Experimental poverty measures: accounting for medical expenditures

Alternate methods of measuring medical expenses affect the relative incidence of poverty, the depth of poverty experienced by the poor, and the number of people who are classified in extreme poverty

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T he official measure of poverty in the United States has been in place since the 1960s and has served to inform many policy debates. However, over the years, debate has ensued concerning the level and extent of poverty estimates, as well as the methodology that should be used to measure poverty. One issue that has arisen is whether medical care is or should be accounted for in poverty measurement. Based on research, and recommendations by an expert panel, experimental measures of poverty have been developed that account for medical care costs as well as other dimensions. Accounting for health care costs considerably increases the number of people who appear to be struggling to get by. Particularly, it increases the number of elderly who are considered poor, while only slightly affecting other groups, such as poor children and Blacks.

This article describes and compares the size and composition of the poverty population under the official poverty measure and two experimental measures of poverty. The major focus is a discussion of methods and data used to estimate medical out-of-pocket expenses. All statistics shown in this article—poverty rates, poverty gaps, and income-to-poverty thresholds ratios— are affected by the method chosen to account for medical expenses in the measure. Results indicate that, while many groups are somewhat more

likely to be classified as poor under the experimental measures, the depth of their poverty is less than is generally found under the official measure. In general, results show that alternate methods of measuring medical expenses affect our perception of the relative incidence of poverty, the depth of poverty experienced by these groups, and the number of people who are classified in extreme poverty (those with family income below one-half of the poverty threshold).

Experimental poverty measures are presented here that update those presented in the 1999 Current Population Report by the Census Bureau.[1] Two experimental measures that use Consumer Expenditure (CE) data to estimate poverty thresholds and medical out-of-pocket expenses are presented. These measures and resulting poverty rates are contrasted with the official poverty measure for 2000.

Background

The official poverty measure has often been the focus of criticism from scholars and policymakers alike. In her book, *Drawing the Line*,[2] Patricia Ruggles describes alternative concepts of poverty and methods for measuring poverty; she also proposes methods to update and revise the current official poverty threshold and resource definitions. In response to this work, the Joint

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Economic Committee held Congressional hearings in the early 1990s. These hearings lead to the formation of the National Academy of Sciences Panel on Poverty and Family Assistance (the Panel, for short, henceforth). The goal of the Panel was to examine the current official measure of poverty in the United States. In 1995, this panel of scholars published their findings in a report titled *Measuring Poverty: A New Approach*.[3] In general, the report proposed eight broad sets of recommendations that focus on the following tasks:

- Adopting a new poverty measure
- Setting and updating the poverty threshold
- Adjusting the threshold for geographic differences in prices
- Defining family resources
- Identifying needed data
- Highlighting other issues related to poverty measurement
- Relating poverty measurement to assistance programs
- Linking States' needs to the panel's proposed measure

The Panel stated that poverty thresholds should represent a budget for food, clothing, shelter (including utilities), and a small amount for other needs. Family resources would be defined—consistent with the threshold concept—as the sum of money income together with the value of near money benefits minus expenses that cannot be used to buy the goods and services in the threshold budget. The panel also stated that:

> The U.S. Office of Management and Budget should adopt a revised poverty measure as the official measure for use by the federal government. Appropriate agencies, including the Bureau of the Census and the Bureau of Labor Statistics, should collaborate to produce the new thresholds each year and to implement the revised definition of family resources.[4]

According to the Panel, the basic criteria for developing the poverty measure are that it should be understandable and broadly acceptable to the public, statistically defensible, internally consistent, and operationally feasible.

In response to the Panel's report and recommendations, staff from the Bureau of Labor Statistics (BLS) and the Census Bureau have been conducting research. Their work has resulted in several papers and conference presentations that reproduced the Panel's work, and examined and tested underlying assumptions and measurement issues.[5]

Building on this joint research, the Census Bureau released two reports that presented several variations of alternative methods of measuring who is poor, based on the recommendations of the Panel. The first report, published in July 1999, contains 1990–97 results and the second report, published in October 2001, has results for 1999.[6] The second Census Bureau report includes improved methods for measuring individual elements of experimental measures and further refines the concepts outlined in the Panel report. In particular, the second report examines two new methods for handling medical out-of-pocket expenses: accounting for them in experimental thresholds, or subtracting these expenses from family resources. The treatment of medical out-of-pocket expenses in a poverty measure has proved most controversial in the discussion that followed the release of both the Panel's and the Census Bureau's first reports.[7]

Medical out-of-pocket spending

Medical out-of-pocket expenditures include those for health insurance premiums, medical services, drugs, and medical supplies. The method that the Panel used to value these expenses in a poverty measure using survey data is somewhat complex. Data from the 1987 National Medical Expenditure Survey were used to develop a model that assigned the occurrence of such expenditures and the amount spent. Once these amounts were assigned to families, then the aggregate amount assigned across all families was adjusted to match benchmarks developed from the Health Care Financing Administration's National Health Accounts.[8] The adjusted amounts of out-of-pocket expenses were then subtracted from income as a necessary expense before comparing family resources to poverty thresholds. This step introduced some inconsistency in a complete poverty measure in that no other component in the Panel's measure was adjusted to match independent aggregate estimates. That is, while other elements in the Panel's proposed poverty measure suffer from nonsampling error, such as the underreporting of income or benefits, they are nevertheless unadjusted in the poverty measures reported here, as they are in the official measure. This inconsistent treatment likely resulted in an overstatement of the effect of out-of-pocket expenses on poverty rates in the Panel's report and the first Census Bureau report that mimicked the Panel's approach.

In light of both the conceptual and practical issues raised by this approach, an alternative was proposed to add out-of-pocket needs to the thresholds and not to subtract such expenses from income.[9] Thus, the threshold would include medical out-of-pocket spending along with spending on the commodity bundle of food, clothing, shelter, and utilities. Thresholds could be calculated for family types based on health care spending patterns according to size of family, age of family members, and health insurance coverage status.

The Panel did not pursue this alternative because it would require a much larger number of thresholds to reflect different levels of medical care need.[10] They argued that medical care needs differ from the need for food or housing in that not every family requires medical care in a given year, but when they do, the associated costs may be extraordinarily large.

Assigning an average expenditure to incorporate medical care needs in the thresholds may overestimate the costs for many families and underestimate the cost for a few families due to the distributional properties of these expenditures. The panel concluded that it would be impossible to capture the actual variation of medical needs by variations in the thresholds and that this could lead to what the panel termed "erroneous poverty classification."

The second Census Bureau report presented two new methods of accounting for medical needs, one that subtracted medical out-of-pocket expenses from income and another that included these in the threshold.[11] The first was an updated model following the Panel's procedure. This method used the 1996 and 1997 Consumer Expenditure Survey (CE) to assign values of medical out-of-pocket expenses to different families.[12] This version of the out-of-pocket model differs in some important ways from the earlier model created by the Panel. These differences were summarized by David Betson in a series of recommendations that are made to guide the estimation of this model. For example, one recommendation stated that the out-of-pocket amounts predicted by the model should *not* be calibrated to aggregate totals, as was done in the earlier version. A separate model was estimated for each of 42 different family types, based on characteristics such as age, health insurance coverage, family size, race, and income level. Limits were placed on the maximum out-of-pocket amount that could be assigned. Estimates were then used to assign values of out-of-pocket expenses to individual families in the Current Population Survey (CPS). These amounts were estimated for each family and subtracted from family income before determining poverty status, in the measure referred to as MSI— medical out-of-pocket expenses *subtracted from income*.

Medical out-of-pocket expenses subtracted from income. The MSI measure is conceptually similar to the measure described in the report by the Panel, but with some computational differences. In general, this measure is constructed in the following way:

Thresholds:
- Thresholds for two adult-two child reference families are based on expenditures on food, clothing, shelter and utilities[13]—from the 1998, 1999, and 2000 CE
- The equivalence scale is a three-parameter version[14]
- Geographic indexes are calculated, using the Department of Housing and Urban Development (HUD) Fair Market Rents[15]

Resources:
- Cash income from the March 2001 CPS
- Include the value of food assistance programs (food stamps and school lunches)

- Include the value of housing subsidies
- Include the value of energy assistance (only heating assistance)
- Subtract work-related and childcare expenses
- Take account of taxes as modeled in the CPS
- Subtract medical out-of-pocket expenses as modeled, using CE data

Medical out-of-pocket expenses added to the threshold. The second measure accounts for medical out-of-pocket expenses differently. This method adds health care out-of-pocket expenditures, as reported in the CE, in the calculation of poverty thresholds for the two-adult, two-child reference family. Thus, the thresholds, which typically are based on spending for food, clothing, shelter and utilities, now also include out-of-pocket spending for an additional commodity—health care.

Once the reference family threshold is estimated from CE data, thresholds for families other than the reference family are produced using what we refer to as a 'medical risk index.' These additional thresholds are based on characteristics associated with variations in medical care utilization and cost. These characteristics include, among others, family size, age, and health status of family members, and health insurance coverage. In the case of the uninsured, an adjustment is made to reflect the likely underutilization of health care by the uninsured.[16] These indexes use median medical out-of-pocket expenditures from the 1996 Medical Expenditure Panel Survey to compute ratios of medical out-of-pocket expenditures for different groups varied by the set of characteristics listed to those of the reference family. Data from the Medical Expenditure Panel Survey are used because health status data are not collected in the CE.[17] This method is referred to as medical out-of-pocket expenditures in the threshold or MIT. Again, unlike the panel's original method, no attempt was made to adjust these dollar amounts to aggregate spending totals. Once medical out-of-pocket amounts were calculated, they were included in the thresholds, rather than subtracted from income, before determining poverty status. Generally, the MIT measure is calculated as follows:

Thresholds:
- Thresholds for two adult-two child reference families are based on estimated expenditures for food, clothing, shelter and utilities, and medical out-of-pocket expenditures from the 1998, 1999, and 2000 CE
- The equivalence scale is a three-parameter version and is applied to the food, clothing, shelter, and utilities portion of the threshold
- A medical risk index is applied to the medical out-of-pocket expenditures portion of the threshold

- Geographic indexes are calculated using HUD Fair Market Rents

  Resources:
- Cash income from the March 2001 CPS
- Include the value of food assistance programs (food stamps and school lunches)
- Include the value of housing subsidies
- Include the value of energy assistance (only heating assistance)
- Subtract work-related and childcare expenses
- Take account of taxes as modeled in the CPS

The poverty thresholds in 2000 for a two-adult, two-child reference family are presented in the following tabulation. The experimental threshold without medical costs is slightly higher than the official threshold for this family type. As may be expected, the threshold that includes medical out-of-pocket expenditures is higher than that without.

Official measure	$17,463
Experimental without medical	17,884
Experimental with medical	19,549

Mean values of medical out-of-pocket expenditures assigned by the two different methods for different family types are shown in the appendix. Although the two methods assign different amounts to different families, the key difference between the two methods is that MSI models health expenditures (medical out-of-pocket expenses) based on individual family characteristics, whereas MIT fixes the level at the median value for families categorized by certain specific characteristics.

Finally, we note that the second Census Bureau report included a third method. This approach to valuing medical expenses combined the two approaches just described into a single measure. This combined approach included the addition of a medical out-of-pocket value in the thresholds, but also subtracted a net medical out-of-pocket amount from family income.[18] The discussion here focuses only on the two separately estimated methods to establish more clearly the differences in the two methods.

Experimental poverty rates

The estimated poverty rate using the MSI measure was 12.2 percent in 2000. The MIT measure yields a poverty rate of 12.7 percent. Both of the new experimental measures result in similar poverty rates that are slightly higher than the official rates for the total U.S. population (11.3 percent). The inclusion of medical out-of-pocket expenses in a poverty measure and the method by which that is done have important effects on the poverty rates of different population subgroups. Poverty rates based on these MSI and MIT measures

are presented in the following tabulation along with the official poverty rate:

	Number of persons (in thousands)	Percent of the U.S. population
Official measure	31,054	11.3
Medical out-of-pocket expenses subtracted from income (MSI)	33,739	12.2
Medical out-of-pocket expenses in the threshold (MIT)	34,960	12.7

Demographic subgroups. Using the poverty measures described in the previous section, this section examines the differential incidence of poverty for various socio-economic and demographic subgroups. Table 1 shows poverty rates under the official and the two experimental poverty measures for various demographic groups.

Poverty rates by age group show higher rates for adults using the experimental measures, especially for the elderly. (See chart 1.) The child poverty rate under the official measure, 16.1 percent, is about the same as that under the MIT measure, 15.9 percent, but considerably lower under the MSI measure, 14.6 percent. The non-elderly adult poverty rate increases modestly from 9.4 with the official measure to 10.4 under the MSI measure and 11.0 percent with the MIT measure. The poverty rate for persons age 65 and older is higher: 10.2 percent under the official measure, compared with 14.2 percent under the MIT and 16.6 percent under the MSI measures.

Differences in poverty rates between the official and the experimental measures are explained by all of the elements included in an experimental measure. Chart 2 shows that average family amounts added and subtracted from income vary from the official to the experimental measures for selected subgroups. The chart illustrates the higher average benefits received, including earned income tax credits, and the lower medical out-of-pocket expenses included for children relative to the elderly. The combination of these calculations results in increased poverty rates for the elderly using the experimental measures relative to the official measure.

Differences in poverty rates between the two experimental measures are only explained by different treatments of medical out-of-pocket expenses. While average values for medical out-of-pocket expenses are lower for most subgroups that we examine under the MIT method, this method likely errs by assigning the same values to all in a given group. This results in the imputation of too large a value to too many families, and too small a value to the few families who actually face large medical out-of-pocket expenses.

Experimental poverty rates also differ from official rates by race and ethnicity. Experimental poverty rates are higher

Table 1.	Poverty rates by selected characteristics, 2000			
Characteristic	Official measure	Medical out-of-pocket expenses subtracted from income (MSI)	Medical out-of-pocket expenses in the threshold (MIT)
All persons	11.3	12.2	12.7
Age			
Children (under age 18)	16.1	14.5	15.8
Adults, 18–64 years	9.4	10.4	11.0
Elderly, 65 years and older	10.2	16.6	14.2
Race/ethnicity			
Non-Hispanic white	7.5	8.5	8.6
Black	22.0	20.6	21.3
Hispanic	21.2	24.2	26.3
Family type			
Married-couple	5.6	6.9	7.2
Male-headed (no spouse present)	14.8	17.3	17.5
Female-headed (no spouse present)	25.7	25.1	25.8
Number of workers			
No workers	33.2	35.4	33.8
One or more workers	8.0	8.7	9.5
Region			
Northeast	10.3	12.9	13.2
Midwest	9.5	9.0	9.3
South	12.5	12.2	12.5
West	11.9	14.9	15.8
Metropolitan area			
Central city	16.1	17.6	18.4
In metropolitan area, but not central city	7.8	9.8	10.2
Nonetropolitan area	13.4	10.8	10.8

SOURCE: March 2001 Current Population Survey.

Chart 1.	Poverty rates by age, 2000
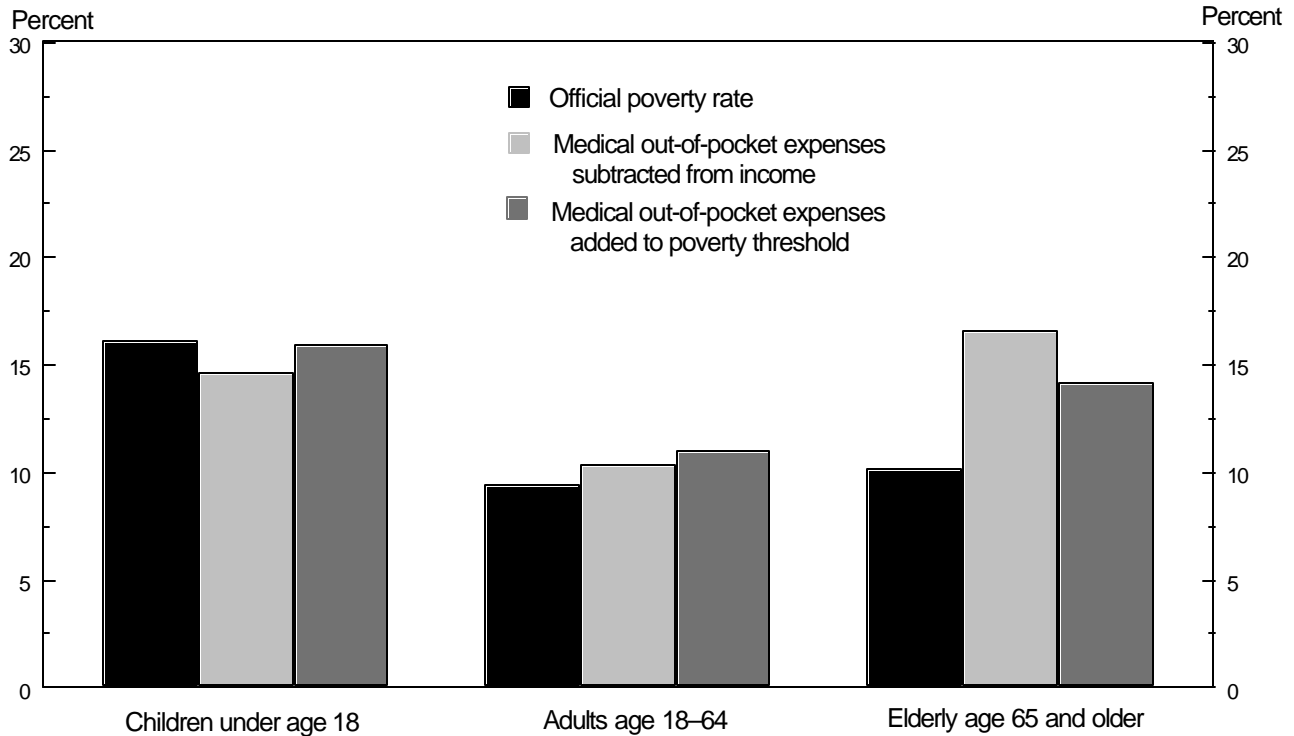
SOURCE: March 2001 Current Population Survey.

than official poverty rates for Non-Hispanic whites and Hispanics, though slightly lower for Blacks. The rates tend to be lower for Blacks due to a combination of factors, including higher receipt of some near-cash transfers and slightly lower work-related expenses and taxes paid. Differences in average amounts of these elements are shown in table 2 by race and Hispanic origin.

Accounting for noncash transfers also affects the incidence of poverty by family type. When poverty rates by family type are examined, one sees increases moving from the official to the experimental measures among persons in married-couple and male-householder (unmarried) families, and little change among female-householder families. Married-couples tend to receive less near-cash transfer income and have higher work-related and medical expenses than the other family types. (See table 2 for average amounts.)

As expected, the experimental measures (which include geographic adjustments) result in poverty rates that differ by region and by metropolitan/nonmetropolitan status. As highlighted by the change in the poverty rates between the official and the experimental measures, poverty estimates increase in the Northeast and West and decrease in the Midwest and South. Likewise, measures that include geographic adjustments (as MSI and MIT do) yield higher poverty rates in central cities, and to a less extent in the suburbs, while lower poverty rates result for nonmetropolitan areas.

Poverty gaps

The previous section reports the prevalence of poverty under different poverty measures. While the poverty rate tells us the proportion of a population that is poor, it does not give us information about the depth of poverty in that population. The mean income deficit, or average poverty gap, tells us something about the shortfall of income relative to the poverty threshold, and thus the depth of poverty for various people.

Table 3 lists mean income deficits, or poverty gaps, under the official measure and under the two experimental measures, MSI and MIT. These income deficits are calculated by determining who is poor under the given measure, and for those individuals, subtracting their family income from their

Table 2.	Mean family amounts across individuals, 2000										
Benefit	**Total**	**Official**	**Near poor**[1]	**Children**	**Adults**	**Elderly**	**White**	**Black**	**Hispanic**	**No workers**	**One or more workers**
Food stamps	$117	$750	$248	$252	$76	$33	$83	$314	$231	$264	$95
Housing subsidies	142	978	346	270	93	116	85	473	293	460	94
School lunch	103	322	256	229	68	9	87	190	254	65	109
Heating	6	28	25	10	5	6	5	11	5	15	5
Federal income tax	−9,075	−20	−101	−9,159	−10,031	−3,936	−9,711	−4,496	−3,887	−1,144	−10,271
FICA tax	−3,475	−438	−979	−3,807	−3,827	−931	−3,611	−2,379	−2,770	0	−4,000
Earned income tax credit	319	1,147	1,257	624	245	41	276	559	795	0	368
Work expenses	−1,230	−460	−771	−1,312	−1,361	−374	−1,242	−1,096	−1,364	0	−1,416
Child care	−377	−162	−305	−746	−292	−8	-367	−468	−429	0	−434
Medical out-of-pocket (MSI)[2]	−1,762	−551	−753	−1,563	−1,643	−2,818	−1,824	−1,419	−1,281	−1,987	−1,729
Medical out-of-pocket (MIT)[3]	1,323	851	1,102	1,256	1,210	2,053	1,340	1,201	1,203	1,443	1,304

Benefit	**Married couple**	**Female house-holder**	**Northeast**	**Midwest**	**South**	**West**	**Central city**	**Suburbs**	**Non-metropolitan territory**
Food stamps	$62	$309	$117	$92	$120	$136	$198	$64	$138
Housing subsidies	48	439	239	98	100	171	287	82	88
School lunch	98	154	89	86	106	126	135	81	115
Heating	4	14	11	9	3	4	8	4	10
Federal income tax	−11,933	−2,621	−10,651	−8,709	−8,414	−9,151	−7,647	−11,235	−5,254
FICA tax	−4,333	−1,607	−3,736	−3,668	−3,184	−3,513	-3,002	−3,985	−2,787
Earned income tax credit	238	627	284	252	337	389	410	263	335
Work expenses	−1,455	-787	−1,240	−1,281	−1,184	−1,242	−1,155	−1,299	−1,154
Child care	−415	-369	-434	-346	−352	-398	-372	−410	-292
Medical out-of-pocket (MSI)[2]	−2,042	−1,313	−1,883	−1,824	−1,715	−1,674	−1,533	−1,894	−1,753

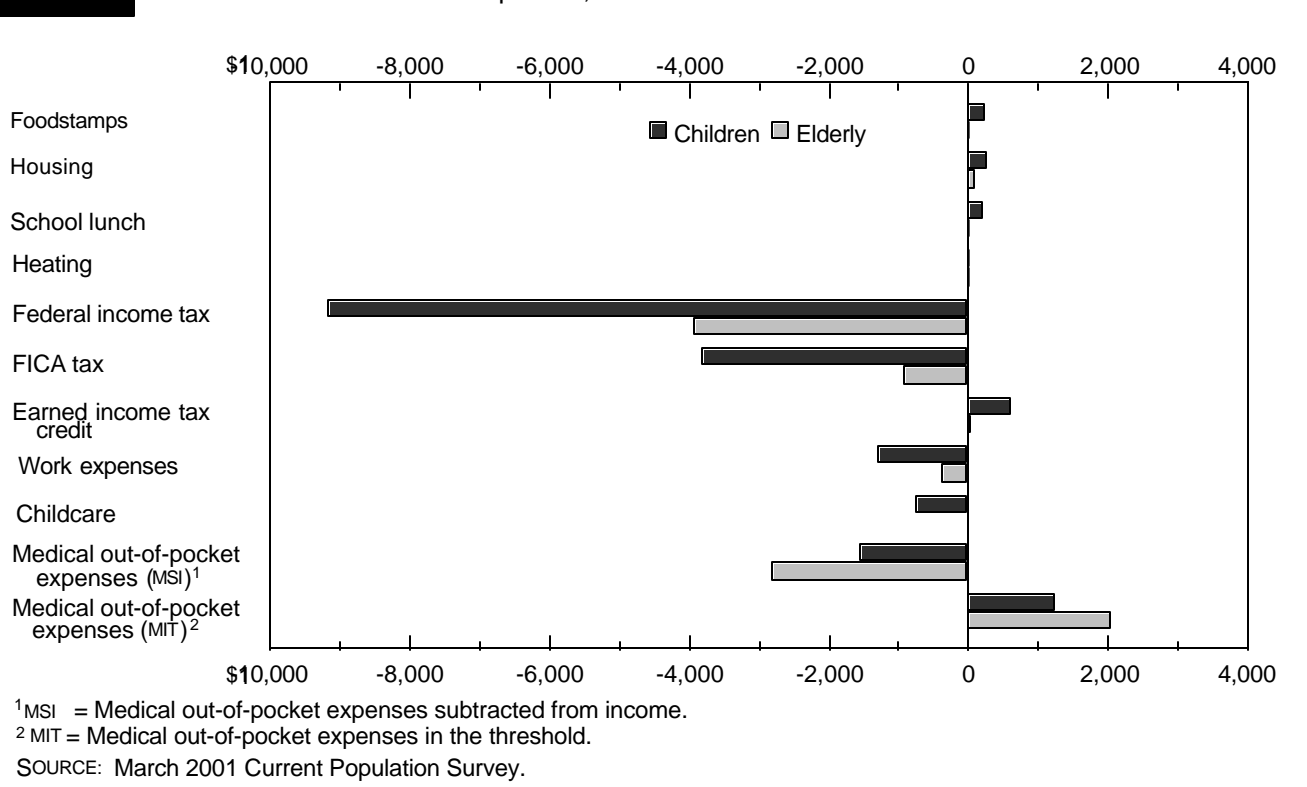[1] People classified as "near poor" are those with family income below 125 percent of the poverty threshold.

[2] Average out-of-pocket expenditure subtracted from income.

[3] Average out-of-pocket expenditures included in threshold.

SOURCE: March 2001 Current Population Survey.

relevant poverty threshold. When incomes are negative, the deficit is set equal to the poverty threshold, suggesting that no deficit exceeds the measure of need for the basic bundle of goods.

In official Census Bureau publications, income deficits are calculated separately for families and for unrelated individuals. The first two lines of table 3 show these calculations for these two groups under the three measures. The third line combines family heads and individuals for simplicity, and the remaining averages for subgroups are based on this combined group, by characteristic of the family head or the unrelated individual. (In effect, unrelated individuals are treated like families consisting of one person. See chart 3.)

Although the prevalence of poverty may be higher under the experimental measures relative to the official measure, table 3 indicates that average poverty gaps are much lower for both experimental measures than the official measure. This result holds for all groups shown in table 3 except one, the elderly. While the differences between the income deficits are larger or smaller for different groups, in general, the family incomes of poor individuals are closer to the poverty line under the experimental measures than under the official measure. Thus, while subtracting taxes and other necessary expenses from income does move some people across the

poverty line and into poverty, on average, they are not being moved as far below the line as families who are poor using the official measure. Including noncash benefits in income raises the income of many poor families, even if those benefits are not sufficient to raise them out of poverty.

As mentioned earlier, for all groups, average poverty gaps are much lower for both experimental measures than for the official measure, except for the elderly. As shown in table 3, the elderly demonstrate higher mean income deficits under the MSI experimental measure relative to the official measure. Although the large medical out-of-pocket expenses attributed to the elderly contribute greatly to these higher figures, there is an additional factor that explains this difference. The official poverty thresholds are specified to be lower for the elderly than for the nonelderly, whereas the experimental poverty thresholds make no distinction for age of householder. However, due to the lower values of medical out-of-pocket expenses assigned using the MIT measure, the poverty gap for the elderly under that measure is lower than the official measure gap.

Income-to-poverty-threshold ratio

Another gauge of the relative distance of the poor from the poverty level is the proportion below specified fractions of

their respective poverty thresholds. This section examines income-to-poverty-threshold ratios under the various measures and does so across the entire income distribution. This exercise illustrates not only the difference in distribution below the poverty line, but also the difference across all income levels as the definition of family resources changes.

Table 4 shows estimates of the percent of people by family income-to-poverty-threshold ratios under the three measures: the official, MSI, and MIT. Accounting for taxes and transfers in the MSI and MIT measures results in greater percentages of individuals in the middle ratio categories. This is the result of the re-distributional effect of taxes and transfers that are included in the experimental measures.

Comparison of the official and the MSI measures shows that a slightly higher percentage of all persons—4.4 percent, versus 3.8 percent—are in extreme poverty (below one-half of the relevant poverty threshold) using the official measure. (See table 4.) Further, although the MSI measure yields a slightly higher percentage of people below the poverty line than the official measure yields, more of those individuals are above one-half the relevant poverty threshold than are found using the official measure— 8.4 percent using MSI, versus 6.9 percent using the official measure. This is as expected from the calculation of

poverty gaps and results from the addition of in-kind transfers to family incomes in the experimental measures. The results are similar, though even more pronounced, for the MIT measures relative to the official measure.

Table 4 also shows that this pattern of fewer people in extreme poverty, when using the experimental measures, holds for most demographic groups including children, Blacks, and Hispanics. Under the official poverty measure, 6.4 percent of children are in extreme poverty. Under the experimental measures, that share falls to 3.9 percent for MSI and 3.8 percent for MIT.

The one exception is the elderly. Notably, 2.2 percent of the elderly are in extreme poverty under the official measure. under the MSI measure, this rate rises to 4.6 percent. This result follows from the method used in that measure to value medical out-of-pocket expenses. However, the MIT measure is much closer to the official measure in this regard.

AN IMPORTANT CONCLUSION from this study is that there is much to be learned from a poverty measure that is carefully and explicitly constructed. It allows us to understand more precisely the economic situation of families and individuals. Including government benefits aimed at the most needy within the
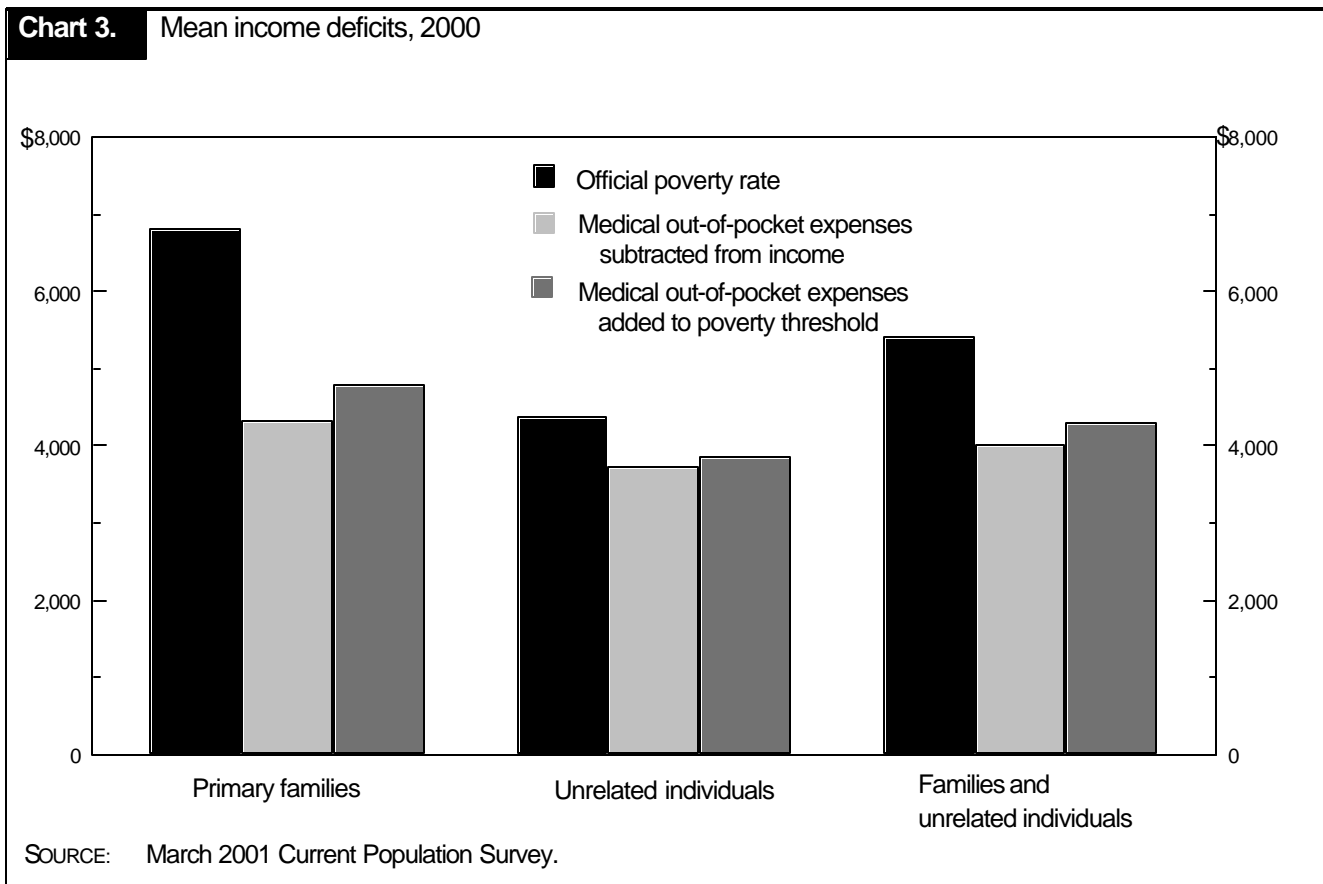
Chart 3. Mean income deficits, 2000

SOURCE: March 2001 Current Population Survey.

Table 3. Mean income deficits, 2000

Household characteristic	Official	Medical out-of-pocket expenses subtracted from income (MSI)	Medical out-of-pocket expenses in the threshold (MIT)
Families	$6,821	$4,333	$4,787
Unrelated individuals	4,388	3,731	3,869
Families and unrelated individuals	5,414	4,013	4,296
Age of household head			
18 to 64	5,986	4,249	4,831
65 and older	2,868	3,173	2,573
White	5,248	3,931	4,184
Black	5,773	4,078	4,438
Hispanic origin	6,258	4,847	5,366
No workers	5,486	4,701	4,701
One or more workers	5,335	3,434	3,951
In family of type:			
Married couple	6,612	4,153	4,578
Male householder	4,968	4,129	4,445
Female householder	5,243	3,889	4,091
Geographic regions:			
Northeast	5,344	4,286	4,607
Midwest	5,398	3,666	3,843
South	5,214	3,718	3,929
West	5,841	4,459	4,893
Metropolitan area:			
Central city	5,588	4,292	4,638
Not central city	5,496	4,150	4,470
Nonmetropolitan area	4,972	3,113	3,176

SOURCE: March 2001 Current Population Survey.

Table 4. Percent of total population by income-to-poverty threshold ratios, 2000

Ratio	Total population			White		
	Official	MSI[1]	MIT[2]	Official	MSI[1]	MIT[2]
Less than 0.5	4.4	3.8	3.6	3.5	3.4	3.2
0.5 to 0.99	6.9	8.4	9.1	5.9	7.3	7.9
1.0 to 1.99	17.9	27.8	29.6	17.0	26.1	27.9
2.0 to 3.99	32.5	37.8	38.7	32.7	39.0	40.3
4 or more	38.3	22.2	19.0	40.9	24.1	20.7

Ratio	Children			Black		
	Official	MSI[1]	MIT[2]	Official	MSI[1]	MIT[2]
Less than 0.5	6.4	3.9	3.8	9.3	6.1	5.7
0.5 to 0.99	9.6	10.7	12.0	12.7	14.5	15.6
1.0 to 1.99	21.3	33.3	34.1	24.4	37.8	39.6
2.0 to 3.99	33.3	36.7	36.8	32.0	30.7	30.1
4 or more	29.3	15.4	13.2	21.7	11.0	9.0

Ratio	Nonelderly adults			Hispanic		
	Official	MSI[1]	MIT[2]	Official	MSI[1]	MIT[2]
Less than 0.5	3.9	3.6	3.6	7.3	6.3	6.1
0.5 to 0.99	5.5	6.8	7.4	13.9	17.9	20.2
1.0 to 1.99	14.7	24.6	25.9	30.1	44.1	44.3
2.0 to 3.99	31.6	39.0	40.4	32.6	25.7	24.4
4 or more	44.3	26.0	22.6	16.1	6.0	5.1

Ratio	Elderly			Female householder		
	Official	MSI[1]	MIT[2]	Official	MSI[1]	MIT[2]
Less than 0.5	2.2	4.6	2.7	10.9	8.6	8.0
0.5 to 0.99	8.0	12.0	11.5	14.8	16.5	17.9
1.0 to 1.99	27.1	32.5	38.8	27.2	38.6	40.1
2.0 to 3.99	35.7	33.5	34.0	29.2	26.6	26.2
4 or more	27.0	17.4	13.1	17.9	9.7	7.9

[1] MSI= Medical out-of-pocket expenses subtracted from income.
[2] MIT= Medical out-of-pocket expenses in the threshold.

SOURCE: March 2001 Current Population Survey.

experimental measures also helps gauge the effectiveness of these programs in improving the lives of low-income families and individuals. With such a procedure one can more carefully ascertain the situation of particular population subgroups that are often specifically targeted for aid. Finally, the experimental measures allow us to more thoroughly understand the costs and economic hardship that individuals and families face and to examine where and how difficulties arise. □

Notes

[1] Short, Kathleen, *Experimental Poverty Measures: 1999,* Current Population Reports, Consumer Income, P60–216 (U.S. Census Bureau, 2001).

[2] Patricia Ruggles, *Drawing the Line—Alternative Poverty Measures and Their Implications for Public Policy* (Washington, DC, Urban Institute Press, 1990).

[3] Constance F. Citro and Robert T. Michael, eds., *Measuring Poverty: A New Approach* (Washington, DC, National Academy Press, 1995).

[4] Citro and Michael, *Measuring Poverty*, p. 5.

[5] Early work includes David Johnson, Stephanie Shipp, Thesia I. Garner, "Developing Poverty Thresholds Using Expenditure Data," in *Proceedings of the Government and Social Statistics Section* (Alexandria, VA, American Statistical Association, August 1997) and Thesia I. Garner Stephanie Shipp, Geoffrey Paulin, Kathleen Short, and Charles Nelson, "Poverty Measurement in the 1990s," *Monthly Labor Review*, March 1998, pp. 39–61. These and other Poverty Measurement Working Papers are available on Census Bureau poverty measurement Web site: **http://www.census.gov/hhes/www/povmeas.htm.**

[6] Short, *Experimental Poverty Measures: 1999*, 2001 and Kathleen Short, Thesia I. Garner, David Johnson, and Patricia Doyle, *Experimental Poverty Measures: 1990 to 1997*, Current Population Reports, Consumer Income, P60-205 (U.S. Census Bureau, 1999).

[7] See for example, "Open Letter on Revising the Official Measure of Poverty," Conveners of the Working Group on Revising the Poverty Measure, U.S. Census Bureau, Aug. 2, 2000, on the Internet at: **http://www.census.gov/hhes/www/povmeas.htm** for the full text of this letter.

[8] See David Betson, "Poor Old Folks: Have Our Methods of Poverty Measurement Blinded Us to Who is Poor?" University of Notre Dame, Poverty Measurement Working Paper (U.S. Census Bureau, 1995).

[9] See Richard Bavier, "Medical Needs and the Poverty Thresholds," Poverty Measurement Working Paper (U.S. Census Bureau, 1998), and a summary of Marilyn Moon's proposal in Citro and Michael, *Measuring Poverty*, p. 236.

[10] Citro and Michael, *Measuring Poverty*, 1995, pp. 223–37.

[11] Short, E*xperimental Poverty Measures: 1999*, 2001.

[12] See David Betson, "Imputation of Medical Out of Pocket (MOOP) Spending to CPS Records," University of Notre Dame, Poverty Measurement Working Paper (U.S. Census Bureau, February 2001) for complete details.

[13] For a description of the procedure using earlier data, see Garner and others, "Poverty measurement,"1998.

[14] Johnson and others, "Developing Poverty Thresholds," 1997.

[15] Short, *Experimental Poverty Measures: 1999*, 2001.

[16] For more details on this method, see Jessica Banthin, Thesia I. Garner, and Kathleen Short, "Medical Care Needs in Poverty Thresholds: Problems Posed by the Uninsured," Paper presented at the American Economic Association Meetings, Poverty Measurement Working Paper (U.S.Census Bureau, 2001).

[17] Other options using the CE are presented in Banthin and others 2001.

[18] Short, *Experimental Poverty Measures: 1999*, 2001.

Appendix: Medical risk factors (with adjustment for the uninsured) and mean values of Medical out-of-pocket expenditures for MSI and MIT measures

Characteristic	Medical risk factors	MSI mean amount[1]	MIT mean amount[2]
Reference family	1.00	$1,853	$1,349
Families with no elderly members:			
Private, one person			
Good health	.42	868	571
Fair/poor health	.77	933	1,044
Private, two people			
Good health	.89	1,991	1,196
Fair/poor health	1.13	2,143	1,520
Private, three or more people			
Good health	1.00	1,946	1,352
Fair/poor health	1.26	1,913	1,695
Public, one person			
Good health	.02	438	24
Fair/poor health	.07	487	93
Public, two or more people			
Good health	.03	322	45
Fair/poor health	.09	403	124
Uninsured, one person			
Good health	.48	235	649
Fair/poor health	.90	278	1,217
Uninsured, two or more people			
Good health	1.02	556	1,370
Fair/poor health	1.08	460	1,462
Families with elderly members:			
Private, one person			
Good health	1.19	2,043	1,606
Fair/poor health	1.31	2,059	1,765
Private, two or more people			
Good health	1.92	3,045	2,593
Fair/poor health	2.30	3,025	3,096
Public, one person			
Good health	.49	1,978	659
Fair/poor health	.45	1,841	605
Public, two or more people			
Good health	.91	2,845	1,220
Fair/poor health	1.01	2,734	1,367

[1] MSI= Medical out-of-pocket expenses subtracted from income.
[2] MIT= Medical out-of-pocket expenses in the threshold.

SOURCE: 1998–2001 Current Expenditure Survey; 2001 Current Population Survey; 1996 Medical Expenditure Panel Survey; and Jessica Banthin and others, "Medical Care Needs in Poverty Thresholds: Problems Posed by the Uninsured," Agency for Healthcare Research and Quality, American Economic Association meeting, January 2001.