CAN WE FIX THE FEDERAL POVERTY MEASURE SO IT PROVIDES RELIABLE

INFORMATION ABOUT CHANGES IN CHILDREN'S LIVING CONDITIONS?

Christopher Jencks
John F. Kennedy School of Government
Harvard University

Susan E. Mayer
Irving B. Harris Graduate School of Public Policy Studies
University of Chicago

and

Joseph Swingle
Department of Sociology
Wellesley College

September 7, 2004

DO NOT CITE WITHOUT THE AUTHORS' PERMISSION

CAN WE FIX THE FEDERAL POVERTY MEASURE SO IT PROVIDES RELIABLE INFORMATION ABOUT CHANGES IN CHILDREN'S LIVING CONDITIONS?

Abstract

The official poverty rate for American children rose during the 1970s and 1980s and fell during the 1990s, but it was still significantly higher in 1999 than in 1969. Since the poverty line is supposed to represent a fixed standard of living, these change in child poverty imply that low-income children's standard of living was lower in 1999 than in 1969. We test this hypothesis using data on housing conditions, telephone service, automobile ownership, doctor visits, and food consumption. With the possible exception of food consumption, trends in these domains do not match the trend in official child poverty. Plausible corrections to the way poverty is measured generate a time series that comes closer to matching trends in living conditions, but the match is still far from perfect.

CAN WE FIX THE FEDERAL POVERTY MEASURE SO IT PROVIDES RELIABLE INFORMATION ABOUT CHANGES IN CHILDREN'S LIVING CONDITIONS?

The federal government established its first official poverty measure in 1969. This measure, based on the work of Mollie Orshansky (1965), defined a family as poor if its money income in any given calendar year fell below a threshold that varied with the family's size and composition. Since 1969 the poverty threshold has risen at the same rate as the Consumer Price Index for urban consumers (CPI-U) but has not changed much in other respects. In principle, therefore, families with incomes at the poverty line are meant to have the same standard of living today that they had in 1969.

According to the Census Bureau's "official" poverty series, the poverty rate for all persons hardly changed between 1969 and 1999. The official rate was about 12 percent in both 1969 and 1979, 13 percent in 1989, and 12 percent in 1999 (U.S. Census Bureau, 2000:B-12). The poverty rate for children has risen. It was 14 percent in 1969, 16 percent in 1979, 20 percent in 1989, and 17 percent in 1999. These statistics imply that low-income children were worse off in 1999 than 1969. This paper investigates whether that was in fact the case.

The stability of the overall poverty rate reflects increases for some groups (notably children) and declines for other groups (notably the elderly), so a convincing assessment of the match between trends in poverty and trends in living conditions would require us to compare these groups. This paper, which focuses on child poverty, is a first step in that direction. We begin with children partly because the increase in child poverty during the 1970s and 1980s was widely cited as evidence of policy failure. In addition, the large increase in child poverty during the 1970s and 1980s followed by a reversal of this trend during the 1990s makes it relatively easy to see whether direct measures of living conditions follow the same trajectory.

We should emphasize at the outset that we will not discuss whether the official poverty line *ought* to represent a fixed standard of living or falling rather than rising in tandem with the overall standard of living of the larger population. Both approaches provide useful information, and we see no compelling reason to choose one to the exclusion of the other. Here, however, we assume that the poverty line is supposed to

represent a fixed benchmark, like the length of a meter, ask whether it has achieved this goal.

Section 1 briefly summarizes some earlier criticisms of the poverty line that bear directly on our argument. Section 2 discusses our data and methods. Section 3 compares trends in child poverty to trends in housing conditions, automobile ownership, telephone service, doctor visits, and food consumption among low-income households with children, showing that almost all these measures suggest improvement in low-income children's living conditions between 1969 and 1999. Section 4 shows how the trend in child poverty changes when we correct various potential flaws in the official poverty measure. These corrections improve the match between trends in the poverty rate and the level of material hardship, but they do not entirely solve the problem.

1. Background

The Census Bureau's poverty counts come from the March Current Population Survey (CPS). The CPS asks an adult informant in each household to list every individual living in the household. In March the CPS also asks how much money income each household member over the age of fifteen received from various sources during the previous calendar year. If the informant does not answer a particular question, the Bureau imputes the missing amount by using the value reported in the last previous household with similar characteristics. The wage and salary data reported in the March CPS match data from other sources quite well. Transfer payments are underreported, and this is especially true for public assistance payments. Interest, dividends, and rent are also underreported, but these income sources play a minor role among low-income parents. Earnings from self-employment are also underreported. The Census Bureau's periodic comparisons between aggregates derived from the March CPS and independent estimates from the National Income and Product Accounts, which rely on different sources, do not suggest major changes in underreporting. Underreporting of welfare receipt does, however, seem to have become significantly more common in the late 1990s (Meyer and Sullivan, 2004, Table 4).

The Census Bureau's poverty count treats the family rather than the household as the basic unit of analysis. A "family" includes only those household members who are

related by blood, marriage, or adoption. A family's income is the total pretax money income of all family members. Pretax money income includes cash benefits such as Aid to Families with Dependent Children but does not include the Earned Income Tax Credit (EITC), because this is a refundable tax credit. To determine whether a family is poor, the Census Bureau compares the family's pretax money income to a threshold that varies with the family's size and composition. If the family's income is below the relevant threshold, the Bureau counts all members of the family as poor. Household members who are not related to one another by blood, marriage, or adoption constitute separate economic units. They are counted as poor if their income falls below their poverty threshold.

The poverty line was controversial from the start. Ruggles (1990) and Citro and Michael (1995) provide good reviews of these arguments, and we will not discuss most of them here. The most important criticisms for our purposes are those that focus on the treatment of noncash benefits, price increases, and household composition.

During the late 1970s several observers argued that defining poverty exclusively in terms of money income underestimated the reduction in poverty since the start of the War on Poverty, because this measure ignored the rapid growth of means-tested noncash benefits since 1965. The Census Bureau responded to this criticism by adding questions about noncash benefits to the March CPS. These questions are available starting in 1979. In the early 1980s the Bureau developed several possible methods for valuing noncash benefits. This work confirmed that taking account of noncash benefits lowered the poverty rate. But in the absence of pre-1979 data the Bureau could not determine how much the poverty rate would have dropped between 1965 and 1979 if such benefits had been taken into account. The official poverty rate is still based entirely on pretax money income.

Inflation also accelerated during the 1970s, and as this happened a number of economists became convinced that the CPI-U overstated the rate at which prices were rising.[1] Criticisms of the CPI-U have led the Bureau of Labor Statistics (BLS) to make a number of changes in the way the CPI-U is calculated. But because the CPI-U is used for a variety of legal purposes, BLS never makes these changes retroactive. BLS does,

---

[1] Boskin et al. (1996) summarize these arguments. See Moulton (1996) for a quite different assessment.

however, publish an "experimental" price index, known as the CPI-U-RS, that tries to approximate the trends that would have been observed if current methods had also been used in the past. The Census Bureau now uses the CPI-U-RS to calculate trends in real household income. In principle the Bureau could use the same index to calculate trends in poverty. At the moment, however, the Office of Management and Budget (OMB) requires the Census Bureau to use the unadjusted CPI-U when reporting historical trends in poverty. This requirement has created a discrepancy between published trends in income and poverty.

The experimental version of the CPI-U, known as the CPI-U-RS, implies that the CPI-U overstated inflation. If that is true, the purchasing power of families at the poverty line has risen. This bias is likely to have been largest between 1969 and 1983, when inflation was high and BLS had not begun correcting biases in the CPI-U. Some economists believe that the CPI-U still suffers from significant upward bias (see especially Boskin et al, 1996), but not all experts agree (see especially Moulton, 1996). Still, if the changes that BLS has made in the CPI-U are improvements, as most experts believe, the CPI-U-RS is almost surely a better measure of price changes than the CPI-U.

The poverty line has also been criticized for assuming that relatives who live in the same household pool their income, while nonrelatives living in the same household neither pool their income nor reduce their needs by living together. This issue is of particular concern because more unmarried couples live together and share expenses. If unmarried mothers live with men whose income helps pay their household bills, ignoring these men when calculating the children's poverty status will be misleading (see, for example, Edin and Lein, 1997).

Ignoring noncash benefits, overestimating inflation, and ignoring cohabitation could mean that trends in child poverty do not match trends in children's living conditions. Others have voiced the same concern. Our work is similar in spirit to several recent papers by Meyer and Sullivan (2003, 2004), and our conclusions are broadly consistent with theirs, although they focus on single mothers rather than all low-income parents. This paper can also be seen as a logical extension of our own earlier work on trends in income and material hardship (Mayer and Jencks, 1993; Jencks and Mayer, 1996; Jencks, Mayer, and Swingle, 2004).

2. Methods

Income measurement. Most of our data come from surveys that measure living conditions at the household level. If a child lives with her mother and grandmother, for example, we know how many people living in the housing unit, how many rooms it has, whether it has telephone service, and whether anyone in the household owns a car or truck. We do not know whether the child has a room of her own or who gets to use the car. The same is largely true if the mother lives with her boyfriend. Because most living conditions are measured at the household level, we measure living conditions among low-income children by ranking children according to their household's total income.

Adjusting for household size. One difficult issue is whether we should rank households on the basis of total income, per capita income, or some compromise between these extremes, such as the ratio of household income to the poverty threshold for a household of the relevant size and composition. We investigated this issue by estimating the elasticity of many different living conditions with respect to both income and household size. Had the ratio of these two elasticities been roughly the same for different outcomes, we could have used it to construct an equivalence scale that equalized a wide range of living conditions for households of different sizes. In reality, however, the ratio varied dramatically from one outcome to the next. The odds that a child had seen a doctor in the past year were more sensitive to doubling household size than to doubling household income, for example, while the opposite was true for telephone service. As a result, no single equivalence scale comes close to equalizing all living conditions for households of different sizes. To do this we would need to weight different living conditions according to their importance in children's lives. Since we had no way of doing this, we conducted parallel analyses using both total household income and per capita household income to identify low-income children. Fortunately, the resulting tables told very similar stories, so we present only the results based on total household income.

Poor children versus low-income children. The most obvious way to determine whether the poverty line has provided families with a fixed standard of living would be to track the living conditions of families with incomes near the line. A second option would

be to track the living conditions of all families below the poverty line. If our only goal were to show that poor children's living conditions had changed, we would have adopted one of these approaches. But because the proportion of the population classified as poor is constantly changing, tables showing that living conditions among the poor have improved are not very informative for other purposes. Instead, we thought it more informative to show changes for a fixed segment of the population. Instead of showing changes in living conditions among children below the poverty line, therefore, we show changes among children in the bottom 20 percent of the income distribution for all children in a given survey and year. We refer to these children and their parents as members of "low income" families.

Table 1 shows that the mean household income of children below the 20th percentile of the CPS distribution for all children falls when the official poverty rate rises and rises when the official poverty rate falls. Thus if we find a discrepancy between trends in poverty and trends in living conditions, this discrepancy is not likely to be caused by the fact that we chose to track low-income children rather than poor children. As a further check, however, Appendix A presents data on living conditions for *all* children, regardless of income. Looking at all children sidesteps income classification and measurement issues, as well as the question of how we should adjust for household size. These tables show that the incidence of material hardship among all households with children moves in tandem with its incidence among low-income households children. This is not surprising, since these hardships are concentrated in the lower part of the income distribution.

Business cycles. Figure 1 shows both the official child poverty rate and the unemployment rate between 1959 and 2000. The unemployment rate clearly influences child poverty. Thus if we want to generalize about long-term trends in child poverty we need to compare similar points in successive business cycles. In principle, we should compare the years with the lowest unemployment rates, namely 1969, 1973, 1979, 1989, and 2000. In practice, not all our measures of material hardship were for 1969, and none were available for 2000 when we did the analyses reported in this paper. Our analyses therefore start in either 1969 or 1973 and end in 1999.

Measuring living conditions. Ideally, we would like to measure changes in living conditions by drawing a random sample of the goods and services that consumers value and tracking changes in the quantity and quality of each good or service for households at different income levels. Our data do not come close to that ideal. In order to assemble reasonably consistent trend measures for large samples of households we have to rely on surveys conducted by the federal government. These surveys focus mainly on food consumption, housing conditions, medical care, and transportation, because these are the domains in which the government has operational programs. These four domains account for a large fraction of total consumption, but they do not account for all of it.

The data available in these four domains are also limited by the fact that every question in a large sample survey is expensive. Simple questions with fairly clear-cut answers therefore get priority. We know how many motor vehicles people own, but not how well they run, how safe they are, or how far they are driven. We know whether housing units have central heat and indoor plumbing, but not how warm the heating system keeps residents or how often the toilet backs up. And we know how often children visited the doctor, not how good the doctor's advice was. Readers will have to decide for themselves whether our measures are sufficiently comprehensive to be convincing.

3. Changes in living conditions.

Housing. Our data on housing conditions come mainly from the American Housing Survey (AHS), which began in 1973 and is now conducted nationally in odd-numbered years. The AHS redraws its sample after each decennial Census, and the wording of certain questions sometimes changes. Both redrawing the sample and changing the questionnaire introduce discontinuities. We have dropped measures with severe discontinuities. We have also compared data from the AHS to data from the decennial Censuses for 1970 through 1990 and will note occasional discrepancies.

The American poor began moving from rural to urban areas in the late nineteenth century. This change continued during the 1970s, but it seems to have stopped after that. Urbanization was accompanied by a shift from single-family homes to apartment buildings and from home ownership to tenancy. Rapid inflation accentuated the decline

in home ownership by driving up mortgage interest rates. Monthly payments on most mortgages issued during the 1970s were fixed in nominal dollars, and the initial cost of home ownership usually exceeded the cost of renting. If inflation continued, the cost of ownership soon fell below the cost of renting the same dwelling, and ownership turned out to be a good investment.[2] But low-income parents were seldom able to afford the high initial payments that fixed-rate mortgages demanded, so their ownership rates fell.

The reduction in ownership among low-income parents during the 1970s probably made the parents worse off in the long run, since it reduced their chances of owning a mortgage-free home when they retired. This reductions in home ownership may eventually have negative effects on these parents' children, who may have to take more economic responsibility for their aging parents and may be less likely to inherit a share of their parents' home equity. But the only question we can address with our data is whether declining home ownership meant that low-income children grew up in worse housing. The answer to this question seems to be no.

Table 2 groups housing conditions under three broad headings: design problems, maintenance problems, and crowding. By "design problems" we mean the absence of built-in amenities that most Americans now take for granted, such as a sewer hookup or septic system, complete indoor plumbing (hot and cold water, a sink, a toilet, and either a shower or a tub), and an electric outlet in every room. These amenities are relatively cheap to install as a building is put up and more expensive to install later, so their availability is linked to buildings' age, as well as to the dates at which the local building codes began to require such amenities. Table 2 shows that a significant fraction of low-income children still lacked these amenities in 1973. By 1979 the fraction of children without these amenities had fallen by half.[3] This trend continued during the 1980s and 1990s. The change derived in large part from the departure of more affluent families for the suburbs, which created vacancies in urban apartment buildings that had these

---

[2] Because ownership was a good investment during the 1970s, ownership rates rose both for the population as a whole and for those with children (see Appendix Table A.1).

[3] The decennial census also asks about plumbing facilities. In 1970 18.0 percent of low-income children lived in a home that lacked complete plumbing. This figure had dropped to 4.8 percent by 1980 and 2.3 percent in 1990. These estimates suggest either a sharp decrease in incomplete plumbing between 1970 and 1973 or some difference between the 1970 Census and the 1973 AHS with respect to reporting practices. After 1979 the Census and AHS trends are roughly the same.

amenities. Landlords then rented these apartments to low-income families because no one else was interested.

Unlike built-in amenities, high maintenance standards are a recurrent cost, so they are only feasible when a tenant can afford them. If low-income parents' purchasing power is falling, landlords are likely to cut maintenance standards in order to keep rents low and buildings occupied. In addition, both folklore and economic theory suggest that homeowners should maintain their residences better than landlords do, so declines in home ownership should lead to a decline in maintenance. Since Table 2 shows that the child poverty rate rose by a third between 1969 and 1989 and that home-ownership among low-income parents declined by a third, we would expect maintenance standards to have declined as well.

Maintenance problems did increase between 1973 and 1979. The percentage of low-income parents reporting cracks or holes in the wall, ceiling, or floor edged up, and the percentage reporting broken plaster and peeling paint rose sharply.[4] Leaky roofs became less common, but that was probably because more families lived in apartment buildings, where only those on the top floors are normally affected by roof leaks. The surprise is that while maintenance standards fell during the 1970s, they rose in the 1980s and were higher in 1989 than they had been in 1973. Indeed, the AHS suggests that maintenance standards rose as much during the 1980s, when the official child poverty rate was rising and home ownership was falling, as they did during the 1990s, when child poverty was falling and home ownership was rising. We cannot explain why this was the case.

When we turn to crowding, Table 2 shows that low-income children's homes had fewer rooms in 1979 than in 1973. But low-income households shrank even more than the homes in which they lived. As a result, low-income children were less likely to live in what the Census Bureau calls crowded conditions (more than one person per room).

---

[4] Reports of rats or mice also rose slightly between 1973 and 1979 among low-income households with children. This question was changed in the 1980s so we have no longer-term trend.

Crowding hardly changed during the 1980s, but it fell again in the 1990s. Overall, crowding was cut in half between 1973 and 1999.[5]

The bottom two rows of Table 2 summarize trends in low-income children's housing problems. The average number of problems experienced by low-income children fell in every decade and was cut in half between 1973 and 1999. The percentage of low-income children in problem-free housing problems did not change much during the 1970s or 1980s, but it fell substantially in the 1990s. These trends recur when we look at housing conditions for all children rather than just low-income children (see Appendix Table A.1). They also recur when we focus on the bottom decile of the income distribution instead of the bottom quintile, and when we array children by per capita income rather than total income.

The two notable exceptions to the overall pattern of improvement are that low-income families lived in somewhat older buildings in 1999 than in 1973 and that they were more likely to be tenants. Living in an older building is not a problem unless it is linked to design or maintenance problems, which does not seem to have been the case after the 1970s. Declines in ownership would not pose a problem either if low-income tenants found other ways of forcing themselves to save. But home ownership has long been the principal way in which less affluent households accumulated capital, so the decline in ownership since 1973 may well foreshadow a decline in the economic well-being of the aging poor.

One limitation of Table 2 is that it provides no data on changes in homelessness. Very few children sleep on the streets, because child welfare agencies are quite aggressive about removing such children from their parents' custody. Homeless parents who cannot get into a family shelter therefore try to place their children with relatives. The number of children in family shelters almost certainly rose during the 1980s (Jencks, 1994), because the supply of family shelters rose. Whether these children were worse off in family shelters than they would have been if they had been living with relatives or in foster care is unclear.

---

[5] The decennial census also asks about household size and number of rooms. In 1970, 41.7 percent of low-income children lived in housing with more than one person per room. This dropped to 26.8 percent in 1980 and edged up to 27.0 percent in 1990.

Consumer goods. Table 3 shows changes in the proportion of low-income children living in households without telephone service, without air conditioners, and without motor vehicles. The top panel shows data from the AHS, while the bottom panel shows data from the decennial Census.

Telephone service was widely regarded as a necessity in late twentieth century America. The Census suggests that the fraction of low-income children living in houses without telephone service fell by a third between 1970 and 1980. The AHS does not provide data on telephone service until 1975 and shows little change between 1975 and 1979. Neither the Census nor the AHS shows much change during the 1980s. This is not surprising, because deregulation often led to substantial increases in the real cost of local service during the 1980s. The spread of service resumed during the 1990s, however, and by 1999 only 7 percent of low-income children lived in households without service.

The fraction of low-income children in households that did not own a car or truck hardly changed during the 1970s. This would be surprising if child poverty had been rising, since the surge in gasoline prices raised the real cost of operating a vehicle, and urbanization presumably put more people within walking distance of public transportation. The proportion of low-income children in households without a vehicle edged down in the 1980s, and the proportion in households with two or more vehicles jumped sharply. The increase in households with two or more vehicles could reflect an increase in the proportion of households with two or more working adults, but such households are seldom in the bottom income quintile. The reasons for this increase deserve more investigation.

Air conditioning also spread steadily during the last third of the twentieth century. In 1973 almost 70 percent of low-income children lived in housing without any air conditioning. By 1999 the figure was 31 percent. One reason for this change may be that the cost of window units rose far less than most other prices. But the lifetime cost of an air conditioner is mainly the cost of operating it, and real energy prices were higher in 1999 than in 1973. Whatever the explanation, the spread of air conditioning surely improved children's living conditions.

Doctor Visits. Most pediatricians believe that children should have a medical checkup at least once a year, especially when they are young. The proportion of young children who have not seen a doctor within the past twelve months is therefore a widely used measure of inadequate care. We estimate trends in this proportion using the National Health Interview Survey (NHIS). The NHIS questionnaire changed between 1980 and 1982 and changed again in 1997. We therefore focus on trends between 1970 and 1980 and between 1982 and 1996.

Table 4 shows that the percentage of low-income children without a doctor visit in the past twelve months declined sharply between 1970 and 1980. The same pattern recurs when we look at the total number of visits during the past year (data not shown). We suspect that this improvement was largely attributable to the combination of broader Medicaid coverage and the resulting increase in the number of doctors and clinics located in poor areas. The percentage of children who had not seen a doctor in the past twelve months also fell between 1982 and 1996, but the fall was much smaller than during the 1970s. These increases in doctor visits were accompanied by declines in child mortality rates, although there is no clear evidence for a causal link between the two changes. Among children under the age of one, mortality fell from 2.0 percent in 1970 to 1.3 percent in 1980 and 0.7 percent in 1996. Among children between the ages of five and fourteen, the cumulative death rate fell from 0.41 percent in 1970, 0.30 percent in 1980, 0.24 percent in 1990, and 0.18 percent in 2000 (US Census Bureau, 2001b:75).

Although children's chances of dying fell between 1970 and 2000, parents were more likely to report that their children had been sick enough to stay home from school or stay in bed (data not shown). We are not sure what such reports mean. Neither staying home from school nor staying in bed is a strong predictor of children's doctor visits, and the increase in doctor visits is far larger than would have predicted based on the increase in reported sickness (Mayer, 1991). Furthermore, increasing contact with doctors could have made more parents keep their children home from school or in bed.

Food Consumption. The Nationwide Food Consumption Survey (NFCS) asked homemakers what they served their families in 1955, 1965, 1977, and 1987, but the 1987 response rate was less than 40 percent, so we have not analyzed the 1987 data. Our

analyses of the earlier surveys showed that the diets of the poor and the affluent became more alike between 1965 and 1977 (Jencks and Mayer, 1987, Table 3.2).

Popkin et al. (1996) combined data from the 1965 and 1977 NFCS with data that the Continuing Survey of Food Intake by Individuals collected in 1989-91. They then compared households' reports of what they ate on the day before the survey to eight guidelines issued by a National Academy of Sciences panel in 1989. Applying these guidelines to food intake for a single day is obviously problematic, since people are more likely to balance their diet over the course of a week or a month than over the course of any one day. But this problem need not distort trend estimates. Popkin and his colleagues found that food intake in 1989-91 conformed more closely to the NAS guidelines than food intake in earlier years. That is hardly surprising. Experts frequently change their opinion about what people should eat. If people pay any attention at all to these changes, expert opinion should predict current eating habits better than past eating habits.

Popkin and his colleagues divided respondents into three socioeconomic groups. The "low SES" group all reported incomes below 185 percent of the poverty line and had less than twelve years of school. The "high SES" group all had incomes more than 350 percent of the poverty line and some post-secondary education. Everyone else was assigned to a "medium SES" group. Using the NAS standards announced in 1989, low-SES families ate considerably better than high-SES families in 1965. All groups improved their habits between 1965 and 1989-91, but the high-SES families improved more. By 1989-91 high- and low-SES families ate about equally well (or equally badly, depending on your temperament). Popkin et al. did not present separate estimates for families with children, but if low-income families with children changed their habits in the same ways as low-income families generally, low-income children ate better in 1989-91 than in 1965.

We also tried to compare grocery spending to the food stamp budget in different years, but these data suffer from a number of problems. Few households keep detailed accounts, and survey respondents often round their estimates to numbers like $50 or $75

a week.[6] Even when respondents know how much they spend at the grocery store, they seldom know how much of the money goes for food and how much goes for all the other things that grocery stores now sell. Nor do respondents usually know how much other adults in their household spend on food, especially if the food is consumed away from home. As a result, households systematically underestimate their food expenditures, and the problem appears to have gotten worse over time (Jencks, Mayer, and Swingle, 2004).

Low-income households' estimates of their grocery spending are also problematic because surveys seldom give clear instructions about how respondents should treat food stamps. This problem was especially serious during the 1970s, when low-income families had to buy their food stamps but paid far less than the stamps were worth at the grocery store. Surveys seldom told respondents whether they should report only the money they spent on food stamps or the full value of the food they bought with the stamps. Data from this period include a large number of anomalous responses.

The Panel Study of Income Dynamics (PSID) has asked families how much they spent on food consumed both at home and away from home in most years since 1968. From 1969 to 1971 the PSID asked respondents whether their estimate included any money spent on alcohol or cigarettes and subtracted the amount spent on these items. This adjustment was dropped in later years. The PSID questions changed repeatedly between 1971 to 1981, so we have not tried to estimate trends during this period.[7] Our only consistent time series therefore run from 1969 to 1971 and from 1981 to 1991.

Our measure of food expenditures in the PSID is the sum of a family's reported expenditures on food consumed at home and away from home. To adjust for variation in family size by compare this total to the US Department of Agriculture's "thrifty" food budget for a family of the relevant size and composition. This budget is the basis for food stamp allotments. USDA uses a fixed-weight price index to keep the purchasing power of the thrifty food budget constant. Any fixed-weight adjustment will overstate the increase in food outlays required to maintain either a constant level of palatability or a

---

[6] With luck, rounding should not bias estimates of groups' mean spending. But rounding means that spending at any given percentile of the distribution, including the median, can remain unchanged for long periods even though the mean is shifting.

[7] A memo describing the many changes in the PSID questions since 1968 is available from the authors on request.

constant level of nutritional adequacy, because it will take no account of the fact that consumers substitute foods whose price has risen relatively slowly for foods whose price has risen more rapidly. To minimize this source of upward bias we use the chain-price index for food taken from the National Income and Product Accounts. The chain-price index typically rises about 0.3 percent less per year than the fixed-weight index.

Table 5 suggests that low-income children's families grocery spending rose about ten percent faster than their needs between 1969 and 1971. Much of this improvement was probably due to the growth of food stamps. There appears to be a sharp decline in low-income parents' food spending between 1971 and 1981, and a somewhat smaller decline among middle-income parents, but because of the questionnaire changed this decline should not be taken at face value. Table 5 shows little change between 1981 and 1991 at any income level.

We have not estimated trends in food expenditure since 1991, but Meyer and Sullivan (2004) have done this for single mothers. In the PSID they find that spending fell slightly between 1993-95 and 1997-2000 among single mothers whose reported food expenditures were in the bottom decile for a given year. Using the Consumer Expenditure Survey (CES), Meyer and Sullivan (2004) find such declines for all single mothers with food expenditures below the median. In the CES, however, declines in single mothers' food expenditures were accompanied by increases in total expenditures. Most of the increase in total expenditures was for transportation and housing. Increased transportation spending presumably reflected the fact that more single mothers were working, but single mothers who bought cars to get to work were also able to use them for other purposes, like shopping. Meyer and Sullivan find that in the CES families at *all* levels reduced the fraction of their total expenditures allocated to food. This could reflect changes in relative prices or underreporting problems. This issue needs further work.

Summary. Figures 2 and 3 summarize our findings about living conditions. The dark solid lines show the official trend in child poverty. The remaining lines summarize trends in various forms of material deprivation. To facilitate comparisons, all measures are divided by their level in 1973 and multiplied by 100, so that the vertical axis shows the percentage change in each measure since 1973. There is no reason to expect a ten percent increase in the poverty rate to produce a ten percent increase in any particular

measure of material deprivation, but an increase in child poverty should be accompanied by *some* increase in material deprivation. Yet with the exception of food expenditures, all our measures of material deprivation decline between 1973 and 1999.

4. Can We Improve Official Poverty Statistics?

Because changes in the official child poverty rate do not match changes in low-income children's standard of living, we investigated whether plausible corrections in the official poverty measure would make trends in poverty more consistent with trends in material hardship. The official measure could yield biased trend estimates for several reasons:

1) An interagency committee changed the official poverty thresholds slightly in 1981.

2) Children's households included more non-relatives in 1999 than in 1969.

3) BLS believes that the CPI-U overstated inflation in the past, and it may still do so today.

4) Noncash benefits grew rapidly during the 1970s.

5) The quality of the CPS income data may have changed.

6) Although the poverty threshold is adjusted to take account of declining household size, the adjustment may be wrong.

We take up these issues in order.

Threshold changes. A federal interagency committee revised the official poverty thresholds in 1981, introducing higher thresholds for very large families, eliminating separate thresholds for families with male and female heads, and raising the threshold for farm families from 85 to 100 percent of the nonfarm level. These changes were not retroactive, so the official poverty series is internally inconsistent. Row 1.1 of Table 6 shows child poverty rates taken directly from Census publications.[8] Row 1.2 recalculates these rates by converting family income in all years to 1992 dollars and comparing this amount to the official poverty thresholds for 1992.[9] Once we make the thresholds

---

[8] For reasons we cannot explain, we cannot replicate the official estimate for 1969 using the CPS data tapes. Our estimate is 0.2 points higher than the published estimate.

[9] The official thresholds vary slightly according to the fraction of family members who are over the age of eighteen. Among families of four, for example, the 1992 threshold was $14,471 if no family member was

consistent in this way, the estimated increase in child poverty between 1969 and 1999 is 1.7 rather than 2.9 points.

Changes in household composition. The Census Bureau's poverty counts treat unrelated household members as if they lived in different households. If a single mother lives with her boyfriend, for example, her children's poverty status depends entirely on her income, not his. The proportion of poor children living with an unmarried female head of household was 47 percent in 1969 and 61 percent in 1999. A growing minority of these women lived with unrelated adults, so taking account of nonrelatives' income and expenses could make a significant difference to the child poverty rate.

Even when children live with a nonrelative who is not their mother's or father's sexual partner, ignoring this person's contribution to the household economy seems unrealistic. Consider two single mothers who share living quarters and each have one child. If the two mothers are not related, each mother-child family had a poverty threshold of $12,400 in 2002, so the household needed a total income of at least $24,800 to ensure that none of its members were counted as poor. If the two mothers were sisters, they were counted as members of a four-person family with a poverty threshold of $18,244 -- a 26 percent reduction.

The idea that household members share more expenses when they are related to one another made sense in the 1940s, when there were still a lot of roomers and domestic servants living in other people's households, and when cohabiting couples were likely to tell the Census that they were married even if they were not. Today, however, roomers and live-in domestic servants are rare, and domestic partners are less likely to describe themselves as married. These changes have eroded the rationale for drawing a sharp line between relatives and nonrelatives living in the same household. Today the simplest and most consistent way to estimate trends in poverty is to ignore kinship and treat the household as the basic unit of economic analysis.[10] The Census Bureau has moved in this

---

under eighteen, $14,708 if one member was under eighteen, $14,228 if two members were, and $14,277 if three members were. Seeing no plausible rationale for these variations, we used the weighted average for all families of a given size, taken from US Bureau of the Census (1993a, Table A). This change has almost no effect on our results.

[10] Since most Americans prefer to live in nuclear families, it is tempting to argue that the Census Bureau should treat the nuclear family as the basic economic unit when measuring poverty. This would mean considering only the income of the child's resident parents or step-parents when calculating child poverty.

direction when it reports income trends, but it has not made this change when it calculates the poverty rate. Line 2.2 of Table 6 shows how this change alters the apparent trend in child poverty. These estimates compare a household's total income to a poverty threshold based on household size rather than family size.[11] This change cuts the estimated increase in child poverty between 1969 and 1999 from 1.7 to 0.3 percentage points.

Errors in the Consumer Price Index. The Office of Management and Budget (OMB) requires the Census Bureau to adjust the poverty thresholds for inflation using the CPI-U. BLS eliminated one important source of bias in 1983, when it stopped using changes in the purchase price of residential homes to estimate changes in the cost of living in such a home. It has made a number of additional changes since then, although none was as important as the 1983 change. BLS never makes changes in the CPI-U retroactive, but it does publish another price index, the CPI-U-RS, which estimates the likely effect of making these corrections retroactive to 1977. It also published another index, the CPI-U-X1, which estimated the effect of changing the treatment of housing costs back to 1967. Combining the post-1977 CPI-U-RS with the CPI-U-X1 yields the closest thing we have to a consistent measure of price changes between 1969 and 1999. We designate this series as the CPI-U-RS+X1. The Census Bureau uses this measure to adjust its historical estimates of real income but uses the uncorrected CPI-U to calculate trends in poverty. As a result, the official income and poverty series do not move in tandem.[12]

To estimate the effect of using the CPI-U-RS+X1 we use the official poverty thresholds for 1992 as a benchmark and convert income in all years to 1992 dollars using the CPI-U-RS+X1. Line 3.2 of Table 6 shows that shifting from the CPI-U to the CPI-U-

---

But this approach would pose problems for children who do not live wither either parent and for three-generation families in which a young mother lives with her mother.

[11] Children under fifteen years who do not live with relatives are not included in the official poverty count. Children between the ages of fifteen and eighteen who do not live with relatives are treated as "unrelated individuals" and are counted as poor if their personal income falls below the threshold for a single individual living alone. Our household counts include all children under eighteen living in households but do not include those in group quarters or in institutions.

[12] Figuring out what the Census Bureau does is complicated by the fact that its income publications also use the term "CPI-U" to describe the time series used to adjust income, but then indicate that the CPI-U-RS is used for years since 1977. The published values for 1967-77 appear to be based on the CPI-U-X1, not the CPI-U, but this fact is not mentioned. The Bureau's poverty publications also say they use the CPI-U, but do not mention that in this case the CPI-U incorporates neither the CPI-U-RS nor the CPI-U-X1.

RS+X1 appreciably alters the trend in child poverty. In the 1970s, the CPI-U implies that child poverty increased slightly, while the CPI-U-RS+X1 implies that child poverty fell slightly. In the 1980s, child poverty increased appreciably no matter which price index we use, but it rose more using the CPI-U than the CPI-U-RS+X1. In the 1990s, child poverty fell substantially no matter which price index we use, but it fell a little more using the CPI-U-RS+X1 than using the CPI-U. Overall, whereas child poverty rises by 0.3 points between 1969 and 1999 using the CPI-U, it falls by 2.6 points using the CPI-U-RS+X1.

Taxes and Noncash Benefits. Table 7 shows our best estimates of the percentage of poor children receiving noncash benefits in various years. The biggest increases occur between 1969 and 1979. The value assigned to these noncash benefits is controversial, but in our view the Census Bureau's procedures are reasonable and we have followed them here. The Bureau values Food Stamps at their face value. It values housing subsidies by comparing the market value of subsidized units in 1985 to the rent that subsidized tenants actually paid in 1985, treating the difference as income, and adjusting this amount for inflation using BLS data on changes in shelter costs. To estimate the value of Medicare and Medicaid the Bureau uses data on how much these programs reduce poor recipients' out-of pocket medical spending. This approach is meant to approximate the amount of income that Medicaid and Medicare free up for other uses.[13] It does not try to assign a value to the extra medical resources devoted to these individuals' care.

Line 4.2 of Table 6 estimates the impact of Medicaid, Food Stamps, and federal housing subsidies on child poverty. Since the CPS did not ask about noncash benefits in 1969, we have estimated their impact in that year by combining our estimates of 1969 recipiency rates, taken from in Table 7, with estimates of each program's the anti-poverty effectiveness in 1979.[14] This calculation suggests that noncash benefits reduced child poverty by 3.2 percentage points in 1979, compared to only 1.3 points in 1969.

---

[13] In the early 1980s the Census Bureau estimated the market value of an insurance policy that provided coverage equivalent to state Medicaid programs. In some states, however, Medicaid was worth so much to an elderly individual that he or she could end up with an imputed income above the poverty line even if he or she had no cash income, no food stamps, and housing subsidy, so this method was dropped.

[14] Participation in these programs was probably somewhat more valuable to individual recipients in 1979 than 1969. The cost of Medicaid services was equal to 9.9 percent of total household expenditures in 1979,

After 1979 line 4.2 estimates the impact of Medicaid, Food Stamps, and housing subsidies using the recipiency rates and valuations from the public-use CPS files. Taking these programs into account does not alter the trend in child poverty during the 1980s. Because fewer families got Food Stamps in 1999 than in 1989, child poverty falls less during the 1990s when we include noncash benefits than when we look only at money income. But this comparison is rather misleading, since it ignored the growth of EITC benefits during the 1990s. Line 4.3 of Table 6 takes account of federal and state income taxes, payroll taxes, capital gains, employer payments for health insurance, and the Earned Income Tax Credit (EITC) as well as a wider range of noncash benefits, by using what the Census Bureau calls "Definition 14." Taking account of growth in the EITC suggests a larger decline in child poverty during the 1990s than any of our earlier estimates did.

We have not tried to project the results of using Definition 14 back to 1969.[15] Instead, Line 4.4 combines the estimated change in poverty between 1979 and 1999 using Definition 14 with the estimated change between 1969 and 1979 when we adjust only for the growth of food stamps, housing subsidies, and Medicaid. All these estimates also use the CPI-U-RS+X1 rather than the CPI-U to adjust for inflation, treat households rather than families as the unit of economic analysis, and use consistent thresholds throughout the years from 1969 to 1999. The estimates in row 4.4 thus constitute our best estimate of what "really" happened to child poverty between 1969 and 1999. Comparing row 4.4 to row 1.1 of Table 6, our estimates suggest that:

- During the 1970s child poverty fell by 2.4 points rather than rising by 2.3 points.

- During the 1980s child poverty rose by 2.1 points instead of 3.3 points.

---

compared to 7.4 percent in 1969. Food Stamps recipients paid part of the stamps' cost in 1969 but not 1979. Tenants in federally subsidized housing were more likely to be on welfare in 1979 than in 1969, so they paid less rent, increasing the value of the subsidy. But as Panel 6 of Table 1 shows, poor households' cash incomes were also further below the poverty line in 1979 than in 1969. As a first approximation we therefore assumed that receiving these three benefits was as likely to move a household out of poverty in 1969 as in 1979. We first estimated the fraction of poor children's households removed from poverty by Medicaid in 1979, and adjusted our 1969 estimate downward to reflect the smaller proportion of poor children in households with Medicaid. We repeated this process for food stamps and then for housing subsidies.

[15] Iceland et al. (2000) present more detailed estimates based on the recommendations of Citro and Michael (1995) showing the effects of noncash benefits and other related adjustments.

- During the 1990s child poverty fell by 4.8 points instead of 2.7 points.
- Overall, therefore, child poverty fell by 5.1 points between 1969 and 1999, instead of rising by 2.7 points.

These are obviously major changes, and they makes the trend in child poverty somewhat more consistent with trends in material hardship. Figures 4 and 5 illustrate this point by comparing the percentage changes in our revised estimate of child poverty to percentage changes in the same measures of material hardship shown in Figures 2 and 3.

Varying the poverty threshold. In 1989 the Gallup survey asked a sample of American adults the following question:

> People who have income below a certain level can be considered poor. That level is called the poverty line. What amount of weekly income would you use as a poverty line for a family of four (husband, wife, and two children) in this community?

The mean response to this question was 24 percent higher than the 1989 poverty threshold for a married couple with two children. When the General Social Survey asked the same question in 1993, the mean response was 21 percent higher than the 1993 threshold (Citro and Michael, 1995). Thus if our goal were to construct a measure that matched public thinking about who is poor, we might want thresholds 20 to 25 percent higher than the official one. For such a series to be useful, however, we would want a time series that applied these thresholds in the past as well as the present. Since raising the "official" poverty line would pose obvious political problems, it might be better to report both the percentage of people with incomes below the existing poverty line and the percentage with incomes below 125 percent of the poverty line, along with a brief rationale for each measure.

Rows 5.1 and 5.2 of Table 6 both use the household as the unit of observation and the CPI-U-RS+X1 to adjust for inflation. They then show the proportions of children with money income below 100 and 125 percent of the poverty line. Raising the threshold obviously raises the child poverty rate. It also makes the rate fall more over time. The ratio of the two rates shows no consistent trend.

Critics have also faulted the poverty line for ignoring income changes among families below the line. If families in the bottom income decile lose ground while families in the second decile gain ground, the child poverty rate will fall even though severe poverty has increased. At least one study suggests that this happened in the late 1990s. One way to deal with this problem is to report the percentage of the population below 75 or 50 percent of the poverty line, as the Census Bureau sometimes has. Line 5.3 of Table 6 shows that the fraction of children with money incomes below 50 percent of the poverty line did not decline at all between 1969 and 1999. Taking account of noncash benefits and the EITC would probably suggest some decline. Nonetheless, it may be true that extreme poverty has fallen less than overall poverty. Unfortunately, this hypothesis is hard to test, because the income data collected from these families appears to be of very low quality. Many of these families appear to have income from sources that they do not report (Meyer and Sullivan, 2003; Edin and Lein, 1997), and many report expenditures far higher than their income. If extreme poverty among children were in fact rising, we would expect material hardship to increase as well. Meyer and Sullivan's (2004) data on food expenditures provides some evidence of this. Our other measures of living conditions do not.

Changes in Data Quality. Changes in data quality threaten the validity of every time series. One way to detect such threats is to compare data from different surveys that use different methods and questions. We limit ourselves to one such comparison, namely that between the CPS and the decennial Census. Both surveys collect data on households' current composition and on household members' income during the previous calendar year, but they also differ in several respects. First, the CPS asks more detailed income questions than the Census. Second, the CPS conducts more face-to-face interviews, whereas the Census relies largely on mailback questionnaires. Third, CPS interviewers prefer to work during the day, so they tend to interview more wives than husbands. At least in theory, Census respondents have time to consult other household members about their income, although we do not know how often this actually happens. Fourth, each decennial Census is based on a new inventory of housing units. The CPS, in contrast, relies largely on the last previous Census for its sampling frame, which grows

progressively more outdated toward the end of each decade. The 1990 CPS, for example, relied mainly on the 1980 Census for its sampling frame.

Lines 6.1 and 6.2 of Table 6 compare the child poverty rates for 1969, 1979, and 1989 in the CPS and the Census, using households as the unit of analysis and the CPI-U-X1 to adjust for inflation. Whereas child poverty rises by 1.4 points in the CPS, it falls by 0.2 points in the Census. (We have not yet added the 1999 income data collected in the 2000 Census.) We have no good explanation for this difference. The Census Bureau has traditionally believed that CPS respondents provide more complete income data than Census respondents. Consistent with this belief, the bottom quintile of households with children reported more 1969 income to the 1970 CPS than to the 1970 Census. But the gap was smaller in 1979 than in 1969, and it had almost vanished by 1989.[16] Household size also varies more in the CPS than in the Census. We do not know to what extent these discrepancies reflect differences in survey coverage and to what extent they reflect differences in what the same households tell different surveys. Nor do we know whether the Census or CPS estimates of child poverty are more accurate.

Adjustments for household size. Poor children's households averaged 4.8 members in 1989, compared to 6.3 in 1969. This 24 percent decline in household size led to an 18 percent decline in the mean poverty threshold for poor children. The elasticity of the poverty line with respect to declines in household size was thus about 0.72.[17] Conclusions about changes in child poverty depend partly on whether this adjustment is too large, too small, or about right.

Adjustments of this kind are based on "equivalence scales" that try to estimate the amount of income needed to equalize some measure of well-being in households of different sizes.[18] If one thinks that poverty measures should move in tandem with measures of material hardship, the poverty thresholds should presumably use an equivalence scale that equalizes material hardship in households of different sizes. But as we have already indicated, different hardship measures imply different equivalence

---

[16] While the 5th percentile of the 1989 distribution was 11 percent lower in the Census than the CPS, the 20th percentile was 4 percent higher in the Census than in the CPS.

[17] The equivalence scale built into the poverty thresholds comes from Orshansky (1965). The original logic of Orshansky's equivalence scale was that it should equalizing food consumption, but Orshansky then raised the thresholds for families of one and two on the ground that they had other fixed costs.

[18] Citro and Michael (1995: 159-182) review of the extensive literature on equivalence scales.

scales. No equivalence scale can simultaneously equalize all our measures of living conditions across families of different sizes.

Mayer and Jencks (1989) addressed this problem by estimating the relative impact of different material hardships on respondents' satisfaction with their "standard of living." They used these weights to construct an index of material hardship for a sample of families from the Chicago metropolitan area surveyed during 1983-85. When they regressed this index of material hardship on both the logarithm of family income and the logarithm of family size, their results implied that the elasticity of the equivalence scale with respect to family size should be about 0.88. That is not very different from the elasticity implicit in the current poverty thresholds or in the food stamp allotments.[19]

If one thinks that the poverty line should equalize people's subjective satisfaction with their lot, the size elasticity of the poverty thresholds should probably be less than 0.5 (see e.g. Danziger et al. 1984 and DeVos and Garner, 1991). The discrepancy between a scale that equalizes subjective satisfaction and a scale that equalizes material well-being probably reflects the fact that having a child almost always lowers parents' material standard of living but often raises their subjective well-being.

5. Conclusions

Almost all our measures suggest that low-income children's living conditions improved fairly steadily between 1969 and 1999. The data on food expenditures are an exception, but their accuracy is suspect. The apparent improvement in living conditions might be reversed if we had data on the quality of the services that low-income children receive. But the services that matter most to low-income children are probably medical care, education, and public safety, and low-income children receive most of these services at public expense. The official poverty line was never meant to measure the quality of the public services available to children, and there is no reason to expect the two series to move in tandem.

---

[19] Among low-income families, however, the logarithm of household size had a larger coefficient than the logarithm of household income in equations predicting the hardship index. We suspect that this reflects the fact that low reported incomes have an unusually high ratio of error variance to true variance. Kerr and Peterkin (1975) present an equivalence scale that tries to equalize nutritional adequacy in families of different sizes. This scale is the basis for the food stamp formula.

Overall, we think our data support three conclusions. First, official child poverty statistics do not currently provide reliable information about trends in material hardship among American children. Second, the match between child poverty statistics and direct measures of material well-being could be improved by making some of the changes in Table 6. Nonetheless, the match is never likely to be perfect. Our best poverty estimates suggest, for example, that the level of child poverty was roughly the same at the end of the 1980s as at the end of the 1960s. Yet our measures of living conditions almost all improved during this period. More tinkering with the poverty measure would certainly be possible, but whether it would narrow the difference between trends in poverty and trends in living conditions is an open question.

Our third major conclusion is therefore that if we want to know what is happening to low-income households' living conditions, we need to measure them directly. The American Housing Survey was a first step in this direction. The US Department of Agriculture's Food Security Survey, which has been conducted annually since 1995, was another valuable step in this direction. But if we want a complete picture of how poor people's lives are changing, far more needs to be done.

REFERENCES

Boskin, Michael, Ellen Dulberger, Robert Gordon, Zvi Griliches, and Dale Jorgenson. 1996. *Final Report of the Advisory Commission to Study the Consumer Price Index*. Washington, Government Printing Office.

Citro, Constance and Robert Michael, eds. 1995. *Measuring Poverty: A New Approach*. Washington: National Academy Press.

Committee on Ways and Means. 1994. *Green Book*. Washington, D.C.: US Government Printing Office.

Council of Economic Advisers. 2001. *Economic Report of the President, 2001*. Washington, D.C.: US Government Printing Office.

Danziger, Sheldon, Jacques van der Gaag, Michael Taussig, and Eugene Smolensky. 1984. "The Direct Measurement of Welfare Levels: How Much Does it Cost to Make Ends Meet." Review of Economics and Statistics. 66:500-505.

De Vos, Klaas and Thesia Garner. 1991. "An Evaluation of Subjective Poverty Definitions: Comparing Results from the U.S. and the Netherlands." *Review of Income and Wealth* (September) 37(3):267-85.

Edin, Kathryn and Laura Lein. 1997. *Making Ends Meet: How Single Mothers Survive Welfare and Low-Wage Work.* New York: Russell Sage Foundation.

Iceland, John, Kathleen Short, Thesia Garner, and David Johnson. 2000. "Are Children Worse Off? Evaluating Well-Being Using a New (and Improved) Measure of Poverty." *Journal of Human Resources* 26(2)398-412.

Jencks, Christopher. 1994. *The Homeless*. Cambridge: Harvard University Press.

Jencks, Christopher, and Susan E. Mayer. 1987 "Poverty and Material Hardship: How We Made Progress while Convincing Ourselves that We Were Losing Ground." Evanston: Northwestern University, Center for Urban Affairs and Poverty Research.

Jencks, Christopher and Susan E. Mayer. 1996. "Do Official Poverty Rates Provide Useful Information and Trends in Children's Economic Welfare?" Center for Urban Affairs and Policy Research Working Paper 96-1, Northwestern University, Evanston, IL.

Jencks, Christopher, Susan E. Mayer, and Joseph Swingle. 2004. "Who Has Benefited from Economic Growth in United States since 1969? The Case of Children." Pp 48-80 in Edward N. Wolff, ed. *What Has Happened to the Quality of Life in the Advanced Industrial Nations?"* Cheltenham, UK: Edward Elgar.

Kerr, Richard and Betty Peterkin. 1975. "The Effect of Household Size on the Cost of Diets That are Nutritionally Equivalent." Washington: US Department of Agriculture, Consumer and Food Economics Institute, CFE (adm) 325.

London, Rebecca. 1998. "Trends in Single Mothers' Living Arrangements from 1970 to 1995." *Demography* (February) 35(1):125-31.

Mayer, Susan E. 1991. "Are There Economic Barriers to Seeing the Doctor?" Chicago: University of Chicago, Harris School of Public Policy Studies.

Mayer, Susan E. and Christopher Jencks. 1989. "Poverty and the Distribution of Material Hardship." *Journal of Human Resources*, 24: 88-114.

Mayer, Susan E. and Christopher Jencks. 1993. "Recent Trends in Economic Inequality in the United States: Income versus Expenditures versus Material Well-Being," in Edward N. Wolff, ed. *Poverty and Prosperity in the USA in the Late Twentieth Century*, pp121-203. New York: St. Martin's Press.

Meyer, Bruce and James Sullivan. 2003. "Measuring the Well-Being of the Poor Using Income and Consumption." Cambridge: National Bureau of Economic Research, Working Paper 9760.

Meyer, Bruce and James Sullivan. 2004. "Trends in the Consumption and Income of Poor Families." Northwestern University, Department of Economics, unpublished.

Moulton, Brent R. 1996. "Bias in the Consumer Price Index: What Is the Evidence?" *Journal of Economic Perspectives* (Autumn 1996) 10(4) 159-77.

Ohls, James and Harold Beebout. 1993. *The Food Stamp Program: Design Tradeoffs, Policy, and Impacts.* Washington: Urban Institute Press.

Orshansky, Mollie. 1965. "Counting the Poor: Another Look at the Poverty Profile." *Social Security Bulletin*. (January) 28: 3-29.

Popkin, Barry, Anna Maria Siega-Riz, and Pamela Haines. 1996. "A Comparison of Dietary Trends among Racial and Socioeconomic Groups in the United States." *New England Journal of Medicine* (September 5) 335(10):716-20.

Rainwater, Lee. 1974. *What Money Buys: Inequality and the Social Meaning of Income*. New York: Basic Books.

Ruggles, Patricia. 1990. *Drawing the Line: Alternative Poverty Measures and Their Implications for Public Policy*. Washington: Urban Institute Press.

US Bureau of the Census. 1990. "Marital Status and Living Arrangements: March 1989." Current Population Reports Series P20-145. Washington, D.C.: US Government Printing Office.

US Bureau of the Census. 2000. "Poverty in the United States: 1999." *Current Population Reports*, P60-210. Washington, D.C.: Government Printing Office.

US Bureau of the Census. 2001a. "Poverty in the United States: 2000." *Current Population Reports*, P60-214. Washington, D.C.: Government Printing Office.

US Bureau of the Census. 2001b. *Statistical Abstract of the United States: 2002.* Washington, D.C.: US Government Printing Office.

Figure 1: Child Poverty Rate and Unemployment Rate: 1959-2000
(Dashed vertical lines show business cycle peaks.)
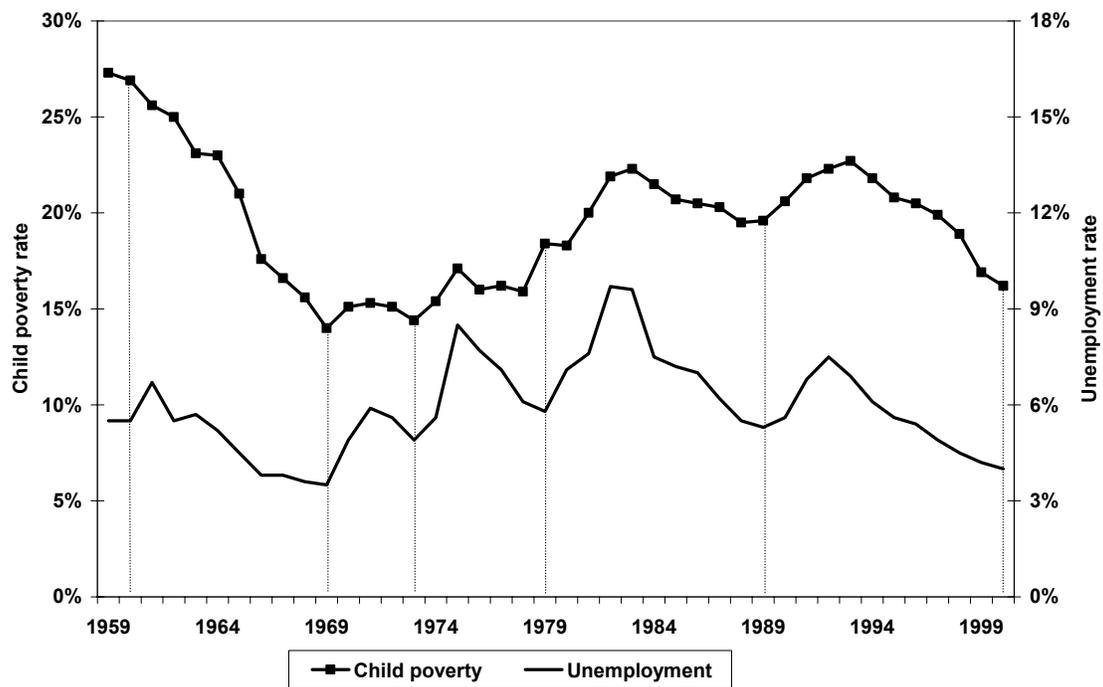
Sources: US Bureau of the Census (2001a), Table A2, and Council of Economic Advisers (2001).

Figure 2. Percent Change in Child Poverty and in Housing Problems among Low-Income Children: 1973 to 1999
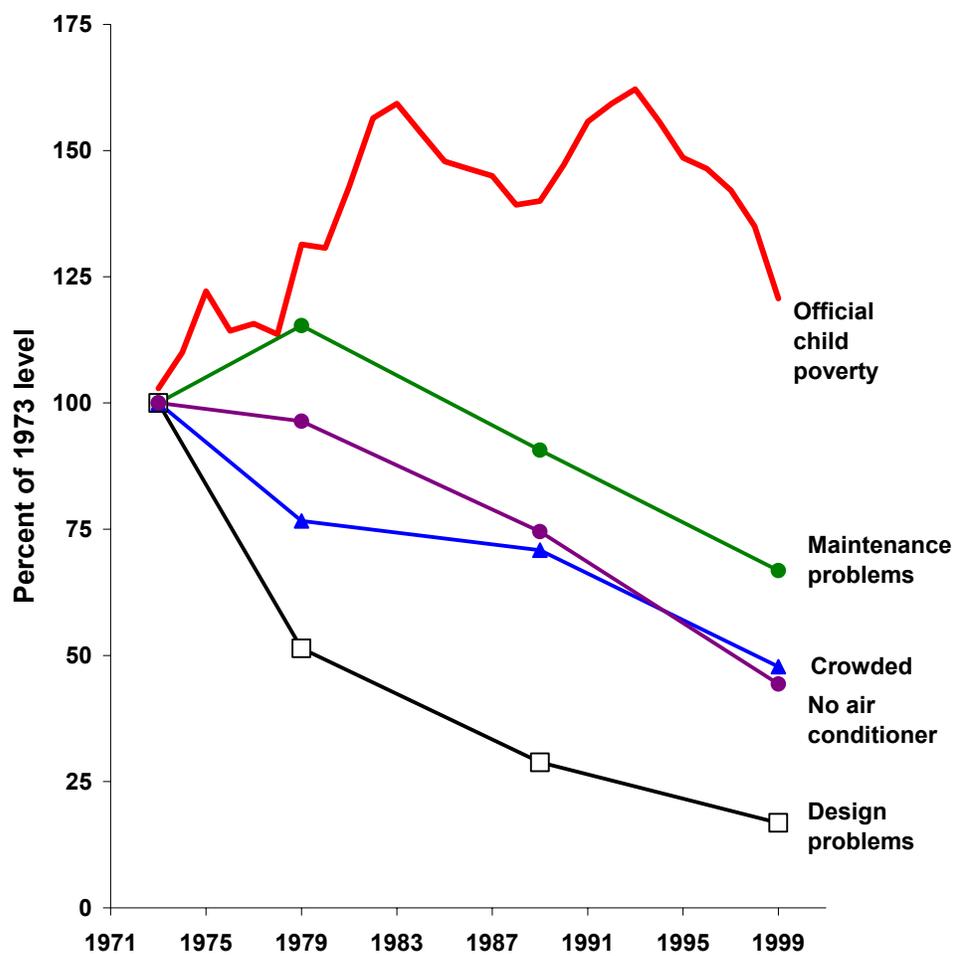
**Figure 3. Percent Change in Official Child Poverty Compared to
Fraction of Children with No Phone, No Vehicle, No Doctor Visits, and
Inadequate Food Spending**
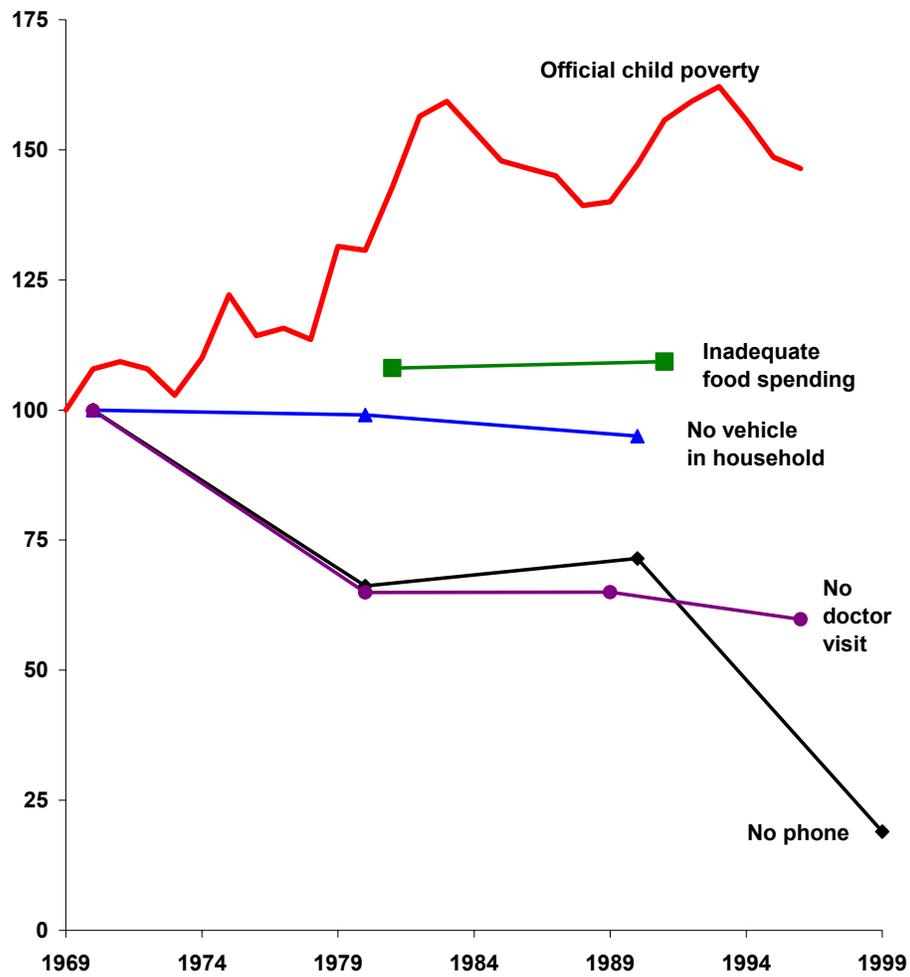
Figure 4. Trends in Low-Income Children's Housing Conditions and Revised Measure of Child Poverty: 1973 to 1999
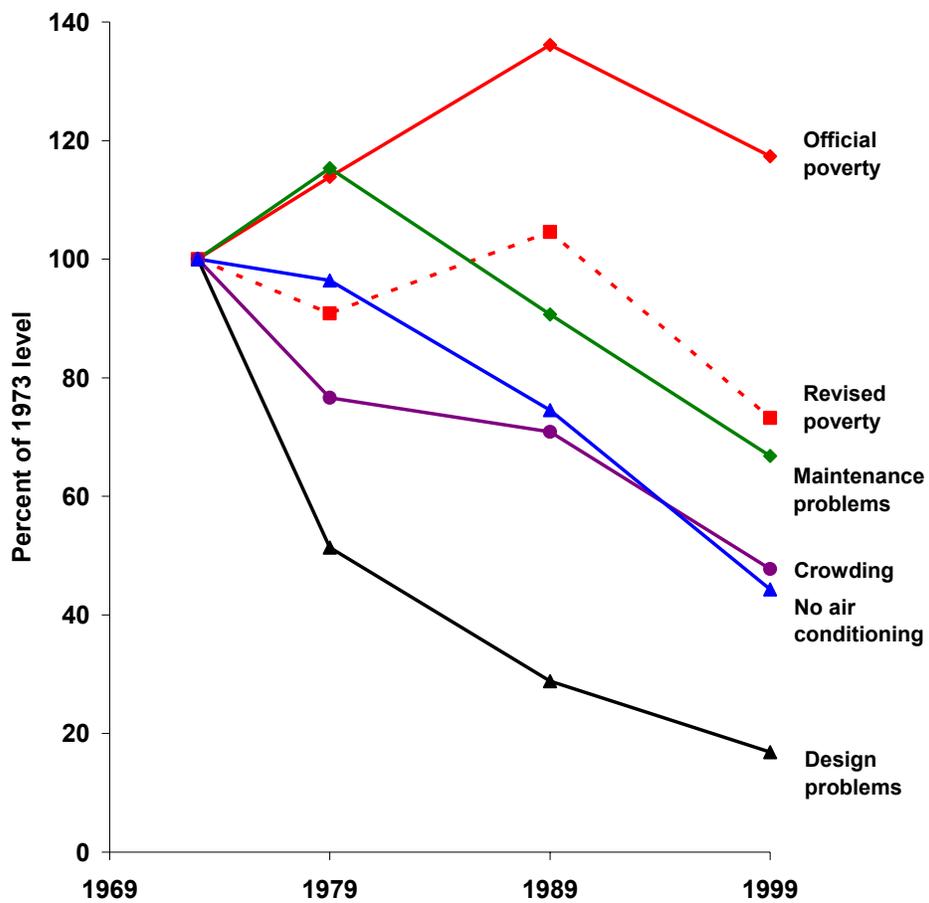
Figure 5. Trends in Low-Income Children's Food Spending, Doctor Visits, Phones, and Vehicles vs Revised Measure of Child Poverty: 1969 to 1999
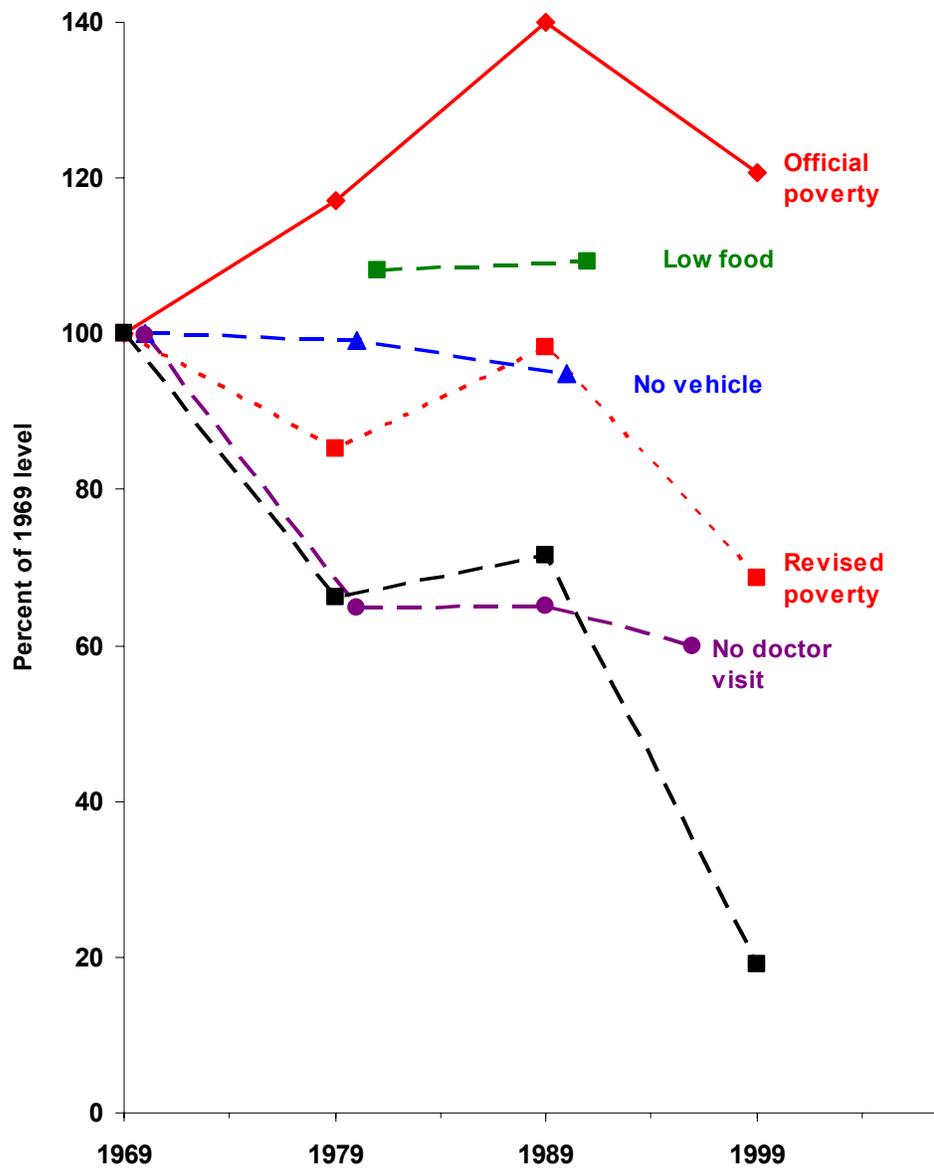
**Table 1: Official Child Poverty Rate versus the Mean Household Income
for the Bottom Quintile of Children: 1969-1999**

Income measure	1969	1979	1989	1999
Official child poverty rate	14.0[a]	16.4	19.6	16.9
Mean pretax money income for the bottom quintile of children in 1992 CPI-U dollars	$11,536	$10,297	$9,154	$10,394

Sources: Poverty rates are from US Census Bureau (2000). Incomes are from the authors' tabulations using the March CPS.

a. We have been unable to reproduce this estimate from the public use data tapes. Our estimate is 14.2 percent.

**Table 2. Housing Conditions of Children in the Bottom Income Quintile
of the American Housing Survey: 1973 to 1999**

Measure	1973	1979	1989	1999	*Percentage point change: 1973 to 1999*
		Survey year			
Official child poverty rate	14.0	16.4	19.6	16.9	*2.9*
Percent in different types of housing					
Multi-family dwelling	26.6	38.1	39.8	37.7	*11.1*
Rental unit	56.1	66.8	72.7	68.5	*12.4*
Percent with various design problems					
No sewer or septic system	7.3	3.4	1.1	0.4	*-6.9*
Incomplete plumbing[a]	10.8	5.6	3.7	2.4	*-8.4*
No electricity in one or more rooms	14.0	7.8	5.2	3.2	*-10.8*
Built before 1940	40.2	38.0	25.9	23.8	*-16.4*
Percent with maintenance problems					
Holes in floor	6.8	6.9	4.7	4.5	*-2.3*
Cracks or holes in wall or ceiling	16.3	17.7	16.3	13.5	*-2.8*
Broken plaster or peeling paint[b]	10.1	15.8	12.2	6.7	*-3.4*
Leaky roof	15.4	14.6	11.2	8.0	*-7.4*
Mean years since unit was built	28.1	29.8	29.5	33.4	*5.3* [d]
Crowding measures					
Mean number of rooms	5.1	4.9	4.9	5.1	*0.0*
Mean household size	5.2	4.5	4.5	4.2	*-1.0*
Pct. with more than one person/room	38.1	29.2	27.0	18.2	*-19.9*
Mean number of housing problems[c]	1.21	1.03	0.85	0.60	*0.50* [d]
Percent with at least one problem[c]	51.3	49.1	48.3	38.8	*-12.5*

a. Hot and cold water, sink, toilet, and either a shower or tub for exclusive use of tenants. Plumbing must be
   indoors in all years but need not be for the exclusive use of the tenant until 1980.
b. Greater than one square foot.
c. Incomplete plumbing, no sewer or septic, no electricity in one or more rooms, holes in floor, holes or
   cracks in walls, leaky roof, or more than one person per room.
d. Change in mean.

Sources: Child poverty rates are from US Bureau of the Census (2000), Table A2. All other data are from
tabulations by the authors. Children are the unit of observation for all analyses.

**Table 3: Percentage of Low-Income Children in Households That Lacked
A Telephone, an Air Conditioner, and a Motor Vehicle: 1970 to 1999**

	1973	1975	1979	1989	1999	*Percentage point change: 1973-1999*
			Survey year			
Official child poverty rate	14.0	17.1	16.4	19.6	16.9	*2.9*
American Housing Survey						
Percentage of children lacking:						
Telephone service:		28.6	27.3	26.0	7.0	*-21.6*
Air conditioner	69.5		67.0	51.8	30.8	*-38.7*

	1970		1980	1990		*1970-1990*
Official child poverty rate	15.1		18.3	20.6		*5.5*
Decennial Census						
Percentage of children lacking:						
Telephone service:	36.1		23.9	25.8		*-10.3*
Car or truck	31.9		31.6	30.3		*-1.6*
Percentage of children in households with two or more vehicles	16.6		17.6	25.8		*9.2*

Sources:
  AHS data are from the authors' tabulations. Census data are from tabulations by
  David Knutson. Child poverty rates are from US Bureau of the Census (2000),

Table 4: Changes in the Percent of Low-Income Children Who Had Not Visited a Doctor in the Past Twelve Months: 1970 to 1980 and 1982 to 1996

| | NHIS-I[a] | | NHIS-II[a] | | | *Percentage point change* | |
| | | | | | | *1970 to* | *1982 to* |
	1970	1980	1982	1989	1996	*1980*	*1996*
Child poverty rate	15.1	18.3	21.9	19.6	20.5	*3.2*	*-1.4*
Child's age:							
0 to 6	26.5	11.9	14.4	14.0	12.7	*-14.6*	*-1.7*
7 to 17	45.1	32.7	32.6	31.4	29.0	*-12.4*	*-3.6*

Source: Tabulations by David Knutson from the National Health Interview Survey. Cell sizes range from 2,000 to 2,800 for children under seven and 3,200 to 5,000 for children aged seven to seventeen.

a. The NHIS questionnaire was revised between 1980 and 1982, so comparisons between the NHIS-I and NHIS-II series may not be valid.

Table 5. Food Expenditures as a Proportion of the 1992 Thrifty Food Budget, by Income Quintile in PSID Children's Households: 1969 to 1991

	PSID: Series I		PSID: Series II	
Income group	1969	1971	1981	1991
Official child poverty rate	14.0	15.3	20.0	21.8
Food expenditures				
Bottom quintile	.94	1.04	.87	.86
Middle quintile	1.13	1.16	1.11	1.08
Top quintile	1.53	1.53	1.52	1.50
All	1.17	1.20	1.15	1.12

Source: Tabulations by Timothy Veenstra. PSID households are allocated to income quintiles using the mean of income in the survey year and in the year prior to the survey. Thrifty food budgets are converted to constant dollars using the chain-price index for food. The questions about food expenditures and food stamps changed repeatedly between 1971 and 1981. The difference between 1971 and 1981 may therefore be a methodological artifact.

Table 6. Effects of Methodological Changes on Trends in Child Poverty: 1969 through 1999

Methodological change	1969	1979	1989	1999	Percentage point change			
					1970s	1980s	1990s	*1969-99*
Consistent thresholds using family income and the CPI-U								
1.1 Official thresholds	**14.0**	**16.3**	**19.6**	**16.9**	**2.3**	**3.3**	**-2.7**	*2.9*
1.2 Consistent thresholds	15.2	16.6	19.6	16.9	1.4	3.0	-2.7	*1.7*
Household vs family income using consistent thresholds								
2.1 Family poverty	15.2	16.6	19.6	16.9	1.4	3.0	-2.7	*1.7*
2.2 Household poverty	15.0	16.0	18.5	15.3	1.0	2.5	-3.2	*0.3*
CPI-U-RS+X1 vs CPI-U using household income								
3.1 CPI-U	15.0	16.0	18.5	15.3	1.0	2.5	-3.2	*0.3*
3.2 CPI-U-RSX[2]	17.6	17.1	18.8	15.0	-0.5	1.7	-3.8	*-2.6*
Total income vs money income[2]								
4.1 Pretax money income	17.6	17.1	18.8	15.0	-0.5	1.7	-3.8	*-2.6*
4.2 Plus food stamps, housing, and Medicaid	16.3	13.9	15.4	12.5	-2.4	1.5	-2.9	*-3.8*
4.3 Definition 14 (see text)		12.4	14.5	9.7		2.1	-4.8	
4.4 Best trend estimate[3]					**-2.4**	**2.1**	**-4.8**	**-5.1**
Higher vs. lower thresholds (money income only)[2]								
5.1 100% of 1992 level	17.6	17.1	18.8	15.0	-0.5	1.7	-3.8	*-2.6*
5.2 125% of the 1992 level	25.1	22.7	24.1	20.5	-2.4	1.4	-3.6	*-4.6*
5.3 50% of the 1992 level	5.4	6.1	7.5	5.6	0.7	1.4	-1.9	*0.2*
Census versus CPS, using household money income and CPI-U-X1								
6.1 CPS	17.1	16.6	18.5		-0.5	1.9		
6.2 Census	17.9	16.4	17.7		-1.5	1.3		

Source: Authors' tabulations from the March Current Population Survey. Estimates based on households exclude children in group quarters. All estimates exclude children in institutions.

1. 1992 thresholds using family income and the CPI-U.

2. Household money income was converted to 1992 dollars using the CPI-U-RS+X1 and compared to the official 1992 thresholds.

3. Combines line 4.2 for 1969-79 with line 4.3 for 1979-89 and 1989-99.

Table 7. Estimated Percentage of Poor Children in Households Receiving Various Means-Tested Noncash Benefits: 1969 to 1999

Benefit and data source	1969	1972-73	1979	1989	1999
Medicaid (CPS)	37.3[a]	41.5[b]	53.8	59.8	64.6
Food stamps (CPS)	11.9[c]		60.7	61.1	52.8
Public housing					
CPS			12.3	13.8	17.1
AHS	6.0[d]	9.0	13.5	14.4	11.2
Rent subsidy in private housing					
CPS			3.9	9.9	10.4
AHS	~0[d]	1.7	4.5	12.3	12.3
AFDC (CPS)	32.4		46.7	46.1	28.5

Sources: Except where otherwise indicated, all estimates are from authors' tabulations using the Current Population Survey (CPS) or the American Housing Survey (AHS). Poor children are defined as in row 3.6 of Table 6.

a. We have not been able to locate counts of children receiving Medicaid in 1969, but families receiving public assistance were all legally eligible. We assumed that the ratio of poor families receiving Medicaid to poor families receiving public assistance was the same in 1969 as in 1979 (.538/.467 = 1.15).

b. Estimated for 1972. Medicaid coverage of dependent children under the age of twenty-one rose by 20.5 percent between 1972 and 1979 (Committee on Ways and Means, 1994: 798), while the number of poor children under eighteen fell by 7 percent. Assuming poor children under eighteen accounted for the same fraction of Medicaid cases in 1972 and 1979, coverage in 1972 would be (.538) /(1.205/.93) = 41.5 percent.

 c. Estimated from trends between 1969 and 1979 in the number of food stamp recipients (N_f) and the number of poor persons (N_p). N_f is from Ohls and Beebout (1993, pp189-90). N_p is the official poverty count. N_f/N_p = .609 in 1979 and .596 in 1989. These values are very close to the CPS estimate of the percentages of children living in households that received Food Stamps in 1979 and 1989. We therefore used our estimated of N_f/N_p for 1969 (.119) to estimate the fraction of children getting food stamps in that year.

d. Based on linear extrapolation from the trend between 1973, when the first AHS data were collected, and 1979.

Appendix Table A.1: Housing Conditions of All Children in the American Housing Survey, 1973 to 1999

Measure	Survey year				Percentage point change: 1973 to 1999
	1973	1979	1989	1999	
Official child poverty rate	14.4	16.4	19.6	16.9	2.5
Percent in different types of housing					
Multi-family dwelling	16.1	17.1	19.3	17.8	1.7
Rental unit	32.7	30.2	37.1	33.4	0.7
Percent with various design problems					
No sewer or septic system	2.0	1.1	0.3	0.1	-1.9
Incomplete plumbing[a]	3.0	2.0	2.2	1.2	-1.8
No electricity in one or more rooms	6.3	4.0	2.8	2.1	-4.2
Built before 1940	31.3	27.6	20.8	18.6	-12.7
Percent with maintenance problems					
Holes in floor	2.6	2.8	1.8	1.7	-0.9
Cracks or holes in wall or ceiling	7.9	7.9	7.8	7.9	0.0
Broken plaster or peeling paint[b]	6.0	7.7	6.0	3.8	-2.2
Leaky roof	9.2	8.9	8.5	7.4	-1.8
Mean years since unit was built	24.1	24.7	26.1	29.4	5.3 [d]
Crowding measures					
Mean number of rooms	5.9	5.9	5.9	6.2	0.3
Mean household size	5.1	4.7	4.6	4.5	-0.6
Pct. with more than one person per roon	24.4	19.3	17.8	11.7	-12.7
Mean persons per room	0.86	0.80	0.78	0.73	-0.1 [d]
Mean number of housing problems[c]	0.54	0.50	0.48	0.47	0.87 [d]
Percent with at least one problem[c]	29.0	28.5	33.1	26.6	-2.4

a. Hot and cold water, sink, toilet, and either a shower or tub for exclusive use of tenants. Plumbing must be indoors in all years but need not be for the exclusive use of the tenant until 1980.
b. Greater than one square foot.
c. Incomplete plumbing, no sewer or septic, no electricity in one or more rooms, holes in floor, holes or cracks in walls, leaky roof, or more than one person per room.
d. Change in mean.

Source: Tabulations by the authors covering households at all income levels weighted by the number of children under eighteen.

Table A.2: Percentage of Children at All Income Levels Whose Households Lacked Telephones, Air Conditioning, and Motor Vehicles: 1970 to 1999

		Survey year			Percentage point change:
American Housing Survey	**1973**	**1979**	**1989**	**1999**	**1973 to 1999**
Official child poverty rate (CPS)	14.4	16.4	19.6	16.9	2.5
No telephone:	11.4[a]	10.2	8.8	3.0	-8.4
No air conditioning	53.2	48.3	34.8	21.8	-31.4
Decennial Census	**1970**	**1980**	**1990**		**1970 to 1990**
Official child poverty rate (CPS)	15.1	18.3	20.6		5.5
No telephone	13.6	8.6	8.3		-5.3
No car or truck	9.9	10.0	8.9		-1.0
Less than two cars or trucks	54.9	51.0	33.6		-21.3

Sources: AHS data are from authors' tabulations. Census data are from tabulations by David Knutson. Child poverty rates are from US Bureau of the Census (2000), Table A-2.