relevant in the context of program analysis. In this context, the use of a very broad definition of income, including both fungible and non-fungible noncash benefits, is likely to lead to the types of distortions seen in the Medicare example cited above.

This is not to imply that there is no set of circumstances under which a broader definition of income would be useful. On the contrary, one point that has been made several times in these meetings, and which I endorse, is that whatever income definition or set of definitions is adopted by the Census Bureau for its own publications, it will still be crucial to maintain full data on all of the individual components of income. Further, these data should be maintained in a form that allows income to be disaggregated and redefined by individual researchers in ways that are consistent with their own analytical purposes. For example, while an after-tax measure of income is generally preferable if one is trying to assess households' net resources, a pre-tax measure will be necessary if one wishes to consider the total distributional impact of Federal tax and transfer programs. Even if Census moves to an after-tax definition as the basis for its published poverty statistics, data on pre-tax incomes should therefore still be retained.

As long as individual researchers are able to construct the income measures that are relevant for their purposes, much of the debate over which specific measure is "best" can probably be avoided. As Hanushek and Williams' study makes clear, the best measure depends on the purpose for which the measure is to be used. Census data are used for many different purposes, of course, which may argue for the publication of several alternate measures. In any case, I would suggest that any debate over how good a particular measure or set of measures is will be fairly meaningless unless the purposes for which these measures are to be used are also taken into account. It is not realistic to assume, as many economists seem to, that the only relevant purpose is an assessment of the overall distribution of material well-being.

Before turning to a discussion of programs using aggregate income measures to allocate benefits, I'd like to comment briefly on some of the more technical issues Hanushek and Williams raise with regard to individual benefit programs. The authors point out that many other factors besides issues related to noncash benefits are crucial in determining program eligibility, and these factors may interact in complex ways with changes in income measures. Among the examples they cite are accounting period problems, problems having to do with the inclusion or exclusion of assets, and variations in costs-of-living across localities. These are difficult measurement issues even with a fairly limited poverty measure, and they can potentially become more difficult as the attempt is made to expand the different types of benefits included in the poverty measure.

The list of similar measurement issues that could be brought up is almost endless, but I would like to mention briefly an additional one that I think is especially relevant for program analysis--the problem of defining the income-receiving unit. Programs vary considerably in their rules regarding eligible units, which may be persons, households, families, or subfamilies of some type. Indeed, changes in the unit definition aimed at including more potential income recipients have recently been an important means of targetting benefits more narrowly and reducing program costs in programs such as AFDC.

Poverty thresholds necessarily are applied to some income-receiving unit, such as a family or a household. However, such a unit may include several different AFDC recipient units, for example, as well as tax units and SSI units, which may or may not overlap. As the benefits from more and more programs, each with its own

definition of an eligible unit, are included in the income measure, it may become increasingly difficult to decide exactly who should be considered a recipient of income from any particular source. It may be even more difficult to choose the appropriate unit for analyzing the impacts on poverty of all these different benefit programs.

PROGRAMS USING AGGREGATE INCOME CRITERIA

Many of the measurement problems affecting programs using aggregate income eligibility criteria to allocate funds across jurisdictions are similar to those that arise in determining individual and family benefits. In the case of benefits to jurisdictions, however, the overall poverty rate is often an explicit factor in the benefit allocation formula, and so the impacts of changes in income measures would be felt more directly in this category of programs.

Hanushek and Williams discuss two issues they consider especially important in assessing the impact of definitional changes on benefits allocated to jurisdictions under such formulas: cost-of-living differences across jurisdictions, and the disincentives for local anti-poverty efforts implied by the use of local poverty rates in allocating funds. Both of these factors are problems in using poverty rates to allocate benefits to local jurisdictions under current law, although the authors argue that the existing problems would be exacerbated by the inclusion of more in-kind income sources in the poverty measure.

It is clear from the examples provided by the authors that different methods of valuing in-kind benefits would indeed have very different implications for the relative income rankings of different local jurisdictions. However, it seems to me that both these problems are in danger of being overstated, in the sense that both may be susceptible to relatively simple technical (if not political) solutions. For example, it is theoretically possible to apply some sort of state or local cost-of-living index to aggregate income measures before computing local poverty rates, although the computation of such a cost-of-living index might be quite difficult given current data limitations. Even under current law, however, some Federal programs do make implicit allowances for price differences across jurisdictions. As Hanushek and Williams imply, it would be worthwhile to expand these efforts if a more inclusive income measure were adopted. In many cases, this would require some amendment of existing grant legislation.

Similarly, encouraging local effort while continuing to target aid to the most needy is an ongoing problem in grant allocation. For that reason, many grant allocation formulas currently include some measure of local effort or spending in addition to poverty measures. Many of the problems caused by including locally-provided noncash benefits in income could be at least partially solved by taking these local efforts into account explicitly in the grant allocation formula.

CONCLUSIONS

The authors make several other interesting and useful points in this paper, but unfortunately the limited space available here prevents me from commenting further on these. As I suggested at the beginning of these comments, however, the underlying themes of the paper are fairly clear. These are, first, that it does indeed matter for program benefit allocation how benefits are valued and how income is defined; and

second, no one income or poverty definition is likely to be suitable for every program and every purpose, and it is therefore important to consider the underlying purpose when choosing an income definition. These are conclusions with which I heartily concur.



Closing Remarks

C. L. Kincannon
Deputy Director
Bureau of the Census

I would like personally to thank everybody here for the role each played in making this conference a success. I also want to thank the Census Bureau staff who worked here with us to ensure that things worked well.

You heard Jack Keane in his opening remarks the other night refer to our longstanding practice of listening to the needs and concerns of data users. Those are the people we serve. We do not create the statistics for ourselves or to sit in books on the shelf. We are doing our job only if the statistics meet the needs of those who use them. You are representatives of many of those who are using this set of statistics. We thank you very much for helping us to review our imperfections and identify some opportunities for improving.

We are not going to solve all of these problems for a number of reasons, some of which have been mentioned, but we can make progress in dealing with them. It is going to take us a while to digest and assess the results of this conference. A lot has been said here, a lot has been written, and we are not going to have the answers to what we are going to do this afternoon or even next week.

But by early next year, I expect that we will have a plan for some things that we will be doing in response to what we heard here. We will be working very closely with other interested groups. That does not mean that we are not going to take responsibility for our decisions. We are certainly going to do that. But on an issue like this, keeping other interested parties involved and informed is essential, and obviously we recognize that.

We will be working with not only some of you here, but of course, the General Accounting Office, Office of Management and Budget, Department of Health and Human Services, other statistical agencies, and other parties who are going to be interested in next steps taken.

We are not going to spring a surprise. Those who follow our income statistics series should not open a report one August morning and find something markedly different. We will announce any planned material changes, so they will be expecting what they see and will have time to refine either their wrath or their pleasure at what is going to be there.

A few things, I believe, are clear, and maybe it is silly to mention them again. But it is clear that there is considerable consensus for continuing and intensifying research on the measurement of noncash income all across the income distribution.

There has not been as much research done in the last couple of years as needs to be done and this conference, I believe, is going to be a catalyst that will help us to focus available resources and perhaps garner some additional resources. There is plenty to be done far beyond the resources immediately available.

We have been reminded properly--not that I think we have forgotten--but it has been stressed very carefully that we need to respect the need for historical continuity in data series. There are many ways of doing that. One way is the use of multiple series when we have an improved series to offer, or to have periods of overlap, and that we recognize as essential and valuable.

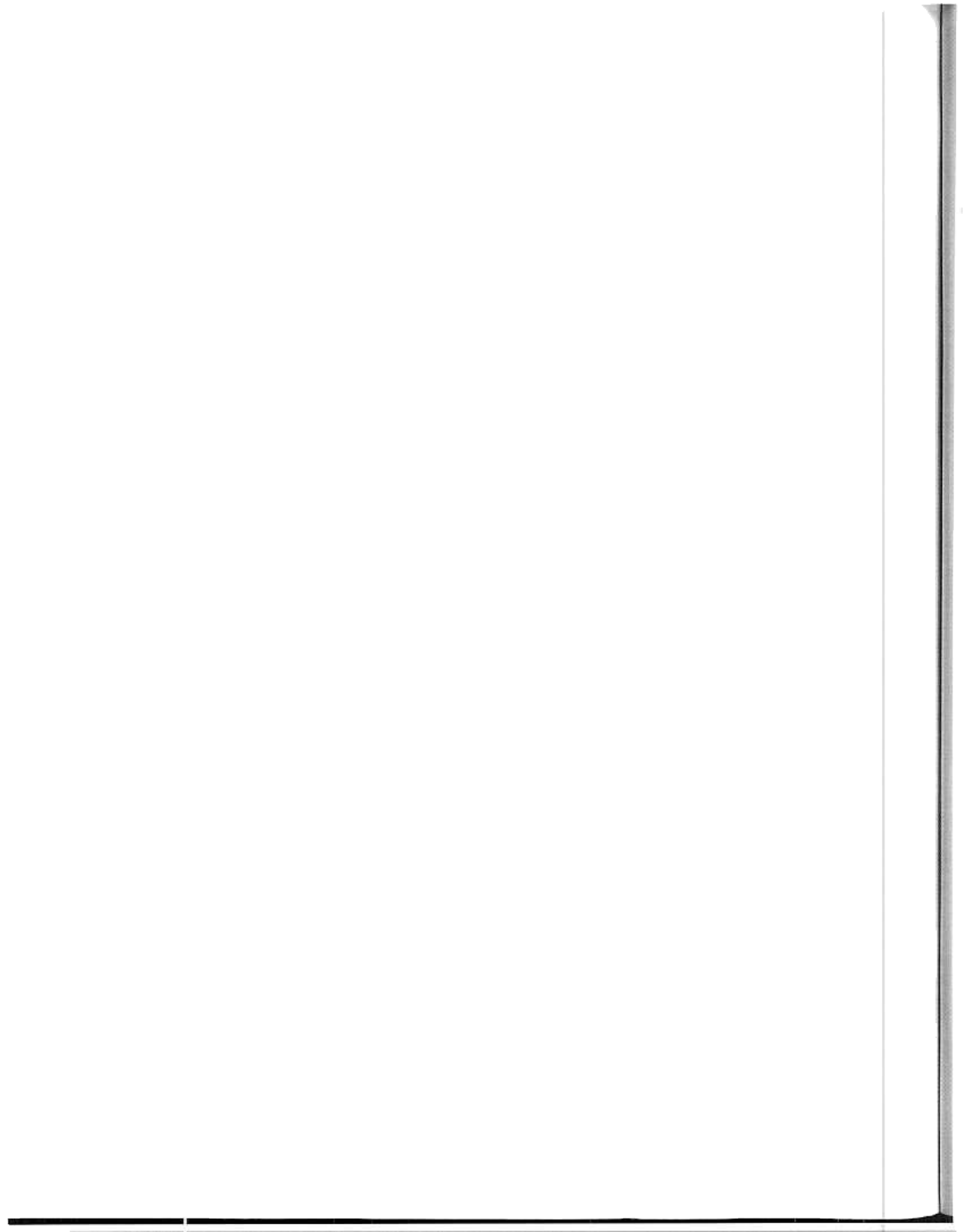
I was impressed with the amount of agreement on expanding the application of after-tax income to other kinds of uses. We will take that very seriously. I also took careful note of the interest in doing more work on underreporting of income, all across the income distribution. Underreporting may be more prevalent at one end or the other than it is in the middle but it is certainly important at both ends of the income spectrum. There seems to be a pretty clear consensus to drop medical benefits for the institutionalized--from consideration in income measurement. Finally, at the minimum, we need to relabel the cash equivalent method with a more descriptive term.

On the first item of doing more research, I want to stress what Tim Smeeding said about the American Statistical Association and National Science Foundation Fellows Program. Tim's role as a Fellow in that program was the beginning of much of this work. I would really encourage those of you from academia, from Government agencies, from private nonprofit agencies, and so forth, to examine the possibilities of a period of work at the Census Bureau under the auspices of that program, either for yourself or for others whom you know who would like to work in the area of income measurement. That is an important augmentation of the intellectual resources at our disposal, and there is money available from the National Science Foundation and to some extent from Census to support this work. Some very fine work in other fields has been done there, too, and I would really urge you to take a careful look at that as an opportunity.

Well, your contribution is very much appreciated, you have helped us along in a number of issues, even without final answers, and I believe that the result of the conference and our assessment and implementation of some recommended steps will improve income distribution statistics that we all use and that society uses to understand itself better. I appreciate that very much.

Let me leave you with a wish for a Happy Holiday season, and because I do not want any of you to receive anything except imputed benefits from insurance, please be careful on the way home.

APPENDIXES



Appendix A. Agenda

BUREAU OF THE CENSUS

Conference
on the Measurement
of Noncash Benefits



DECEMBER 12—14, 1985

FORT MAGRUDER INN & CONFERENCE CENTER
WILLIAMSBURG, VIRGINIA

Thursday, December 12, 1985

3:00 p.m.—6:30 p.m. REGISTRATION.....*LOBBY*

6:30 p.m.—8:00 p.m. DINNER.....*HILL'S REDOUBT*

8:00 p.m.—9:00 p.m. EVENING SESSION

PRESIDING.....**Gordon W. Green, Jr.**
Assistant Division Chief
Population Division
Bureau of the Census

WELCOME ADDRESS.....**John G. Keane**
Director
Bureau of the Census

STATEMENT OF
PURPOSE AND REVIEW
OF PAST WORK.....**William P. Butz**
Associate Director for
Demographic Fields
Bureau of the Census

OVERVIEW OF
CONFERENCE
AGENDA.....**Gordon W. Green, Jr.**

9:00 p.m.—10:00 p.m. RECEPTION.....*GRANT'S REDOUBT*

Friday, December 13, 1985

- 7:00 a.m.—8:30 a.m. BREAKFAST VERANDA DINING ROOM
ROOM
- 8:00 a.m.—9:00 a.m. REGISTRATION LOBBY
- 8:30 a.m.—12:30 p.m. PLENARY SESSION JEFFERSON DAVIS AMPHITHEATER
- FACILITATOR **Gordon W. Green, Jr.**

INTRODUCTION OF AUTHORS AND DISCUSSANTS

“STATISTICAL DEFINITION OF INCOME”

- 8:30 a.m.—8:55 a.m. AUTHORS..... **Lawrence Summers**
Department of Economics
Harvard University
- David Ellwood**
John F. Kennedy School
of Government
Harvard University
- 8:55 a.m.—9:05 a.m. DISCUSSANT..... **Alan Blinder**
Department of Economics
Princeton University
- 9:05 a.m.—9:15 a.m. DISCUSSANT..... **Albert Rees**
Sloan Foundation
- 9:15 a.m.—9:20 a.m. AUTHORS' REJOINDER

“METHODS OF MEASURING NONCASH BENEFITS”

- 9:20 a.m.—9:45 a.m. AUTHOR..... **Barry R. Chiswick**
Department of Economics
University of Illinois
- 9:45 a.m.—9:55 a.m. DISCUSSANT..... **Henry Aaron**
Brookings Institution
- 9:55 a.m.—10:05 a.m. DISCUSSANT. **Edgar K. Browning**
Department of Economics
Texas A & M University
- 10:05 a.m.—10:10 a.m. AUTHOR'S REJOINDER
- 10:10 a.m.—10:30 a.m. COFFEE BREAK

Friday, December 13, 1985 — CONTINUED

"STATISTICAL COMPARABILITY USING ALTERNATIVE METHODOLOGIES"

- 10:30 a.m.—10:55 a.m. AUTHOR..... **Michael Ward**
Unicon Research
Corporation
- 10:55 a.m.—11:05 a.m. DISCUSSANT..... **Eugene Smolensky**
University of
Wisconsin
- 11:05 a.m.—11:15 a.m. DISCUSSANT..... **June O'Neill**
Urban Institute
- 11:15 a.m.—11:20 a.m. AUTHOR'S REJOINDER

"USE OF POVERTY STATISTICS IN FEDERAL LAWS AND PROGRAMS"

- 11:20 a.m.—11:45 a.m. AUTHORS..... **Eric Hanushek**
University of
Rochester
- Roberton Williams**
Congressional Budget
Office
- 11:45 a.m.—11:55 a.m. DISCUSSANT..... **Patricia Ruggles**
Urban Institute
- 11:55 a.m.—12:05 p.m. DISCUSSANT..... **Kenneth Clarkson**
Law and Economics
Center
University of Miami
- 12:05 p.m.—12:10 p.m. AUTHORS' REJOINDER
- 12:10 p.m.—12:30 p.m. ASSIGNMENT TO
AFTERNOON SESSIONS... **Gordon W. Green, Jr.**
- 12:30 p.m.—2:00 p.m. LUNCHEON..... **HILL'S REDOUBT**

Friday, December 13, 1985 — CONTINUED

2:00 p.m.—5:30 p.m. FORUM

- | | | |
|---------|-------------------------------------|--|
| GROUP 1 | LEADER.....
Conference Room..... | Roger A. Herriot
JEFFERSON DAVIS
AMPHITHEATER |
| GROUP 2 | LEADER.....
Conference Room. | Gordon W. Green, Jr.
.. KEARNY'S LOUNGE |
| GROUP 3 | LEADER.....
Conference Room. | John F. Coder
LEE'S REDOUBT |
| GROUP 4 | LEADER.....
Conference Room... | John M. McNeil
JACKSON'S REDOUBT |
| GROUP 5 | LEADER.....
Conference Room. | Katharine J. Newman
GRANT'S REDOUBT |

5:30 p.m.—6:30 p.m. CONFERENCE MIXER..... GRANT'S REDOUBT
(Cash Bar)

6:30 p.m.—8:00 p.m. DINNER..... VERANDA DINING ROOM

Saturday, December 14, 1985

- 7:30 a.m.—8:30 a.m. BREAKFAST..... *VERANDA DINING ROOM*
- 8:30 a.m.—12:30 p.m. PLENARY SESSION..... *JEFFERSON DAVIS AMPHITHEATER*
- PRESIDING..... **Gordon W. Green, Jr.**
- GROUP REPORTS
- 8:30 a.m.—8:45 a.m. GROUP 1
- 8:45 a.m.—9:00 a.m. GROUP 2
- 9:00 a.m.—9:15 a.m. GROUP 3
- 9:15 a.m.—9:30 a.m. GROUP 4
- 9:30 a.m.—9:45 a.m. GROUP 5
- 9:45 a.m.—10:15 a.m. COFFEE BREAK AND CHECK OUT
- 10:15 a.m.—12:15 p.m. OPEN DISCUSSION AND COMMENTS
- 12:15 p.m.—12:30 p.m. CLOSING REMARKS..... **C. Louis Kincannon**
- 12:30 p.m.—1:30 p.m. LUNCHEON..... *VERANDA DINING ROOM*

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C. Louis Kincannon, Deputy Director

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Mary F. Henson, Conference Coordinator

Appendix B. Statement of Purpose

One of the most important responsibilities of the Census Bureau is the collection and publication of data on the income and poverty status of the U.S. population. These data are widely regarded as being among the most useful data available to measure the distribution of economic well-being.

From the beginning, the income and poverty data published by the Census Bureau were based on money income only. In the past few years, however, analysts have recognized that the U.S. population receives very substantial amounts of noncash income. At the direction of the U.S. Congress, the Census Bureau published in 1982 a technical paper that, for the purpose of estimating the number of persons in poverty, assigned dollar values to certain government noncash benefits. Because there was no "best" method of valuing benefits, the Census Bureau published nine different estimates based on three different groupings of benefits and three different methods of valuing the benefits.

Although attention has been focused on poverty estimates, the issue of valuing noncash benefits is important for all measures of the distribution of income. The implications of adopting revised methods of preparing income and poverty estimates are very great, and it is essential that all present and potential users of income and poverty data have the opportunity to comment and counsel us on this issue.

This conference is designed to provide a wide variety of academic, private sector, and government researchers, as well as representatives from public interest groups and interested Congressional committees, an opportunity to learn about the issues involved and to make their own views known to the Census Bureau. An outline of the conference will be presented at our Thursday evening session. The Friday morning session will feature presentations of papers on four primary issues. Each paper will be formally discussed by two discussants. The Friday afternoon session will be comprised of five concurrent workshops, and a plenary session devoted to group discussion will be held Saturday morning. The design was adopted to ensure that all conference attendees will have an opportunity to express their views and get those views into the record.

Appendix C. Biographies of Authors and Discussants

I. STATISTICAL DEFINITION OF INCOME

Authors

LAWRENCE H. SUMMERS is a Professor of Economics at Harvard where he specializes in macroeconomics and public finance. He is a member of the Brookings Panel on Economic Activity and is a Research Associate at the National Bureau of Economic Research. He served as an Economist at the Council of Economic Advisers. He has published many articles in professional journals and books, concentrating primarily on the economics of taxation, employment and capital formation. His book, Asset Prices and Capital Taxation, will be published by the Harvard University Press in 1987. He has a PhD in Economics from Harvard.

DAVID T. ELLWOOD is a Professor of Public Policy at the John F. Kennedy School of Government at Harvard. He has done extensive work in the area of welfare dependency and youth unemployment. Dr. Ellwood has studied how long welfare dependency lasts, who is able to become self-sufficient, and how self-sufficiency is achieved. He has also explored the impact of welfare on family structure and living arrangements. His work has been widely cited in both academic and public debates on poverty and welfare. He has a PhD in Economics from Harvard.

Discussants

ALBERT REES is now the President of Sloan Foundation. Prior to that he had taught Economics for 25 years at the University of Chicago and at Harvard. In 1974-75 he was Director of the Council on Wage and Price Stability. He has published a number of books on all aspects of labor economics. He holds a PhD in Economics from the University of Chicago.

ALAN S. BLINDER is now Professor of Economics at Princeton University and Visiting Fellow at the Brookings Institution. He was Deputy Assistant Director of the Congressional Budget Office in 1975. He has a PhD in Economics from Massachusetts Institute of Technology; his topic was income distribution. He has published a paper on "The Level and Distribution of Economic Well-Being" in the volume "American Economy in Transition," edited by Martin Feldstein. At the Conference on Poverty in Williamsburg in 1984, he presented a paper entitled "Macroeconomics, Income Distribution, and Poverty" published in "Fighting Poverty: What Works and What Doesn't," edited by Sheldon Danziger and Daniel Weinberg.

II. METHODS OF MEASURING NONCASH BENEFITS

Author

BARRY R. CHISWICK is now a Research Professor in the Department of Economics and Survey Research Laboratory at the University of Illinois at Chicago. He received his PhD in Economics from Columbia University. He was Senior Staff Economist at the Council of Economic Advisers from 1973 to 1977. He is currently Chairman of the American Statistical Association Census Advisory Committee. Barry has done extensive research on income distribution and his books include Income Inequality published by the National Bureau of Economic Research and Human Resources and Income Distribution which he co-authored with June O'Neill. His recent research has focused on the determinants of income among immigrants and racial and ethnic minorities.

Discussants

HENRY J. AARON has been a Senior Fellow at Brookings Institution since 1968 and Professor of Economics at the University of Maryland since 1967. In 1977 and 1978 he served as Assistant Secretary for Planning and Evaluation at the Department of Health and Human Services. He received his PhD in Economics from Harvard. He served as a staff member of the Council of Economic Advisers. He chaired the 1979 Advisory Council on Social Security. Dr. Aaron is the author or editor of nine books and co-author or co-editor of five others specializing in the fields of tax reform and Social Security.

EDGAR K. BROWNING is a Professor of Economics at Texas A. & M. He has a PhD in Economics from Princeton, where his topic was "Income Redistribution and the Negative Income Tax." He has made major contributions to the field of public choice economics on a variety of topics including income distribution and poverty. He has written a book on government transfers to the poor, entitled "Redistribution and the Welfare System." Dr. Browning has published a number of papers on income distribution and in-kind transfers.

III. STATISTICAL COMPARABILITY USING ALTERNATIVE METHODOLOGIES

Author

MICHAEL P. WARD is Vice President of Unicon Research Corporation which is an economic and statistical research firm located in Los Angeles. He received his PhD in Economics at the University of Chicago. He has published extensively in leading professional journals and is an authority on wage and employment patterns for women, job turnover, and pension and retirement issues. Dr. Ward is a former member of the faculties at the University of California and the University at Santa Barbara and former Senior Economist at the Rand Corporation in Santa Monica, California. He serves as a member of the Census Bureau's Advisory Committee on Population Statistics.

III. STATISTICAL COMPARABILITY USING ALTERNATIVE METHODOLOGIES--Continued

Discussants:

JUNE O'NEILL is currently Assistant Staff Director for Programs and Policy at the Commission on Civil Rights. She was formerly the Director of the Program of Policy Research on Women and Families at the Urban Institute. She served as Chief of the Human Resources Cost Estimates Unit of the Congressional Budget Office from 1976-1979, and as a Senior Staff Economist at the Council of Economic Advisers from 1971-1976. She published a number of articles relating to income distribution and male-female earnings differentials. She holds a PhD in Economics from Columbia University.

EUGENE SMOLENSKY is now a Professor of Economics at the University of Wisconsin. He was formerly Chairman of the Department and Director of the Institute for Research on Poverty. His most recent Federal activity was as an Economist at the Department of Health and Human Services working on welfare reform. He wrote his first paper on the valuation of in-kind transfers in 1967 and has continued this work to the present. He is the author (with Marilyn Moon) of a book entitled Improving the Measures of Economic Well Being. His PhD is in Economics from the University of Pennsylvania.

IV. USE OF POVERTY STATISTICS IN FEDERAL LAWS AND PROGRAMS

Authors

ERIC A. HANUSHEK was until December 1985 Deputy Director of the Congressional Budget Office. He is now and was prior to December of 1983 the Chairman of the Department of Economics and Director of the Public Policy Analysis Program at the University of Rochester. He taught economics at Yale University and at the United States Air Force Academy. He served as a Senior Staff Economist at the President's Council of Economic Advisers and as a Senior Economist with the President's Cost of Living Council. Dr. Hanushek holds his PhD in Economics from the Massachusetts Institute of Technology. He has done extensive research in the areas of education policy, urban affairs and the economic analysis of income and discrimination.

ROBERTON C. WILLIAMS, JR. is the senior analyst for income security at the Congressional Budget Office, where his primary responsibilities include analysis of policies related to income transfer programs such as AFDC, SSI, and Food Stamps and issues concerning the distributional effects of government policies. His most recent paper, "Reducing Poverty Among Children," evaluated various options for helping children in poor families. Dr. Williams taught economics at Williams College in Massachusetts, where his research dealt with housing assistance, measuring neighborhood quality, the effects of inflation on the poor, Medicare, and the Food Stamp Program. He holds a PhD in Economics from Harvard.

IV. USE OF POVERTY STATISTICS IN FEDERAL LAWS AND PROGRAMS--Continued

Discussants

KENNETH W. CLARKSON is currently a Professor of Economics and Director of the Law and Economics Center at the University of Miami. He was formerly the Associate Director for Human Resources, Veterans and Labor at the Office of Management and Budget from 1981 to 1983. He is the author or co-author of more than 50 books and articles including Economic Source Book of Government Statistics and teaches courses in Public Policy, Public Finance, Industrial Organization and Quantitative Methods. He holds a PhD in Economics from the University of California at Los Angeles.

PATRICIA RUGGLES is now Senior Research Associate at the Urban Institute. She is working mainly on income transfer programs for the low-income population. She worked at the Congressional Budget Office where she specialized in anti-poverty programs and Social Security. She gave a paper at the most recent meetings of the Public Policy Management Association on the "Sensitivity of Income Support Programs to Changes in Economic Circumstances." Ms. Ruggles has done graduate work in Economics at Harvard.

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Appendix E. Letter of Invitation

Dear _____

The Bureau of the Census invites you to attend a Conference on the Measurement of Noncash Benefits to be held at the Fort Magruder Inn, in Williamsburg, Virginia, December 12-14 (see enclosed brochures).

The Census Bureau collects and publishes the Nation's official statistics on income and poverty. During the past several years, the Census Bureau has expanded its efforts to collect and analyze data on noncash benefits. Our work has increased in response to the substantial growth during the past two decades in government noncash benefits such as food stamps, school lunches, public or subsidized housing, Medicare and Medicaid; and private sector "fringe" benefits such as employer contributions for pension and health plans. The official estimates of income and poverty include only money income and do not include noncash benefits of any kind. In recent years, noncash benefits have grown dramatically for persons all along the income distribution. The Census Bureau's official estimates of income distribution give a less complete picture of economic well-being because of the failure to count noncash benefits.

In September 1980, Congress directed the Secretary of Commerce to expedite efforts to collect data on noncash benefits, develop procedures to value these benefits, and show their effect on income and poverty estimates in Census Bureau publications. In response to this request, the Census Bureau conducted extensive research on the valuation of noncash benefits and published data for 1979 in Technical Paper 50. We published updated estimates for the years 1980 to 1984 in Technical Papers 51, 52, and 55. (We are enclosing a copy of Technical Paper 55.) Each of these reports employs the same set of methods and shows nine different estimates of the number of people in poverty (given the Office of Management and Budget definition) if income is defined to include the value of selected noncash benefits. To date, there is no consensus on the best methodology to be used for valuing noncash benefits.

The purpose of the conference is to allow persons outside the Census Bureau to review the methodologies used in these technical papers and, more specifically, to address the following issues:

1. What types of cash receipts and noncash benefits should be included in the Census Bureau's definition of income?
2. What are the most appropriate methodologies for valuing various noncash benefits?
3. If income is defined to include noncash benefits, what are the issues of data comparability for the current income and poverty measures?

Mr.

4. What are the implications for Federal laws requiring the use of poverty data in allocating funds to states and local areas?

We are enclosing a more complete outline of the conference agenda, together with a list of designated authors and discussants for the papers.

To provide the greatest possible range of views, the Census Bureau is inviting to the conference a wide variety of academic, private sector, and government researchers, as well as representatives from advocacy groups and appropriate Congressional committees.

We extend this invitation to you personally because of the special contribution you can make in these discussions. If you cannot attend, please do not substitute another person's name. We need to receive the enclosed form by October 25 showing whether you will attend. The Census Bureau is exploring the possibility of obtaining funds to pay travel and lodging expenses; however, we are not certain yet that this will be possible. Our conference coordinator, Dr. Gordon Green, Assistant Chief, Population Division, (301-763-7444), will provide you with the administrative details at a later date. He also will provide you with a set of background materials.

I hope that you will be able to attend this conference and I look forward to seeing you.

Sincerely,



JOHN G. KEANE
Director
Bureau of the Census

Enclosures

Appendix F. General Discussion Points

TO BE CONSIDERED BY EACH WORKING GROUP

1. What were the main issues identified by the authors and discussants? What is your position on these issues? Are there any important issues that were not identified in the session?
2. What are the most important things that the Census Bureau should do in pursuing its program on valuing noncash benefits:
In the short run?
In the long run?

EACH WORKING GROUP TO BE ASSIGNED TWO DISCUSSION POINTS

I. ISSUE: Counting Medical Care Benefits

Background

The counting of medical care benefits has a large effect on experimental estimates of the number of persons in poverty. The inclusion of medical care benefits and the way in which they are counted have been the subject of some controversy. First, there has been much discussion about the theoretical desirability of including medical care benefits in the definition of income. Second, it has been noted that the "market value" approach assigns medical care benefit values in some states that are large enough to lift persons above the poverty line regardless of their other resources. Third, it has been argued that the Census Bureau should not use a procedure that counts the cost of medical care received by the institutionalized population as part of the income received by noninstitutionalized persons.

Questions

1. Should medical care benefits be counted as income:
For the purpose of calculating the distribution of income?
For the purpose of estimating the number of persons in poverty?
2. If medical care benefits are counted as income, what method should be used to determine their value?
3. Should the cost of medical care received by institutionalized persons be counted as income received by the noninstitutionalized?

II. ISSUE: Counting Employer-Provided Benefits

Background

Employer-provided benefits make up the bulk of noncash income but we have not yet developed methods for including the value of these benefits in a definition of income. The major employer benefits include contributions to health and pension plans, contributions to social insurance plans (Social Security, unemployment compensation, worker's compensation), and more specialized benefits such as the use of a company car, tuition payments, and "expense account" benefits in the form of meals and entertainment. A complicating factor is the lack of knowledge on the part of survey respondents concerning employer-provided benefits. In the absence of direct information from employers, estimates of the value of benefits received by employees will be very imprecise.

Questions

1. Which employer-provided benefits should be counted as income:
For the purpose of calculating the distribution of income?
For the purpose of estimating the number of persons in poverty?
2. How should the Census Bureau balance the desire for a more comprehensive measure of income with the problem of data quality?

III. ISSUE: Misreporting Of Income

Background

The Census Bureau regularly publishes data comparing our survey estimates of income with benchmark estimates. The extent to which the survey estimates agree with the benchmark estimates varies by type of income, but there are serious problems of survey underreporting for certain income types such as property income and transfers. There has long been an interest in trying to determine what the income distribution would look like if there were no problems of misreporting.

Question

1. Should the Census Bureau devote resources to the development of methods to adjust survey estimates so that they agree with benchmark estimates of total income and income by type?

IV. ISSUE: Implementing the "Recipient Value" and "Poverty Budget Share" Approaches by Measuring the Normal Expenditures of Unsubsidized Persons

Background

Technical problems exist with the "recipient value" and "poverty budget share" methods of assigning dollar values to noncash benefits. In order to implement the former approach, it is necessary to measure the normal expenditure on the particular good or service made by an unsubsidized person who otherwise has the same characteristics as the subsidized person. To implement the latter approach, it is necessary to measure the normal expenditures of an unsubsidized person at the poverty level. In some instances, it is virtually impossible to obtain a valid measure of the normal expenditures of unsubsidized persons. For example, it is virtually impossible to obtain a valid estimate of normal expenditures on medical care made by unsubsidized persons 65 years or over (not covered by Medicare). As a result, the values assigned by the "recipient value" and "poverty budget share" approaches can be seriously biased.

Questions

1. Are data problems of this sort sufficiently explained in Census Bureau publications?
2. Are the conceptual and empirical data problems sufficiently severe to argue for the cessation of the estimates?

V. ISSUE: Comparing Before-Tax Income Measures to Poverty Thresholds Based on After-Tax Income

Background

Poverty status is determined by comparing the income of a family or person to the appropriate poverty threshold. The poverty thresholds were adopted during the 1960's and are updated each year to account for price changes. The thresholds were calculated on the basis of the cost of certain food plans and the proportion of after-tax income spent on food. The Census Bureau's official estimates of poverty have always been prepared by comparing before-tax income to the thresholds. This procedure has been followed because neither the Current Population Survey (CPS) or the decennial census collects data on taxes. In recent times, the Census Bureau has prepared estimates of after-tax income by simulating the tax payments of CPS households. This has raised the question of whether poverty estimates should in fact be prepared by comparing the simulated after-tax income with the poverty threshold. If such a procedure were adopted, it is important to note that estimates of after-tax income would become available several months after the regular CPS income data (to obtain after-tax data sooner would require additional assumptions in the simulation process).

V. ISSUE: Comparing Before-Tax Income Measures to Poverty Thresholds Based on After-Tax Income--Continued

Questions

1. Should poverty status be determined by comparing thresholds against simulated after-tax income or by comparing thresholds against the income figures as they are reported in the survey?
2. If a decision is made to use simulated after-tax income in determining poverty status, poverty reports will either be delayed or will be based on a simulation model in which assumptions will not be based on the most current information. What are your recommendations on this issue?