

## Appendix D. Description of the SIPP 1990 Panel File and Data Quality

### DESCRIPTION OF THE SIPP 1990 PANEL FILE

The estimates presented in this report are based on the SIPP 1990 panel file. This file contains monthly data for persons over a 32-month period. The staggered SIPP design (described in appendix A) means that the actual reference periods are October 1989 to May 1992, November 1989 to June 1992, December 1989 to July 1992, and January 1990 to August 1992. The period covered by the 1990 longitudinal panel file consists of 32 interview months (eight interviews) for rotations 1, 2, 3, and 4. Data from all four rotation groups are available only for the reference period January 1990 through May 1992.

### ATTRITION BIAS

Each person in the panel file has been assigned three weights: a weight for calendar-year 1990, a weight for calendar-year 1991, and a weight for the 32-month reference period.<sup>1</sup> In order to receive a non-zero weight, a person must have an observation for each month of the relevant reference period or have a complete set of observations up until the time he or she died, became institutionalized, or moved to Armed Forces barracks or out of the country. The data shown in this report are affected if characteristics of persons with an incomplete set of observations differed from those with a complete set.

<sup>1</sup>The panel file does not contain month weights. Month weights necessary for cross-sectional estimates were extracted from the wave files.

Table D-1. Percent Distribution of Three Categories of Sample Persons: 1990 SIPP Panel

| Characteristic                                       | Complete set of interviews obtained <sup>1</sup> | Interviewed in first wave, left sample for reasons other than death, institutionalization, or a move to Armed Forces barracks or out of the country | Not a member of sample household during first wave, interview obtained in second or later waves |
|--|--|---|---|
| Total .....  | 43,799   | 14,489  | 10,827  |
| Percent .....  | (100.0)  | (100.0)   | (100.0)   |
| <b>Sex</b>   |  |   |   |
| Male .....   | 47.0   | 50.4  | 51.0  |
| Female .....   | 53.0   | 49.6  | 49.0  |
| <b>Age at First Interview</b>                        |  |   |   |
| Under 18 years .....                                 | 28.6   | 27.4  | 38.0  |
| Under 6 years .....                                  | 10.7   | 9.4   | 25.1  |
| 8 to 17 years .....                                  | 8.6  | 15.6  | 20.8  |
| 18 to 24 years .....                                 | 31.5   | 33.3  | 27.5  |
| 25 to 44 years .....                                 | 18.6   | 16.5  | 10.4  |
| 45 to 64 years .....                                 | 12.7   | 7.3   | 3.2   |
| 65 years and over .....                              | 5.1  | 2.6   | 1.1   |
| 75 years and over .....                              |  |   |   |
| <b>Program participation, first month in sample:</b> |  |   |   |
| Persons 18 years and over .....                      | 31,267   | 10,523  | 6,711   |
| Percent .....  | (100.0)  | (100.0)   | (100.0)   |
| Participated in major assistance program .....       | 9.1  | 10.5  | 11.4  |
| AFDC or General Assistance .....                     | 2.0  | 2.9   | 2.7   |
| Food stamps .....                                    | 4.4  | 5.1   | 5.8   |
| Medicaid .....                                       | 5.5  | 5.9   | 7.1   |
| Public/ subsidized housing .....                     | 3.9  | 4.8   | 2.8   |
| SSI .....  | 2.3  | 1.8   | 2.2   |
| Did not participate .....                            | 90.9   | 89.5  | 88.6  |
| Covered by private health insurance .....            | 79.7   | 70.2  | 67.9  |
| Provided through employer .....                      | 44.2   | 39.2  | 39.5  |
| Not covered by private health insurance .....        | 20.4   | 29.8  | 32.1  |

<sup>1</sup>Includes 1,832 persons who died, were institutionalized, or moved to Armed Forces barracks or out of the country during the 32-month period.

Table D-1 shows three categories of sample persons by sex, age, and program participation status. The numbers in the table are unit counts; they are not weighted. The category "complete set of interviews obtained" includes 43,799 persons. The next category, "Interviewed in first wave, left sample for reasons other than death, institutionalization, or a move to Armed Forces barracks or out of the country" includes 14,489 persons. The final category includes 10,827 persons who were not members of a SIPP household during the first wave of interviews, but who subsequently became members of a sample household.

A comparison of the first two columns shows that the characteristics of those who completed the full set of interviews are reasonably close to the characteristics of those who dropped out of the sample. The major differences in the age distribution are for young adults and for the elderly. Young adults are underrepresented and the elderly are overrepresented in the group of persons who completed the full set of interviews. The data in table D-1 are, as noted, unweighted, and any potential problem caused by unrepresentative age distributions are minimized when the file is weighted to independent controls.

### **TIME-IN-SAMPLE BIAS**

The use of the panel file to obtain estimates for 1990 and 1991 raises the issue of time-in-sample bias. There is ample evidence that certain measures vary according to the number of times the respondent has been visited. In the CPS, for example, the measured unemployment rate is always higher for the group of households being interviewed for the first time than for the groups being interviewed for the second or later times.

Time-in-sample bias arises when a person's response to a survey question (or the interviewer's method of asking a question) is influenced by what occurred in a previous visit. The overlapping SIPP sample design provides the data that allows for an examination of the presence of time-in-sample bias in SIPP estimates. That is, it is possible in SIPP to obtain estimates for a given time period from two or more separate panels, and the amount of time respondents will have spent in the SIPP panel will differ for each of the panels. For example, estimates for each of the four quarters of 1991 can be obtained from both the 1990 and 1991 panels (respondents in the 1990 will have had more visits).

Quarterly estimates for the years 1984 to 1992 are shown in Table D-2. Estimates from each panel file are shown separately for comparison. The estimates shown are the number of poor nonfarm households as well as the number of households receiving various government benefits.

The figures in table D-2 provide very little evidence regarding the existence of time-in-sample bias for several reasons. First, most of the observed differences are

smaller than the differences that could be explained by sampling error. Second, a single observation is not sufficient to identify a pattern of bias. Third, differences may be attributable to attrition bias rather than time-in-sample bias. In spite of these qualifications, however, the observed relationships offer some reason to be cautious in interpreting the differences between the 1990 and 1991 estimates that have been presented earlier in this report.

### **OTHER ISSUES OF DATA QUALITY**

Two major determinants of the quality of income data collected in household surveys are the magnitude of missing responses and the accuracy of the responses that are provided. This appendix has been included to supply information concerning nonresponse rates for selected income questions, the average amounts of income reported in the survey or assigned in the imputation of missing responses, and the extent to which the survey figures underestimate numbers of income recipients and amounts of income received.

Nonresponse in this discussion refers to missing responses to specific questions or "items" on the questionnaire. Noninterviews or complete failure to obtain cooperation from any household member have not been considered in this examination of nonresponse rates. Adjustments to account for noninterviews are made by proportionally increasing the survey weights of interviewed households. Missing responses to specific questions are assigned a value in the imputation phase of the data processing operation.

Nonresponse is a very important factor in assessing the quality of survey data. Nonresponses to income questions cannot be considered random since experience has shown that persons with the highest nonresponse rates have reported characteristics such as education levels and occupations that, in general, differ from population averages. The most frequent causes of nonresponse are the inability of the respondent to answer the question because of either (1) a lack of knowledge or (2) refusal to answer. The first reason is especially important in situations of proxy response when one household member answers questions for another household member not present at the time of the interview. The practice of accepting proxy interviews from household members deemed "qualified" to answer is a standard procedure in the CPS and most other surveys conducted by the Census Bureau. During the eight interviews of the 1990 panel, an average of 36 percent of the interviews were taken from proxy respondents.

Nonresponses are assigned values prior to producing estimates from the survey data. The procedure used to assign or impute responses for missing data for SIPP are of a type commonly referred to as a "hot deck"

**Table D-2. Average Monthly Nonfarm Poverty and Household Participation in Means-Tested and Nonmeans-Tested Government Programs—SIPP Panels: First Quarter 1984 to Fourth Quarter 1993**

[Numbers in thousands]

| Panel, year, and quarter | All households | Nonfarm poor households | Received Government benefits | Received means-tested benefits | Received AFDC or other non-SSI Public Assistance | Received SSI | Received food stamps | Covered by Medicaid | Lived in public or subsidized housing | Received non-means-tested benefits | Received Social Security or Railroad Retirement | Received unemployment compensation |
|--------------------------|----------------|-------------------------|------------------------------|--------------------------------|--|--------------|----------------------|---------------------|---------------------------------------|------------------------------------|---|------------------------------------|
| 1984 Panel               |                |                         |                              |                                |  |              |                      |                     |                                       |                                    |   |                                    |
| 1984: 1st quarter        | 83,643         | 11,722                  | 39,050                       | 16,052                         | 3,870  | 2,880        | 6,462                | 7,593               | 3,615                                 | 30,578                             | 23,479  | 2,659                              |
| 2nd quarter              | 84,002         | 11,124                  | 37,712                       | 14,460                         | 3,832  | 2,975        | 6,303                | 7,559               | 3,669                                 | 29,973                             | 23,525  | 2,047                              |
| 3rd quarter              | 84,609         | 11,050                  | 36,674                       | 13,188                         | 3,565  | 3,002        | 5,989                | 7,242               | 3,670                                 | 29,747                             | 23,475  | 1,784                              |
| 4th quarter              | 84,945         | 11,160                  | 38,347                       | 15,276                         | 3,585  | 3,008        | 6,107                | 7,211               | 3,584                                 | 30,308                             | 23,559  | 2,240                              |
| 1985: 1st quarter        | 84,948         | 10,922                  | 39,158                       | 15,403                         | 3,763  | 3,020        | 6,230                | 7,458               | 3,546                                 | 31,238                             | 23,821  | 2,944                              |
| 2nd quarter              | 85,614         | 10,783                  | 37,725                       | 13,921                         | 3,651  | 3,085        | 5,955                | 7,264               | 3,486                                 | 30,485                             | 23,955  | 2,062                              |
| 3rd quarter              | 86,249         | 10,872                  | 37,143                       | 13,013                         | 3,598  | 3,036        | 5,886                | 7,370               | 3,502                                 | 30,339                             | 23,938  | 1,757                              |
| 4th quarter              | 86,585         | 10,688                  | 38,547                       | 15,274                         | 3,622  | 3,064        | 5,839                | 7,461               | 3,583                                 | 30,379                             | 23,864  | 1,824                              |
| 1985 Panel               |                |                         |                              |                                |  |              |                      |                     |                                       |                                    |   |                                    |
| 1985: 1st quarter        | 85,228         | 11,585                  | (NA)                         | (NA)                           | 3,536  | 2,990        | 5,999                | 7,277               | 3,751                                 | (NA)                               | 23,559  | 2,872                              |
| 2nd quarter              | 85,875         | 10,929                  | (NA)                         | (NA)                           | 3,554  | 3,116        | 5,808                | 7,460               | 3,778                                 | (NA)                               | 23,781  | 2,232                              |
| 3rd quarter              | 86,561         | 11,088                  | (NA)                         | (NA)                           | 3,526  | 3,211        | 5,624                | 7,501               | 3,844                                 | (NA)                               | 23,838  | 1,883                              |
| 4th quarter              | 86,832         | 10,978                  | (NA)                         | (NA)                           | 3,499  | 3,200        | 5,676                | 7,517               | 3,889                                 | (NA)                               | 23,929  | 2,075                              |
| 1986: 1st quarter        | 86,911         | 10,890                  | (NA)                         | (NA)                           | 3,591  | 3,114        | 5,800                | 7,589               | 3,868                                 | (NA)                               | 24,145  | 2,617                              |
| 2nd quarter              | 86,940         | 10,463                  | (NA)                         | (NA)                           | 3,502  | 3,168        | 5,617                | 7,456               | 3,847                                 | (NA)                               | 24,130  | 2,112                              |
| 3rd quarter              | 87,180         | 10,873                  | (NA)                         | (NA)                           | 3,462  | 3,201        | 5,573                | 7,499               | 3,813                                 | (NA)                               | 24,150  | 2,037                              |
| 4th quarter              | 87,607         | 10,872                  | (NA)                         | (NA)                           | 3,516  | 3,181        | 5,641                | 7,575               | 3,710                                 | (NA)                               | 24,264  | 2,206                              |
| 1986 Panel               |                |                         |                              |                                |  |              |                      |                     |                                       |                                    |   |                                    |
| 1986: 1st quarter        | 87,134         | 11,711                  | 40,711                       | 16,422                         | 3,753  | 3,107        | 6,588                | 7,593               | 4,172                                 | 31,702                             | 24,013  | 2,443                              |
| 2nd quarter              | 87,192         | 11,185                  | 40,125                       | 16,034                         | 3,858  | 3,270        | 6,524                | 7,901               | 4,347                                 | 31,272                             | 24,102  | 2,001                              |
| 3rd quarter              | 87,313         | 11,144                  | 39,427                       | 14,999                         | 3,680  | 3,290        | 6,180                | 7,879               | 4,239                                 | 31,448                             | 24,310  | 2,062                              |
| 4th quarter              | 87,721         | 11,081                  | 40,620                       | 16,418                         | 3,780  | 3,270        | 6,212                | 8,041               | 4,199                                 | 31,697                             | 24,523  | 1,985                              |
| 1987: 1st quarter        | 88,118         | 11,471                  | 41,243                       | 16,654                         | 3,885  | 3,347        | 6,340                | 8,265               | 4,172                                 | 32,268                             | 24,567  | 2,356                              |
| 2nd quarter              | 88,367         | 11,022                  | 39,781                       | 15,123                         | 3,848  | 3,395        | 6,218                | 8,278               | 4,179                                 | 31,619                             | 24,612  | 1,720                              |
| 3rd quarter              | 88,645         | 10,839                  | 39,358                       | 14,975                         | 3,794  | 3,482        | 5,900                | 8,288               | 4,204                                 | 31,067                             | 24,572  | 1,442                              |
| 4th quarter              | 89,058         | 10,634                  | 40,846                       | 16,431                         | 3,718  | 3,399        | 5,789                | 8,189               | 4,160                                 | 31,532                             | 24,747  | 1,579                              |
| 1987 Panel               |                |                         |                              |                                |  |              |                      |                     |                                       |                                    |   |                                    |
| 1987: 1st quarter        | 88,131         | 11,291                  | 40,543                       | 15,793                         | 3,717  | 3,075        | 6,230                | 7,707               | 3,883                                 | 32,216                             | 24,529  | 2,616                              |
| 2nd quarter              | 88,237         | 10,691                  | 39,345                       | 14,857                         | 3,597  | 3,222        | 6,142                | 7,795               | 3,979                                 | 31,470                             | 24,702  | 1,869                              |
| 3rd quarter              | 88,601         | 10,648                  | 38,681                       | 13,605                         | 3,485  | 3,208        | 5,881                | 7,759               | 3,861                                 | 31,670                             | 25,198  | 1,624                              |
| 4th quarter              | 89,067         | 10,558                  | 40,395                       | 15,748                         | 3,425  | 3,194        | 5,833                | 7,818               | 3,941                                 | 32,073                             | 25,150  | 2,179                              |
| 1988: 1st quarter        | 89,719         | 10,630                  | 40,853                       | 15,921                         | 3,607  | 3,172        | 5,916                | 7,919               | 4,053                                 | 32,282                             | 25,410  | 1,996                              |
| 2nd quarter              | 89,963         | 10,212                  | 39,418                       | 14,527                         | 3,534  | 3,159        | 5,824                | 7,986               | 4,006                                 | 31,615                             | 25,403  | 1,448                              |
| 3rd quarter              | 90,401         | 10,354                  | 38,201                       | 13,285                         | 3,382  | 3,150        | 5,706                | 7,909               | 4,001                                 | 31,279                             | 24,947  | 1,296                              |
| 4th quarter              | 90,481         | 10,461                  | 40,102                       | 15,314                         | 3,329  | 3,186        | 5,813                | 7,876               | 4,012                                 | 31,952                             | 25,228  | 1,495                              |
| 1988 Panel               |                |                         |                              |                                |  |              |                      |                     |                                       |                                    |   |                                    |
| 1988: 1st quarter        | 89,858         | 11,547                  | 41,438                       | 16,741                         | 3,318  | 3,496        | 5,996                | 7,882               | 4,488                                 | 32,334                             | 25,399  | 2,164                              |
| 2nd quarter              | 90,066         | 11,020                  | 40,078                       | 15,160                         | 3,356  | 3,747        | 5,948                | 8,265               | 4,557                                 | 32,012                             | 25,456  | 1,655                              |
| 3rd quarter              | 90,488         | 11,154                  | 39,634                       | 14,320                         | 3,375  | 3,793        | 5,851                | 8,530               | 4,515                                 | 32,262                             | 25,641  | 1,593                              |
| 4th quarter              | 90,517         | 10,855                  | 41,316                       | 16,860                         | 3,417  | 3,790        | 6,038                | 8,556               | 4,563                                 | 32,297                             | 25,573  | 1,540                              |
| 1989: 1st quarter        | 91,144         | 10,677                  | 41,775                       | 16,829                         | 3,477  | 3,682        | 6,133                | 8,405               | 4,746                                 | 32,796                             | 25,762  | 2,087                              |
| 2nd quarter              | 91,614         | 10,548                  | 40,740                       | 15,272                         | 3,362  | 3,624        | 5,892                | 8,274               | 4,716                                 | 32,753                             | 25,959  | 1,565                              |
| 3rd quarter              | 91,841         | 10,858                  | 39,866                       | 14,142                         | 3,275  | 3,645        | 5,856                | 8,455               | 4,556                                 | 32,549                             | 25,975  | 1,380                              |
| 4th quarter              | 92,103         | 11,144                  | 42,048                       | 16,380                         | 3,265  | 3,721        | 6,108                | 8,730               | 4,252                                 | 32,579                             | 26,369  | 1,382                              |
| 1989 Panel               |                |                         |                              |                                |  |              |                      |                     |                                       |                                    |   |                                    |
| 1989: 1st quarter        | 91,394         | 10,949                  | 41,101                       | 16,408                         | 3,744  | 3,388        | 5,787                | 8,104               | 4,575                                 | 32,470                             | 25,621  | 1,907                              |
| 2nd quarter              | 91,819         | 10,256                  | 40,160                       | 15,078                         | 3,604  | 3,522        | 5,725                | 8,190               | 4,563                                 | 32,510                             | 25,890  | 1,631                              |
| 3rd quarter              | 92,083         | 10,538                  | 39,496                       | 13,878                         | 3,597  | 3,620        | 5,640                | 8,299               | 4,441                                 | 32,505                             | 26,154  | 1,473                              |
| 1990 Panel               |                |                         |                              |                                |  |              |                      |                     |                                       |                                    |   |                                    |
| 1990: 1st quarter        | 91,776         | 10,864                  | 42,687                       | 16,690                         | 3,523  | 3,239        | 5,939                | 8,348               | 4,576                                 | 33,472                             | 26,257  | 2,407                              |
| 2nd quarter              | 92,308         | 10,462                  | 41,827                       | 15,303                         | 3,696  | 3,315        | 6,184                | 8,607               | 4,470                                 | 33,397                             | 26,412  | 2,011                              |
| 3rd quarter              | 92,722         | 11,055                  | 41,419                       | 14,397                         | 3,711  | 3,354        | 6,254                | 8,871               | 4,452                                 | 33,686                             | 26,745  | 1,921                              |
| 4th quarter              | 92,421         | 11,381                  | 43,554                       | 17,130                         | 3,722  | 3,369        | 6,334                | 9,014               | 4,431                                 | 33,939                             | 26,529  | 2,288                              |

**Table D-2. Average Monthly Nonfarm Poverty and Household Participation in Means-Tested and Nonmeans-Tested Government Programs—SIPP Panels: First Quarter 1984 to Fourth Quarter 1993—Continued**

[Numbers in thousands]

| Panel, year, and quarter | All households | Nonfarm poor households | Received Government benefits | Received means-tested benefits | Received AFDC or other non-SSI Public Assistance | Received SSI | Received food stamps | Covered by Medicaid | Lived in public or subsidized housing | Received non-means-tested benefits | Received Social Security or Railroad Retirement | Received unemployment compensation |
|--------------------------|----------------|-------------------------|------------------------------|--------------------------------|--|--------------|----------------------|---------------------|---------------------------------------|------------------------------------|---|------------------------------------|
| 1991: 1st quarter        | 93,058         | 11,548                  | 44,708                       | 17,776                         | 3,879  | 3,482        | 6,631                | 9,326               | 4,502                                 | 34,922                             | 26,702  | 3,354                              |
| 2nd quarter              | 93,278         | 11,367                  | 43,316                       | 16,230                         | 4,004  | 3,418        | 6,664                | 9,462               | 4,490                                 | 34,434                             | 26,732  | 2,818                              |
| 3rd quarter              | 93,443         | 11,555                  | 42,568                       | 15,212                         | 4,150  | 3,475        | 6,750                | 9,853               | 4,513                                 | 34,364                             | 26,705  | 2,681                              |
| 4th quarter              | 93,289         | 11,545                  | 44,975                       | 17,921                         | 4,045  | 3,516        | 6,857                | 10,015              | 4,452                                 | 34,944                             | 26,642  | 3,183                              |
| 1992: 1st quarter        | 93,879         | 11,679                  | 46,292                       | 18,448                         | 4,089  | 3,744        | 7,152                | 10,339              | 4,504                                 | 36,286                             | 26,943  | 4,244                              |
| 1991 Panel               |                |                         |                              |                                |  |              |                      |                     |                                       |                                    |   |                                    |
| 1991: 1st quarter        | 93,313         | 12,453                  | 44,115                       | 18,203                         | 4,051  | 3,593        | 6,814                | 9,652               | 4,836                                 | 34,047                             | 26,189  | 3,120                              |
| 2nd quarter              | 93,545         | 11,876                  | 43,439                       | 17,131                         | 4,152  | 3,799        | 6,945                | 9,996               | 4,845                                 | 34,103                             | 26,299  | 2,861                              |
| 3rd quarter              | 93,774         | 12,162                  | 42,903                       | 16,149                         | 4,003  | 3,936        | 6,975                | 10,313              | 4,830                                 | 34,214                             | 26,369  | 2,714                              |
| 4th quarter              | 93,649         | 12,294                  | 45,301                       | 18,677                         | 3,927  | 3,902        | 7,055                | 10,281              | 4,706                                 | 34,846                             | 26,456  | 3,236                              |
| 1992: 1st quarter        | 94,157         | 12,422                  | 46,455                       | 18,962                         | 4,057  | 3,957        | 7,358                | 10,533              | 4,871                                 | 36,180                             | 26,685  | 4,502                              |
| 2nd quarter              | 94,588         | 12,240                  | 44,958                       | 17,557                         | 4,062  | 4,173        | 7,248                | 10,678              | 4,772                                 | 35,509                             | 26,591  | 4,076                              |
| 3rd quarter              | 94,095         | 12,291                  | 43,665                       | 16,556                         | 3,987  | 4,152        | 7,199                | 10,813              | 4,621                                 | 34,902                             | 26,533  | 3,550                              |
| 4th quarter              | 94,546         | 12,339                  | 45,629                       | 19,175                         | 4,099  | 4,128        | 7,251                | 10,981              | 4,558                                 | 34,864                             | 26,339  | 3,378                              |
| 1992 Panel               |                |                         |                              |                                |  |              |                      |                     |                                       |                                    |   |                                    |
| 1991: 4th quarter        | 92,932         | 11,917                  | 44,691                       | 18,746                         | 3,958  | 3,597        | 7,060                | 9,818               | 4,294                                 | 33,884                             | 26,099  | 3,164                              |
| 1992: 1st quarter        | 93,473         | 11,939                  | 45,925                       | 19,063                         | 4,171  | 3,723        | 7,573                | 10,224              | 4,446                                 | 35,291                             | 26,195  | 4,630                              |
| 2nd quarter              | 94,432         | 11,876                  | 45,012                       | 18,030                         | 4,298  | 3,961        | 7,693                | 10,865              | 4,560                                 | 35,231                             | 26,265  | 4,289                              |
| 3rd quarter              | 94,260         | 11,964                  | 43,952                       | 16,721                         | 4,117  | 3,978        | 7,634                | 11,048              | 4,493                                 | 35,001                             | 26,362  | 3,696                              |
| 4th quarter              | 94,410         | 12,266                  | 46,047                       | 19,499                         | 4,137  | 4,124        | 7,634                | 11,232              | 4,397                                 | 35,089                             | 26,481  | 3,535                              |
| 1993: 1st quarter        | 94,805         | 12,713                  | 46,661                       | 19,790                         | 4,339  | 4,083        | 7,895                | 11,387              | 4,409                                 | 35,760                             | 26,583  | 4,075                              |
| 2nd quarter              | 94,905         | 12,553                  | 45,093                       | 18,370                         | 4,442  | 4,154        | 7,876                | 11,639              | 4,426                                 | 35,056                             | 26,623  | 3,416                              |
| 3rd quarter              | 95,796         | 12,296                  | 44,776                       | 17,422                         | 4,372  | 4,322        | 7,808                | 11,939              | 4,364                                 | 35,332                             | 26,619  | 3,396                              |
| 4th quarter              | 96,109         | 12,288                  | 46,689                       | 19,920                         | 4,250  | 4,276        | 7,592                | 11,787              | 4,466                                 | 35,260                             | 26,636  | 3,158                              |
| 1993 Panel               |                |                         |                              |                                |  |              |                      |                     |                                       |                                    |   |                                    |
| 1992: 4th quarter        | 94,633         | 12,594                  | 46,234                       | 19,858                         | 4,512  | 3,625        | 7,848                | 11,219              | 4,827                                 | 34,495                             | 26,232  | 3,166                              |
| 1993: 1st quarter        | 94,924         | 13,011                  | 47,265                       | 20,215                         | 4,831  | 3,861        | 8,594                | 11,636              | 5,137                                 | 35,299                             | 26,657  | 3,712                              |
| 2nd quarter              | 94,981         | 13,009                  | 46,261                       | 18,833                         | 4,904  | 4,113        | 8,645                | 11,839              | 5,098                                 | 35,220                             | 26,826  | 3,461                              |
| 3rd quarter              | 95,982         | 13,213                  | 45,540                       | 17,737                         | 4,870  | 4,198        | 8,727                | 12,127              | 5,025                                 | 35,334                             | 27,027  | 3,178                              |
| 4th quarter              | 96,327         | 12,954                  | 47,670                       | 20,357                         | 4,865  | 4,254        | 8,623                | 12,123              | 5,075                                 | 35,494                             | 27,042  | 3,228                              |

NA Not available.

imputation method. This process assigns values reported in the survey by respondents to nonrespondents. The respondent from whom the value is taken is termed the "donor." Values from donors are stored in a matrix defined by demographic and economic data available for both donors and nonrespondents. Each cell of the matrix defines a unique combination of demographic and economic characteristics. For example, the imputation of an amount for monthly wage and salary income is based on eight different variables. These were (1) occupation, (2) sex, (3) age, (4) race, (5) educational attainment, (6) weeks worked, (7) usual hours worked per week, and (8) place of residence.

The second important determinant of data quality and probably the one examined most closely by users of the income data collected in household surveys is the accuracy of reported (and imputed) amounts. In

general, household surveys have a tendency to underestimate the number of persons receiving income and the average amount received. These problems result for a variety of reasons including random response error, misreporting of sources of income, failure to report the receipt of income from a specified source, and failure to report the full amount received. The net effect of these kinds of problems is, for most income types, underestimation or underreporting of income amounts. The extent of underreporting is measured by comparing survey estimates with independently derived estimates, usually based on administrative data that are, generally, more reliable than the estimates derived from the survey. It should be noted that the independent estimates are subject to errors themselves. In addition, independent estimates do not reflect income attributable to the "underground" economy, some of which may be reported

**Table D-3. Comparison of CPS and SIPP Poverty Rates, by Selected Characteristics: 1990 and 1991**

[Estimates from SIPP based on 1990 panel file]

| Characteristic                     | Percent below the poverty level |      | Percentage point difference CPS-SIPP | CPS-SIPP |
|------------------------------------|---------------------------------|------|--------------------------------------|----------|
|                                    | CPS <sup>1</sup>                | SIPP |                                      |          |
| <b>1990</b>                        |                                 |      |                                      |          |
| <b>Age</b>                         |                                 |      |                                      |          |
| Total .....                        | 13.5                            | 10.1 | 3.4                                  | 1.34     |
| Under 18 years .....               | 20.6                            | 16.8 | 3.8                                  | 1.23     |
| 18 to 64 years .....               | 10.7                            | 7.7  | 3.0                                  | 1.39     |
| 65 years and over .....            | 12.2                            | 8.1  | 4.1                                  | 1.51     |
| <b>Sex</b>                         |                                 |      |                                      |          |
| Male .....                         | 11.7                            | 8.2  | 3.5                                  | 1.43     |
| Female .....                       | 15.2                            | 11.9 | 3.3                                  | 1.28     |
| <b>Race and Hispanic Origin</b>    |                                 |      |                                      |          |
| White .....                        | 10.7                            | 7.5  | 3.2                                  | 1.43     |
| Black .....                        | 31.9                            | 27.0 | 4.9                                  | 1.18     |
| Hispanic origin <sup>2</sup> ..... | 28.1                            | 21.2 | 6.9                                  | 1.33     |
| <b>1991</b>                        |                                 |      |                                      |          |
| <b>Age</b>                         |                                 |      |                                      |          |
| Total .....                        | 14.2                            | 10.6 | 3.6                                  | 1.34     |
| Under 18 years .....               | 21.8                            | 17.2 | 4.6                                  | 1.27     |
| 18 to 64 years .....               | 11.4                            | 8.3  | 3.1                                  | 1.37     |
| 65 years and over .....            | 12.4                            | 8.5  | 3.9                                  | 1.46     |
| <b>Sex</b>                         |                                 |      |                                      |          |
| Male .....                         | 12.3                            | 8.9  | 3.4                                  | 1.38     |
| Female .....                       | 16.0                            | 12.2 | 3.8                                  | 1.31     |
| <b>Race and Hispanic Origin</b>    |                                 |      |                                      |          |
| White .....                        | 11.3                            | 8.1  | 3.2                                  | 1.40     |
| Black .....                        | 32.7                            | 27.1 | 5.6                                  | 1.21     |
| Hispanic origin <sup>2</sup> ..... | 28.7                            | 24.7 | 4.0                                  | 1.16     |

<sup>1</sup>Standard errors for the 1990 and 1991 Current Population Survey poverty rates can be derived from appendices B of Current Population Reports, Series P-60, Numbers 175 and 181, *Poverty in the United States: 1990 (1991)*.

<sup>2</sup>Persons of Hispanic origin may be of any race.

in the survey.<sup>2</sup> AFDC and food stamp participation for January 1992 were 25.3 and 23.4 percent lower in the 1990 SIPP panel than the numbers from administrative records of the Departments of Health and Human Services and Agriculture.

### COMPUTATION OF POVERTY STATUS IN SIPP AND COMPARISON WITH CPS ESTIMATES

Official poverty data in the CPS are based on questions on income received in the preceding calendar

<sup>2</sup>For a general discussion of these problems, see Thomas B. Jabine, Karen F. King, and Rita J. Petroni, *SIPP Quality Profile*, Bureau of the Census, May 1990, pp. 145-146. For a more specific discussion of the quality of the income data from the SIPP, see Denton R. Vaughn, "Reflections on the Income Estimates from the Initial Panel of the Survey of Income and Program Participation," in *Individuals and Families in Transition: Understanding Change Through Longitudinal Data*, U.S. Department of Commerce, Bureau of the Census, March 1988, pp. 333-413. The Census Bureau is currently updating this evaluation with an analysis of the income data from the SIPP 1990 panel.

year, which are asked in the March supplement. Family composition is fixed as of the survey date and assumed to be constant over the previous year (in the case of 1990 poverty status, the data were collected in March 1991). In this report using the 1990 SIPP panel, income information was collected for each month. Family composition data was updated on a monthly basis also. A person's annual poverty status was determined by comparing the sum of the person's monthly income (family income or unrelated individual income as appropriate) against the sum of the appropriate monthly poverty thresholds. If the sum of the monthly incomes was below the sum of the monthly poverty thresholds, the person was classified as below the poverty level for the year.

Poverty estimates vary considerably between the CPS and SIPP. In 1990, the CPS-based poverty rate was 13.5 percent, compared with 10.3 percent based on SIPP. When household composition was fixed as of March of 1991, in order to make the SIPP estimate more comparable to the CPS estimate, the poverty rate rose to 10.8 percent, still significantly less than the CPS rate.

Other than treatment of changes in household composition, there are several other differences between CPS and SIPP that should be noted in comparing results from the two surveys. First, the shorter recall period in SIPP results in more accurate data on the receipt of transfer income. This difference would tend to result in SIPP poverty estimates that are lower than CPS poverty estimates. A second difference concerns the way in which self-employment income is recorded. It is possible to record negative amounts in CPS, but not in SIPP. This difference would also tend to result in SIPP estimates of poverty that are lower than CPS estimates. It is also possible because of its more frequent interviews that SIPP has better reporting of intermittent income than does the CPS. If such income tends to cluster at the lower end of the earnings distribution, this would tend to lower the number of poor.

Paradoxically, wage and salary income estimates tend to be lower in SIPP than in the CPS. It is possible that persons tend to report net rather than gross wage and salary income in the SIPP. This would tend to result in SIPP estimates of poverty that are higher than the CPS estimates for those persons/families with wage and salary income.

Tables D-3 and D-4 compare selected poverty rates and year-to-year changes in these rates from the March 1991 and 1992 CPS (in which 1990 and 1991 poverty statistics were collected) with the 1990 SIPP panel file figures. In general, SIPP estimates are considerably lower, with the CPS poverty rate for 1990 being over 3 percentage points greater than the comparable SIPP estimate.

**Table D-4. Comparison of 1990 to 1991 Year-to-Year Percentage Point Changes in Poverty Rates Between CPS and SIPP**

| Characteristic                     | CPS | SIPP |
|------------------------------------|-----|------|
| <b>Age</b>                         |     |      |
| Total .....                        | 0.7 | 0.5  |
| Under 18 years .....               | 1.2 | 0.4  |
| 18 to 64 years .....               | 0.7 | 0.6  |
| 65 years and over .....            | 0.2 | 0.4  |
| <b>Sex</b>                         |     |      |
| Male .....                         | 0.6 | 0.7  |
| Female .....                       | 0.8 | 0.3  |
| <b>Race and Hispanic Origin</b>    |     |      |
| White .....                        | 0.6 | 0.6  |
| Black .....                        | 0.8 | 0.1  |
| Hispanic origin <sup>1</sup> ..... | 0.6 | 3.5  |

<sup>1</sup>Persons of Hispanic origin may be of any race.

The total weighted number of persons in 1990 will fall short of the independent estimates of the total population because some persons with positive weights are excluded from the analysis, namely, those who died, were institutionalized, or moved to Armed Forces barracks or out of the country. The total estimate for 1991 will fall short of independent estimates for the same reasons and because of natural increase and net migration between 1990 and 1991.