

**THE SURVEY OF INCOME AND
PROGRAM PARTICIPATION**

**DEFINING AND MEASURING NONMETRO
POVERTY: RESULTS FROM THE SURVEY
OF INCOME AND PROGRAM PARTICIPATION**

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**DEFINING AND MEASURING NONMETRO POVERTY:
RESULTS FROM THE SURVEY OF INCOME AND PROGRAM PARTICIPATION**

INTRODUCTION

Since the 1960's, a dramatic change has occurred in how people receive their income. Transfer payments,¹ largely from government programs, have become a large source of income. As government programs became more important, the need for better information to evaluate them became more apparent. To fill this need, a new survey, the Survey of Income and Program Participation (SIPP) was developed. SIPP was designed to record people's receipts of income, including transfers, and their participation in government programs month by month (Nelson et al., 1985, p. 1).

SIPP's unique monthly data allow different definitions of poverty. How poverty is defined affects the measured extent of poverty and the groups who are included among the poor. Issues related to poverty, including its definition and measurement, are particularly important to nonmetro² areas, because poverty has historically been more prevalent in nonmetro areas, according to the official poverty statistics (Deavers et al., 1988).

This paper presents results from a study that used SIPP data to examine poverty in nonmetro areas. First, a brief history of poverty measurement in the United States is outlined. A description of the survey comes next, followed by the definitions used in the analysis. Finally, how different

¹Transfer payments are receipts of income, largely from government programs, for which no work is performed in the current time period (Bentley, 1988, p. vii).

²Nonmetro areas lie outside Metropolitan Statistical Areas (MSA's). Generally speaking, MSA's have a large population nucleus and also contain nearby communities that are economically and socially integrated with the nucleus (U.S. Bureau of the Census, 1985, pp. 35-36).

poverty definitions alter the extent and nature of nonmetro poverty are examined. In particular, this paper will address the following questions:

Does the definition of poverty make a difference in the extent of poverty in nonmetro areas?

Do nonmetro areas have proportionately more poor than metro areas under all definitions considered?

Does the composition of the nonmetro poor vary substantially under different definitions?

Is any particular definition preferable for examining nonmetro poverty?

The research described below is the result of cooperation between two Federal agencies: the Economic Research Service (ERS) and the Census Bureau. This cooperation allowed ERS personnel to use the internal SIPP files at the Census Bureau, which was necessary to access a variable that completely differentiated between metro and nonmetro cases. Details are discussed below.

BACKGROUND: POVERTY MEASUREMENT IN THE U.S.

A statistically rigorous definition of poverty did not exist until the 1960's. When Franklin Roosevelt saw "one-third of a Nation ill-housed, ill-clad, ill-nourished" (Bartlett, 1980, p. 780) in 1937, he had no official measure of poverty to draw upon. This does not mean that there were no attempts to measure the size of the low-income or poor population. Congress, for example, occasionally commissioned studies of the low-income population (U.S. Dept. of HEW, 1976, p. 5).³ The need for a statistical measure of poverty was clear after President Johnson announced the War on Poverty in his 1964 State of the Union Address.

³See, for example Characteristics of the Low-Income Population and Related Federal Programs (U.S. Congress, 1955).

The official U.S. poverty level evolved from the pioneering work by Mollie Orshansky of the Social Security Administration (SSA). Orshansky (1963) derived poverty levels based on the cost of a minimum diet from a 1955 USDA survey. Because families spent about one-third of their income on food, the poverty level was set at three times the cost of the food plan. Her original study provided needs criteria only for families with children. Orshansky (1965) later revised her work, providing thresholds for more family types. Her poverty thresholds varied with family size, number of children, sex and age of the family head, and farm-nonfarm residence.

During the 1960's, the SSA updated Orshansky's thresholds annually for changes in food prices (U.S. Dept. of HEW, 1976, p. 6) and estimated poverty from the Current Population Survey (CPS). In 1968, the Census Bureau began publishing estimates of the poor population based on the SSA's thresholds and the CPS. By 1969, the Office of Management and Budget designated the SSA's thresholds and the estimates of poverty derived from them as official statistics to be released each year from the Census Bureau. The poverty levels have been updated by the Consumer Price Index and released annually by the Bureau ever since (U.S. Dept. of HEW, 1976, p. 7). In the early 1980's, other adjustments in the poverty threshold finally eliminated the farm differential, replaced the head concept with the householder concept, and eliminated the differential based on sex of householder (Getz, 1984).

Annual poverty data for metro and nonmetro areas are available from the CPS back to 1967. Although the CPS provides two decades of poverty data for nonmetro areas, the survey does have shortcomings. The CPS was originally designed as a monthly labor force survey; collecting income data was a secondary goal (U.S. Bureau of the Census, 1987, p. 1-1). Therefore, detailed

income data for a given year are collected only once, in a supplement to the March CPS of the following year. For example, income data for calendar year 1987 were collected in March 1988.

This gap between data collection and income receipt leads to three problems (U.S. Bureau of the Census, 1987, p 1-1). First, people may have difficulty remembering all income that they received during the previous year. Second, the CPS fixes family composition as of the interview. It does not record changes in family composition that may have occurred during the previous year. Third, the CPS does not explicitly capture partial years of participation in government transfer programs, except for Food Stamps.

These problems, plus the need for more information to evaluate government transfer programs, led to interest in designing a new survey that would collect information on a subannual basis and also focus on transfer payments. Expanding the CPS questionnaire would be inappropriate, since its main purpose is to collect labor force data. The Income Survey Development Program (ISDP) was begun in 1975 as an experiment to develop income and program participation data on a subannual basis. Based on the knowledge gained in the ISDP, SIPP was initiated by the Census Bureau in 1983 (Nelson, et al., 1985, pp. 1-3).

DATA

Before any results can be presented, some basic information about the organization of the survey is necessary. Some of the decisions on how to conduct the analysis and some of the results will be more understandable if the nature of the survey is explained.

Structure of the Survey⁴

SIPP is a complex longitudinal survey that collects monthly data continuously from the same households over a period of time. A new sample, or panel, is introduced each year. The first (1984) panel was introduced in October, 1983. Subsequent panels are initiated each February, starting in 1985. At any given time, two or three panels may be in the field simultaneously. The first panel started with about 19,900 interviewed households. Subsequent panels have been smaller because of budget reductions. The 1985 panel initially had 13,300 interviewed households, while the 1986 panel had 11,500.

The households in each panel are divided into four rotation groups. Within each interview period, or wave, all rotation groups are given the same questionnaire. Because only one rotation group is interviewed each month, it takes four months to complete a wave. During each interview, data for the previous four months are collected. This data collection pattern results in staggered monthly data (figure 1). The 1984 panel has nine waves, and later panels have eight.

An additional complication arises from the fact that the composition of families and households is not fixed in SIPP and can vary from month to month. This is an important strength of SIPP, for it allows analysts to follow changes in family and household composition over time. On the other hand, allowing families and households to vary complicates data analysis.

⁴Most of the information in this section came from two sources: Survey of Income and Program Participation Users' Guide (U.S. Bureau of the Census, 1987) and An Overview of the Survey of Income and Program Participation: Update 1 (Nelson et al., 1985).

Figure 1. Data collection schedule, 1984 panel.

Wave	Rotation Group	Interview Month	Reference Period															
			1983			1984				1985			1986					
			2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr			
1	1	Oct		JAS														
	2	Nov		JAS	O													
	3	Dec		AS	ON													
	4	Jan		S	OND													
2	1	Feb			OND		J											
	2	Mar			ND		JF											
	3	Apr			D		JFM											
3	4	May					JFM	A										
	1	Jun					FM	AM										
	2	Jul					M	AMJ										
	3	Aug					AMJ	J										
4	4	Sep						MJ	JA									
	1	Oct						J	JAS									
	2	Nov							JAS	O								
	3	Dec							AS	ON								
5	4	Jan								S	OND							
	1	Feb								OND	ND		J					
	2	Mar								ND	D		JF					
	3	Apr								D			JFM					
6	4	May											JFM	A				
	1	Jun											FM	AM				
	2	Jul											M	AMJ				
	3	Aug											AMJ	J				
7	4	Sep												MJ	JA			
	1	Oct												J	JAS			
	2	Nov													JAS	O		
	3	Dec													AS	ON		
8	4	Jan													S	OND		
	1	Feb													OND	ND		J
	2	Mar													ND			JF
9	3	Apr														D		JFM
	4	May																JFM
	1	Jun																FM
	2	Jul																M

Note: Two waves collect data from only three rotation groups. These smaller waves were introduced to save money. However, the smaller waves do not result in data gaps for the rotation groups affected (U.S. Bureau of the Census, 1987, pp. 2-3 and 2-6).

Source: U.S. Bureau of the Census, 1987.

Structure of the Longitudinal Research File

In order to make SIPP data available as quickly as possible, the Census Bureau has released wave files separately. Many analysts, including me, would prefer to examine income, poverty, and other data over a twelve-month period. Therefore, the Census Bureau decided to develop a system to link wave files together (Coder et al., 1987, Appendix A, pp. 2-3).

As a by-product of its efforts, the Bureau has produced an edited, 12-month longitudinal research file that contains selected data from waves one through four of the first (1984) panel (Coder et al., 1987, Appendix A, p 3). This is the data source used in this report. The 12 months vary from rotation group to rotation group and do not form a particular fiscal or calendar year. The four 12-month periods are: June, 1983, through May, 1984; July, 1983, through June, 1984; August, 1983, through July, 1984; and September, 1983, through August, 1984 (Coder et al., 1987, p. 2). The varying periods result from the staggered data collection procedure illustrated in figure 1.⁵

The longitudinal research file provides estimates of the income received by a person as an individual each month, the income received by the person's family each month, and the poverty level for the person's family each month. Because an individual need not be in the same family each month, the family income and poverty level variables for a given month reflect the income and poverty threshold for the particular family he or she belonged to that month.⁶

⁵Weights were assigned only to people who were interviewed in all three waves or were interviewed in all waves before dying or going into an institution (Coder et al., 1987, p. 43).

⁶The Census Bureau derived the poverty level for each month by dividing the annual poverty level for that type of family by 12 and using the Consumer Price Index (CPI) to adjust for price changes from month to month (Coder, et al., 1987, Appendix K). Thus, the poverty levels used in this paper are ultimately based on the official poverty thresholds.

Because the quality of estimates from the longitudinal research file is unknown as yet, all users of the file are required to include the following paragraph in their reports (U.S. Bureau of the Census, n.d.):

This report uses data from the Survey of Income and Program Participation 1984 Panel (Preliminary) Longitudinal Research File, which was released by the Census Bureau for research to improve understanding and analysis of SIPP data. The data on the file are preliminary and should be analyzed and interpreted with caution. At the time the file was created, the Census Bureau was still exploring certain unresolved technical and methodological issues associated with the creation of this longitudinal data set. The Census Bureau does not approve or endorse the use of these data for official estimates.

Geography

To avoid disclosure, the public use files do not contain a variable that completely differentiates between metro and nonmetro cases (U.S. Bureau of the Census, 1987, pp. 5-26 through 5-28). In some States, metro-nonmetro residence is actually identified for all cases. In 21 States, however, the cases identified as nonmetro actually are a mixture of nonmetro cases and a small number of metro cases. In addition, no metropolitan population is identified in Maine and Iowa or in the one State group made up of Mississippi and West Virginia. Nonmetro estimates at the national level can be made only indirectly. For more information, see the Survey of Income and Program Participation User's Guide (U.S. Bureau of the Census, 1987).

These problems were circumvented by using the Bureau's internal files. The internal longitudinal file has no top coding and no suppressions to avoid disclosure; it is meant for use by Census employees. However, an ERS programmer and I were able to use the internal file by participating in an intergovernmental fellowship program sponsored by the Census Bureau.

became sworn Census agents, taking the same oath and following the same confidentiality rules as regular Census employees.

The metro-nonmetro designations on the internal longitudinal file are the same as those in the 1980 Census. No data are presented for the two subdivisions of the metro sample, central cities and other metro. The Bureau had problems identifying central city observations that are not completely resolved. Some central city estimates from the 1984 panel are not of publishable quality (Jones, 1985).

PROCEDURES

The methodology used in this paper is straightforward. Poverty is measured under four definitions, and the resulting poverty estimates are compared. Significance tests were performed using the parameters developed for the longitudinal research file (Coder et al., 1987). Any differences discussed in the text are significant at the .05 level, unless stated otherwise.⁷

Measuring Poverty With SIPP

Monthly data from the longitudinal research file can be used to bring a unique time element to the study of poverty. This paper will examine poverty under four definitions:

Fixed-family definition. Family composition is fixed as of the last of the 12 months. All 12 monthly person income amounts are added up for all members of each family, and the total is compared to the poverty level for that type of family for 12 months. The fixed-

⁷Because the longitudinal file is new and experimental, the number of characteristics for which parameters were developed is small. Thus, the tests in this paper used the parameters prepared for all other characteristics not explicitly listed. Use of these parameters is conservative. In other words, they are more likely to classify differences as not significant than parameters specifically developed for the characteristic.

family definition provides an annual poverty rate for persons, but does not make allowances for people moving between families during the year. (This definition is similar to that currently used in the CPS, which fixes family composition as of the March interview and adds up family members' income for the previous calendar year.)

Varying-family definition. Each person record has a variable recording the total income of his/her family for each month and a variable recording the poverty level for his/her family each month. (Family membership can change from month to month.) If the sum of the income amounts for all 12 months is smaller than the sum of the poverty levels, the person is poor. This definition provides an annual poverty rate for individuals and allows people to move from family to family.

Poor all 12 months. A person's family income is compared to his/her family poverty level each month. A person is considered poor if his/her monthly family income is smaller than the poverty level in every one of the 12 months. (Family membership can change from month to month.)

Ever Poor. As with the previous definition, a person's family income is compared to the appropriate family poverty level each month. A person is considered poor if his/her monthly family income is smaller than the poverty level in at least one month. (Family membership can change from month to month.)

The measures outlined above were adapted from Williams (1987), who used them to analyze SIPP poverty data. He developed these definitions to explore variation in poverty rates under different annual and monthly measures. The first two definitions are based on 12 months of income, with the income counted slightly differently. The third and fourth definitions stress poverty measured over a much shorter period of time--the month. The measures were devised for analytical purposes, and Williams drew no conclusions about the intrinsic superiority of any particular definition (Williams, 1987, p. 4).

Williams also calculated poverty rates for each month of calendar year 1984 for selected demographic groups and then averaged the monthly poverty rates for each group for the year. This measure summarizes variation in

months of poverty. Variation in months of poverty will also be addressed here, but simply by examining the distribution of people by months of poverty.

Comparisons With Other Studies and the CPS

Nonmetro poverty estimates from SIPP are not explicitly compared with nonmetro poverty estimates from the CPS in this paper. Such comparisons are not possible, because slightly more than half of the data on the longitudinal file are from 1984 (Coder et al., 1987, p. 5), and because metro-nonmetro poverty or income estimates were not prepared from the CPS for 1984 (U.S. Bureau of the Census, 1986a, pp. 1-2).⁸ However, general conclusions about the nature of the nonmetro poor from previous CPS-based research are cited. When appropriate, comparisons are also made with SIPP results from Williams (1987) and Coder et al. (1987).⁹

RESULTS

The effects of different definitions on poverty counts and poverty rates will be presented first, followed by a discussion of the characteristics of the poor under the different definitions. Finally, monthly poverty data will be examined.

⁸Between April 1984 and June 1985, the Bureau introduced a new sample design for the CPS. Introducing the new design prevented the Bureau from making metro, nonmetro, farm, and nonfarm estimates for 1984. For more information, see U.S. Bureau of the Census (1986a, pp. 1-2).

⁹A Census working paper (Coder, et al., 1987) compares poverty estimates from the longitudinal file and the CPS at the national level. Note, however, that the national poverty figures in the working paper differ from those presented below because the poverty levels on the longitudinal file were revised after the working paper was printed. Slightly different rounding conventions for the weighting procedures also contribute to different results. In addition, Robertson Williams (1986 and 1987) compares poverty rate estimates for 1984 from the SIPP and the CPS at the national level.

Poverty Counts and Rates

Choosing between a fixed-family or a varying-family definition makes little difference in either the number of poor or the size of the poverty rate (table 1). Switching from a fixed-family to a varying-family definition lowers the number of poor by only about 4 percent in both metro and nonmetro areas. These differences are not statistically significant. Poverty rates under the two definitions differ by only about half a percentage point in both metro and nonmetro areas. Again, these differences are not statistically significant.

While the population simultaneously classified as poor under both the fixed-family and varying-family definitions is smaller than the population classified as poor under either definition alone, the difference is small and not statistically significant. Similarly, differences in the poverty rates are small at all geographic levels, regardless of whether poverty is defined in terms of one definition alone or in terms of both.

From a practical point of view, there appears to be little difference between the fixed- and varying-family definitions. Both measures include essentially the same people, and they result in the same size poor population and poverty rate. Neither seems to have an overwhelming advantage for analytical purposes.

Compared to the above definitions, however, restricting the poor population to those who are poor every month of a 12-month period results in substantially smaller poor populations and poverty rates. The larger poverty counts under the fixed- and varying-family definitions indicate that people who are poor on the basis of annual income may not be poor each month.

Table 1. Poverty counts and poverty rates under different definitions, by residence, 1983-84

Item	U.S. Total	Metro	Nonmetro
---Thousands---			
Total Population	228,253	170,383	57,870
Poor population:			
Fixed-family definition	29,906	20,813	9,088
Varying-family definition	28,661	19,935	8,722
Both family definitions	28,096	19,527	8,564
12-month definition	16,835	11,805	5,030
Ever poor	61,210	42,483	18,720
---Percent---			
Poverty rate:			
Fixed-family definition	13.1	12.2	15.7
Varying-family definition	12.6	11.7	15.1
Both family definitions	12.3	11.5	14.8
12-month definition	7.4	6.9	8.7
Ever poor	26.8	24.9	32.3
Residential distribution of poor:			
Fixed-family definition	100.0	69.6	30.4
Varying-family definition	100.0	69.6	30.4
Both family definitions	100.0	69.5	30.5
12-month definition	100.0	70.1	29.9
Ever poor	100.0	69.4	30.6
Residential distribution of total population	100.0	74.6	25.4

Note: Metro and nonmetro populations may not sum to the U.S. total due to rounding.

Source: U.S. Bureau of the Census, 1986b.

In contrast, if poverty is defined as having one or more month below the poverty level, the poverty rate and the poverty count are substantially higher than under the other definitions. More people experience poverty part of a year than is indicated by any of the other measures.

In general, the results in table 1 are similar to those of Williams (1987). He also found that the fixed-family definition yields higher poverty rates than the varying-family definition. Both of these rates were substantially higher than the percentage who were poor for 12 months and substantially lower than the ever-poor population.

The biggest discrepancy between Williams' results and those presented here was the difference between the poverty rates under the fixed- and varying-family definitions.¹⁰ Williams found a 1.3 percentage point difference between the poverty rates under the two definitions, compared with only .5 percentage points in table 1. However, the .5 percentage point differences in table 1 correspond closely with the .6 percentage point difference found by Coder et al. (1987, p. 16), who also used the longitudinal file.¹¹ The differences between results from Williams and results based on the longitudinal file can be explained by the different time periods analyzed and the different procedures used to prepare the data.

Finally, a consistent geographic relationship appears in table 1. Regardless of the definition used, nonmetro areas consistently have higher poverty rates. Or, stated slightly differently, nonmetro areas consistently

¹⁰No significance tests were performed on the differences between William's results and those presented in this paper.

¹¹Poverty rates for the U.S. total population in Coder et al. (1987) were within a tenth of a percentage point or so of those in table 1. Exact correspondence was not expected because the poverty levels on the longitudinal file were revised after Coder et al. was printed.

have 30 percent of the poor, proportionately more than their 25 percent share of the population. Thus, nonmetro poverty is more prevalent than metro poverty under all the definitions.

Poverty Rates by Group

Poverty rates for various groups of people are presented in table 2. Each nonmetro poverty rate generally is higher than its metro counterpart at the .10 significance level or higher, except for Hispanics, children, and people in family households with a female householder. Also, the fixed-family and varying-family definition yield similar poverty rates for each group in both metro and nonmetro areas.

Because the 12-month definition is more restrictive than the other definitions, it results in a smaller poor population and yields smaller poverty rates. However, differences between the 12-month poverty rate and the varying- and fixed-family rates are not always statistically significant, particularly in nonmetro areas. In contrast, using the ever poor measure classifies more people as poor than the other definitions and results in the highest poverty rates.

Some consistent patterns appear in nonmetro areas under different poverty definitions. For example under all definitions, nonmetro whites have a substantially lower poverty rate than nonmetro blacks, and nonmetro people in married-couple households have a substantially lower poverty rate than nonmetro people in other household types.

Interestingly, the poverty rates for children and the aged are not significantly different in nonmetro areas under the fixed-family, varying-family, and 12-month definitions. Only under the ever-poor definition do nonmetro children have a significantly higher poverty rate than the nonmetro

Table 2. Poverty rates and the composition of the poor population under four poverty definitions, by residence, 1983-84

Item	Metro				Nonmetro			
	Fixed-family def.	Varying-family def.	Poor 12 months	Ever poor	Fixed-family def.	Varying-family def.	Poor 12 months	Ever poor
	Percent				Percent			
Poverty rates:								
Total population	12.2	11.7	6.9	24.9	15.7	15.1	8.7	32.3
Black	29.3	29.0	19.1	45.4	37.8	37.4	27.3	62.3
Hispanic 1/	28.8	28.4	16.0	43.8	27.0	27.7	12.8	53.1
White	9.3	8.8	4.9	21.3	13.3	12.6	6.8	29.2
Aged 2/	8.9	8.6	6.2	14.0	18.2	17.9	13.8	25.3
Children 3/	19.6	19.1	12.1	35.0	21.2	20.5	11.5	40.3
Disabled	18.5	17.9	11.3	31.0	24.2	22.9	15.4	39.7
People in: 4/								
Married couple households	6.2	6.3	2.8	18.2	9.6	9.6	4.5	26.2
Other family households, male householder	9.6	9.5	5.1	22.2	25.4	26.2	17.4	44.4
Other family households, female householder	37.0	34.8	24.3	52.5	41.5	38.0	25.3	61.2
Nonfamily households, male householder	17.2	15.2	8.6	33.7	27.4	25.5	15.6	42.7
Nonfamily households, female householder	19.5	17.6	12.4	31.0	33.6	31.4	23.9	45.0
Number of poor	20,813	19,935	11,805	42,483	9,088	8,722	5,030	18,720
Percent of the poor who are: 5/								
Black	31.0	32.1	35.6	23.6	22.0	22.7	28.6	17.6
Hispanic 1/	20.3	21.0	19.9	15.2	3.4	3.7	2.9	3.3
White	63.7	62.8	58.9	71.5	75.9	75.1	70.2	81.1
Aged 2/	7.9	8.0	9.7	6.1	15.6	15.9	21.3	10.5
Children 3/	41.8	42.6	45.5	36.6	35.8	35.4	34.9	33.0
Disabled	15.7	15.9	17.0	12.9	21.0	20.7	24.2	16.7
People in: 4/								
Married couple households	36.1	38.0	29.1	51.6	47.2	49.0	39.7	62.3
Other family households, male householder	2.0	2.0	1.8	2.2	3.5	3.7	4.3	2.9
Other family households, female householder	41.9	41.2	48.6	29.1	30.3	28.9	3.4	21.7
Nonfamily households, male householder	8.1	7.5	7.2	7.8	6.4	6.2	.6	4.9
Nonfamily households, female householder	10.7	10.1	12.0	8.4	12.4	12.1	0	8.1

1/ Hispanics may be of any race.

2/ At least 65 years old.

3/ Under 18 years old.

4/ Reflects household composition in month 12.

5/ The percentage sum to more than 100 percent because a person may be in more than one group.

Source: U.S. Bureau of the Census, 1986b.

elderly. In contrast, metro children have substantially higher poverty rates than the metro elderly under all definitions. Although poverty seems to be more prevalent among children than the elderly in metro areas, it is a problem of both the elderly and children in nonmetro areas.

Composition of the Poor

The groups making up the poor differ in metro and nonmetro areas. Previous analyses of CPS data have shown that the nonmetro poor are more likely to be aged, white, and members of married-couple families (Getz and Hoppe, 1983; Deavers et al., 1988). The same conclusions can be drawn from this analysis, regardless of the definition used (table 2). In addition, the disabled make up a larger portion of the poor in nonmetro than metro areas.

The portion of the poor in each group is similar under the fixed- and varying-family definitions within each residential category (table 2). However, shifting from either the fixed- or varying-family definitions to the 12-month definition tends to increase the portion of the poor who are black, aged, disabled, or in female-headed households. These shifts are not always statistically significant, however. For example, none of the shifts in nonmetro areas are significant at the .05 level, and the increase in the proportions black and aged are significant only at the .10 level. The ever-poor definition, in contrast, yields a poor population that is more likely to be white and live in married-couple households than the other definitions. Children make up about the same portion of the nonmetro poor under all four definitions.

Nevertheless, under all four definitions, the nonmetro poor are still more likely to be white, aged, disabled, and members of married-couple households than the metro poor. The composition of the nonmetro poor reflects

the composition of the nonmetro population in general, which also has proportionately more people in the same groups (table 3). However, nonmetro people in these groups also have higher poverty rates than their metropolitan counterparts (table 4). Thus, the high concentration of members of particular groups among the nonmetro poor reflects a higher chance that they will be poor as well as a greater concentration in the nonmetro population as a whole.

Poverty By Month

Substantially fewer people experienced no months of poverty in nonmetro than metro areas. Only two-thirds of nonmetro people had no months of poverty, compared with three-fourths of the metro population (table 4).¹² The percentages of people experiencing one, two, or three months of poverty were similar in metro and nonmetro areas, differing by only half a percentage point or less.

Beginning with four months of poverty, however, differences tended to be more substantial. A much larger and statistically significant share of the nonmetro population experienced four through 11 months of poverty. Over 15 percent of the nonmetro population fell into this category, compared with only 10 percent of the metro population. Differences between metro and nonmetro areas were not significant for each month in the four-to-11-month category, however. Differences were significant for four, five, six, seven, and 11 months of poverty.

The nonmetro share of people with four to 11 months of poverty was large relative to the nonmetro population. Although nonmetro areas have only 25.4

¹²At the national level, 73.2 percent of the population has zero months of poverty, which is consistent with the 73.8 percent figure calculated from Williams (1987, p. 17) and the 73.3 percent figure calculated from Coder et al. (1987, Appendix C, pp. 1-2).

Table 3. Composition of the total population, by residence, 1983-84

Item	U.S. Total		Metro		Nonmetro	
	Number	Share of Total	Number	Share of Total	Number	Share of Total
	Thous.	Pct.	Thous.	Pct.	Thous.	Pct.
Total population:	228,253	100.0	170,385	100.0	57,870	100.0
Black	27,321	12.0	22,040	12.9	5,281	9.1
Hispanic	15,861	6.9	14,702	8.6	1,159	2.0
White	194,350	85.1	142,347	83.5	52,007	89.9
Aged	26,317	11.5	18,552	10.9	7,765	13.4
Children	59,711	26.2	44,403	26.1	15,309	26.5
Disabled	25,602	11.2	17,732	10.4	7,870	13.6
People in:						
Married couple households	165,227	72.4	120,767	70.9	44,465	76.8
Other family household, male householder	5,523	2.4	4,280	2.5	1,244	2.1
Other family households, female householder	30,243	13.2	23,607	13.9	6,636	11.5
Nonfamily households, male householder	11,968	5.2	9,840	5.8	2,128	3.7
Nonfamily households, female householder	14,806	6.5	11,434	6.7	3,367	5.8

Note: Metro and nonmetro populations may not sum to the U.S. total due to rounding.

Source: U.S. Bureau of the Census, 1986b.

Table 4. Months of poverty by residence, 1983-84

Item	U.S. Total		Metro		Nonmetro		Nonmetro
	Number	Share	Number	Share	Number	Share	share
	: of total :		: of total :		: of total :		of U.S.
	Thousands	Percent	Thousands	Percent	Thousands	--Percent--	
Months of poverty:							
Zero	167,044	73.2	127,901	75.1	39,149	67.6	23.4
One through three	18,012	7.9	13,219	7.8	4,792	8.3	26.6
One	8,085	3.5	5,949	3.5	2,135	3.7	26.4
Two	5,356	2.3	4,104	2.4	1,252	2.2	23.4
Three	4,571	2.0	3,166	1.9	1,405	2.4	30.7
Four through eleven	26,362	11.5	17,458	10.2	8,899	15.4	33.8
Four	7,591	3.3	5,016	2.9	2,575	4.4	33.9
Five	2,914	1.3	1,778	1.0	1,136	2.0	39.0
Six	2,229	1.0	1,402	0.8	828	1.4	37.1
Seven	2,243	1.0	1,334	0.8	908	1.6	40.5
Eight	4,613	2.0	3,354	2.0	1,258	2.2	27.3
Nine	2,025	0.9	1,359	0.8	662	1.1	32.7
Ten	1,902	0.8	1,481	0.9	421	0.7	22.1
Eleven	2,845	1.2	1,734	1.0	1,111	1.9	39.1
Twelve	16,835	7.4	11,805	6.9	5,030	8.7	29.9
Total population	228,253	100.0	170,383	100.0	57,870	100.0	25.4

Note: Items may not sum to totals due to rounding.

Source: U.S. Bureau of the Census, 1986b.

percent of the U.S. population, they had 33.8 percent of the people experiencing four through 11 months of poverty. Many of these people may need financial assistance, but only for short periods of time. This group should be examined in more detail by analysts concerned about rural poverty.

Monthly Versus Annual Poverty. One can be poor for a number of months and still not be classified as poor on the basis of annual income (table 5). Only about two-fifths of the nonmetro people with four through 11 months of poverty were considered poor by the two definitions based on annual income. Thus, a substantial population which may need short-term assistance is not fully captured by annual poverty measures.

A small number of months of poverty may not be a particularly severe problem. For example, poverty lasting less than one year could reflect anticipated seasonal work for which people can compensate through saving. Or, a few months of poverty could present a temporary problem for people between jobs. On the other hand, only a month or two of unanticipated poverty imposes a real hardship on people who normally are not far above the poverty level and find saving difficult.¹³ Also, a few consecutive months of poverty at the end of a year could represent the beginning of a long spell of poverty that will continue into future years.¹⁴

¹³Ruggles (1988), also using SIPP, found that "subannual spells of poverty are extremely common, and typically affect persons whose incomes are near but not necessarily below the poverty level when measured on an annual basis." Nearly 90 percent of those entering a poverty spell have yearly incomes less than or equal to the median income for the population.

¹⁴Alternatively, consecutive months of poverty at the beginning of the year may reflect the end of a long spell of poverty from previous years.

Table 5. Months of poverty for the total population and the poor population, by residence, 1983-84

Item	U.S. Total			Metro			Non-metro		
	Number of people	Poor under fix.-fam. def.	Poor under var.-fam. def.	Number of people	Poor under fix.-fam. def.	Poor under var.-fam. def.	Number of people	Poor under fix.-fam. def.	Poor under var.-fam. def.
	:Thousands	--Percent--		Thousands	--Percent--		Thousands	--Percent--	
Months of poverty:									
Zero	167,044	0.2	0.0	127,901	0.2	0.0	39,149	0.2	0.0
One through three	18,012	4.2	0.4	13,219	4.2	0.5	4,792	4.1	0.2
One	8,085	3.3	0.1	5,949	3.1	0.0	2,135	3.8	0.4
Two	5,356	3.2	0.0	4,104	3.2	0.0	1,252	2.9	0.0
Three	4,571	6.8	1.4	3,166	7.5	2.1	1,405	5.5	0.0
Four through eleven	26,362	45.6	44.6	17,458	47.1	46.2	8,899	42.7	41.4
Four	7,591	9.9	6.3	5,016	10.8	7.6	2,575	8.2	3.8
Five	2,914	19.8	13.3	1,778	21.4	12.3	1,136	17.3	15.1
Six	2,229	36.7	32.8	1,402	37.7	33.2	828	34.9	31.9
Seven	2,243	46.7	45.7	1,334	46.2	45.5	908	47.5	45.8
Eight	4,613	60.1	61.4	3,354	60.2	62.2	1,258	59.6	59.3
Nine	2,025	84.0	85.0	1,359	86.5	86.8	662	78.9	81.3
Ten	1,902	87.7	95.0	1,481	89.5	96.1	421	81.5	91.0
Eleven	2,845	94.8	97.3	1,734	94.3	98.1	1,111	95.6	96.0
Twelve	16,835	100.0	100.0	11,805	100.0	100.0	5,030	99.9	100.0
Total population	228,253	13.1	12.6	170,383	12.2	11.7	57,870	15.7	15.1

Note: Items may not sum to totals due to rounding.

Source: U.S. Bureau of the Census, 1986b.

On a more technical note, the fixed-family definition gives some seemingly nonsensical results. For example, some people were classified as poor under this definition, although they had no months of poverty, and others were classified as nonpoor, although they had 12 months of poverty (table 5). These situations arise when family composition is fixed at one point in time by definition but actually varies over the year. For example, consider a person living alone who is just above the poverty level each of the first 11 months. In month 12 the person marries into a family that was just below the poverty level during each of the previous 11 months. The person's income, when added to the other family members' income, is just enough to lift the new family out of poverty in month 12. Thus, the person has no months of poverty for the year. However, the person's income during 12 months, when added to the other members' income over the 12 months, is not quite enough to move the whole family out of poverty on an annual basis with the family composition fixed as of month 12. Thus the person is poor for the year with fixed-family composition, but has no months of poverty.

Composition by Month. Composition of the population varies with months of poverty. For example, in both metro and nonmetro areas, the population with no months of poverty contains more whites and more people in married-couple households than the 12-month poor (table 6). In contrast, the 12-month poor contain more blacks, more children, more disabled, and more people in female-headed households than the population with zero months of poverty. The populations with one to three and four to 11 months of poverty tend to lie between these extremes. Whites and people in married-couple households make up a larger share of the population in nonmetro areas, regardless of the months of poverty.

Table 6. Distribution and composition of the population, by months of poverty and residence, 1983-84

Item	Metro				Nonmetro			
	Poor 0 months	Poor 1 to 3 months	Poor 4 to 11 months	Poor 12 months	Poor 0 months	Poor 1 to 3 months	Poor 4 to 11 months	Poor 12 months
	Thousands				Thousands			
Number of people:	127,901	13,219	17,458	11,805	39,149	4,791	8,899	5,030
	Percent				Percent			
Percentage who are: 1/								
Black	9.4	13.9	22.8	35.6	5.1	12.0	14.3	28.6
Hispanic 2/	6.5	11.4	14.8	19.9	1.4	3.0	3.6	2.9
White	87.5	82.3	71.9	58.9	94.1	87.8	83.6	70.2
Aged 3/	12.5	3.4	5.8	9.7	14.8	4.8	7.5	21.3
Children 4/	22.6	31.2	34.6	45.5	23.3	30.5	33.2	34.9
Disabled	9.6	10.0	12.4	17.0	12.1	12.2	14.8	24.2
People in: 5/								
Married couple households	77.3	64.0	57.5	29.1	83.8	71.9	69.8	39.7
Other family households,								
male householder	2.6	1.9	2.8	1.8	1.8	2.2	2.6	4.3
Other family households,								
female householder	8.8	19.7	23.2	48.6	6.6	16.7	17.8	33.4
Nonfamily households,								
male householder	5.1	7.4	8.5	7.2	3.1	3.8	4.4	6.6
Nonfamily households,								
female householder	6.2	6.5	7.3	12.0	4.7	5.2	5.2	16.0

1/ The percentages of the population in various groups sum to more than 100 percent because a person may be in more than one group.

2/ Hispanics may be of any race.

3/ At least 65 years old.

4/ Under 18 years old.

5/ Reflects household composition in month 12.

Source: U.S. Bureau of the Census, 1986b.

People who are poor from four to 11 months should be examined in detail, for they are disproportionately nonmetropolitan. The nonmetropolitan people in this group are overwhelmingly white (83.6 percent) and members of married-couple households (69.8 percent). One-third of this group are children, about the same percentage as for the 12-month poor. The elderly, disabled, and members of female-headed family households are less common among people with four to 11 months of poverty than among the 12-month poor in nonmetro areas.

Thus, programs targeted at the elderly or disabled, such as Social Security or SSI, or programs targeted at female-headed households, such as Aid to Families With Dependent Children (AFDC), will affect a smaller share of the people with four to 11 months of poverty than people with 12 months of poverty. Food Stamps may be more helpful to a larger share of people with four to 11 months of poverty, because the program requires only low income and low assets, not membership in a particular age group or particular type of family.¹⁵

Medical insurance may also be a problem for people with four to 11 months of poverty, unless they are covered through group plans at work. Because they are less likely to be elderly than the 12-month poor, they are less likely to be covered by Medicare. Medicaid, the medical program for the poor, is largely targeted at actual or potential participants in the SSI and AFDC programs. Thus, Medicaid is less likely to aid people with four to 11 months of poverty than people with 12 months of poverty, because fewer of the four- to-11-month poor belong to groups eligible for SSI or AFDC.

¹⁵The discussion of welfare programs is based on their characteristics in early 1988. A welfare reform bill signed by the President in October, 1988, will alter the programs' rules and regulations.

CONCLUSIONS AND DISCUSSION

The questions asked in the introduction can now be answered.

Does the definition of poverty make a difference in the extent of poverty in nonmetro areas?

Yes. While the poverty rate and the poverty count are about the same under both the varying- and fixed-family definition in both metro and nonmetro areas, defining poverty in terms of 12 months of poverty does make a difference. Using this more restrictive definition drastically reduces the number of poor, regardless of residence. Similarly, using the ever-poor definition increases the number of poor, regardless of residence.

Do nonmetro areas have proportionately more poor than metro areas under all definitions considered?

Yes. The nonmetro poverty rate is substantially higher under both the fixed- and varying-family definitions. Although the 12-month definition greatly decreases the number of poor and the ever-poor definition greatly increases the number of poor, the nonmetro poverty rate is still higher under these definitions.

Does the composition of the nonmetro poor vary substantially under different definitions?

Yes. For example, the nonmetro poor are more likely to be white or to live in married-couple households under the ever-poor definition than under the other definitions. However, under all four definitions, the nonmetro poor are still more likely to be white, aged, disabled, and members of married couple households than the metro poor.

Is any particular definition preferable for examining nonmetro poverty?

No. None of the four definitions is obviously superior. From a practical point of view, there appears to be little difference between the fixed- and varying-family definitions in the size and composition of the nonmetro poor population or in the magnitude of the poverty rate. Using the more restrictive 12-month definition or the more liberal ever-poor definition changes the size of the poor population, but still results in a higher nonmetro poverty rate and a nonmetro poor population that is more likely to be white, aged, disabled, and members of married-couple households than the metro poor. All four definitions yield similar conclusions and would lead to similar policy recommendations.

Note, however, that these conclusions are only based on the results presented here and may not hold for all groups in all circumstances. For example, Williams (1987, p. 17) found a large, six-percentage point difference between the poverty rates calculated under the fixed- and varying-family definitions for people in single-parent families with children. Anyone focusing on a specific group, such as single-parent families with children, should choose definitions carefully.

The choice of a definition to use in analyzing SIPP data depends largely on the research problem. If one is interested in the needs of the consistently poor, analysis of the 12-month poor is logical. The 12-month poor can be compared with groups experiencing fewer months of poverty to examine gradations of poverty. For a broader group to analyze, either the variable or fixed-family definition would be appropriate. The ever-poor definition could be useful in identifying people who experience any poverty at all during a year, even if the time spent in poverty is short.

Using a different line of reasoning, Williams also concluded that neither annual nor monthly measures are intrinsically superior (Williams, 1987, pp. 4-5):

Neither monthly nor annual poverty rates are necessarily superior as indicators of need. Monthly rates are more closely related to the eligibility criteria for transfer programs, but do not take account of the fact that families may well be able to cover expenditures during months with low incomes until incomes are higher in the future. Annual poverty rates, on the other hand, give less recognition to the fact that some needs--such as those for food, shelter, and medical care--simply cannot be postponed for long without potentially severe consequences.

Analysts cannot avoid selecting a single definition of poverty, if results from SIPP are to be presented to a general audience. Simultaneously trying to explain SIPP and more than one poverty definition to an audience that is not statistically inclined will be difficult. Results must be simplified if they are to be used beyond the narrow research community.

FUTURE RESEARCH

This paper is the first in a series of papers using SIPP to examine poverty in nonmetro areas. Therefore, it emphasized definitions of poverty and the nature of the survey itself. Future papers will focus on interpreting the unique data collected by SIPP.

SIPP is a particularly rich data source that allows us to bring a time element to poverty research. One use of the time element in this paper was to sort the metro and nonmetro populations by months of poverty. People with four to 11 months of poverty were disproportionately nonmetropolitan. My next paper to use SIPP poverty data will analyze these people, comparing their sources of income, their program participation, and their labor force participation with those of the 12-month poor.

A later paper will utilize another unique feature of SIPP--its detailed information on sources of income. Over the years, much research has been conducted on the effectiveness of various sources of income, including government programs, in reducing poverty. Generally, the poverty rate is first calculated after counting only earnings and receipts of property as income, then after adding social insurance to income, and finally after adding public assistance.¹⁶ By comparing all the poverty rates generated, analysts can see how well each group of programs reduces poverty. SIPP data will be used to conduct such comparisons for nonmetro areas. Because extensive income data are collected in SIPP, more detailed income sources can be used than in past studies.

¹⁶See for example, Danziger et al. (1984).

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