

Are Children Worse Off? Evaluating Child Well-Being Using a New (and Improved) Measure of Poverty

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Abstract

Using the current official measure of poverty, child poverty rates continue to surpass those of others. However, there is growing consensus that the way poverty is currently measured in the United States is outdated. In this analysis we implement a new experimental poverty measure based on recommendations made by the National Academy of Sciences Panel on Poverty and Family Assistance, focusing on how the adoption of a new measure affects our understanding of child economic well-being.

We find that the current official poverty measure overstates the material disadvantage of children relative to others, in large part because of its restrictive definition of family resources. However, the child poverty rate under the experimental measure is still high in absolute terms, and it continues to surpass the adult poverty rate.

Introduction

Child poverty rates continue to surpass those of working-age adults and the elderly. However, there is growing consensus among experts that the way poverty is currently measured in the United States is outdated and flawed (Citro and Michael 1995; Ruggles 1990). One of many criticisms offered is that the official measure does not take full account of a family's resources. In particular, only cash income and cash transfers are included in a family's income; not included are other important types of government assistance such as Food Stamps, school lunch subsidies, and tax credits, even though these transfers may ease a family's economic burden. Because many of these transfers are designed to help families with children, the current official poverty measure may overstate poverty among children relative to poverty among other demographic groups (Betson and Warlick 1998; Citro and Michael 1995; Short, et. al. 1998).

In the summer of 1999, the U.S. Census Bureau will release a report presenting alternative measures of poverty for the United States based on the recommendations of the 1995 National Academy of Sciences' (NAS) Panel on Poverty and Family Assistance (Citro and Michael 1995). The purpose of this analysis is to examine whether children are indeed worse off than others, in terms of poverty, when a new and improved measure is adopted. Using data from the Current Population Survey (CPS), the Survey of Income and Program Participation (SIPP), and the Consumer Expenditure Survey (CE), we analyze the effect of various elements of a new measure on child poverty, with a special focus on the role of government transfers and family's non-discretionary expenses in affecting poverty rates.

Child Poverty

Poor children lag behind other children in terms of health, are more likely to do worse in school, become teen parents, and experience poverty as adults (Duncan and Brooks-Gunn 1997; Federal Interagency Forum 1998; Gottschalk, McLanahan, and Sandefur 1994). Moreover, trends in child poverty, according to official statistics, are not encouraging. After a period of improvement in the 1960s, child poverty worsened over the last three decades. The percent of children living in families with incomes below the poverty line declined from 27.3 percent in 1959 to 14.0 percent in 1969. Over the next decade the child poverty rate fluctuated around this level, slowly inching upward. By 1981 the poverty rate was up to 20 percent, and has since remained at this higher level. In 1997, 19.9 percent of children in the U.S. were poor (Dalaker and Naifeh 1998).

The trend in poverty among working-age adults has followed a similar pattern, though the magnitude of the rates are considerably lower. Poverty for persons ages 18-64 declined from 17.0 percent in 1959 to 8.7 percent in 1969, remained fairly steady in the 1970s, then rose to modestly higher levels in the 1980s and 1990s. As of 1997, the poverty rate for this age group was 10.9 percent. Poverty among the elderly, in contrast, has declined relatively steadily from 35.2 percent in 1959, to 10.5 in 1997 (see Figure 1).

As of 1997, children comprised about 40 percent of the poverty population, though only about a quarter of the total population. Child poverty has risen and remained high for the last three decades for a number of reasons. The growth in the number of children in single-parent families is clearly an important factor (Devine and Wright 1993). The poverty rate for children in female-headed families was 49.0 percent in 1997, while the comparable figure for children in dual-headed families was just 9.5 percent (Dalaker and Naifeh 1998). Labor market changes, such as the rise in earnings inequality and declining wages of young adults (many of whom have children) have also played a role, as has the decline of cash transfers in real dollars (Danziger and Gottschalk 1995; Danziger and Weinberg 1994; Hill 1985). We now discuss the role of the last factor-government transfers-in more detail.

Government Transfers

Government programs can potentially play a significant role in alleviating poverty, especially among demographic subgroups (Center on Budget and Policy Priorities 1998). For example, Social Security is credited as being an important program which has helped alleviate poverty among the elderly, who, because of a lack of steady income, were traditionally the age group most likely to be impoverished. Between 1960 and 1990, overall social insurance and poverty-related expenditures rose markedly in the U.S., both in absolute terms and as a percentage of the Gross National Product (GNP). Spending on means-tested programs in 1992 came to \$218.5 billion, up from \$27.1 billion in 1960, \$62.1 billion in 1970, and \$132.1 billion in 1980 (all figures are in 1990 dollars). Despite increased government spending, anti-poverty programs have tended to exert only a modest overall effect (Burtless 1994). And as shown earlier, poverty has not significantly declined since the 1970s. However, the official poverty rate masks the full extent of poverty reduction because it only counts *cash income* in the measure of family resources, while the growth in means-tested transfers in recent decades has been overwhelmingly concentrated in *in-kind* or near-cash programs and tax breaks, such as Food Stamps and the Earned Income Tax Credit (EITC). The Center on Budget and Policy Priorities (1998) estimated that if all transfers were counted in a measure of family resources, safety-net programs-- cash and otherwise-- would have lifted 5.3 million children out of poverty in 1996. Of these 5.3 million, about 2.2 were lifted out of poverty by cash transfers (which are counted in a family's income under the official poverty measure). Cash transfers include Social Insurance programs (e.g. Social Security) and means-tested cash programs (e.g. Aid to Families with Dependent Children, Supplemental Security Income). An even greater number, 3.1 million, would have been lifted out of poverty if means-tested non-cash income and federal taxes and the EITC were counted in a definition of family's resources. Overall, their analysis found an increase in the effectiveness of safety-net programs in helping people over the 1987-1996 period.

While these estimates are suggestive and informative, they can be misleading in terms of simulating an exact poverty rate. A poverty measure needs to both define family resources suitably and achieve consistency between its definition of family resources and poverty thresholds (Citro and Michael 1995; Ruggles 1990). The next section examines how poverty has historically been measured, and discusses new experimental measures of poverty which can more accurately and appropriately gauge the impact of anti-poverty policies on people's economic well-being.

Poverty Measurement

The current official poverty measure was adopted in 1965, and only a few minor changes have been implemented since then. The measure consists of a set of thresholds for families of different sizes and composition which are compared to a resource measure to determine a family's poverty status. Basically, the thresholds represent the cost of a minimum diet multiplied by three to allow for expenditures on other goods and services. The definition of family resources used is before-tax money income. Concerns about the adequacy of the measure increased during the past two decades, culminating in a Congressional appropriation for an independent scientific study of the concepts, measurement methods, and information needs for a poverty measure. In response, the National Research Council of the National Academy of Sciences (NAS) established the Panel on Poverty and Family Assistance, which released its report titled *Measuring Poverty: A New Approach* in the spring of 1995. Based on its assessment of the weaknesses of the current poverty measure, the NAS panel recommended a new measure that better reflects contemporary social and economic realities and government policy.

Weaknesses of the current measure

The NAS panel identified major weaknesses in both the threshold and the resource definition of the current poverty measure. These weaknesses have become more apparent and problematic over the past three decades. For the purposes of understanding child poverty, some of these weaknesses include:

- *The current income measure does not reflect the effects of key government policies that alter the disposable income available to families and, hence, their poverty status.* Examples include taxes which reduce disposable income, and in-kind public benefit programs such as the Food Stamp Program which free up resources to spend on nonfood items.
- *The current measure does not take into account variation in expenses that are necessary to hold a job and to earn income-- expenses that reduce disposable income.* These expenses include transportation costs for getting to work and child care expenses of families with working parents.
- *The current poverty threshold uses family size adjustments that are anomalous.* In other words, the implicit equivalence scales in the current thresholds do not accurately capture economies of scale for families of different types and sizes.

The NAS panel reviewed several alternative approaches to measuring poverty, each with merits and limitations, noting that any decision to accept or reject a particular approach must involve judgment as well as scientific evidence. The NAS panel did, however, recommend specific changes to the official poverty measure based on

the best scientific evidence available, its best judgment, and the criteria that the resulting poverty measure should be acceptable and understandable to the public, statistically defensible, and feasible to implement. At the broadest level, the NAS panel recommended that the new poverty measure should consist of (1) a set of poverty thresholds representing a basic bundle of needs, (2) a definition of family resources for comparison to the thresholds to determine who is or who is not poor, and (3) that the definition of family income or resources be consistent with the concept underlying the poverty threshold. The NAS panel elaborated these recommendations by providing specific, detailed procedures for implementation, though often within a range, and by identifying research needed to fully implement the more general recommendations. We base the following analysis on these recommendations.

Data

For this analysis we use data from the CPS, SIPP, and CE. The CPS and SIPP provide alternative sources of data for the measurement of families' incomes, while CE data is used to construct experimental poverty thresholds. The CPS is a monthly survey of about 50,000 households conducted by the U.S. Census Bureau for the Bureau of Labor Statistics. It is the primary source of information on the labor force characteristics of the civilian non-institutional U.S. population. In addition to the basic CPS survey, supplementary questions are asked in March which serve as a source of detailed information on income, poverty, and work experience in the United States. Data from the March supplement is used in this analysis.

A primary recommendation of the NAS panel was to make the SIPP rather than the CPS the official source of poverty statistics. The SIPP is a continuing panel survey, begun in 1983, that is sponsored and conducted by the U.S. Census Bureau. Through 1993, the design introduced a new sample panel each February that was usually followed for about 3 years, depending on the panel. Monthly data are collected from households and families who are interviewed every four months. Beginning in 1996, a four-year panel was introduced, with no further panels planned until 2000. The sample covers the U.S. civilian non-institutionalized population and members of the armed forces living off post or with their families on post. Sample sizes have varied from 12,500 to 23,500 households per panel, though the 1996 panel is composed of 36,700 households.

The CE survey has two components - an Interview Survey and a Diary Survey. Interview survey data are used to produce the poverty thresholds. About 7,000 consumer units participate in the Interview Survey each quarter. Consumer units are interviewed every three months over a 12 month period for a total of 5 interviews. The NAS panel recommended that the CE be used for deriving and updating the poverty thresholds, as we do here. In these calculations we have used three-year averages to estimate the median expenditures for a basic bundle of commodities for a Census reference family composed of two adults and two children. The three years of data are used to compensate for the relatively small sample sizes of the survey and also to smooth any fluctuations from year-to-year.

Method

Our goal is to show how estimated levels of child poverty would differ from official levels of poverty as specific recommendations of the NAS panel are implemented one at a time, and then simultaneously. Estimates are developed for calendar years 1992-1996 from the March Current Population Survey. Because 1996 SIPP panel data are still being processed, we use data only from the 1992 SIPP, and compare these SIPP poverty figures to those estimated from the 1993 CPS which contains income data for the 1992 calendar year.

More specifically, our research plan proceeds as follows. First, results from both the SIPP and CPS are presented showing how the official child poverty rate for 1992 is affected by implementing various NAS panel recommendations (listed below) one at a time, highlighting the effect of government transfers and tax credits in particular. For purposes of comparison, we also illustrate how adult and elderly poverty rates are likewise affected by these measures.

Second, results are presented showing the implications of simultaneously implementing several recommendations for overall poverty rates in 1992, the distribution of poverty among subgroups of children in that year, and for trends between 1992 and 1996. Some of the estimates we present are 'standardized'- that is, estimates which are adjusted so that the overall experimental poverty rate is the same as that under the current official measure in 1992 (the first year we examine). To do this, the poverty thresholds are multiplied by a factor (0.8615 in this case) in order to match the official poverty rate of 14.8 percent in 1992. These results are presented in order to facilitate comparisons of the differential incidence of poverty using the official measure versus the experimental measure across age groups and other subgroups.

The Panel's specific recommendations on resource measurement and poverty thresholds are now discussed in turn. Details on how these recommendations are implemented are described in the Technical Appendix.

Family resource recommendations

Under the experimental poverty measure, family resources are defined as the value of money from all sources plus the value of near-money benefits that are available to buy goods and services covered by the new thresholds and minus expenses that divert money that can no longer be used to buy these critical goods and services. Near-money benefits include the following non-medical in-kind or near-cash benefits: Food Stamps, subsidized housing, school breakfasts and lunches, home energy assistance, the Earned Income Tax Credit,

and assistance from Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Expenses subtracted include: income taxes, Social Security payroll taxes, child care and other work-related expenses, child support payments to another household, and household contributions toward the costs of medical care and health insurance premiums (i.e., medical out-of-pocket costs, or MOOP).

Threshold recommendations

Poverty thresholds under an experimental poverty measure should represent a dollar amount for food, clothing, shelter, utilities (FCSU), and a small additional amount to allow for other needs (e.g., household supplies, personal care, non-work-related transportation). One threshold is developed for a reference family type using consumer expenditure survey data, and the reference family threshold is then adjusted-- using an equivalence scale-- to reflect the needs of different family types. A further adjustment is then made to reflect geographic differences in housing costs. The reference family consists of two adults and two children. Thresholds are updated over time to reflect changes in nominal growth in FCSU expenditures.

Some of the Panel's recommendations could not be implemented here because necessary data (or model estimates) are not available. For this analysis we produce alternative estimates of poverty using resources as measured by the SIPP and the CPS because each survey has deficiencies not present in the other. In our estimates using the CPS, there is no data available on child support payments made by the payer, or the value of benefits received under the WIC program and the school breakfast program. In our poverty estimates using SIPP data, we do not include the effect of taxes because these data are not accurately reported; there are ongoing efforts to model taxes in SIPP which we eventually plan to incorporate in our resource measure. As noted earlier, over the longer run, the Panel on Poverty recommended that the SIPP should become the basis of official U.S. income and poverty statistics in place of the CPS because the SIPP asks more relevant questions and obtains income data of higher quality. However, more research and development is needed on the SIPP before it can become the official source of poverty statistics.

Results

Table 1 displays data from the 1992 CPS and SIPP on transfers and expenses that are to be incorporated in a refined measure of a family's disposable income, as the NAS Panel on Poverty and Family Assistance recommended. The table indicates that, according to the CPS, about 11 percent of all persons lived in families which received Food Stamps. The corresponding figure in the SIPP-- 13 percent-- is not statistically different. Food stamp receipt is higher among poor families, and especially among poor families with children. About two thirds of CPS children-- and nearly three quarters of SIPP children-- lived in poor families which received Food Stamps. Food Stamp income averaged about \$2,500 in such families according to the CPS.

Subsidized school lunches are another transfer received by many children in poor families, with an average subsidy of \$660 according to the CPS. Housing subsidies, although more substantial, are received by fewer families. About 23 percent of children live in poor families which report it, according to the CPS, and close to 31 percent in the SIPP.

As is apparent from the figures in the table, there are discrepancies between the two surveys regarding both the percent of families reporting transfer receipt, and the average amount of the transfer. The numbers from SIPP tend to be higher than those from the March CPS. This is in large part due to the fact that the SIPP, as an income survey, is designed to do a more complete job of collecting income data (Coker and Scoon-Rogers 1996). Respondent recall tends to be better under the SIPP design, where people are interviewed every four months rather than annually as in the CPS. Differing methods of estimating some government transfers also play a role (see the Technical Appendix for details).

Of the *expenses* listed in the table, work-related expenses and medical out-of-pocket costs tend to be incurred by a high proportion of most types of families, and the amounts are quite substantial. Child care expenses are also substantial, with 13 percent to 21 percent (depending on the survey) of children living in poor families which report such expenses. Finally, while taxes tend to impose a substantial financial burden on a majority of families, poor families pay considerably less taxes. In fact, many poor families (over half of poor children's families) get important tax relief in the form of the Earned Income Tax Credit. As discussed in the Technical Appendix, it is important to note that taxes in our data are simulated. For example, data on EITC receipt is not based on actual reports, but rather on estimates calculated for persons who are simulated to be eligible for the credit.

Marginal Effect of Panel Recommendations on Poverty Rates

This section focuses on the marginal effect of each transfer and expense discussed in the previous section, along with the effect of new poverty thresholds and equivalence scales, on child poverty rates. While the official poverty rate incorporates a family resource definition that includes all cash government transfers, it does not include the near-cash transfers and credits discussed below. We also examine whether the NAS Panel's recommendations have a differential effect on children as compared to working-age adults and the elderly. Table 2 shows the impact of each resource addition or subtraction on the poverty rate, using official poverty thresholds and equivalence scales. The final row displays the impact of the new experimental poverty thresholds, equivalence scales, and geographic adjustments, while using the official definition of resources. The reader should note that results regarding the effects of each specific recommendation cannot simply be summed

to estimate the overall effect of implementing multiple recommendations. We would also like to emphasize that the measures presented in this section do not achieve consistency between resources and thresholds. While this analysis is informative and relevant to our understanding of the elements in a poverty measure, *no measure in this section can be considered a legitimate measure of who is poor*. These measures are presented to provide an incremental view of the effect of each recommended change.

Looking at various elements that *add* to a family's income (in-kind government transfers, tax credits, and capital gains), we find that Food Stamps and the Earned Income Tax Credit tend to have the biggest impact on the overall poverty rate. The marginal effect is such that the poverty rate declines from 14.8 percent to 14.1 when each of these two sources of income are added separately to the official resource measure, according to data from the CPS. Housing subsidies alone have a modest impact at best, lowering the poverty rate from 14.8 to 14.4 percent.

There is some variation by age group. Food stamps have the biggest impact on child poverty rates (lowering the child poverty rate from 22.3 to 21.0). The EITC and housing subsidies also continue to exhibit a substantial impact on children. Among the elderly, housing subsidies have the largest impact on their poverty rate, lowering it from 12.9 to 11.4 percent. For all age groups, the measured impact of additions to resources is larger using data from the SIPP than data from the CPS. For example, adding various transfers (and capital gains) to the family incomes of children reduces the poverty rate by about a fifth using CPS data, but by a full thirty percent using SIPP data. As discussed earlier, this likely reflects in part better coverage of income sources and receipt in the SIPP survey.

Regardless of the source of data, the overall impact of adding near-cash income from various sources to a measure of family resources is to lower the poverty rates of children more than the rates of other groups. According to the CPS, the marginal effect of including all additions in the family resource definition is to significantly lower the child poverty rate by 19.9 percent, versus a 15.8 percent reduction among working-age adults, and a 16.3 percent reduction among the elderly. Thus, near-cash transfer programs appear to be more effective lowering material hardship among children living in poor families than among people of other age groups.

Of the expenses listed in Table 2, subtracting medical out-of-pocket (MOOP) costs from family incomes clearly has the largest effect on poverty rates. Using CPS figures, we find that the poverty rate rises from 14.8 percent to 17.9 percent when MOOP costs are subtracted from resources. Also of note are the effects of Social Security taxes and work-related expenses on poverty rates. They raise the poverty rate from 14.8 percent to 15.9 percent and 15.7 percent, respectively, according to CPS figures. The pattern among children and working-age adults tends to follow the overall pattern. Among the elderly, however, the only expenses that has a substantial effect on poverty are MOOP expenditures. This is unsurprising given that many elderly do not work, and thus do not incur work-related expenses or have to pay Social Security taxes. The impact of MOOP expenses on elderly poverty rates is very large, as a relatively high proportion of the elderly use medical services and incur such expenses.

Subtracting expenses from family's resources tends to increase poverty among children *less* than it increases poverty among other age groups, in part because of relatively higher initial poverty rates among children which produce smaller relative effects. According to CPS data, subtracting expenses increases the child poverty rate by 36.9 percent; the increase among working-age adults is 49.4 percent, and among the elderly it is 73.1 percent—the last figure again largely reflects the considerable effect of medical expenses among the elderly. Finally, the last row of Table 2 shows poverty rates using the official income definition, but with new FCSU thresholds based on CE data (as described in the methods section). These thresholds also incorporate a refined equivalence scale, and have been adjusted for geographic differences in housing costs across various regions and metropolitan area sizes (see the Technical Appendix for details). The overall effect of the experimental thresholds on poverty rates is modest. Among children, the poverty rate declines from 22.3 with official definitions to 21.7 with the new threshold definitions. This small difference is unsurprising, given that the threshold for a reference family under the experimental measure was \$14,253 in 1992, only slightly lower than the corresponding official threshold of \$14,335.

For the purposes of our analysis, the most important finding in Table 2 is that moving to a new, more expansive, definition of family resources and non-discretionary expenses would likely increase child poverty rates by less than it would increase the rates of other age groups. Two factors in particular produce this result: 1) near-cash and in-kind government transfers have a larger poverty-reducing effect on children than on others, and 2) subtracting expenses produces smaller poverty increases among children than other age groups. But thus far, we have only examined the *marginal* effects of various transfers and expenses on poverty. The next section examines the effect of using a combined measure of resources with complementary poverty thresholds on child poverty rates. Only then can we gauge the overall effect of implementing multiple recommendations from the NAS Panel on a legitimate alternative measure of poverty.

Combining NAS Panel Recommendations

Table 3 displays the result of the experimental poverty measure, by survey, when all the recommendations are implemented simultaneously. The table confirms some of the findings from the previous section. Looking at data from the CPS, we find that, for all age groups, poverty is higher under the experimental measure, as defined here, than under the official measure. The CPS experimental poverty rate is 19.0 percent-28.4 percent higher than the official rate of 14.8.

Importantly, the percent change in the poverty rate using the experimental versus the official measure is *smaller* for children than for working-age adults and the elderly. Among children, the poverty rate rises from 22.3 percent under the official measure to 25.6 percent under the experimental measure, a 14.8 percent increase. The corresponding increases for working age adults and the elderly are 31.9 percent and 62.8 percent, respectively. Thus, this analysis confirms the notion that the restricted definition of resources under the current official poverty measure *overstates* the material disadvantage of children relative to other age groups. This finding supports recent work by Betson and Warlick (1998), who find that the poverty gap between children and the elderly is narrowing, not widening, when an expanded definition of family resources is employed.

Yet it is important to note that child poverty rates under the experimental measure *still surpass* the poverty rates of the other two age groups, even if the increase in the experimental measure versus the official rate is smaller among children. In fact, the CPS estimate indicating that a full quarter of children lived in poverty in 1992 is troubling. That almost a fifth of all persons lived in poverty in that year likewise indicates that the current official poverty measure may understate economic hardship in the U.S.

The picture that emerges when using data from SIPP is a little more sanguine. Poverty rates for all groups are lower when measured with SIPP data than with CPS data. Poverty rates under the SIPP experimental measure range from 11.2 percent for adults to 18.6 percent among children, who once again display the highest poverty rate.

However, the SIPP experimental child poverty rate of 18.6 percent is actually not statistically different from the SIPP poverty rate estimated using the official definitions of income and thresholds (19.0 percent). This is the only experimental poverty rate that is not higher than one based on official definitions for any age group in either of the surveys. The more expansive definition of resources, coupled with thorough reporting of in-kind transfers in the SIPP, account for much of this. Furthermore, once a tax model with the EITC for SIPP is incorporated in our estimates, the SIPP experimental poverty rate may be even lower.

Another notable result in the table is that elderly poverty rates are higher than the overall poverty rate under the experimental measure versus the official measure-particularly when using SIPP data. As shown in the previous section, high MOOP expenses incurred by the elderly contribute to their economic hardship.

To illustrate these patterns, Figure 2 displays standardized poverty estimates. As discussed earlier, by constraining the experimental poverty rate to equal the overall official poverty rate, we are able to facilitate sub-group comparisons. Figure 2 clearly shows that experimental child poverty rates are lower than official poverty rates, once the overall poverty rate is constrained to equal the official poverty rate. Among working-age adults, official and experimental poverty rates are similar. Finally, among the elderly, experimental poverty rates are considerably higher than poverty rates estimated using the current official measure for reasons discussed above.

Child Poverty Rates by Selected Demographic Characteristics

Table 4 displays poverty rates calculated for various subgroups of the population for 1992 using the official measure and the standardized experimental measure estimated with CPS data. In this table, the experimental measure is standardized to the official poverty rate for *children*, as opposed to the overall poverty rate as was done in the previous section. In particular, the thresholds are adjusted by a factor (in this case, 0.91795) in order to match the CPS child poverty rate of 22.3 percent for 1992. This measure is shown this way to once again facilitate comparisons of poverty rates across subgroups among the broader group of interest here (i.e., children).

The table shows that poverty rates are somewhat lower for Black children under the standardized experimental measure than under the official measure. Further analysis (not shown) indicates that greater receipt of in-kind government transfers and lower average MOOP expenses of officially poor black families with children account for this. Hispanic children appear to have modestly higher poverty rates under the standardized experimental measure than under the official measure, due to a combination of factors including less receipt of transfers and higher work-related expenses.

The standardized experimental measure also produces higher poverty rates for children in married-couple families and male-headed families, and corresponding lower rates for those in female-headed families with no spouse present, than we see under the official measure. Married-couple and male-headed families have higher standardized experimental poverty rates in part they are less likely to

receive government transfers. Conversely, female-headed families have lower standardized experimental poverty rates in part because they receive more government transfers than the average family with poor children.

Results also indicate higher poverty rates under the standardized experimental measure than under the official measure for children in families with workers. Families with workers tend to receive fewer government transfers and incur higher work-related expenses. They also have relatively high MOOP expenses.

Poverty Estimates over Time: The Standardized Experimental Measure versus the Official Measure

Figure 3 compares trends in child poverty rates using the official CPS measure and the standardized experimental measure. The experimental measure in this section is standardized such that the child poverty rate is constrained to equal the official child poverty rate (22.3 percent) in 1992. As before, this is done for illustrative purposes: by constraining the experimental measure to equal the official measure in the initial time period, we are able to gauge whether the trend in the material well-being of children exhibited by the experimental measure is captured by the official poverty measure.

Figure 3 indicates that the experimental and official poverty rates follow the same general trend, rising in 1993 before falling for three consecutive years from 1994 to 1996. However, the experimental rate fell at a faster clip. In 1996, the official child poverty rate was 20.5 percent while the standardized experimental rate had fallen to 19.0 percent. This indicates that the experimental poverty rate measures improvements in child well-being not captured by the official measure over that time period. Short, et. al. (1998) report similar results in their analysis of the *overall* official poverty rate versus an experimental poverty rate calculated with a method similar to the one used here.

Further investigation reveals that near-cash government transfers and tax-breaks to officially poor children's families rose at a faster clip than the modest increase in non-discretionary expenses over the time period. By far the most significant increase in transfers or tax breaks over the period occurred in the EITC program. Poor children lived in families which received, on average, over \$700 dollars more in EITC tax credits in 1996 than in 1992 (in constant 1992 dollars). As discussed earlier, one caveat to these results is that EITC receipt in the CPS data is not based on actual reports, but rather on estimates calculated for persons who are eligible for the credit (see the Technical Appendix for details).

Overall, the results in this section illustrate the fact that the official poverty rate-- in contrast to the experimental poverty rate--is unable to capture the impact of many government programs directed toward improving child well-being.

Conclusion

Official poverty rates continue to be higher for children than adults. However, over the past couple of decades there has been a growing consensus that the way poverty is currently measured has become outdated. This analysis addresses the issue of how our view of child poverty would differ if a new, refined poverty measure were adopted. We base the implementation of a new poverty measure in large part on both the research of the National Academy of Science's Panel on Poverty and Family Assistance, whose work culminated in the 1995 book, *Measuring Poverty: A New Approach*, and on-going research efforts at the U.S. Census Bureau and Bureau of Labor Statistics. This analysis focuses specifically on the role of adopting a more expensive definition of family resources-- which includes near-cash income but subtracts non-discretionary expenses-- on child poverty.

We find that experimental poverty rates, as defined here, tend to be higher than official poverty rates, and that child poverty rates, by any measure, continue to surpass those of both working-age adults and the elderly. However, the *gap* between child and adult poverty rates is substantially *smaller* under the experimental measure. This reflects the finding that: 1) near-cash government transfers have a larger poverty-reducing effect on children than on others, and 2) subtracting expenses produces smaller poverty increases among children than other age groups. Of the near-cash government transfer programs examined, Food Stamps have the biggest impact on reducing child poverty rates under the experimental measure. The EITC and housing subsidies also exhibit a substantial impact on child poverty rates.

We also find that moving to an experimental poverty measure would have implications for the composition of the child poverty population. Moving from an official poverty measure to an experimental one would produce a smaller increase in poverty among Black children than others, largely due to greater receipt of in-kind government transfers and lower than average MOOP expenses among poor black children's families. Conversely, moving to an experimental poverty measure would produce a greater increase in the poverty rate among Hispanic children, whose their families tend to incur greater work-related expenses and receive fewer government transfers. Children in married-couple families would do a little worse under the experimental poverty measure because their families are less likely to receive government transfers. In contrast, children in female-headed families would see smaller

increases in their poverty rates under the experimental measure because their families are more likely to receive government transfers.

With regard to patterns over time, we find that the experimental and official poverty rates follow the same general trend, rising in 1993 before falling from 1994 to 1996. However, the experimental rate fell at a faster rate in the latter period. This reflects increases in near-cash government transfers and tax credits over the period which alleviate economic hardship and, therefore, poverty under the experimental framework. The most significant increase in transfers or tax credits occurred in the EITC program, which benefited an increasing number of low-income families in the 1990s (Center on Budget and Policy Priorities 1998).

Overall, this analysis confirms the notion that the restricted definition of resources under the current official poverty measure *overstates* the material disadvantage of children relative to other age groups. Yet even under the experimental measure child poverty rates are still high in absolute terms—a full quarter of children in the U.S. live in poverty according to CPS figures—and the child poverty rate continues to surpass the adult rate.

Technical Appendix

Defining poverty thresholds

In this study, as in the Panel's study and other work (Citro and Michael 1995; Garner et al. 1998; Short et al. 1998), poverty thresholds are calculated by following several steps. First, a reference unit is chosen. The Panel recommended using a 2 parent, 2 child family as the reference unit. Second, median expenditures for reference units are obtained using their food, clothing, shelter and utilities (FCSU) expenditures. Third, percentages of median expenditures are selected which reflect the 30th and 35th percentiles of the distribution of FCSU expenditures. These percentiles translate to approximately 78 and 83 percent of the median. The Panel concluded in their study that these percentiles seem to represent a "reasonable range" for the FCSU component of the reference family's threshold.

Fourth, expenses for their other needs (e.g., household supplies, personal care, and non-work related expenses) are accounted for through the use of a small multiplier. The Panel recommended a lower and upper value for the multiplier of 1.15 and 1.25, respectively. In this study, as in the Panel's work, the base year threshold is computed by taking the average of these upper and lower values for both the percentages and multipliers (i.e., $\text{Threshold} = 0.5 \cdot (1.15 \cdot 78 + 1.25 \cdot 83) \cdot \text{median}$), with the result being that the threshold equals $0.96725 \cdot \text{median}$ expenditures for the basic bundle. Hence, the resulting threshold is almost equal to median expenditures on FCSU.

Fifth, adjustments are made to reflect geographic differences in costs. Following the Panel, we use inter-area housing cost indexes calculated from the 1990 Census data on gross rent (including utilities) for apartments with specified characteristics, adjusted for the share of housing in the proposed poverty budget. They focused on shelter because housing expenditures are the largest component of the poverty budget and because variations in housing costs are significant across regions and by population size. These indexes are produced for six population size categories within each of the nine census regions (see Citro and Michael 1995 for a list of the indexes). In our application, we normalize the indexes based on the geographic distribution of a weighted sample. The area indexes are produced relative to the U.S. average index, which is equal to 1.0. For example, the threshold for the reference unit in a large metropolitan area in New England is 27 percent higher than the national average, while it is 15 percent lower than the national average if this family lives in a non-metropolitan area in the West South Central region.

Sixth, an equivalence scale adjusts the reference unit threshold to produce thresholds for household units with different characteristics than those of the reference unit. The equivalence scale used is discussed in more detail in the next section.

Seventh, the base year thresholds are updated over time using a price adjustment factor. The Panel recommended updating by the change in median expenditures each year (a quasi-relative adjustment), which we do here. Table A1 presents the official thresholds and the experimental thresholds used in this report for 1992 through 1996.

Year	Official	FCSU
1992	\$14,228	\$14,253
1993	\$14,654	\$14,791
1994	\$15,029	\$15,166
1995	\$15,455	\$15,545
1996	\$15,911	\$15,744

Table A1: Thresholds for Reference Family of Two Adults and Two Children

Source: Bureau of Labor Statistics tabulations

Equivalence Scales

The Panel recommended a two-parameter equivalence scale that accounts for the differing needs of adults and children and the economies of scale of living in a larger household. For this analysis, however, we adopt a three-parameter scale proposed by Betson (see Betson 1996 and Johnson et al. 1997). Compared with the panel's two-parameter scale recommendation, the three-parameter scale provides more economies of scale between singles and childless couples and more similarity between the scales for families with one-parent and two children and two-parent families with one child.

Resources

Food Stamps and School Lunch Subsidies

Receipt of Food Stamps, and the amount received, is reported in the CPS and SIPP. While this benefit is reported similarly in both surveys, the CPS respondents are asked if they ever received Food Stamps in the previous calendar year. If they answer that they did, they are then asked to report the total amount received in that year. Respondents to the SIPP are asked to report receipt of Food Stamps on a monthly basis for the entire panel length, and the monthly face value amounts which we then summed across the 12 months of the calendar year.

School lunches, whether free, reduced price, or regular price, are reported differently in the two surveys. In the CPS, respondents report the number of children who usually ate a school lunch, and they indicate if that lunch was free or reduced price in the previous calendar year. In the SIPP, the question is asked, "How many school lunches were eaten by the children per week?"

The income value for the school lunch program for each participant family is calculated using this information and data on the annual subsidy for free, reduced, and full-priced meals. Information on subsidies per meal is obtained from the Department of Agriculture. Again, however, the treatment is different in each survey. In the CPS, since no additional information is available, we must assume that all reported children ate a school lunch of the reported price scheme all year. In the SIPP, with sub-annual reports, we can more correctly apply the correct amounts of the in-kind benefit to each family.

Housing Subsidy Valuation

Rent subsidies, one of the non-cash benefits valued in the March supplement to the Current Population Survey, are released every year on the CPS microdata file. These values are currently estimated with a regression model that uses American Housing Survey data from 1985. The data are updated using a Consumer Price Index (CPI) for Residential Rent.

The current model provides estimates of monthly housing costs for renters as a function of four variables: 1) presence of full baths, 2) presence of refrigerator, dishwasher and garbage disposal, 3) presence of rats, holes, and other like problems, and 4) an index of satisfaction with community services.

This model is estimated only for unsubsidized renters in two bedroom units, the most prevalent type of rental unit. Separate regressions were run for each of the four regions. The regression coefficients are then applied to the housing characteristics of subsidized renters in the relevant region to obtain the predicted monthly housing cost. Subsidized renters are those who either live in public housing, or receive state or local assistance with housing costs. The difference between the mean predicted monthly housing cost and the mean out-of-pocket housing costs of subsidized renters in the designated region is the mean subsidy for a two bedroom unit in that region. Finally, this subsidy is then adjusted for family income and number of bedrooms (for more details on this method, see U.S. Bureau of the Census, forthcoming).

Instead of using statistical models to calculate subsidies as done above for the CPS, SIPP housing subsidies are based on county-level Fair Market Rents (FMR) for housing units of different sizes. The procedure for estimating subsidies is as follows. First, we select people who report living in public housing or receiving government rent subsidies. Second, for these families we calculate the number of bedrooms in their unit. This is modeled as a function of family size and composition. Each married couple in the family is assigned one bedroom, and an additional bedroom is assigned for each two additional people of the same sex.

Finally, the housing subsidy is calculated by subtracting 30 percent of family income from the Fair Market Rent of the unit. FMRs vary by county of residence and number of bedrooms in the unit. Fair Market Rents are estimated as the 45th percentile of the rent distribution in each area by the U.S. Department of Housing and Urban Development. The 30 percent figure subtracted from the FMR reflects the notion that persons who receive housing subsidies are expected to contribute 30 percent of their net income toward rent. Thus, the difference between this amount and the fair market rent for the area is the housing subsidy.

Energy Assistance

The CPS collects information on whether persons receive benefits from the governments' energy assistance program and the amount received over the last six months. Given that this information is only reported for the winter months suggests that we are probably only collecting the heating portion of this program. The SIPP, however, collects information on receipt of energy assistance in every month of the year, producing higher energy assistance receipt estimates than in the CPS. Asking the questions all year round captures individuals who received help with cooling as well as heating bills.

Work-Related Expenses

Under the experimental measure of poverty two types of work-related expenses are subtracted from family's resources: 1) child care expenditures, and 2) "other" work-related expenses. We describe each in turn.

Child Care Costs

In our CPS analysis, we value childcare expenditures for CPS families with no non-working parents and children under 12 by using topical module data from the 1991 SIPP (the March CPS contains no questions on childcare expenses). In the SIPP, parents or guardians of children less than 15 years of age who were in the labor force or attended school during the reference period were asked about their childcare arrangements and costs during the last month. Using this data, we first ran logistic regressions to estimate the probability of incurring childcare expenses based on family structure, the race/ethnicity of the head, the number of children of various ages, region, and family income. The logistic regression results were then used to establish the probability that a family in CPS had incurred childcare costs.

For the families that were simulated to have incurred expenses, we then subtract dollar amounts from resources based on Aid to Families with Dependent Children (AFDC) child care deduction guidelines which take into account the number and age of children in the family. We base child care valuations on these figures because these program deductions for child care are the clearest normative statement of what the federal government regards as a ceiling on the cost of child care necessary for employment (for more details, see U.S. Bureau of the Census, forthcoming). To take account of changing costs over time, we update them for inflation using the CPI-U.

In our SIPP analysis, we use an alternative method for estimating child care costs. It involves simply subtracting a fixed amount from the earnings of families with no non-working parents and with children under the age of 12; we then limit this deduction to the earnings of the lower earner. We subtract fixed amounts equal to 85 percent of median annual expenses as reported in SIPP from these families. We calculated six separate medians depending on the number and age of children. This method has the advantage of imputing child care costs for all families with working parents and children. This allows us to take into account the opportunity costs involved in arranging for child care. For example, a family might opt to leave a child unsupervised during working hours because it cannot afford childcare. This family might not be poor, even though subtracting an adequate amount to pay for childcare would render this family poor. Likewise, some families with high childcare costs might be counted as poor, even though their overall level of well-being might be higher than that of some non-poor families with lower or no childcare costs. Subtracting fixed amounts from family's resources overcomes this problem.

Other Work-related Expenses

The Panel proposed subtracting a flat amount for "other" work-related expenses, to be updated annually for inflation. Following the Panel's recommendations, the flat amount we deducted from both CPS and SIPP families' incomes equals 85 percent of the median amount spent on other work-related expenses, as reported by SIPP respondents (no questions on other work-related expenses are asked in the CPS). This amount is restricted to not exceed the person's earnings. The Panel used data from the 1987 panel of the SIPP, the most recent data available.

More specifically, the 1987 SIPP collected information on work-related expenses from people who had at least one employer in the reference period. Three types of expenses were identified: 1) annual work-related expenses such as union dues, licenses, permit, special tools, or uniforms; 2) mileage expenses--the number of miles usually driven to and from work in a typical week, for people who do some driving to work. An estimate of 22.5 cents per mile was used to convert mileage to expenses; and 3) other expenses incurred in getting to and from work, such as bus fares or parking fees.

The combined deduction of both child care expenditures and other work-related expenses for working families with children under 12 years of age is capped to not exceed the earnings of the parent with lower earnings in the SIPP portion of the analysis, but not in the CPS portion of the analysis due to the different method used for valuating child care expenses in the CPS.

Taxes

Three types of taxes were simulated in the CPS data set: 1) Federal individual income taxes, including the Earned Income Tax Credit, 2) State individual income taxes, and 3) Social Security payroll (FICA)

taxes. Procedures for estimation are summarized below; for a more detailed explanation, again refer to U.S. Bureau of the Census, forthcoming. Note that a method for valuating taxes with SIPP data is under development but not yet complete.

Simulation of Federal income taxes in the CPS required up to four separate operations. First was the formation and classification of tax filing units using household relationship, marital status, and dependency rules. Second was the calculation of adjusted gross income for each of those units. Third was the simulation of amount of Federal income taxes paid, using tax laws for the relevant time period. Finally, we estimated earned income tax credits, where applicable, for lower-income families.

The amounts of State individual income taxes paid were computed by developing a model of each State's income tax regulations. Information on the State tax systems was obtained from the State Tax Handbook. State tax rates and brackets are updated annually to reflect changes in state tax regulations. While every detail of each State's income tax system was not simulated, most of the important aspects were accounted for.

The Social Security payroll tax (FICA) was simulated by using information on individuals' occupations and earnings as reported in the CPS, and by applying the Social Security payroll tax formula for 1997. Not all workers were assigned coverage under Social Security and, therefore, a small number were not subject to Social Security taxes. All Federal employees and specific proportions of workers in certain occupation groups were assigned non-covered status. Unpublished statistics supplied by the Social Security Administration were used to make these assignments.

Medical Care

The method used for taking account of medical care expenses in the experimental poverty measure is based on the work of the NAS panel. Out-of-pocket medical expenditures are imputed to both CPS and SIPP families based on data from the 1987 National Medical Expenditure Survey (NMES) which has been updated using the CPI for medical care. The approach involves allocating expenditures to families based on characteristics of the family head and calibrating those allocations to control totals.

Following the panel's recommendations, we use separate procedures for estimating medical-out-of-pocket (MOOP) costs for families headed by someone younger than 65 years of age and those headed by someone 65 years or older. Expenditures for families with a non-elderly head were estimated as a function of health insurance status, family size, race of head, and income-to-poverty ratio. Expenditures for families with an elderly head were based on age of head (under 75, 75 and over), income-to-poverty ratio, and family size.

A fraction of the families were assigned to have MOOP expenses to match the fractions with positive expenditures in the NMES survey. If a family was assigned to have positive expenses, actual amounts were then imputed to be consistent with the distribution of NMES expenditures (see U.S. Bureau of the Census, forthcoming, for more details).

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