5

Effects of the Proposed Poverty Measure

This chapter presents our analysis of the difference it would make to poverty statistics to adopt the proposed measure in place of the current measure. This analysis has several objectives: to demonstrate the feasibility of implementing the proposed measure; to determine the reasons for important differences in the numbers and kinds of poor people between the proposed measure and the current measure; and to identify problems and areas for further research.

We first describe the data sources and procedures that we used. Next, we present the results we obtained for income year 1992, for which we conducted the most extensive analysis. Two aspects that we explore in detail are the effects of using different equivalence scales for the poverty thresholds and the accuracy of our imputations for out-of-pocket medical care costs and their implications for poverty rates. We then briefly review the data, procedures, and results for the more limited analysis that we were able to conduct for earlier years. Finally, we consider the likely effects on poverty rates of using the Survey of Income and Program Participation (SIPP) instead of the March income supplement to the Current Population Survey (CPS).

In conducting this analysis, we had to wrestle with a number of data problems. Hence, in this chapter we also discuss those problems and make recommendations for improvements in data sources that are needed for more accurate measurement of people's poverty status. The discussion covers data sources for deriving and updating the thresholds, as well as data sources for estimating family resources.

DATA AND PROCEDURES

An extract of the March 1993 CPS provided to the panel by the Census Bureau served as the primary database for our analysis for income year 1992. SIPP is an alternate data source and, indeed, we recommend that SIPP become the basis for official poverty statistics in place of the March CPS (see below).[1] We did use SIPP data to impute some of the elements for deriving disposable income that are not part of the March CPS. Because we have estimates of aggregate poverty rates from the March CPS and SIPP, using the current gross money income definition of family resources, we are reasonably confident of the type of results that we would have obtained had we used SIPP (see below).

Poverty Measure Alternatives

For income year 1992, we conducted two analyses that compared the current measure with the official thresholds and the official definition of family resources (namely, gross money income) to the proposed measure.

The first analysis was designed to illustrate the effects of the current and proposed measures on the kinds of people who are poor, holding constant the official 1992 poverty rate for the total population. For this exercise, we determined the two-adult/two-child family threshold that, together with the proposed threshold adjustments (with a 0.75 scale economy factor) and the proposed family resource definition, resulted in the same 1992 poverty rate as the official rate of 14.5 percent.[2] The official reference family threshold for 1992 was $14,228; the threshold that gave the same result with the proposed measure is $13,175.[3]

The second analysis was designed to illustrate the effects—for the whole

[1] We did not use SIPP in our analysis because the Census Bureau had not completed work to develop procedures for simulating income taxes and valuing in-kind benefits with SIPP (this work will be completed in the near future); we did not have the time or resources to undertake such work ourselves. By using the March CPS, we could take advantage of the Bureau's long-standing procedures for estimating taxes and valuing in-kind benefits with that data source.

[2] The 1992 poverty rates that we tabulated from the March 1993 CPS for the current measure are consistent with rates published in Bureau of the Census (1993c). Subsequently, the Census Bureau revised the rates due to the introduction of new population weighting controls derived from the 1990 census results that incorporate an adjustment for the census undercount (see Bureau of the Census, 1995). Thus, the revised official 1992 poverty rate for the total population is 14.8 percent instead of 14.5 percent as previously reported and as we tabulated.

[3] The value of $13,175 has no intrinsic meaning as a reference family poverty threshold. It is an artifact of the analysis, including not only the effects of the other threshold adjustments and definition of resources as disposable money and near-money income, but also the effects of the underlying data, including imputations. In other words, it is simply the result of implementing all other proposed changes and calculating what level of the reference family threshold is necessary to achieve the specified rate of 14.5 percent.

population and various groups—of raising the poverty threshold in real terms as well as implementing the proposed threshold adjustments and family resource definition. For this exercise, we used a two-adult/two-child family threshold of $14,800, representing the midpoint of our suggested range for that threshold of $13,700 to $15,900 (see Chapter 2). We implemented two versions of the proposed measure with the $14,800 reference family threshold: one with a scale economy factor of 0.75 and one with a scale economy factor of 0.65.

Threshold Adjustments

Table 5-1 shows the poverty thresholds for 1992 by family size and number of children for the current measure. Table 5-2 shows the thresholds for three versions of the proposed measure: using a $13,175 reference family threshold to keep the overall poverty rate at 14.5 percent; using a $14,800 reference family threshold and a scale economy factor of 0.75; and using a $14,800 threshold and a scale economy factor of 0.65. Unlike the official thresholds, the proposed thresholds do not distinguish one- and two-person families by whether the head is over or under age 65. We adjusted the thresholds in Table 5-2 for estimated differences in the cost of housing by size of metropolitan area within nine regions of the country; see Table 5-3.

Imputation Procedures for Proposed Resource Definition

For the two analyses, we also implemented the proposed definition of family resources as disposable money and near-money income, adding values for in-kind benefits (food stamps, school lunches, and public housing) to gross money income, and subtracting the following from income: out-of-pocket medical care expenditures (including health insurance premiums), federal and state income and Social Security payroll taxes, child care expenses, and other work-related expenses. Imputations to the March 1993 CPS were the basis for each of these adjustments. The only element of the proposed resource definition that we did not implement was the subtraction of child support payments to another household, because the March CPS does not provide a basis for a reasonable imputation; however, we have an estimate of the likely effect of subtracting child support payments on the aggregate poverty rate from SIPP (see below).

This section describes our imputation procedures (in some cases, the Census Bureau's procedures for which we simply adopted the results) for each component used in the derivation of disposable money and near-money income (see Betson, 1995, for a detailed description). Generally, the goal of our procedures was to use the best and most recent data source and to develop a

TABLE 5-1 Official Poverty Thresholds in 1992, by Family Size and Type

Number in Family (Age of Head)	Number of Related Children Under 18 Years								
	None	One	Two	Three	Four	Five	Six	Seven	Eight or More
One[a]									
<65	$7,299								
65+	6,729								
Two									
<65	9,395	9,670							
65+	8,480	9,634							
Three	10,974	11,293	11,304						
Four	14,471	14,708	14,228	14,277					
Five	17,451	17,705	17,163	16,743	16,487				
Six	20,072	20,152	19,737	19,339	18,747	18,396			
Seven	23,096	23,240	22,743	22,396	21,751	20,998	20,171		
Eight	25,831	26,059	25,590	25,179	24,596	23,855	23,085	22,889	
Nine or More	31,073	31,223	30,808	30,459	29,887	29,099	28,387	28,211	27,124

SOURCE: Bureau of the Census (1993c:Table A).

NOTE: Weighted average thresholds for families of two or more people (which are those commonly cited) are as follows: $9,137 for all two-person families ($9,443 for such families with the householder under age 65, $8,487 for such families with the householder age 65 and over); $11,186 for three-person families; $14,335 for four-person families; $16,592 for five-person families; $19,137 for six-person families; $21,594 for seven-person families; $24,053 for eight-person families; and $28,745 for families of nine or more people (Bureau of the Census, 1993c:Tables A-3, 23). Weighted average thresholds for each family size are the average of the thresholds for the specific categories (e.g., families of size two with no children or one child), weighted by the proportion that each category represents of all families of that size.

[a]A one-person "family" is an unrelated individual, that is, someone living alone or with others not related to him or her.

procedure that preserved as much of the variance and as many of the relationships among key variables as possible. (The preservation of variance and key relationships is particularly important for an indicator such as the poverty measure, which relates to one tail of the income distribution.) However, we were limited in available time and resources.[4]

[4] Readers interested in replicating our results or in conducting additional analyses may obtain a data file (from the Committee on National Statistics) that contains the March 1993 CPS extract file with our imputed variables and poverty status indicators for the current measure and the proposed measure.

TABLE 5-2 Poverty Thresholds in 1992 Under Proposed Measure, by Family Size and Type

Number in Family	Number of Related Children Under 18 Years								
	None	One	Two	Three	Four	Five	Six	Seven	Eight
$13,175 Reference Family Threshold: 0.75 Scale Economy Factor									
One[a]	$5,262								
Two	8,850	7,834							
Three	11,995	11,083	10,147						
Four	14,883	14,038	13,175	12,293					
Five	17,594	16,796	15,985	15,161	14,322				
Six	20,172	19,411	18,640	17,857	17,063	16,258			
Seven	22,645	21,912	21,173	20,424	19,665	18,898	18,119		
Eight	25,030	24,323	23,608	22,887	22,158	21,420	20,674	19,919	
Nine	27,342	26,655	25,963	25,264	24,559	23,848	23,128	22,402	21,667
$14,800 Reference Family Threshold: 0.75 Scale Economy Factor									
One[a]	$5,911								
Two	9,941	8,800							
Three	13,474	12,450	11,398						
Four	16,719	15,769	14,800	13,809					
Five	19,764	18,868	17,957	17,031	16,088				
Six	22,660	21,805	20,939	20,060	19,168	18,263			
Seven	25,438	24,615	23,784	22,943	22,091	21,229	20,354		
Eight	28,117	27,323	26,520	25,710	24,891	24,062	23,224	22,376	
Nine	30,714	29,943	29,165	28,380	27,588	26,789	25,981	25,165	24,339
$14,800 Reference Family Threshold: 0.65 Scale Economy Factor									
One[a]	$6,680								
Two	10,483	9,432							
Three	13,644	12,741	11,802						
Four	16,449	15,636	14,800	13,938					
Five	19,017	18,267	17,500	16,715	15,910				
Six	21,409	20,707	19,992	19,263	18,519	17,758			
Seven	23,665	23,001	22,326	21,640	20,943	20,232	19,508		
Eight	25,811	25,178	24,536	23,885	23,224	22,552	21,870	21,177	
Nine	27,865	27,258	26,643	26,021	25,390	24,751	24,103	23,445	22,777

NOTE: The thresholds are adjusted by geographic area; see Table 5-3 and text.

[a]A one-person "family" is an unrelated individual, that is, someone living alone or with others not related to him or her.

In-Kind Benefit Values and Taxes

We used the 1992 values that the Census Bureau provided on the March 1993 CPS extract file for in-kind benefits (food stamps, school lunches, and public and subsidized housing) and for federal and state income and Social Security payroll taxes. (See Chapter 4 for a description of the Census Bureau's current in-kind benefit valuation procedures, which use the market value approach,

TABLE 5-3 Housing Cost Adjustments for Proposed Poverty Thresholds

Area and Population Size	Index Value
Northeast	
New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont)	
Nonmetropolitan areas and metropolitan areas under 250,000	1.128
Metropolitan areas of 250,000-500,000	1.128
Metropolitan areas of 500,000-1,000,000	1.148
Metropolitan areas of 1,000,000-2,500,000	1.141
Metropolitan areas of 2,500,000 or more	1.209
Middle Atlantic (New Jersey, New York, Pennsylvania)	
Nonmetropolitan areas and metropolitan areas under 250,000	0.908
Metropolitan areas of 250,000-500,000	0.997
Metropolitan areas of 500,000-1,000,000	1.020
Metropolitan areas of 1,000,000-2,500,000	0.975
Metropolitan areas of 2,500,000 or more	1.187
Midwest	
East North Central (Illinois, Indiana, Michigan, Ohio, Wisconsin)	
Nonmetropolitan areas and metropolitan areas under 250,000	0.896
Metropolitan areas of 250,000-500,000	0.959
Metropolitan areas of 500,000-1,000,000	0.987
Metropolitan areas of 1,000,000-2,500,000	0.995
Metropolitan areas of 2,500,000 or more	1.059
West North Central (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota)	
Nonmetropolitan areas and metropolitan areas under 250,000	0.861
Metropolitan areas of 250,000-500,000	0.962
Metropolitan areas of 500,000-1,000,000	0.981
Metropolitan areas of 1,000,000-2,500,000	1.028
Metropolitan areas of 2,500,000 or more	N.A.
South	
South Atlantic (Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia)	
Nonmetropolitan areas and metropolitan areas under 250,000	0.899
Metropolitan areas of 250,000-500,000	0.961
Metropolitan areas of 500,000-1,000,000	1.007
Metropolitan areas of 1,000,000-2,500,000	1.043
Metropolitan areas of 2,500,000 or more	1.119
East South Central (Alabama, Kentucky, Mississippi, Tennessee)	
Nonmetropolitan areas and metropolitan areas under 250,000	0.827
Metropolitan areas of 250,000-500,000	0.935

Area and Population Size	Index Value
East South Central—*continued*	
Metropolitan areas of 500,000-1,000,000	0.947
Metropolitan areas of 1,000,000-2,500,000	N.A.
Metropolitan areas of 2,500,000 or more	N.A.
West South Central (Arkansas, Louisiana, Oklahoma, Texas)	
Nonmetropolitan areas and metropolitan areas under 250,000	0.858
Metropolitan areas of 250,000-500,000	0.911
Metropolitan areas of 500,000-1,000,000	0.942
Metropolitan areas of 1,000,000-2,500,000	0.962
Metropolitan areas of 2,500,000 or more	1.005
West	
Mountain (Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming)	
Nonmetropolitan areas and metropolitan areas under 250,000	0.888
Metropolitan areas of 250,000–500,000	0.976
Metropolitan areas of 500,000–1,000,000	1.039
Metropolitan areas of 1,000,000–2,500,000	1.003
Metropolitan areas of 2,500,000 or more	N.A.
Pacific (Alaska, California, Hawaii, Oregon, Washington)	
Nonmetropolitan areas and metropolitan areas under 250,000	0.969
Metropolitan areas of 250,000–500,000	1.018
Metropolitan areas of 500,000–1,000,000	1.028
Metropolitan areas of 1,000,000–2,500,000	1.104
Metropolitan areas of 2,500,000 or more	1.217

NOTES: Housing cost indexes calculated from 1990 census data on gross rent for apartments with specified characteristics, adjusted to reflect the share of housing in the proposed poverty budget; see Chapter 3. Nonmetropolitan areas are combined with metropolitan areas of less than 250,000 population because of restrictions on geographic area coding in the CPS and SIPP
N.A., not applicable

and for a description of the Census Bureau's tax simulator. Because of the Census Bureau's procedures to protect confidentiality on the public-use March CPS files, care must be taken in subtracting taxes for high-income people so as not to inadvertently move them below the poverty line. Also, the portion of taxes due to realized capital gains should not be subtracted because such gains are not part of the proposed resources definition.)

Out-of-Pocket Medical Care Expenditures

The March CPS does not contain any information on medical care expenses (out-of-pocket or otherwise), although it does provide some relevant information

that is helpful for imputation purposes, such as age and health insurance coverage. We imputed out-of-pocket expenses by using tabulations provided by the Agency for Health Care Policy and Research (AHCPR) from the 1987 National Medical Expenditure Survey (NMES), aged to represent the 1992 population.[5] AHCPR prepared separate multivariate tabulations for families (and unrelated individuals) for which the head was under age 65 or age 65 and older. The tabulation for families headed by someone younger than 65 cross-classified the age of head and type of health insurance coverage (private, public, or no insurance) by family size, family annual income-to-poverty ratio, and race of head. The tabulation for families headed by someone age 65 or older included the same variables, except that the categories for type of insurance coverage were different (Medicare and private, Medicare and public, all other).[6]

Because of the small sample size of the NMES, we had to combine many of the cells in these two very large multivariate tabulations to have a minimum of 100 observations in each cell. The tabulation that we used for families headed by someone younger than age 65 cross-classified health insurance status (covered, not covered) by family size (one, two-three, four or more people), by race of head (black, other), and by annual income-to-poverty ratio (less than 1.50, greater than or equal to 1.50). The tabulation that we used for families headed by someone aged 65 or older cross-classified the age of head (under 75, 75 and older) by income-to-poverty ratio (under 1.50, greater than or equal to 1.50) and by family size (one, two or more people). For each category in these two tabulations, we had the weighted counts of families with no out-of-pocket medical care expenditures and with non-zero expenditures within each of 10 expenditure ranges. Out-of-pocket expenditures included health insurance premiums, copayments, deductibles, and all other health care expenditures paid directly by the family. The lower bounds for the 10 expenditure ranges were $1, $500, $1,000, $1,500, $2,000, $2,500, $5,000, $7,500, and $12,500.

The imputation of out-of-pocket expenditures to the March 1993 CPS was a multistep procedure. The first step was to determine whether the individual CPS record would be imputed to have any out-of-pocket expenditures. For families who reported receiving Medicaid, we assumed that they would have no out-of-pocket medical expenditures.[7] For non-Medicaid families, we randomly assigned a fraction of these families to have some out-

[5] A multiple regression would have been preferable for imputation purposes (because it would then have been possible to introduce more variation), but it could not be obtained within the time and resources available.

[6] Although type of health insurance coverage is captured in these tabulations, differences in generosity of coverage within type (e.g., differences among state Medicaid programs) are not.

[7] This assumption is an approximation, as the generosity of Medicaid programs varies across states, and some families with Medicaid coverage do incur out-of-pocket medical expenditures. See Taylor and Banthin (1994: Table 2) for estimates from the 1987 NMES of out-of-pocket expenses by type of insurance coverage.

of-pocket medical expenditures on the basis of their characteristics and the computed probabilities from the NMES tabulations. If the family was assigned to have out-of-pocket medical expenditures, we devised an imputation procedure so that these families were assigned a level of expenditures consistent with the distribution of expenditures tabulated with their characteristics from the NMES. The object of this two-step procedure was to impute a set of medical expenditures that would reflect the entire distribution of expenditures and not to impute to all families the average level of expenditures consistent with their characteristics (see Betson, 1995).

Child Care Expenses

The March CPS does not contain any information on child care expenses, although it does have information on the number and age of children and employment status and weeks worked for the parents, which is needed for imputation purposes. We imputed child care expenses by using four regression equations from the 1990 SIPP panel. Two logit regressions estimated, respectively, the probability that a single parent who worked and a two-parent family in which both parents worked would pay for child care. Then, two ordinary-least-squares regressions estimated, for those single-parent and two-parent working families who paid for care, the total weekly amount. The single-parent working family equations included as independent variables the race of the head, the number of children of various ages, the region of residence, and the log of total family income. The two-parent working family equations included the same variables plus the proportion of family earnings accounted for by the earnings of the mother. (A number of model specifications were tested before deciding on these regression models.)

For weekly child care amounts, the probability that a family would have paid for child care was computed using the estimated logit equations. On the basis of this probability, the family was randomly assigned either to have or to have not paid for child care. If the family was imputed to have paid for child care, the second estimated equation and the family's characteristics were used to predict an average amount of child care for the family. A random "shock," whose standard deviation was derived from the standard error of the estimated equation, was then added to this average amount.

This weekly amount was then multiplied by the number of weeks worked by the head of single-parent families or by the secondary worker of two-earner families. A cap was imposed so that the annual amount imputed could not exceed the earnings of the parent with the lower earnings or the value of the ceiling on eligible expenses for the dependent care tax credit of $2,400 per year for one child and $4,800 for two or more children.

Other Work-Related Expenses

The March CPS does not contain any information on work-related expenses,

although it does report the employment status and weeks worked of each adult. We imputed work expenses to each worker aged 18 and over. For each week worked, we assigned a work expense value of $14.42, representing an annual amount of $750 for a 52-week work-year (or $720 for a 50-week work-year—see Chapter 4). The amount assigned was not allowed to exceed the worker's annual earnings. Also, for any parent for whom child care expenses were imputed (the parent in each family with the lower annual earnings), the combined child care and other work expense deduction was not allowed to exceed the parent's annual earnings.

The value of the work expense deduction was derived on the basis of analyzing work expense data from Wave 3 of the 1987 SIPP. We computed median weekly work expenses for the first job reported for all workers aged 18 and over (including those reporting zero values). The estimated median weekly value in 1992 dollars was $17 (see Chapter 4 for details of the calculation). The amount that we deducted from earnings for each week worked ($14.42) is 85 percent of the median value.

Distribution of Imputed Values

On average, we imputed $2,872 in deductions for out-of-pocket medical care expenses, child care expenses, and other work-related expenses, or 8.5 percent of gross money income for the average unit (families and unrelated individuals). As would be expected, the dollar amount imputed increased linearly with gross money income and decreased on a percentage basis. As shown in Table 5-4, the imputed deduction for the sum of these three expense categories is $669 for the family at the 10th percentile of the distribution (10.7% of gross money income); $3,007 for the family at the 50th percentile (median) (11.1% of gross money income); and $4,898 for the family at the 95th percentile (5.2% of gross money income). Higher amounts, both in dollars and as a percentage of gross money income, were imputed for these expenses for the reference family of two adults and two children (see Table 5-4); this results from the high proportion of workers among this family type.

RESULTS

Effects with a Constant Poverty Rate

In our first analysis, we implemented the current measure with the official 1992 threshold of $14,228 for a two-adult/two-child family and the proposed measure with a threshold of $13,175 for this family type and a scale economy factor of 0.75. By design, the proposed measure under this scenario produces about the same 1992 poverty rate (14.54%) and number of poor people (36.9 million) as the current measure (14.52% and 36.9 million). However, they are not all the same people.

TABLE 5-4 Distribution of Gross Money Income, with Amounts Deducted for Out-of-Pocket Medical Care Expenditures, Child Care Expenses, and Other Work-Related Expenses, 1992, in Dollars

	All Families[a]			Two-Adult/Two-Child Families		
Percentile of Gross Money Income	Gross Money Income	Deductions[b]		Gross Money Income	Deductions[b]	
		Dollar Amount	Percent		Dollar Amount	Percent
10th	6,282	669	10.7	15,798	2,648	16.8
20th	10,768	1,429	13.3	24,364	4,142	17.0
30th	15,544	2,042	13.1	31,005	4,629	14.9
40th	20,971	2,518	12.0	37,275	5,656	15.2
50th (median)	27,088	3,007	11.1	43,387	5,894	13.6
60th	34,210	3,516	10.3	49,816	5,669	11.4
70th	42,916	3,956	9.2	56,993	6,108	10.7
80th	54,538	4,416	8.1	66,633	6,926	10.4
90th	74,240	4,651	6.3	86,667	6,641	7.7
95th	93,818	4,898	5.2	99,451	6,946	7.0
Average	33,857	2,872	8.5	46,583	5,243	11.3

[a] Includes unrelated individuals.

[b] Average of imputed out-of-pocket medical care expenses (including health insurance premiums), child care expenses, and work-related expenses for families with gross money income 2.5 percentiles below to 2.5 percentiles above each percentile value (e.g., deductions for families at the 10th percentile are averaged over families with gross money income between the 7.5 and 12.5 percentiles).

The proposed measure moves 7.4 million people out of poverty, and it moves about 7.4 million people into poverty. (A total of 29.5 million people, 80% of the poverty population, are poor under both measures.) Most of the movement occurs near the poverty line. Thus, 87 percent of the 7.4 million people who are no longer categorized as poor move from the category of income between 50 and 100 percent of the poverty line to the category of income between 100 and 150 percent of the poverty line. Similarly, 79 percent of the 7.4 million people who are newly categorized as poor move from the category of income between 100 and 150 percent of the poverty line to the category of income between 50 and 100 percent of the poverty line; see Table 5-5.

Table 5-6 shows the effect of the proposed poverty measure on the composition of the poor population. By age, somewhat more poor people are adults aged 18-64 and somewhat fewer poor people are adults aged 65 and older under the proposed measure in comparison with the current measure, while the proportion of children under age 18 among the poverty population is about the same under both measures. By race, somewhat more poor people

TABLE 5-5 Change in Poverty Status and Income-to-Poverty Ratio Under the Current and Proposed Poverty Measures, with Total Poverty Rate Held Constant at 14.5 Percent, 1992

Poverty Status and Income-to-Poverty Ratio	Number of People (millions)	Percent Distribution Within Category
People Moved out of Poverty	7.35	100.0
Current measure: income <50% of threshold		
Proposed measure		
Income 100–150% of threshold	0.45	6.1
Income 150–200% of threshold	0.00	0.0
Income 200% or more of threshold	0.00	0.0
Current measure: income 50–100% of threshold		
Proposed measure		
Income 100–150% of threshold	6.42	87.3
Income 150–200% of threshold	0.47	6.4
Income 200% or more of threshold	0.01	0.1
People Moved into Poverty	7.37	100.0
Current measure: income 100–150% of threshold		
Proposed measure		
Income <50% of threshold	0.02	0.3
Income 50–100% of threshold	5.81	78.8
Current measure: income 150–200% of threshold		
Proposed measure		
Income <50% of threshold	0.00	0.0
Income 50–100% of threshold	1.47	19.9
Current measure: income 200% or more of threshold		
Proposed measure		
Income <50% of threshold	0.00	0.0
Income 50–100% of threshold	0.07	0.9
People Poor Under Both Measures	29.54	100.0
Current measure: income <50% of threshold		
Proposed measure		
Income <50% of threshold	8.47	28.7
Income 50–100% of threshold	6.10	20.6
Current measure: income 50–100% of threshold		
Proposed measure		
Income <50% of threshold	1.50	5.1
Income 50–100% of threshold	13.47	45.6
People Not Poor Under Both Measures	209.71	100.0
Current measure: income 100–150% of threshold		
Proposed measure		
Income 100–150% of threshold	14.79	7.1
Income 150–200% of threshold	3.48	1.7
Income 200% or more of threshold	0.25	0.1

Poverty Status and Income-to-Poverty Ratio	Number of People (millions)	Percent Distribution Within Category
People Not Poor Under Both Measures—continued		
Current measure: income 150–200% of threshold		
Proposed measure		
Income 100–150% of threshold	11.75	5.6
Income 150–200% of threshold	9.41	4.5
Income 200% or more of threshold	2.37	1.1
Current measure: income 200% or more of threshold		
Proposed measure		
Income 100–150% of threshold	5.44	2.6
Income 150–200% of threshold	20.88	10.0
Income 200% or more of threshold	141.34	67.4

NOTE: The reference family (two-adult/two-child) threshold for the current measure is $14,228; for the proposed measure keeping the overall poverty rate constant, it is $13,175. The total U.S. population is 253.97 million.

are white and somewhat fewer poor people are black under the proposed measure. By ethnicity, somewhat more poor people are Hispanic under the proposed measure. The proposed measure also markedly reduces the proportion of poor people who are categorized as one-person families (either living alone or with others not related to them); this effect is largely due to the scale economy factor (see below).

The most significant effect of the proposed measure is on the proportions of poor people in families that receive welfare and in families with one or more workers. For families that receive Aid to Families with Dependent Children (AFDC) or Supplemental Security Income (SSI), their share of the poverty population decreases from 40 to 30 percent. For families with workers, their share of the poverty population increases from 51 to 59 percent. The proposed measure also noticeably affects the proportion of poor people in families that lack health insurance; their share increases from 30 to 36 percent. Finally, the proposed measure alters the regional composition of the poverty population. The share of poor people who reside in the Northeast and West increases under the proposed measure, while the share of poor people who reside in the South and, to a lesser extent, the Midwest decreases.[8]

Another way to consider the differences in the current and proposed measures is to look at the poverty rates for various groups. While the overall poverty rate of 14.5 percent is the same under both the current and the proposed measures, the rates for some groups differ appreciably; see Table 5-7. Of

[8] See Table 5-3 for the states in each region.

TABLE 5-6 Composition of the Total and Poverty Populations Under the Current and Proposed Measures, with Total Poverty Rate Held Constant at 14.5 Percent, 1992

Population Group	Percent of Total Population	Percent of Poor Population	
		Current Measure[a]	Proposed Measure[b]
Age			
Children under 18	26.3	39.6	39.2
Adults 18–64	61.5	49.6	51.8
Adults 65 and older	12.2	10.8	9.0
Race			
White	83.6	66.8	69.3
Black	12.5	28.6	25.7
Other	3.9	4.6	5.1
Ethnicity			
Hispanic	8.9	18.1	20.9
Non-Hispanic	91.1	81.9	79.1
Family Size			
One person	14.5	21.7	15.7
Two persons	23.2	15.8	17.1
Three or four persons	42.3	33.5	37.4
Five or more persons	20.1	29.0	29.8
Welfare Status of Family			
Receiving AFDC or SSI	9.9	40.4	29.9
Not receiving AFDC or SSI	90.1	59.6	70.1
Work Status of Family			
One or more workers	81.1	50.8	58.9
No workers	18.9	49.2	41.1
Health Insurance Status of Family			
No health insurance	13.7	30.1	35.7
Some health insurance	86.3	69.9	64.3
Region of Residence			
Northeast	20.0	16.9	18.9
Midwest	24.0	21.7	20.2
South	34.4	40.0	36.4
West	21.6	21.4	24.5

[a] A threshold of $14,228 for two-adult/two-child families.
[b] A threshold of $13,175 for two-adult/two-child families, with a 0.75 scale economy factor; see text for discussion.

course, there are significant differences in poverty rates among groups under the current measure: for example, the rate for children (22%) is 50 percent higher than the overall rate of 14.5 percent; the rate for people in families receiving AFDC or SSI (59%) is 310 percent higher than the overall rate; and the rate for people in working families (9%) is 37 percent lower than the overall rate (see first column of Table 5-7). Hence, it is important to find an

TABLE 5-7 Poverty Rates by Population Group Under the Current and Proposed Measures, with Total Poverty Rate Held Constant at 14.5 Percent, 1992

	Poverty Rate (%)		Percentage Point Change	
Population Group	Current Measure[a]	Proposed Measure[b]	Actual	Standardized[c]
Age				
Children under 18	21.87	21.66	-0.21	-0.14
Adults 18–64	11.70	12.23	0.53	0.66
Adults 65 and older	12.90	10.80	-2.10	-2.36
Race				
White	11.60	12.04	0.44	0.55
Black	33.15	29.76	-3.39	-1.48
Other	17.39	19.06	1.67	1.39
Ethnicity				
Hispanic	29.43	34.03	4.60	2.27
Non-Hispanic	13.06	12.62	-0.44	-0.49
Family Size				
One person	21.75	15.77	-5.98	-3.99
Two persons	9.91	10.74	0.83	1.22
Three or four persons	11.50	12.84	1.34	1.69
Five or more persons	20.98	21.60	0.62	0.43
Welfare Status of Family				
Receiving AFDC or SSI	59.39	44.04	-15.35	-3.75
Not receiving AFDC or SSI	9.60	11.30	1.70	2.57
Work Status of Family				
One or more workers	9.09	10.55	1.46	2.33
No workers	37.91	31.70	-6.21	-2.38
Health Insurance Status of Family				
No health insurance	31.95	37.87	5.92	2.69
Some health insurance	11.76	10.83	-0.93	-1.15
Region of Residence				
Northeast	12.29	13.81	1.52	1.80
Midwest	13.10	12.21	-0.89	-0.99
South	16.89	15.36	-1.53	-1.32
West	14.39	16.48	2.09	2.11

NOTE: The poverty rates are for individuals: They are determined on the basis of comparing the income of their family (or one's own income if an unrelated individual) to the appropriate threshold.

[a] A threshold of $14,228 for two-adult/two-child families.

[b] A threshold of $13,175 for two-adult/two-child families, with a 0.75 scale economy factor; see text for discussion.

[c] See text for derivation.

appropriate metric for comparing poverty rates between the two measures. One such metric is to present results in terms of percentage changes in the poverty rate for each group; however, it is awkward to speak of percentage changes in a percentage. A method that is equivalent but more readily interpretable is to present results in terms of percentage point changes in the poverty rate in which these changes are standardized for each group to be comparable to the total population (see last column of Table 5-7).[9]

In standardized terms, the proposed measure increases the poverty rate by more than 1 percentage point for the following groups: people in two-person families, 1.2; people of other races (not white or black), 1.4; people in three-or four-person families, 1.7; Northeasterners, 1.8; Westerners, 2.1; Hispanics, 2.3; people in working families, 2.3; people in families not receiving AFDC or SSI, 2.6; and people in families without health insurance, 2.7. In contrast, the proposed measure decreases the poverty rate by more than 1 percentage point (in standardized terms) for the following groups: people in families with some health insurance, -1.2; Southerners, -1.3; blacks, -1.5; adults aged 65 or older, -2.4; people in families without workers, -2.4; people in families receiving AFDC or SSI, -3.8; and one-person families, -4.0.

Effects with a New Threshold

For our second analysis, we implemented the current measure with the official 1992 threshold of $14,228 for a two-adult/two-child family and the proposed measure with a threshold of $14,800 for this family type and two different scale economy factors—0.75 (alternative 1) and 0.65 (alternative 2). The value of $14,800 is the midpoint of our suggested range ($13,700–$15,900) for the starting reference family threshold. The purpose of this analysis was to determine the effect on the overall poverty rate, as well as the effect on groups, of raising the poverty threshold in real terms in addition to implementing the recommended adjustments to the threshold and family resource definition.

The Overall Rate

Under the proposed measure with a $14,800 reference family threshold and a 0.75 scale economy factor for 1992, 46.0 million people are poor, and the poverty rate is 18.1 percent, compared with the official count of 36.9 million and the official rate of 14.5 percent. With the same threshold and a 0.65 scale economy factor, the 1992 poverty rate is 19.0 percent.

[9] The procedure is to determine the ratio of the current poverty rate for the total population to the rate for the group and apply that ratio to the percentage point change for the group. This procedure standardizes the percentage point changes by treating each group as if it had the same poverty rate as all people.

The net effect of implementing the proposed measure with a higher threshold is to increase the number of poor, but not all of the movement is in the same direction. Under alternative 1 (0.75 scale economy factor), 4.2 million people are moved out of poverty and 13.3 million people are moved into poverty (32.7 million people are poor under both measures). As in the analysis with a constant poverty rate, most of the movement occurs near the poverty line. Thus, 93 percent of the 4.2 million people who are no longer categorized as poor move from the category of income between 50 and 100 percent of the poverty line to the category of income between 100 and 150 percent of the poverty line. Conversely, 72 percent of the 13.3 million people who are newly categorized as poor move from the category of income between 100 and 150 percent of the poverty line to the category of income between 50 and 100 percent of the poverty line.

Below, we show in broad terms the effects of the proposed changes to the thresholds and to the family resource definition on the increase in the overall poverty rate, which is 3.6 percentage points for alternative 1 and 4.5 percentage points for alternative 2 (see "Marginal Effects" for a more detailed decomposition):

Type of Change	Alternative 1	Alternative 2
All changes	+3.6	+4.5
$14,800 threshold	+0.7	+0.7
0.75 scale economy factor	-0.7	N.A.
0.65 scale economy factor	N.A.	-0
Housing cost index	+0.1	+0.1
Proposed resource definition	+2.0	+2.0
Net interaction effect	+1.5	+1.7

The use of a higher reference family threshold accounts for only 0.7 percentage point of the increase in the poverty rate. The use of a 0.75 scale economy factor (alternative 1) offsets the effect of a higher reference family threshold: it decreases the poverty rate by 0.7 percentage point. In contrast, the use of a 0.65 scale economy factor (alternative 2) has no effect, which is why the overall increase in the rate is higher for alternative 2 than for alternative 1. (See the discussion below as to why the two scale economy factors have these different outcomes.) Adjusting the threshold for geographic area differences in the cost of housing has little effect on the overall poverty rate for the nation as a whole.

In contrast, the changes to the family resource definition account for a large part of the increase in the poverty rate, 2.0 percentage points.[10] There is

[10] This amount is the sum of the effect of each specific change—e.g., adding the value of in-kind benefits to income or subtracting child care costs from income—considered alone.

also an interaction effect, calculated as the total effect minus the sum of the marginal effects of all the components, which can increase or decrease the rate. An example of a positive interaction effect is that of a working family that is not poor when its taxes, child care expenses, and other work-related expenses are considered in isolation, but that becomes poor when its expenses on all of these items are considered together. This interaction effect accounts for 1.5 percentage points of the increase for alternative 1 and 1.7 percentage points of the increase for alternative 2.

Groups

Implementing the proposed measure with a higher threshold increases the poverty rate for most population groups. The pattern of effects is similar to that seen in the previous analysis that held the overall poverty rate constant; see Table 5-8. In standardized terms, alternative 1 increases the poverty rate by 5.0 or more percentage points (compared with the overall increase of 3.6 percentage points) for several groups: people in two-person families, 5.2; Northeasterners, 5.7; Hispanics, 5.7; Westerners, 5.7; people in families lacking health insurance, 5.9; people in families of three or four persons, 6.3; and—the largest increase—people in working families, 7.3. It increases the poverty rate by less than 2.2 percentage points for a few groups: Southerners, 2.1; elderly people, 1.9; blacks, 1.1. It actually *decreases* the rate by more than 1 percentage point for two groups: people in welfare families, -1.5; and one-person families, -1.8. (The increases in the poverty rate for other groups are within 1 percentage point of the overall increase.)

Perhaps the most striking effect of the proposed measure is on the distribution of the poor population between working and welfare families. People in working families make up 51 percent of the poor under the current measure; under alternative 1, they make up 61 percent of the poor. This increase represents a net shift of 9.4 million working family members who are not classified as poor under the current measure who are so classified under the proposed measure. People in welfare families make up 40 percent of the poor under the current measure; under alternative 1, they make up 29 percent of the poor. This decrease represents a net shift of 1.5 million welfare family members who are no longer classified as poor under the proposed measure. Despite these shifts, however, the poverty rate for welfare families remains considerably higher than the rate for working families.

In comparing the effects of the two equivalence scales in the proposed measure, the use of a 0.65 scale economy factor (alternative 2) increases the poverty rate for most groups by 0.5-1.0 percentage point more than the use of a 0.75 scale economy factor (alternative 1). There are a few striking exceptions to this general pattern, shown in Table 5-8. For the elderly, alternative 2 increases their poverty rate by an additional 3.9 percentage points over

TABLE 5-8 Poverty Rates by Population Group Under the Current and Proposed Measures, 1992

	Poverty Rate (%)			Percentage Point Change—Standardized[a] with Proposed Measure	
		Proposed Measure			
Population Group	Current Measure	Alternative 1	Alternative 2	Alternative 1	Alternative 2
Total population	14.52	18.12	19.02	+3.60	+4.50
Age					
Children under 18	21.87	26.44	26.35	3.03	2.97
Adults 65 and over	12.90	14.56	18.00	1.89	5.74
Race and Ethnicity					
White	11.60	15.26	16.14	4.58	5.68
Black	33.15	35.62	36.76	1.08	1.58
Hispanic[b]	29.43	40.98	40.88	5.70	5.65
Family Size					
One person	21.75	19.09	23.83	-1.78	1.39
Two persons	9.91	13.45	15.10	5.18	7.60
Three or four persons	11.50	16.52	16.81	6.34	6.70
Five or more persons	20.98	26.19	24.74	3.61	2.60
Welfare or Work Status					
Receiving AFDC or SSI	59.39	53.40	55.12	-1.46	-1.04
One or more workers	9.09	13.66	14.11	7.30	8.02
Without Health Insurance	31.95	44.87	46.03	5.87	6.40
Region of Residence					
Northeast	12.29	17.09	18.19	5.67	6.97
Midwest	13.10	15.43	16.27	2.58	3.51
South	16.89	19.37	20.29	2.13	2.92
West	14.39	20.06	20.83	5.72	6.50

NOTE: Both alternatives use a two-adult/two-child poverty threshold of $14,800; for alternative 1 the scale economy factor is 0.75; for alternative 2 it is 0.65. The poverty rates are for individuals: They are determined on the basis of comparing the income of their family (or one's own income if an unrelated individual) to the appropriate threshold.

[a] See text for derivation of standardized percentage point changes.

[b] Hispanics may be of any race.

alternative 1. In other words, the equivalence scale has more of an effect on the elderly than on other groups. This finding also holds for one-person families and members of two-person families, for which, in comparison with other groups, alternative 2 makes more of a difference in their poverty rates than does alternative 1. Indeed, the results for these groups are not unrelated, as a very high proportion of the elderly are in one- and two-person families.[11]

Finally, in contrast to the pattern for all other groups, measure 2 *decreases* poverty for five-person and larger families by 1 percentage point compared with measure 1. (See below for further discussion of equivalence scale effects.)

Marginal Effects

This section considers the effects of the individual components of the proposed poverty measure, including the various adjustments to both the thresholds and the family resource definition. We show why, for example, the proposed poverty measure increases the poverty rate for people in working families and decreases the rate for people in welfare families. Table 5-9 shows the marginal effect on the rate for specific groups of making each of the following changes in isolation: the adjustment to the thresholds for geographic area differences in the cost of housing, the use of a 0.75 scale economy factor, the use of a 0.65 scale economy factor, adding the value of in-kind benefits to income, subtracting out-of-pocket medical care expenses from income, subtracting income and payroll taxes from income, subtracting child care expenses from income, and subtracting other work-related expenses from income. Not shown is the marginal effect of a particular reference family threshold or the net interaction effect.[12]

The adjustment to the thresholds for area differences in the cost of housing increases the overall poverty rate by a negligible amount (see Table 5-9, first column). This result is expected because the housing cost adjustment is an index with values higher and lower than 1, which should approximately balance out overall. By region, the housing cost index has marked effects, increasing the poverty rate in the Northeast by 2 percentage points and in the West by 1.7 percentage points (all figures are standardized). In contrast, the housing cost index decreases the poverty rate in the South by 1.1 percentage points and in the Midwest by 0.8 percentage point. The housing cost index has negligible effects on the poverty rate for other groups, with the exception of Hispanics, who reside disproportionately in East and West coast cities with higher-than-average housing costs; the index increases their poverty rate by 1.1 percentage points.

The use of an equivalence scale with a scale economy factor of 0.75 reduces the overall poverty rate by 0.7 percentage point. In contrast, the use of a scale economy factor of 0.65 has almost no effect on the poverty rate. The

[11] In 1992, 31 percent of the elderly lived alone (compared with 12 percent of all people age 15 and older); another 54 percent lived with a spouse (Bureau of the Census, 1993d: Table 71). Note that the category of one-person "families" or unrelated individuals includes those living with other unrelated individuals in a larger household, as well as those living alone.

[12] For the total population, as noted above, the marginal effect of a $14,800 reference family threshold (compared with the current threshold of $14,228) is to increase the overall poverty rate by 0.7 percentage point; the net interaction effect increases the rate by 1.5 and 1.7 percentage points for alternatives 1 and 2, respectively. In the analysis that keeps the overall poverty rate constant, the marginal effect of a $13,175 reference family threshold (compared with the current threshold of $14,228) is to decrease the rate by 1.2 percentage points; the interaction effect decreases the rate by 0.2 percentage point.

effects of the two scale economy factors are similar for most groups, with the exceptions noted above and discussed below.

The addition to gross income of values for in-kind benefits has a marked effect on reducing the overall poverty rate—1.7 percentage points. The reduction in the poverty rate from adding the value of in-kind benefits is particularly large for several groups: the elderly, -2.2; Northeasterners, -2.3; and people in welfare families, -2.5. The reduction in the poverty rate from this change to the resource definition is least for people in families without health insurance, -1.1 percentage points.

The subtraction from gross income of out-of-pocket medical care expenses (including health insurance premiums) has a large effect on increasing the overall poverty rate—2.1 percentage points. The increase in the poverty rate from this component is particularly large for several groups: people in families without health insurance, 2.9; people in families with workers, 3.0; people in two-person families, 3.2; and elderly people, 3.5. The increase in the poverty rate from this component is less striking for blacks, 1.0; and people in welfare families, 0.5.

The subtraction of taxes increases the overall poverty rate by 0.5 percentage point. (The EITC does not fully offset payroll and state income taxes.) The subtraction of child care expenses has a smaller effect (0.3 percentage point), which is expected because this deduction applies only to working families with children in which both parents (or one if there is just one) work and the family pays for child care. The subtraction of other work-related expenses increases the overall rate by 0.8 percentage point. Summing the marginal effects of these three components, the result is an increase in the overall poverty rate of 1.6 percentage points. The increase in the poverty rate from subtracting these three components from income is much less for the elderly, 0.2 percentage point; there is also a smaller-than-average effect for blacks, 1.0 percentage point, and for people in welfare families, 0.4 percentage point. For people in working families, there is a larger-than-average effect: subtracting these three components from income increases their poverty rate by 2.9 percentage points.

We do not have a directly comparable estimate of the effect of child support payments on poverty rates. Tabulations prepared for us from the 1990 SIPP panel, which compare aggregate poverty rates under the current measure and under a measure in which child support payments are subtracted from income, indicate that the effect might be to increase the overall poverty rate by about 0.3-0.5 percentage point, similar to the effect of child care expenses.

Looking across all of the components provides insight as to why the proposed measure disproportionately affects the poverty rates under alternatives 1 and 2 for some groups relative to the overall increase of 3.6 to 4.5 percentage points. For example, the poverty rate for welfare family members *decreases* by 1 percentage point (on a standardized basis), although it remains

TABLE 5-9 Effect of Individual Components of the Proposed Measure on Percentage Point Changes in the Official Poverty Rates, 1992

	Marginal Percentage Point Change in the Poverty Rate[a]			
Population Group	Housing Cost Index	Scale Economy Factor 0.75	Scale Economy Factor 0.65	In-Kind Benefits
Total Population	0.09	-0.73	-0.02	-1.65
Age				
Children under 18	0.11	-0.33	-0.33	-1.79
Adults 65 and over	-0.03	-2.07	1.26	-2.15
Race and Ethnicity				
White	0.01	-0.89	-0.03	-1.61
Black	0.07	-0.49	-0.06	-1.84
Hispanic[b]	1.12	-0.15	-0.19	-1.68
Family Size				
One person	0.02	-3.99	-1.58	-1.47
Two persons	0.01	0.40	1.95	-1.42
Three or four persons	0.15	0.44	0.80	-1.92
Five or more persons	0.09	-0.28	-0.86	-1.60
Welfare or Work Status				
Receiving AFDC or SSI	0.21	-0.40	-0.02	-2.50
One or more workers	0.03	-0.78	-0.34	-1.66
Without Health Insurance	0.04	-0.60	-0.25	-1.06
Region of Residence				
Northeast	1.98	-0.95	0.04	-2.26
Midwest	-0.81	-0.95	-0.11	-1.66
South	-1.10	-0.56	0.16	-1.46
West	1.73	-0.69	-0.33	-1.52

NOTE: The poverty rates are for individuals: They are determined on the basis of comparing the income of their family (or one's own income if an unrelated individual) to the appropriate threshold.

very high. This occurs because welfare families benefit proportionately more than others from in-kind programs, including health insurance (as reflected in lower out-of-pocket medical care expenses) and are proportionately less adversely affected by taxes and work expenses. Conversely, the rate for working family members increases by a full 7-8 percentage points (on a standardized basis). Such families are proportionately more affected than others by subtracting out-of-pocket medical care costs, taxes, child care, and other work-related expenses.

The poverty rate for members of families without health insurance increases by 6 percentage points (on a standardized basis), mainly because there is a proportionately smaller effect for these families of adding values for in-kind benefits and a proportionately larger effect of subtracting out-of-pocket medical

Marginal Percentage Point Change in the Poverty Rate[a]			
Out-of-Pocket Medical Costs	Taxes	Child Care Costs	Other Work Expenses
2.09	0.47	0.28	0.81
1.62	0.25	0.40	0.74
3.52	0.11	0.00	0.08
2.54	0.55	0.29	0.93
1.04	0.24	0.27	0.45
1.94	0.41	0.22	0.71
1.56	0.93	0.00	0.69
3.15	0.29	0.31	0.82
2.37	0.10	0.49	1.07
1.58	0.65	0.25	0.59
0.47	0.02	0.16	0.24
3.00	0.78	0.56	1.58
2.91	0.70	0.33	1.14
2.09	0.45	0.22	0.64
2.39	0.54	0.40	1.01
2.07	0.47	0.25	0.79
1.81	0.38	0.26	0.76

[a] The effect of changing only the single component on the official 1992 poverty rate for the group (see Table 5-8). The effect is expressed in standardized percentage points; see text for derivation.
[b] Hispanics may be of any race.

care costs. Conversely, the poverty rate for blacks increases by less than 2 percentage points (on a standardized basis) because proportionately more blacks are in welfare families and proportionately fewer are in working families. Finally, the poverty rate for children increases by 3 percentage points—or close to the overall increase—because poor children are members of both welfare families and working families.

Equivalence Scale Effects

Use of the panel's proposed equivalence scale has significant implications for poverty rates for certain groups relative to the equivalence scale that underlies the current measure. Also, the choice of a scale economy factor—0.75 or

TABLE 5-10 Effect of Alternative Scale Economy Factors in the Proposed Measure on Poverty Rates, by Family Size, 1992

Family Size	Official Poverty Rate (%)	Percentage Point Change Due to Scale Economy Factor[a]		Percent of Population in Each Category	
		0.75	0.65	Total	Children
One person[b]	21.75	-3.99	-1.58	14.5	0.2
Two persons	9.91	+0.40	+1.95	23.2	5.7
Three persons	12.03	+0.91	+1.63	19.5	19.7
Four persons	11.05	0.00	0.00	22.8	35.5
Five persons	16.56	-0.34	-0.55	11.9	22.2
Six persons	22.24	-0.24	-0.99	4.8	9.6
Seven or more persons	35.07	-0.18	-1.26	3.3	7.1
Total	14.52	-0.73	-0.02	100.0	100.0

NOTE: The poverty rates are for individuals: They are determined on the basis of comparing the income of their family (or one's own income if an unrelated individual) to the appropriate threshold.

[a] The percentage point changes are standardized: they represent the percentage point changes for each family size category times the ratio of the overall poverty rate to the rate for that category. Both scale economy factors were applied to a threshold of $14,228 for the reference two-adult/two-child family.

[b] Includes people living alone or with others not related to them.

0.65—makes a difference for some groups. To explore these effects more fully, we analyzed poverty rates for people in specific family sizes, from one-person families (i.e., unrelated individuals) to families of seven or more persons; see Table 5-10. Specifically, we compared the official rates to rates developed with the same threshold for a two-adult/two-child family ($14,228), but with different thresholds for other family types calculated from the proposed equivalence scale formula with a scale economy factor of 0.75 or 0.65.[13] The only factor that we change in these comparisons is the equivalence scale: that is, we do not change the reference family threshold (up or down) or the resource definition or adjust the thresholds for differences in cost of housing.

Because the threshold for the reference family does not change, the current poverty rate of 11 percent for people in four-person families should not change across the three measures, and, in fact, it does not. The rates for people in other family types do change, in varying ways.

The scale economy factor of 0.75 affects the poverty rates for people in

[13] The formula is as follows: scale value = $(A + 0.70K)0.75$ (or 0.65), where A is the number of adults in the family and K is the number of children under age 18. To develop the thresholds, the scale value for each family type is converted to a ratio to the scale value for the reference two-adult/two-child family and applied to the threshold for that reference family.

smaller and larger families, but, with one exception, the effects are small. The exception is the category of one-person families, for which the 0.75 factor reduces their poverty rate by almost 4 percentage points (on a standardized basis) compared with the official rate. One can see why this occurs by looking at Figure 3-5 (in Chapter 3): the equivalence scale value for one-person families with the 0.75 factor is lower than the current scale value, while the scale values for other family types are very similar. The difference in the scale values for one-person families stems from the fact that the current measure assumes that unrelated individuals need almost 80 percent as much as two-adult families, but the proposed equivalence scale with the 0.75 scale economy factor assumes that unrelated individuals need only about 60 percent as much as two-adult families. (Expressed another way, the current measure assumes that two-adult families need only 29% more than one-adult families, while the proposed scale with the 0.75 factor assumes that they need 68% more. These relationships are not quite the same when the second person in a family is a child; see Chapter 3.)

The scale economy factor of 0.65 affects poverty rates to a moderate extent for people in almost all family size categories, although the net effect for the total population balances out to almost zero. The 0.65 factor reduces poverty for unrelated individuals (although not as much as the 0.75 factor) and also for people in families of five, six, and seven or more persons. In contrast, it increases poverty for people in two-person and three-person families. The reason for these results is that the 0.65 factor assumes greater economies of scale than either the measure with the 0.75 factor or (in most instances) the current measure. Hence, the 0.65 factor generally produces higher scale values than the other two measures for two- and three-person families and lower scale values for families of five or more persons. (The scale value for unrelated individuals with the 0.65 factor is between the other two values for this group; see Figure 3-5.)

In sum, the scale with the 0.75 factor has little effect on poverty for most family size categories but a large (negative) effect on unrelated individuals; the scale with the 0.65 factor has moderate effects on every category. Neither scale affects poverty among children to any degree because almost 80 percent of children are in families of 3-5 persons, for which the effects tend to balance out. In contrast, because 85 percent of the elderly are in families of one or two persons (with 54% in the latter category), the scale with the 0.75 factor lowers the poverty rate for the elderly by a significant amount, while the scale with the 0.65 factor has the opposite effect (see Table 5-9).

Accuracy of Medical Care Expense Imputations

The imputation of out-of-pocket medical care expenses is the component with the biggest single effect on the overall poverty rate under the proposed

measure, increasing the rate by 2.1 percentage points in standardized terms. Clearly, a question is the adequacy of the imputation procedures.

One way to assess their adequacy is to inspect the results for reasonableness. Thus, the results we obtained meet such obvious tests as that the amounts imputed, in total and by characteristics, match the dollar totals obtained from the NMES data. Also, the imputed amounts make sense in relation to families' income levels: for families with gross money incomes around the median, we imputed an average of about $2,150 for out-of-pocket medical care expenses; for families with incomes around the 10th percentile, we imputed an average of only $450 for such expenses. (Table 5-4 shows the combined amount of deductions for out-of-pocket medical care, child care, and other work-related expenses that were imputed to families at different points in the income distribution.)

Some recent research studies provide information to evaluate alternative imputation procedures for out-of-pocket medical care expenditures, including ours. Weinberg and Lamas (1993) estimated poverty rates for 1989 under several measures, including some that took account of out-of-pocket medical care costs that they imputed to the March 1990 CPS by using 1987 NMES data. Specifically, they imputed mean 1987 expenditures, updated to 1989 with the Consumer Price Index (CPI) for medical care, to people under age 65 categorized by age group (under 5, 6-17, 18-44, 45-64) and health insurance coverage (any private insurance, public insurance only, uninsured) and to people aged 65 and older categorized by health insurance coverage (Medicare only, Medicare and other public coverage, Medicare and private coverage, uninsured). Because they also made some other changes to the poverty definition, it is not possible to estimate precisely the marginal effect on poverty rates of subtracting their imputed values for out-of-pocket medical care costs. Roughly, it appears that the effect would be to increase the 1989 poverty rate of 12.8 percent by 5.4 percentage points (Weinberg and Lamas, 1993: Table A-2); this increase is 6.1 percentage points standardized to the 1992 poverty rate of 14.5 percent.

Doyle, Beauregard, and Lamas (1993) used the 1987 NMES itself, projected forward to income year 1991 and calibrated to the March 1992 CPS, to estimate poverty rates with the current definition and measures that excluded out-of-pocket medical care costs. (They also estimated poverty rates with variations of a two-index approach.) For one measure, they calculated out-of-pocket expenses in the same manner as Weinberg and Lamas (1993) (i.e., by using subgroup means); for another measure, they used the actual out-of-pocket expenditures reported in the NMES for each family unit. With subgroup means, they estimated that the subtraction of out-of-pocket medical care costs would increase the 1991 poverty rate of 14.2 percent by 1.9 percentage points; with the use of actual NMES expenditure data, they estimated

that the increase would be 1.1 percentage points (Doyle, Beauregard, and Lamas, 1993: Table 2a).[14]

Hence, there are four estimates, including the panel's, of the effect on poverty of subtracting out-of-pocket medical care costs (including health insurance premiums) from income (standardized to 1992):

- 6.1 percentage points, with group means imputed to the March 1990 CPS (Weinberg and Lamas, 1993);
- 2.1 percentage points, with the more elaborate imputation procedure that we carried out on the March 1993 CPS;
- 1.9 percentage points, with group means imputed to a 1987 NMES file calibrated to the March 1992 CPS (Doyle, Beauregard, and Lamas, 1993); and
- 1.1 percentage points, with actual expenditure data from a 1987 NMES file calibrated to the March 1992 CPS (Doyle, Beauregard, and Lamas, 1993).

Clearly, the effect on the poverty rate of subtracting out-of-pocket medical care costs from income is less with the use of actual data than with imputed data. Also, a more elaborate imputation (e.g., that conducted by the panel) produces less of an effect than a simpler imputation. These findings are as expected because the distribution of out-of-pocket medical care costs is highly skewed: many people have relatively low-costs, while some people have high costs that raise the average, even within subgroups. Hence, an imputation procedure (particularly a simple one) is likely to overstate the expenses of enough people so as to overstate the increase in the poverty rate. Finally, there is an unexplained difference attributable to the use of a different survey file: namely, estimates of the effect on the poverty rate of subtracting out-of-pocket medical care costs with the NMES are lower than those with the March CPS, even when the same procedure of imputed subgroup means is used.[15]

Overall, it is not possible to draw a definitive conclusion about our approach because of the differences in the data and procedures used to calculate each of the estimates. However, it appears that our estimate is roughly consistent with all the available work, although it may somewhat overstate the

[14] Again, these are rough estimates because Doyle, Beauregard, and Lamas also made other changes to the poverty measure, specifically, excluding taxes from income and reducing the official poverty thresholds by 3.6 percent to account for average out-of-pocket medical care expenses for the total population. A tabulation run for the panel, which provides a better estimate of the marginal effect, estimated an increase in the poverty rate of 0.8 percentage point with the approach of using actual expenditure data from the NMES. (This tabulation kept taxes in the income definition and lowered the official thresholds.)

[15] One factor that may contribute to the difference is that Doyle, Beauregard, and Lamas (1993) updated the 1987 NMES expenditure data by changes in the national health accounts rather than by the change in the medical care component of the CPI.

effect on the poverty rate of subtracting out-of-pocket medical care costs from income. For the elderly, our measure may somewhat *understate* the effect on the poverty rate. Thus, Doyle, Beauregard, and Lamas (1993: Table 2a) estimate that subtracting out-of-pocket medical care expenses would raise the poverty rate for the elderly by 6.8 percentage points, compared with our estimate of 3.5 percentage points; see Table 5-9 (both increases are standardized to the poverty rate for the total population).

The treatment of out-of-pocket medical care costs is clearly a topic for which further work is needed. As a first priority, improved imputation procedures should be developed for both the March CPS and SIPP. Data from the next round of the NMES (scheduled for 1996) should prove very helpful in this regard. Work should also be done to explore ways of obtaining reasonable estimates of actual expenses in SIPP, acknowledging that SIPP (let alone the March CPS) cannot obtain the kind of detailed information on medical care costs that is the focus of the NMES. A mixed strategy may prove optimal: asking some broad questions on expenses in SIPP and using the more detailed NMES information to adjust the responses appropriately.[16] In any case, we stress the importance of accounting for out-of-pocket medical care costs in the poverty measure. Even the lower bound for the estimated increase in the poverty rate represents a significant effect. Moreover, by taking account of such expenses, the poverty measure will be able to contribute to tracking the effects of changes in the health care financing system on families' resources for consumption.

Prior Income Years

Data and Procedures

It is clear from the analysis that implementation of the proposed poverty measure will have important effects on the overall poverty rate in total and for various population groups. What is less clear is the effect on time trends. We attempted to conduct the same kinds of analyses reviewed above for 1992 with the March 1990, 1984, and 1980 CPS files. For the current measure, we used the official thresholds for 1992, 1989, 1983, and 1979. For the proposed measure, we used a $14,800 reference family threshold for 1992 and thresholds for the earlier years that reflect changes in spending on food, clothing, and shelter by two-adult/two-child families projected backwards from 1992; Consumer

[16] The method of "bracketing" responses, that is, asking respondents who answer "don't know" whether the amount is above or below certain levels (e.g., $100, $500, $1,000, $5,000, $10,000) may improve the completeness of reporting of out-of-pocket medical care expenses in SIPP. The bracketing method has been used successfully for asset reporting in the Health and Retirement Survey (see Chapter 4) and will be used in the next round of that survey for out-of-pocket medical care expenses.

Expenditure Survey (CEX) expenditure data were used to calculate the thresholds for the proposed measure (see Chapter 2, especially Table 2-7).

In the calculation of disposable income, we used the values for taxes and in-kind benefits that were developed by the Census Bureau and supplied with the extract file for each year. For child care and other work-related expenses, we adjusted the amounts that we used for our imputations for income year 1992 backwards to the earlier years by the change in the overall CPI. These adjustments do not seem unreasonable, although they do not capture price changes specific to these particular expenses, nor do they reflect other relevant changes that may have occurred over the period (e.g., in the proportion of working families that pay for child care). In the case of out-of-pocket medical care expenditures, we concluded that a simple price adjustment, even using the medical care component of the CPI, could be very problematic, particularly given the large effect of this component. With regard to cost-of-housing differences, the March CPS files for earlier years provide less geographic identification so that it would be difficult to implement a sufficiently detailed index. Hence, we computed poverty rates for 1979, 1983, 1989, and also 1992 that made all of the proposed changes with the exception of the subtraction of out-of-pocket medical care expenditures from income and the adjustment of the thresholds for housing cost differences. Child support payments are also not accounted for because of the absence of data in the March CPS with which to make a reasonable imputation.

Results

With either a 0.75 or a 0.65 scale economy factor (alternative 1 or 2), the proposed measure produces poverty rates that differ somewhat from the rates under the current measure for 1992 and preceding years; see Table 5-11.[17] The differences are more pronounced when one compares percentage point changes in the poverty rate for different periods:[18]

	Percentage Point Increase		
Time Period	Current Measure	Proposed Measure	
		Alternative 1	Alternative 2
1979–1983	+3.5	+3.9	+3.8
1983–1989	-2.4	-2.0	-1.9
1989–1992	+1.7	+1.3	+1.5
1979–1992 (overall)	+2.8	+3.3	+3.4

[17] Because we do not subtract out-of-pocket medical care costs, the differences for 1992 are smaller than shown above; presumably, the differences for earlier years are also smaller than would be the case if out-of-pocket medical expenses were deducted from income.

[18] The percentage point changes under the proposed measure are standardized to the official rate in the first year of each time period.

TABLE 5-11 Poverty Rates Under the Current and Proposed Measures: 1992, 1989, 1983, 1979

Measure	1992	1989	1983	1979
Poverty Rate (%)				
Current measure	14.52	12.82	15.24	11.70
Proposed measure[a]				
0.75 scale economy factor	14.59	13.21	15.16	11.36
0.65 scale economy factor	15.25	13.69	15.64	11.80
Percentage Point Change under Proposed Measure[b] (standardized to 1992)				
0.75 scale economy factor	+0.07	+0.44	-0.08	-0.42
0.65 scale economy factor	+0.73	+0.99	+0.38	+0.12
Marginal Change Due to				
0.75 scale economy factor	-0.73	-0.69	-0.55	-0.62
0.65 scale economy factor	-0.02	-0.16	-0.10	0.06
Addition of in-kind benefits	-1.65	-1.76	-1.38	-2.21
Subtraction of taxes	0.47	0.76	1.03	0.60
Subtraction of child care costs	0.28	0.33	0.24	0.24
Subtraction of other work expenses	0.81	0.82	0.68	0.74

NOTES: The reference (two-adult/two-child) family thresholds are as follows:

	1992	1989	1983	1979
Current measure	$14,228	$12,575	$10,097	$7,355
Proposed measure	14,800	12,986	10,038	7,565

The poverty rates are for individuals: They are determined on the basis of comparing the income of their family (or one's own income if an unrelated individual) to the appropriate threshold.

[a] Excludes adjustments for out-of-pocket medical care costs and geographic area differences in the cost of housing.

[b] Standardized percentage point changes represent the percentage point changes for a time period times the ratio of the official poverty rate in 1992 to the official rate for the period. Marginal percentage point changes are also standardized to 1992.

Over the entire period from 1979 to 1992, the proposed measure shows a somewhat higher increase in the poverty rate than the current measure. One reason for the difference is that such in-kind benefits as food stamps were more widely available in the 1970s than in the 1980s. The proposed measure reflects this change; the current measure does not.[19] Both the proposed and the current measures show an increase in the poverty rate from the economic recession in the early 1980s, a decline in the poverty rate from the economic

[19] As shown in Table 5-11, adding the value of in-kind benefits to income reduces the poverty rate by a larger amount in 1979 than in later years.

recovery of the mid- and late 1980s, and another increase in the rate from the recession in the early 1990s. However, the proposed measure shows a larger increase in the poverty rate from 1979 to 1983 because of such factors as the curtailment of in-kind benefits in the early 1980s and somewhat higher taxes on the working poor, which are captured in the proposed measure but not the current measure. The recent expansion of the Earned Income Tax Credit (EITC) is also captured in the proposed measure, which shows a smaller increase in the poverty rate from 1989 to 1992 than the current measure.

Our analysis of time trends is limited by our inability to develop reasonable imputations for many components of disposable income. We believe that it would be possible, with further work, to produce a more definitive analysis of changes in the poverty rate over time under the current measure and the proposed measure. For example, data from the predecessors to NMES in 1977 and 1980 could be used to develop imputations for out-of-pocket medical care expenses; data from the 1984 SIPP panel could be used to develop imputation regressions for child care expenses for earlier years; and data from the 1980 census could be used to develop geographic cost-of-housing indexes for earlier years. We support such work in order to develop a time series for comparison and to facilitate the transition to a new measure.

Historically, it is likely that the major differences between the current measure and the proposed measure would be most evident, not in the 1980s, but in the 1970s, when the Food Stamp Program and other antipoverty programs exhibited their largest growth. Because of data limitations, it does not seem feasible to construct estimates with the proposed measure for years before 1979. In the future, the proposed measure should provide a more accurate picture of the effects of important government policy initiatives that affect disposable income.

For example, changes in the health care financing system that affect out-of-pocket medical care costs or changes in tax provisions that affect disposable income would be reflected in the proposed measure; they cannot affect the poverty rate under the current measure. To provide some illustrations of this point, we simulated the effects on the poverty rate of policy changes that are scheduled to occur in a future year or that could conceivably be implemented in the future—making the assumption that the changes were actually implemented in 1992.

For one simulation, we estimated families' net taxes as if the legislated expansion of the EITC, which is scheduled to take full effect in 1996, were in effect in 1992. The result is to reduce the 1992 poverty rate under the proposed measure from 18.1 to 17.2 percent (using a $14,800 reference family threshold and 0.75 scale economy factor).

For another simulation, we estimated families' disposable income as if changes in health care financing (whether instituted publicly or privately) had placed a cap on families' out-of-pocket costs for medical care. Under one

scenario, we assumed that such a cap limited families' expenses to a maximum of $3,000 ($1,500 for an unrelated individual); under another scenario, we assumed that the cap limited families' expenses to a maximum of $2,000 ($1,000 for an unrelated individual). We applied these caps to the imputed values of out-of-pocket medical care expenses in our data file for 1992. The result is to reduce the 1992 poverty rate under the proposed measure from 18.1 percent to 17.2 percent for the higher cap and from 18.1 percent to 16.6 percent for the lower cap.

Poverty Rates Using SIPP

For the reasons described above, our analysis was conducted entirely with extracts from the March CPS. However, we recommend (see below) that SIPP become the source of the nation's official poverty statistics, beginning when the survey is redesigned in 1996. A question is what effects the use of SIPP, compared with the March CPS, will have on poverty rates. Table 5-12 presents a time series of poverty estimates for the total population based on the official thresholds and gross income data from the March CPS, SIPP, and the CEX, as well as estimates of poverty based on the official thresholds and a consumption or expenditure definition of family resources from the CEX.

In looking at the income-based estimates, the poverty rates from SIPP for 1984-1991 are consistently lower than the rates from the March CPS: the difference ranges from 2.6 to 3.6 percentage points. This pattern suggests if we had analyzed our measure with SIPP, the result for 1992, using a $14,800 reference family threshold, would have been poverty rates of 14.9 to 15.8 percent (depending on the scale economy factor) instead of the rates of 18.1 to 19.0 percent that we obtained with the March CPS. In other words, the increase in the rate—compared with the official rate of 14.5 percent—would have been 0.4 to 1.3 percentage points instead of 3.6 to 4.5 percentage points.

In turn, the March CPS rates for the years 1980-1991 are lower than the rates from the CEX, particularly in the years after 1983. These results suggest that surveys with a focus on measuring income in fact capture more income (at least at the lower end of the income distribution) and, hence, produce lower poverty rates. Indeed, the rates from SIPP, which is the survey with the greatest focus on income, are close to the CEX rates that use a consumption or expenditure-based definition of resources.[20]

[20] Preliminary unpublished estimates of CEX consumption-based and expenditure-based poverty rates by Christopher Jencks (private communication) are lower than those shown above. Income-based poverty rate estimates from the CEX, March CPS, and SIPP would be lower by about 1 percentage point if food stamps were added to income. Food expenditures that are paid for by food stamps are included in the consumption- and expenditure-based measures.

TABLE 5-12 Poverty Rates Calculated from the Consumer Expenditure Survey, Current Population Survey, and Survey of Income and Program Participation, 1980–1991

	Percent Poor of the Total Population				
	Income Definition			Consumption/Expenditure Definition	
Year	CEX[a]	March CPS[b]	SIPP[c]	CEX Consumption[d]	CEX Expenditures[e]
1980	13.7	13.0	N.A.	8.2	10.1
1981	14.3	14.0	N.A.	N.A	8.8
1982	15.8	15.0	N.A	N.A.	11.3
1983	16.1	15.2	N.A.	N.A.	10.2
1984	17.6	14.4	11.5	9.9	10.2
1985	17.6	14.0	10.7	N.A.	10.1
1986	18.9	13.6	10.3	N.A.	9.4
1987	15.0	13.4	10.8	N.A	9.7
1988	15.8	13.0	10.0	9.3	9.5
1989	15.2	12.8	N.A.	N.A.	9.7
1990	N.A.	13.5	10.1	N.A.	N.A.
1991	N.A.	14.2	10.6	N.A.	N.A.

[a] Estimates from Slesnick (1991b: Table 7).
[b] Estimates from Bureau of the Census (1992c: Table 2).
[c] Estimates from unpublished tabulations, Bureau of the Census. The 1985 estimate is an average of the rates estimated from the 1984-1985 panels.
[d] Estimates from Cutler and Katz (1991: Table 13). The estimates are crudely adjusted for use of the personal consumption deflator to update the thresholds instead of the CPI; a strictly comparable CPI-based poverty rate estimate for 1988 in Cutler and Katz (1992: Table 3) is 10.3 percent. Consumption is defined as all out-of-pocket expenditures minus spending on insurance, pensions, and Social Security plus net imputed rent for homes and vehicles.
[e] Estimates from Slesnick (1991b: Table 7).

There are several reasons that SIPP poverty rates are lower than the rates from the March CPS: SIPP obtains more complete reporting of transfer income (e.g., Social Security, SSI, and unemployment compensation); SIPP obtains higher reported numbers of recipients for most income types, and, with more income sources reported, there is a greater likelihood that respondents' total income will be above the poverty line; SIPP asks self-employed people about their income or cash "draw" from their businesses, rather about their net profit or loss; and SIPP obtains a better match of family composition with income data, which has been shown to reduce the poverty rate (see Bureau of the Census, 1993c:xxii; Coder and Scoon-Rodgers, 1994; see also Appendix B). Recent Census Bureau research (Lamas, Tin, and Eargle, 1994) also suggests that a small fraction of the difference between the SIPP and March CPS poverty rates is due to higher attrition of low-income people from SIPP for which the weighting adjustments do not completely compensate.

However, allowing for the attrition effect would still produce a 2-3 percentage point difference in the poverty rates estimated by the two surveys.

With regard to poverty rates for various groups, Census Bureau tabulations for 1987 and 1988 indicate that differences between SIPP and the March CPS are similar for most groups under the current measure, with the CPS rate always higher. For example, for 1987, the March CPS rate was 124 percent of the SIPP rate for the total population, 124 percent for men, 125 percent for women, 128 percent for people aged 18 to 64, 123 percent for Hispanics, and 132 percent for whites. For blacks, the March CPS rate was only 107 percent of the SIPP rate, and for children it was 115 percent. For the elderly, the CPS rate was 140 percent of the SIPP rate. The patterns were similar for 1988 (Short and Shea, 1991: Table D-3). These results suggest that differences between the March CPS and SIPP would be similar under the proposed measure for most groups, with the March CPS rate exceeding the SIPP rate in every case. In the next section, we consider explicitly the role of SIPP in poverty measurement and the overall need for improved data.

DATA SOURCES

Critically important for the measurement of poverty is the availability of appropriate, high-quality, and timely data—both for developing and updating the poverty thresholds and for estimating the resources available to families and individuals. We experienced first-hand the problems of inadequate data on family resources in analyzing the effects of implementing the proposed poverty measure in place of the current measure. Similarly, in attempting to understand the behavior of the proposed method for updating the poverty thresholds (see Chapter 2), we faced inadequate time-series data on consumer expenditures.

We note specific data problems and possible solutions in many places throughout our report. In this section we pull together in broad terms our proposals for improvements to support appropriate and accurate poverty measurement now and into the future. We first consider needed improvements for estimating families' resources in terms of disposable money and near-money income. On the resource side of the ledger, the data requirements are particularly pressing because of demands for fast release of the latest poverty statistics and the need for large sample sizes to support reliable comparisons across population groups, geographic areas, and time periods. A fundamental issue for resource estimation is which of the two major income surveys in the United States—the March CPS or SIPP—should provide the basis for official poverty statistics with the proposed definition.

We then look briefly at issues of estimating disposable income for surveys that are focused on other topics (e.g., health or housing) but need background

variables on income and poverty for analysis purposes. We take a similar brief look at these issues for the decennial census, which provides small-area income and poverty statistics that are not obtainable in surveys. Finally, we consider needed improvements to data on consumption and expenditures. Deficiencies in the existing series must be remedied, if there is ever to be the possibility of using a consumption-based definition of family resources.

Recommendations

The proposal to define family resources for the poverty measure as disposable money and near-money income requires a wide array of high-quality information on families' demographic characteristics, money income, in-kind benefits, expenses, and assets. The March income supplement to the CPS, which to date has been the source of the nation's official poverty statistics, only partly meets these requirements now and is unlikely to meet them all in the future. Consequently, imputations would be required to fully implement the proposed family resource definition with March CPS data. In general, despite reporting problems with surveys, it is much preferable to have actual rather than imputed data. Imputation procedures are unlikely to reproduce fully the relationships and variations that exist in the population, and they may well introduce errors. There is an alternate source that we believe can provide the needed data, namely, the relatively new SIPP.

From our comparative review of the current and likely future capabilities of the two surveys (see below), we conclude that SIPP should become the primary source of official income, poverty, and related statistics, beginning when a redesign of the survey takes effect in 1996. The SIPP design, questionnaire, and methodological research program should give priority to implementation of the poverty measure.

To facilitate the transition to a new poverty measure with a new data source, the Census Bureau should produce concurrent series of poverty statistics from both SIPP and the March CPS. Also, many analysts will want to continue to develop poverty estimates from the March CPS so the Census Bureau should regularly issue public-use files from both the March CPS and SIPP that are suitable for this purpose.

RECOMMENDATION 5.1. The Survey of Income and Program Participation should become the basis of official U.S. income and poverty statistics in place of the March income supplement to the Current Population Survey. Decisions about the SIPP design and questionnaire should take account of the data requirements for producing reliable time series of poverty statistics using the proposed definition of family resources (money and near-money income minus certain expenditures). Priority should be accorded to methodological research for SIPP that is relevant for improved poverty measurement.

A particularly important problem to address is population undercoverage, particularly of low-income minority groups.

RECOMMENDATION 5.2. To facilitate the transition to SIPP, the Census Bureau should produce concurrent time series of poverty rates from both SIPP and the March CPS by using the proposed revised threshold concept and updating procedure and the proposed definition of family resources as disposable income. The concurrent series should be developed starting with 1984, when SIPP was first introduced.

RECOMMENDATION 5.3. The Census Bureau should routinely issue public-use files from both SIPP and the March CPS that include the Bureau's best estimate of disposable income and its components (taxes, in-kind benefits, child care expenses, etc.) so that researchers can obtain poverty rates consistent with the new threshold concept from either survey.

Data Sources for Income

The March CPS

The March CPS has several important advantages: large sample size (over 60,000 households); timeliness (reports and data files are typically available within 6 months of data collection); and the fact that analysts both inside and outside the Census Bureau are comfortable with the data. However, the March CPS has many limitations for measuring poverty with the proposed resource definition.[21]

The March CPS collects information for each adult household member on previous year's money income from a large number of sources and also asks about participation in the major in-kind benefit programs. However, its coverage of in-kind programs is not complete. Moreover, it does not ask about expenses that we propose to deduct from income, such as out-of-pocket medical care expenditures, child care costs, other work-related expenses, and child support payments. The March CPS also does not ask questions that would facilitate accurate estimation of income taxes, such as number of dependents (including those outside the household), whether the household itemizes deductions, etc. The March CPS does not ascertain characteristics of rented housing needed to value public subsidies or characteristics of owned housing needed to impute equivalent rents. Finally, it does not ask about assets or lump-sum receipts, which may be needed for supplementary short-term poverty measures, if not for the official annual measure.

[21] For a detailed description of the March CPS, see Appendix B.

Indeed, the March CPS cannot be used to construct poverty measures for shorter (or longer) periods than a year. Moreover, the annual data it provides present a number of technical difficulties. In particular, family composition as defined in March may not reflect the composition during the income reference year, which can result in an erroneous assignment of poverty status. With regard to data quality, many income questions in the March CPS have high nonresponse rates: overall, 20 percent of estimated total income from the CPS represents imputed rather than reported values. There are other kinds of reporting errors as well.

The problems with the March CPS are tractable in principle (e.g., more questions could be added or steps taken to improve quality). In practice, however, it would be difficult to effect further improvements because the March CPS is a supplement to the monthly labor force survey that is the basis of the nation's monthly unemployment statistics. The primary focus of the Bureau of Labor Statistics (BLS), which sponsors the monthly CPS, and the Census Bureau, which collects it, is to maintain and enhance the quality of the monthly labor force data. All of the supplements, including the March income supplement, are of secondary priority. One consequence is that fairly high nonresponse rates to the income supplement are tolerated so as not to reduce the likelihood that households will cooperate with the next month's employment questions. Also, the recent major redesign of the CPS, involving a new sample, revised questionnaire, and revised data collection and processing systems, focused on the main labor force component and not the supplements. The income supplement will benefit from some of the changes, such as the introduction of computer-assisted interviewing, but no special effort was made to revisit the questionnaire or other features of the income supplement itself.

The Alternative of SIPP

Recognizing the inherent limitations of the March CPS as long ago as the early-1970s, a federal interagency committee sponsored by the U.S. Office of Management and Budget proposed that a new income survey be fielded to improve the scope and quality of the information available on income and the effects of government assistance programs. This proposal ultimately led to the creation of SIPP, which began in 1983 (see Committee on National Statistics, 1989:Ch. 4). Currently, SIPP is designed as a longitudinal survey that follows the adult members of samples or "panels" of about 20,000 households. A new panel is introduced every February and followed over a period of 32 months, with interviews at 4-month intervals. The survey is scheduled for a major redesign beginning in 1996.[22]

[22] See Appendix B for a detailed description of SIPP.

SIPP has already made important contributions to knowledge about the dynamics of income receipt and program participation, health insurance coverage, asset holdings, and other topics related to material and other dimensions of well-being. SIPP has also made important strides toward obtaining higher quality income data than in the March CPS (e.g., nonresponse rates for many income sources are significantly lower), although there are still problems to overcome. With specific regard to poverty measurement, SIPP asks (or has asked) questions to obtain virtually all of the information needed to implement the proposed family resource definition. On the negative side, SIPP experienced significant start-up problems, including delays in release of data products and budget cuts that necessitated reductions in sample size and number of interviews.

A panel of the Committee on National Statistics (CNSTAT) recently completed a thorough review and evaluation of SIPP, recommending changes to begin with the 1996 panel (Citro and Kalton, 1993). These changes, taken together, promise to significantly improve the usefulness of the survey for both longitudinal and cross-sectional analyses of income, program participation, and related topics. They include:

- extending the length of each panel (i.e., each new sample of households whose members are followed over time) from 32 to 48 months;
- following children as well as adult members of the households originally included in each panel, even if they move to other households;
- introducing new panels every 2 years, so as to reduce the complexity of the survey (compared with the current design of introducing a new panel every year) and still maintain the ability to produce yearly time series for income, poverty, program participation, and other statistics;
- enlarging the sample size of each panel so that about 55,000 households are available for cross-sectional estimates by combining two panels, compared with 38,000 under the current SIPP design (for fully funded panels) and 62,000 in the March CPS;[23] and
- making maximum use of the planned introduction of computer-assisted interviewing and database management system technology to improve data quality and timeliness.

The CNSTAT Panel to Evaluate SIPP concluded that these changes would make it possible for SIPP to produce timely income statistics of high reliability. Noting the limited ability to make further improvements to the March CPS, the SIPP panel recommended that, over time, SIPP replace the March CPS for purposes of producing income, poverty, and related statistics.[24]

[23] The CNSTAT SIPP panel believed that further expansion of sample size would be possible once planned improvements in data collection and processing are put into place.

[24] The CPS would, of course, continue to include income items for use in labor force analyses.

We are in full agreement with the recommendation that SIPP become the basis for the nation's official poverty and related statistics. The March CPS does not collect all of the information needed for poverty measurement, has problems with the quality of the information that it collects, and does not have much room for further improvement. In contrast, SIPP collects most of the needed information, has achieved quality improvements, and, because of its focus on income, has ample opportunity for further improvements in both the scope and the quality of income-related data. The best time to put this recommendation into effect would be in 1996, when other changes to the survey are made.

Orienting SIPP to Poverty Measurement

A decision to use SIPP to produce the official poverty data means that all aspects of the survey should be reviewed to determine their suitability for providing the most accurate statistics possible under the proposed measure. A key aspect for review is the proposed redesign of the survey. Although the Census Bureau has accepted many of the recommendations of the CNSTAT Panel to Evaluate SIPP, it has decided against the recommendation for a design that would have two panels of about 27,000 households each in the field each year, with new panels introduced every 2 years. Instead, the Census Bureau has proposed a design that would have one large panel of 50,000 households in the field each year, with new panels introduced every 4 years.

The Census Bureau's design has the advantage of maximum sample size in a single panel for purposes of longitudinal analysis. For cross-sectional analysis, the two designs are equivalent: the two panels in the field each year under the CNSTAT SIPP panel's design can readily be combined to produce the same sample size as the single, larger panel of the Census Bureau's design.

Longitudinal estimates are important, but we believe that the time series of annual poverty rates and other statistics is paramount and that the design must support the production of reliable annual estimates. In this regard, the Census Bureau's proposed design provides no overlap between panels. Hence, every 4 years, it will be hard to determine if changes in the poverty rate are real or due to the introduction of a new panel in place of an old panel that may have uncorrected attrition bias or other problems.[25]

Since most attrition of sample cases from SIPP occurs by the end of the first year of a panel, there may be problems of attrition bias with the CNSTAT SIPP panel's design as well as the Census Bureau's, as the former does not

[25] Attrition bias can occur when attrition rates differ between groups: for example, higher rates of attrition for low-income people could produce a downward bias in the poverty rates. Adjustments to the survey weights are usually made to compensate for attrition bias, but the adjustments may not be adequate.

refresh the sample for cross-sectional estimates more frequently than every 2 years. Research on attrition and the most appropriate corrective actions is obviously needed, whichever design is used, and the Census Bureau has stated its commitment to such research for SIPP. However, it is still the case that attrition bias or other problems with a panel that may affect the poverty estimates cannot be fully assessed with a nonoverlapping design.

Indeed, a nonoverlapping design also limits the possibility of using SIPP for longitudinal analysis of important policy changes, such as changes in the welfare or health care systems. Ideally for such analysis, one wants information for a sufficient length of time before a change in order to accurately characterize people's behavior under the old policy regime. One then wants information for as long as possible after the policy change to assess the effects on behavior. However, if policy changes take effect near the beginning or end of a 4-year panel under the Census Bureau's design, information either before or after the change will be limited, reducing the ability to adequately evaluate the effects. In contrast, under the design of the CNSTAT Panel to Evaluate SIPP, there will likely always be a panel in the field that is suitable for analysis of before-and-after effects, albeit with a smaller sample size.

In addition to considering the best survey design for purposes of poverty measurement, the SIPP questionnaire should be reviewed to determine what changes may be required. Thus, some questions may need to be added at least occasionally (e.g., work expenses) or asked more frequently (e.g., child care expenses or child support payments), while others may need to be modified. In some cases, such as the estimation of tax liabilities, it may make sense to collect a limited set of variables that will enhance the Census Bureau's simulation model rather than to try to collect detailed information directly.[26]

Finally, from the perspective of improved poverty measurement, we urge that high priority be given to several areas of methodological research for SIPP. First, questionnaire research should be pursued to develop ways to improve the quality of reporting of wage and salary income in SIPP, which falls short of independent estimates (very likely because many people report net rather than gross pay). Second, research should be conducted to improve the weighting process so that the weights adequately account for the higher rates of attrition evidenced by low-income population groups (see Appendix B on both these points).

Third, and very important, research should be conducted to improve population coverage in SIPP. A problem that affects all household surveys, including SIPP and the March CPS, is that not all people who are associated with sample households are in fact listed as household residents. Particularly subject to undercoverage are low-income minority groups. For example, it is

[26] See Citro and Kalton (1993:Chap. 3) for suggestions of content changes to SIPP that generally comport with the proposed resource definition for the poverty measure.

estimated that as many as 20 percent of black men are missed in the March CPS and SIPP, relative to the population counted in the decennial census. Undercoverage rates are even higher for young black men (Citro and Kalton, 1993: Table 3-12; see also Appendix B). The Census Bureau has initiated a program of coverage research to better understand coverage problems and develop effective countermeasures (Shapiro and Bettin, 1992), and we urge that this work go forward. We note, however, that household surveys, by their nature, overlook some population groups, including the homeless and people in institutions. The decennial population census (see below) includes these groups, although coverage is far from complete.

Transition

We are reasonably confident that use of SIPP data will show the same effects of the proposed poverty measure as shown in the March CPS, with the exception of lower overall rates. However, its use as the official source of poverty statistics represents another change in addition to the significant changes that we propose in the measure itself. To aid in making the transition and to help evaluate the SIPP-based estimates, it would be helpful for the Census Bureau to produce, for some period, concurrent time series of poverty rates from the March CPS and SIPP by using the proposed revised thresholds (updated each year with new CEX data) and the proposed disposable income resource definition. Admittedly, the construction of disposable income with the March CPS is complicated by the necessity for extensive imputations: in addition to imputation procedures for taxes and nonmedical in-kind benefits that already exist, the Census Bureau would need to develop imputation procedures for out-of-pocket medical expenditures, child care expenses, and child support payments.[27] However, we believe that such procedures can be developed, using data from such sources as SIPP and NMES, and that it would be very useful for researchers and policy analysts to have concurrent series. Any imputations that are performed, whether on the March CPS or SIPP, should be evaluated as to their quality and the sensitivity of the resulting poverty rates to the form of the imputation.

The concurrent series should be developed going forward from 1996 when the new SIPP design is implemented, and also going backward to 1984 when SIPP was first introduced. In the case of the latter estimates, some imputations will be required for SIPP as well as for the March CPS; also, small sample size for many SIPP panels will be a problem. Nevertheless, the

[27] For child support payments, adequate imputations will require the addition of a question to the March CPS that asks whether families provide support to children outside their household (ideally, the question would ask the amount as well, obviating the need for an imputation procedure).

"backcasting" exercise should provide results that are helpful to analysts in historically assessing poverty trends under the proposed measure.

Finally, for the foreseeable future, the Census Bureau should routinely issue public-use files from both the March CPS and SIPP that include the Bureau's best estimate of disposable income and its components (taxes, in-kind benefits, child care expenses, etc.). Although many researchers will make the transition to using SIPP for analysis purposes, it is likely that others will continue to use the March CPS for some kinds of poverty analysis, particularly analyses related to labor force behavior (which is the focus of the regular CPS). Hence, it is important that researchers have ready access in the March CPS data files to income variables constructed under the new resource definition as well as variables for the new thresholds: to use the new thresholds with income variables that represent the old resource definition would result in inappropriate estimates of poverty.

Research Recommendations

Income Data in Other Surveys

Many federally sponsored surveys in addition to the March CPS and SIPP (e.g., the American Housing Survey, Consumer Expenditure Survey, National Health Interview Survey, National Medical Expenditure Survey) collect income data. Because the focus of these surveys is on some other topic, they cannot typically afford the questionnaire space to collect detailed income information, although they need to obtain some income measures as background variables for analysis purposes. Often, income-to-poverty ratios are desired because such measures adjust for differences in family size and composition. Our recommendation to measure poverty on the basis of families' disposable money and near-money income may present a problem for surveys with limited room for questions not directly germane to their primary focus.

We encourage work by agencies to determine the best set of questions to include in surveys that require income and poverty measures as background variables. Given limited questionnaire space, we believe that it is more important to include questions that will permit estimating disposable income (e.g., questions on net pay, child care costs, and food stamp benefits) than it is to include questions to distinguish among a large number of components of gross money income (e.g., types of cash transfers or property income).[28]

We also encourage research by agencies on adjustments that may be needed for the greater extent of income underreporting that is likely to occur

[28] In 1990, the Interagency Forum on Aging-Related Statistics issued a set of guidelines for income questions to include in surveys of the elderly. That effort might serve as a model for work to develop guidelines for survey questions to support measurement of disposable income.

because a survey cannot ask about as many income components as are included in SIPP or the March CPS. Research with the March CPS, SIPP (and its predecessor, the Income Survey Development Program) has demonstrated that probing for more different sources of income elicits higher levels of reporting compared with asking broad categories (see Appendix B).

Finally, and most important, we urge research by agencies on methods to develop poverty estimates for surveys with limited income information that are comparable to the estimates that would result from having complete information with which to calculate disposable money and near-money income. Comparisons of poverty rates from SIPP-based on a full implementation of the disposable income concept with rates based on a partial implementation (e.g., based on money income only, or money income, taxes, and nonmedical in-kind benefits only) could form the basis for developing appropriate adjustment factors for other surveys. Alternatively, agencies might come up with some rough-and-ready imputation procedures to use for estimating disposable income from limited survey information (e.g., a table for imputing out-of-pocket medical care expenditures based on type of health insurance and the number and age of family members).

RECOMMENDATION 5.4. Appropriate agencies should conduct research on methods to develop poverty estimates from household surveys with limited income information that are comparable to the estimates that would be obtained from a fully implemented disposable income definition of family resources.

Income Data in the Decennial Census

Another source of income information is the decennial census, which provides data every 10 years for small geographic areas for which reliable estimates cannot be obtained in household surveys. The census also includes population groups, such as the institutionalized and the homeless, that are typically excluded from household surveys (although census estimates of the homeless are of doubtful quality). Income and poverty data from the census are used in many kinds of analyses; they also serve such important governmental purposes as allocation of federal funds to states and localities. For example, census estimates of the number of school-age children in poverty are used to allocate federal funds to school districts for programs to aid disadvantaged children.

Questionnaire space in the decennial census is even more limited than in most surveys. Over the decades, the number of income questions has been expanded, but, in the 1990 census, only 8 types of income were ascertained, compared with more than 30 in the March CPS and more than 60 in SIPP. No information was obtained about taxes, in-kind benefits, medical costs, work expenses, child support payments, or assets. Consequently, it is not

possible to construct poverty estimates from census data with the proposed disposable income definition of families' resources.

Yet, as we have demonstrated, poverty statistics that are based on gross money income cannot distinguish between groups that differ in important ways (e.g., working versus nonworking families) or capture the effects of important government policy changes. Hence, we believe it is critical for agencies to conduct research on methods to adjust census small-area poverty estimates to more closely approximate the estimates that would obtain with a disposable income resource definition. Again, the basis for such adjustments could be analysis of poverty rates with SIPP: for example, comparing rates estimated with a disposable money and near-money income definition to rates estimated with a gross money income definition for various groups. If key population groups (e.g., the elderly, minorities) were distributed about equally across the country instead of residing disproportionately in some areas, then it might not be necessary to conduct research on methods for adjusting census small-area poverty estimates to approximate a disposable income definition of resources. The reason is that most uses of census poverty statistics are relative in nature: for example, allocating shares of a fixed total amount of federal funding to areas according to their poverty rate relative to the nation as a whole.

Also, while recognizing the constraints on the census questionnaire, we urge serious consideration of adding perhaps one or two simple yes-no questions that would facilitate adjusting the census poverty estimates. For example, questions on whether a family received food stamps or paid for child care in the past year or had health insurance coverage would be very helpful in developing appropriate adjustment factors.[29]

RECOMMENDATION 5.5. Appropriate agencies should conduct research on methods to construct small-area poverty estimates from the limited information in the decennial census that are comparable with the estimates that would be obtained under a fully implemented disposable income concept. In addition, serious consideration should be given to adding one or two questions to the decennial census to assist in the development of comparable estimates.

Expenditure Data

Unlike many other developed countries, the United States does not have adequate data with which to develop a poverty measure that uses a consumption-

[29] At present, planning for the year 2000 census is exploring ways to reduce the content of the census questionnaire and to determine alternative sources of data, such as a continuing large-scale sample survey with most of the census content (see Edmonston and Schultze, 1995). Whether income questions are included in the census or in a census-like questionnaire that is fielded at more frequent intervals, the issue of obtaining information for developing appropriate poverty estimates remains.

or expenditure-based definition of resources; hence, there is virtually no practical alternative to using an income-based definition. Of course, there are many arguments in favor of an income definition, but there are also strong arguments in favor of a consumption or expenditure definition. We believe it is important to consider improvements to the Consumer Expenditure Survey that would permit its use in estimating resources for poverty measurement purposes.[30]

We propose use of the current CEX for deriving and updating the poverty thresholds, for which the data requirements are not as demanding as they are for estimating resources (e.g., sample sizes can be smaller). However, even for this purpose, we believe it is important to consider improvements to the survey. In general, improvements to the CEX would be very useful to support research and policy analysis on consumption and savings behavior and the relationship of consumption, income, and wealth.

The most costly improvement to explore would be an expansion of the sample size. A major expansion, from 5,000 households or consumer units (the number provided for analysis purposes by the Interview Survey component of the CEX) to 50,000-60,000 households (i.e., the sample size of SIPP or the March CPS) would be required for the CEX to serve as the vehicle for estimating resources. A more modest expansion—perhaps doubling the current sample size—would improve the quality of the data for updating the poverty thresholds under the proposed procedure. More generally, such an expansion would make the data more useful for analyzing trends in expenditures and consumption patterns across population groups.

Another area to explore is the development of methods to reduce recall and other reporting errors and to improve the survey's response rate. We surmise that the length and complexity of the questionnaire may be major factors in impairing response. The CEX questionnaire is far more complex than the SIPP questionnaire. The latter has often been criticized for length and complexity, but the burden it poses is less than it would appear for the many people who have relatively few sources of income. In contrast, most people spend money on a wide variety of goods and services and hence must answer most of the detailed questions in the CEX. We understand that the current level of detail may be needed for purposes of respecifying the market basket for the CPI (which is done about once every 10 years); however, a more streamlined questionnaire might be more effective for the purposes of poverty measurement and other analytical uses of expenditure data. One possibility could be to embed a more detailed survey for a subsample of respondents within a larger, more streamlined survey.

Yet another area to explore concerns the overall CEX design, which currently consists of two separate surveys (the Diary Survey and the Household

[30] See Appendix B for details about the CEX.

Interview Survey) that comprise separate samples and cannot be linked at the individual respondent level. It would be very useful to consider designs that provide more complete reporting of expenditures for individual families in the sample. Also, it would be useful to explore designs that follow family members over time, so that complete expenditure patterns are obtained on an annual basis. Currently, families that move are not followed; instead, interviews are conducted with the new residents.

The kinds of changes to the CEX that could improve its usefulness for poverty measurement and other analysis purposes would not be easy to implement and would likely be expensive (particularly in the case of an increased sample size); however, the potential benefits could be great. A useful first step would be for BLS to conduct or commission a study that evaluates the CEX and assesses the costs and benefits of changes to the survey that could make it more useful for poverty measurement and other purposes. We urge prompt undertaking of such a study. Furthermore, we hope that improvements to the survey that stem from the review can be implemented in time to provide useful input to the next 10-year review of the poverty measure.

RECOMMENDATION 5.6. The Bureau of Labor Statistics should undertake a comprehensive review of the Consumer Expenditure Survey to assess the costs and benefits of changes to the survey design, questionnaire, sample size, and other features that could improve the quality and usefulness of the data. The review should consider ways to improve the CEX for the purpose of developing poverty thresholds, for making it possible at a future date to measure poverty on the basis of a consumption or expenditure concept of family resources, and for other analytic purposes related to the measurement of consumption, income, and savings.