# Dynamics of Economic Well-Being: Program Participation,1993 to 1995 Who Gets Assistance? 

Household Economic Studies

## INTRODUCTION

The August 1996 passage of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA), also known as welfare reform, gave states considerable flexibility and greater responsibility in formulating and implementing initiatives to reduce welfare dependency and to encourage employment for members of low-income families with children. Under the PRWORA, most welfare recipients face a 60 -month time limit in federal funding and must meet certain work requirements to receive assistance. Even prior to the enactment of PRWORA, however, several states modified their welfare programs under waivers granted by the federal government, which allowed them to implement innovative demonstration projects to move people from welfare to work.

Changes in the welfare system, both under waivers and the PRWORA, have increased the interest in information about the degree to which certain groups of people are involved in assistance programs, about the characteristics of program participants, about the kinds of programs they use, and about the intensity and extent of their participation. Of particular interest is how people's participation extends over time.

This report focuses on participation and on the characteristics of participants in the following means-tested public-assistance programs:'

[^0]- Aid to Families with Dependent Children (AFDC)
- General assistance (GA)
- Food stamps
- Supplemental Security Income (SSI)
- Medicaid
- Housing assistance

The data cover calendar years 1993 and 1994, and the first 9 calendar months of 1995 (January to September), ${ }^{2}$ a time just before federal welfare reform was enacted. The data provide a set of baseline estimates for the study of the effects of the reforms. ${ }^{3}$
${ }^{2}$ This report is an update of Randy Sherrod (1999), "Dynamics of Economic Well-Being: Program Participation, Who Gets Assistance? 1993 to 1994" Current Population Reports, P70-69, Washington, DC: U.S. Census Bureau.
${ }^{3}$ Data from the 1996 and later panels of SIPP will be used to study program participation in the post-reform era. Part of the PRWORA law directed the Census Bureau to field a new survey, whose purpose is to collect the data necessary to evaluate the impact of the change. To carry out that directive, the Census Bureau began conducting the Survey of Program Dynamics (SPD). The SPD will simultaneously describe the full range of state welfare programs along with social, economic, demographic, and family changes that will help or limit the effectiveness of the reforms. The Census Bureau is collecting data for households previously interviewed in the Survey of Income and Program Participation (SIPP) from 1992-94 or 1993-95 for each of the 6 years from 1996 through 2001. Cross-sectional data from SPD were released after the 1997, 1998, and 1999 surveys. The first longitudinal file from SPD was released in the summer of 2001. For more information about SPD, see the SPD Web site, at www.sipp.census.gov/spd/

## Current Population Reports

Jan Tin
Charita Castro

The data come from the 1993 panel of the Survey of Income and Participation (SIPP). ${ }^{4}$ SIPP is a longitudinal survey, which means that, unlike periodic point-in-time surveys, such as the Current Population Survey, SIPP follows the same people over time, or longitudinally. ${ }^{5}$ This longitudinality enables SIPP to study a subject from two perspectives. First, it can look back at the history of a group of people over a span of time. Second, it can take cross-sectional views of a population of interest at regular intervals, such as monthly. SIPP is analogous to a video cassette recorder with a freeze-frame function.

SIPP's historical perspective is useful for examining a variety of concepts. One is gross-activity levels, such as how many people ever used a particular assistance program in a given year, even though not all of them used it at any particular time. Another is cumulative amounts, such as the number of months within a time period that an individual participated in one or more assistance programs. Yet another approach is to examine the number, timing, and duration of flows of people into and out of particular situations within a given time span, such as the length of time an individual continuously participates in a particular program or in assistance in general. SIPP's cross-sectional

[^1]
## Accuracy of the Estimates

Statistics from sample surveys are subject to sampling and nonsampling error. All comparisons presented in this report have taken sampling error into account and meet Census Bureau standards for statistical significance. Nonsampling errors in surveys may be attributed to a variety of sources, such as how the survey was designed, how respondents interpret questions, how able and willing respondents are to provide correct answers, and how accurately answers are coded and classified. The Census Bureau employs quality control procedures throughout the production process, including the overall design of surveys, the testing of the wording of questions, the review of the work of interviewers and coders, and the statistical review of reports.
The SIPP employs ratio estimation, whereby sample estimates are adjusted to independent estimates of the national population by age, race, sex, and Hispanic origin. This weighting partially corrects for bias due to undercoverage, but how it affects different variables in the survey is not precisely known. Moreover, biases may also be present when people who are missed in the survey differ from those interviewed in ways other than the categories used in weighting (age, race, sex, and Hispanic origin). All of these considerations affect comparisons across different surveys or data sources.
Sample attrition, a type of nonresponse error, is another major concern in SIPP because of the need to follow the same people over time. Attrition reduces the available sample size. To the extent that those leaving the sample are systematically different from those who remain in the sample, survey estimates will be biased.
perspective captures changes over time in the level of an activity, such as in the proportion of the population receiving assistance in a given month. Each of these perspectives can be used to study populations, or segments of populations, existing at selected points in time.

The longitudinal properties of SIPP come at a cost, however. Over time, attrition reduces the available sample size; and, to the extent that it takes a larger bite out of certain kinds of sample members, the survey may grow increasingly unrepresentative of the population, leading to biases in the results. Statistical techniques (primarily reweighting) cannot entirely redress these potential imbalances. In terms of a video analogy, differential attrition not only causes the picture to become increasingly grainy, but increasingly distorted as well (see Appendix B
for a fuller discussion of the potential effects of attrition). The data in this report are particularly susceptible to such effects because, as discussed later, poverty is associated with program participation, and longitudinal surveys tend to lose relatively more poor people than higher income people.

These limitations may call for extra care in interpreting the longitudinal data in this report, but they do not destroy their usefulness. Absolute estimates (such as the number of program participants, the level of a participation rate, or the size of a monthly benefit) may not exactly reflect reality, ${ }^{6}$ but they do suggest a minimum or maximum value for
${ }^{6}$ For example, research on data for 1985 through 1993 shows that SIPP estimates of the numbers of recipients for AFDC (and also for food stamps) are lower than the numbers based on administrative data, and the extent of underestimation may have increased over time. See the source cited in Appendix B.
the object under study. More importantly, though individual estimates of the levels of a quantity at successive times may each miss their mark, they often miss it by a consistent degree, so that differences between them can reliably describe the timing and size of changes in the quantity. Averages of estimates (such as the "average monthly participation rate"), being
measures of central tendency, are somewhat protected from the distortions that may affect their components. Relative measures (such as the relative size of the participation rate for men compared with that for women, or the ratio of the number of food stamp participants to the number of medicaid participants) suggest the true nature of relationships. Both absolute and relative

## Description of Concepts

Average monthly participation rate for (a specified year): this is an annual-average measure of the monthly percentage of people who participated in at least one major means-tested program; it represents a weighted average of the 12 monthly ( 9 for 1995) participation rates for the year. People who participated in more than one program in a month are only counted once in the total number of participants for that month.
Participated 1 or more months in (a specified year): the percentage of people who ever participated at any time in at least one major means-tested program during a specified year.

Participated between 1 and 11 months: the percentage of people who participated in at least one program or another for a total of between 1 and 11 months (not necessarily consecutive) during the January 1993-September 1995 period.
Participated 12 or more months: the percentage of people who participated in at least one program or another for a total of 12 or more months (not necessarily consecutive) during the January 1993-September 1995 period, including people who participated in all 33 months of the period.
Participated all 33 months: the percentage of people who participated in at least one program or another for all 33 months of the January 1993-September 1995 period.
Spell of participation: an uninterrupted period of months in which an individual receives means-tested assistance, and which is preceded by 1 or more months of nonparticipation; a month is included in a spell if the individual receives assistance for all or any part of the month.

Median spell duration: that value for spell length that divides the distribution of spells by duration in half, one-half being shorter and onehalf longer than the median.
Median monthly family benefit: that value that divides in half the distribution of the recipients of assistance, by their monthly family benefit amount in a specified year: one-half of the people in the distribution have benefits below the median, the other half have benefits above it. The monthly family benefit amount for an individual in a given year represents the amount for the last month in that year for which the family's receipt of the benefit was reported (not necessarily December); if the family participated in a program for only part of that month, then the benefit amount could underestimate the usual monthly benefit received by the family from that program.
measures can reveal the broad outlines, directions, size, and strength of trends and patterns, especially when they are applied as here (for the "length of participation" and "median spell length" measures) to the history of a group of people existing at a particular point in time.

The first section of the report examines the degree and scope of the involvement of groups of people in assistance programs. The second section looks at the duration of attachment to assistance and at the monthly benefits of program participants. Appendix A displays the detailed statistical tables analyzed in this report.

## HIGHLIGHTS

- About 40 million people (or 15 percent of the population) participated in major meanstested assistance programs in each month, on average, in $1995 .{ }^{\text { }}$
- In 1995, individuals were more likely to participate in medicaid than in any of the other programs examined. Eleven percent of individuals participated in medicaid in an average month in 1995.
- The poor, in 1995, were much more likely to receive at least one type of major means-tested benefit than individuals who were not in poor families. About three in four of the poor received benefits in at least one month in 1995 compared with only one in eleven of the nonpoor.
- Differences in the participation rates among various demographic groups are largely asso-

[^2]ciated with differences in their poverty rates.

- Individuals in households maintained by women were approximately five times as likely to participate in means-tested programs, in an average month in 1995, as individuals in marriedcouple households (44 percent versus 9 percent).
- Adults (people age 18 and over) without a high school diploma were more than twice as likely as high school graduates, and more than five times as likely as those with some college, to participate in some type of means-tested programs in an average month in 1995 (participation rates were 25 percent, 10 percent, and 5 percent, respectively, for these groups).
- Unemployed people were much more likely to receive meanstested benefits in an average month in 1995 than were people with full-time jobs (26 percent compared with 4 percent).
- Children (people under 18 years of age) were more likely than people in other age groups to be long-term recipients of assistance programs ("long term" being defined as participating in all 33 months of the 1993-95 period examined in this report).
- Recipients of means-tested programs participated in housing assistance for a longer period of time (median duration of 7.8 months) than they did in food stamps or medicaid in the 1993-95 period.
- Within selected demographic groups (such as age groups and family types), higher average monthly program participation rates tended to be associated with the receipt of higher median family benefits.


## PROGRAM PARTICIPATION

The focus in this section is on groups of people in the population at large. The discussion investigates their degree of involvement in assistance programs using three concepts, each of which explores a different aspect of program participation. ${ }^{8}$

- The "average monthly program participation rate:" These are annual-average rates-one for each of the years 1993, 1994, and 1995. The rate represents a weighted average of the twelve (nine for 1995) monthly (cross-sectional) measurements taken in the specified year of the proportion of people in the group who participated in assistance programs. (Rates are shown for 1995 even though they are 9-month averages because this number of months is sufficient to make them reasonably comparable to the 12-month averages for 1993 and 1994). Each of the component monthly rates in the average corresponds to the population existing in the month the measurement was taken. The measure tells what share of the group is on assistance, on average, in any given month during the year in question.
- The percentage of a group who "participated 1 or more months in a (specified) year:" These percentages are presented for each year 1993 and 1994. The measure repre-

[^3]sents the proportion of people in a group who ever took part in any program at any time in a year. It is a measure of gross activity, and corresponds to the population existing at the end of the year in question. Data are not shown for 1995 because, unlike the data for 1993 and 1994, they had not achieved their full potential growth when their time base was truncated. The figure represents the share of the group that participated in assistance at some time during the specified year.

- The percentage of the population that "participated for a (specified) number of months in the 33-month period between January 1993 and September 1995:" This measure is based on the number of accumulated (not necessarily consecutive ) months spent in assistance programs throughout the entire 33-month time span. It relates to the population existing at the end of the 33 months.


## Program Usage: 1993 to 1995

Of the estimated 263 million noninstitutionalized civilians living in the United States in 1995, approximately 40 million, or 14.9 percent, participated in one or more major means-tested assistance programs, on average, during each of the first 9 months of 1995. As Figure 1 shows, the annual-average monthly participation rate increased noticeably from about 11 percent in the 1987-90 period to 15.2 percent in 1993 and 1994. The average monthly participation rate in 1995 was 14.9 percent. ${ }^{9}$

[^4]Figure 1.

## Average Monthly Participation Rate in Major Means-Tested Programs: 1987-88 and 1990-95 (Percent)



Note: The 1989 SIPP data are not available for analysis, while the 1995 SIPP data are available only from January to September.
Source: U.S. Census Bureau, Survey of Income and Program Participation.

Figure 2.
Program Participation Rates for Means-Tested Programs: January 1993-September 1995 (Percent)

Participated between 1 and 11 months of January 1993-September 1995
Participated 12 or more months of January 1993-September 1995
Participated all 33 months of January 1993-September 1995
 programs

Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Figure 3.
Program Participation
Rates by Age:
January 1993-September 1995
(Percent)

Participated between 1 and 11 months of January 1993-September 1995
$\square$ Participated 12 or more months of January 1993-September 1995 Participated all 33 months of January 1993-September 1995


[^5]A small proportion of the population existing at the end of the 1993-95 period participated in means-tested programs on a longterm basis, with about 9.0 percent having participated in each month of the period (Figure 2). About 15 percent of people under 18 years old participated each month of the 1993-95 period, compared with 6.2 percent of people 18 to 64 years old, and 9.7 percent of people 65 years and older (Figure 3).

## Medicaid Has the Highest Participation Rate

As Figure 4 illustrates, individuals were more likely to participate in medicaid than in any of the other programs examined in this report. In 1993, 13.6 percent of the population participated in medicaid in at least 1 month; in 1994, 14.1 percent of people did so (Figure 4). Continuing a relationship observed for 1993 and 1994, the average monthly participation rate in 1995 for medicaid (11.2 percent) was higher than that for AFDC or GA, food stamps, housing assistance, or SSI (Figure 5). More people (about 5.9 percent of the population) participated in medicaid in all 33 months than in any other program (see Figure 2). ${ }^{10}$

An estimated 29 million people received medicaid benefits in an average month of 1995; almost 16 million of these recipients were children. In fact, 22.0 percent of children under age 18 received medicaid, compared with 7.0 percent of people 18 to 64 years, and 8.0 percent of people 65 years old
${ }^{10}$ There is no statistical difference in medicaid participation for 1 or more months between 1993 and 1994. The average participation rate for housing assistance in 1995 and the long-term participation rate for food stamps in the 1993-95 period were not significantly different.


Figure 5.
Average Monthly Participation Rate for Means-Tested Programs: 1993, 1994 and 1995
(Percent)


Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Figure 6.
Program Participation Rates by Poverty Status: 1993 and 1994


[^6]and over (see Appendix A, Table A-5). ${ }^{11}$

## Between Half and Three Quarters of the Poor Receive Means-Tested Assistance

Figure 6 shows that 77.2 percent and 75.1 percent, respectively, of the poor (those with family incomes under the poverty thresholds ${ }^{12}$ ) received benefits during at least one month of 1993 and 1994, compared with 10.0 percent and 10.5 percent of the nonpoor. Additionally, 60.2 percent of the poor received at least one type of major means-tested benefit in an average month of 1995, compared with 6.9 percent of the nonpoor (Figure 7). ${ }^{13}$

The poor also tended to be longterm participants in means-tested programs: 65.0 percent of the poor, compared with 4.7 percent of the nonpoor, participated in 12 or more months; and 55.6 percent of the poor, compared with 3.0 percent of the nonpoor, participated in all 33 months during the period of January 1993-September 1995
(Figure 8).

## Program Participation Varies by Race and Ethnic Origin

The likelihood of receiving meanstested assistance and of being in the programs for various times differed among racial groups. In 1993

[^7]Figure 7.
Average Monthly Participation
Rate by Poverty Status: 1993, 1994, and 1995 for 1993
Average monthly participation rate for 1994

- Average monthly participation rate for January 1995-September 1995


Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Figure 8.
Program Participation Rates by Poverty Status: January 1993-September 1995 (Percent)


Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Figure 9.
Program Participation Rates
by Race and Hispanic
Origin: 1993 and 1994
(Percent)

Participated 1 or more months in 1993
Participated 1 or more months in 1994


[^8]and 1994, about 41 percent of Blacks and 12 percent of White nonHispanics participated in a meanstested program for at least 1 month (Figure 9). In 1995, the average monthly participation rate for Blacks, 35.0 percent, was almost four times that of White nonHispanics, 9.2 percent (Figure 10). ${ }^{14}$

The percentage of Blacks receiving assistance in all 33 months of the 1993-95 period was far greater than the percentage of White nonHispanics: 24.8 percent compared with 4.6 percent (Figure 11 ). The corresponding figures for 12 or more months of participation were 30.4 percent for Blacks and 6.4 percent for White non-Hispanics.

The likelihood of receiving meanstested assistance also varied by Hispanic-origin status. ${ }^{15}$ Individuals of Hispanic origin were around three times as likely as White nonHispanics to receive benefits for at least 1 month in 1993 and 1994 (see Figure 9). In 1994, for example, 38.4 percent of Hispanics participated for at least 1 month in a program compared with 12.4 percent of White non-Hispanics. Similarly, the average monthly participation rate in 1995 for people of Hispanic origin, 30.6 percent, was over three times that of White non-Hispanics, 9.2 percent (Figure 10). As shown in Figure 11 , people of Hispanic origin were much more likely than White non-Hispanics to be long-term participants, with 20.4 percent of Hispanics participating all 33 months compared with only 4.6 percent of White non-Hispanics. ${ }^{16}$

[^9]Figure 10.
Average Monthly Participation Rate by Race and Hispanic Origin: 1993, 1994, and 1995
(Percent)

Average monthly participation rate for 1993
Average monthly participation rate for 1994
Average monthly participation rate for January 1995-September 1995

'Hispanics may be of any race.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Figure 11.
Program Participation Rates
for Means-Tested Programs: January 1993-September 1995 (Percent)


Hispanics may be of any race.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Figure 12.
Average Monthly Poverty
Rate by Race and Hispanic Origin: 1993, 1994, and 1995 (Percent)

Participated between 1 and 11 months of January 1993-September 1995
Participated 12 or more months of January 1993-September 1995
Participated all 33 months of January 1993-September 1995

'Hispanics may be of any race.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel

Although Blacks and Hispanics have significantly higher program participation rates than White nonHispanics, the actual number of White non-Hispanics receiving means-tested assistance exceeded the separate numbers of Blacks and Hispanics. In 1994, about 13 million Blacks and 10 million Hispanics participated in a program for at least 1 month, compared with 24 million White non-Hispanics. Similarly, during the 1993-95 period, approximately 9.5 million Blacks and 6 million Hispanics received means-tested assistance for 12 or more months, compared with 12 million White nonHispanics.

Differences among the racial and Hispanic-origin groups in program participation can, in part, be explained by differences in poverty rates. Poverty and participation in major means-tested assistance programs are closely related (see Figure 7 and 8). In 1995, the average monthly poverty rates for Blacks, 31.1 percent, and for people of Hispanic origin, 29.7 percent, were about three times the poverty rate for White non-Hispanics, 10.0 percent (Figure 12). ${ }^{17}$ Moreover, Figure 13 illustrates that Blacks ( 12.5 percent) and people of Hispanic origin (11.0 percent) were more likely than White nonHispanics (2.2 percent) to be poor for all 33 months of 1993-95.

[^10]Figure 13.

'Hispanics may be of any race.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Figure 14.
Average Monthly Participation Rate by Age of Individual: 1993, 1994, and 1995
(Percent)


Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Figure 15.
Average Monthly Participation Rate by Sex: 1993, 1994, and 1995
(Percent)

Average monthly participation rate for 1993
$\square$ Average monthly participation rate for 1994

- Average monthly participation rate for January 1995-September 1995


[^11]
## Children Under 18 Years Are More Likely to Receive Means-Tested Assistance Than People in Other Age Groups

Figure 14 illustrates that children under 18 years of age were more than twice as likely to receive means-tested benefits as people in the other age groups. In an average month during 1995, 26.1 percent ( 18 million) children received some type of means-tested benefit, compared with 10.5 percent ( 17 million) people aged 18 to 64 years old and 11.6 percent ( 4 million) people 65 years and older. ${ }^{18}$ Children also tended to be longterm participants, with 19.6 percent ( 13 million) collecting benefits in 12 or more months, and 14.8 percent ( 10 million) collecting benefits in all 33 months of the 1993-95 period (see Figure 3).

## Men and Women Differ in Program Participation

Women were more likely than men to receive means-tested benefits. Figure 15 shows that in 1995, 17.1 percent of women ( 23 million) participated in an average month, compared with 12.5 percent of men ( 16 million). Women were also more likely than men to receive meanstested benefits in each month of the 1993-95 period-10.5 percent compared with 7.3 percent (Figure 16).

[^12]Figure 16.
Program Participation
Rates by Sex:
January 1993-September 1995
(Percent)


Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Figure 17.
Average Monthly Poverty Rate by Family Type: 1993, 1994, and 1995
(Percent)


Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Figure 18.
Average Monthly Participation Rate by Family Type: 1993, 1994, and 1995
(Percent)


Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Families Maintained by Women Have Higher Participation Rates
Families maintained by women with no spouse present have higher poverty rates and lower incomes than married-couple families. During January-September 1995, households maintained by women had an average monthly poverty rate of 39.0 percent, compared with an average monthly poverty rate of 8.2 percent for people in marriedcouple families (Figure 17).
Reflecting this finding, individuals in female-maintained families were much more likely to participate in major means-tested programs, in an average month in 1995, than were people in married-couple fami-lies-44.2 percent compared with 8.6 percent (Figure 18). ${ }^{19}$ Similarly, about half (50.1 percent) of individuals in families maintained by women participated in means-tested programs for at least 1 month of 1994, in contrast with 12.3 percent of individuals in married-couple families (Figure 19). Furthermore, individuals in families maintained by women were about six times as likely as individuals in married-couple families to receive benefits in all 33 months of the 1993-95 period29.6 percent compared with 4.6 percent (Figure 20).

## Those With Less Education Have Higher Participation Rates

For people age 18 and over, lower educational attainment was associated with greater program participation. The percentage of individuals with less than 4 years of high school receiving benefits in at least 1 month of 1994 (30.9 percent)
${ }^{19}$ There is no statistical significance between the average monthly participation rate and average monthly poverty rate for married-couple families.

Figure 19.
Program Participation Rates by Family Type: 1993, 1994, and 1995
(Percent)


Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Figure 20.
Program Participation
Rates by Family Type: January 1993-September 1995
(Percent)


Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Figure 21.
Program Participation Rates by Educational Attainment: 1993 and 1994 (People 18 Years and Older)
(Percent)


Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.
was a little more than double the corresponding percentage of high school graduates ( 13.8 percent) (Figure 21). During an average month of 1995, about 1 in 4 people ( 24.8 percent) with less than 4 years of high school received means-tested benefits, compared with 1 in 10 high school graduates ( 10.3 percent) and less than 1 in 20 individuals ( 4.5 percent) with at least 1 year of college (Figure 22). Individuals who did not graduate from high school also were more likely than high school graduates and people with at least some college to receive benefits during the entire 33-month period of 1993-95-18.9 percent compared with 5.6 percent and 2.1 percent (Figure 23).

## The Unemployed and Those Out of the Labor Force Are More Likely Than the Employed to Receive MeansTested Benefits

People without jobs-unemployed or out of the labor force-were much more likely to receive means-tested benefits in an average month of 1995 than were either full-time workers or part-time workers. For people 18 years and older, nearly 26 percent of the unemployed received meanstested benefits in an average month of 1995 , compared with 21.0 percent of those out of the labor force,
3.7 percent of full-time workers, and 9.3 percent of part-time workers (Figure 24).

In addition to receiving means-tested benefits, the unemployed may also receive unemployment compensation. In an average month of 1995, only 18.5 percent of the unemployed received unemployment compensation, but 10.6 percent received AFDC or GA, 2.4 percent received SSI, 17.6 percent received food stamps, 16.7 percent

Figure 22.
Average Monthly Participation Rate by Educational
Attainment: 1993, 1994, and 1995 (People 18 Years and Older)
(Percent)


Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Figure 23.
Average Monthly Participation Rate by Educational Attainment: 1993, 1994, and 1995 (People 18 Years and Older)

Participated between 1 and 11 months of January 1993-September 1995
Participated 12 or more months of January 1993-September 1995
(Percent)


Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Figure 24.
Average Monthly Participation
Rate by Employment Status:
1993, 1994, and 1995
(People 18 Years and Older) (Percent)


[^13]received medicaid, and 9.8 percent received housing assistance. ${ }^{20}$

## PROGRAM PARTICIPANTS

This section looks at the characteristics of the recipients of assistance. Two concepts are examined:

- Median duration of program participation for the 1993-95 period: This is a measure of average spell length. A spell is an uninterrupted period of time (measured in months) in which an individual receives meanstested assistance, and which is preceded by a month or more of nonparticipation. Each recipient has one or more such spells. ${ }^{21}$ The measure examines all the spells throughout the 33-month period of the recipients in the population existing at the end of the period. The median is the value for spell length that divides the distribution of spells (not recipients) into two equal parts. ${ }^{22}$ The data address the question: "how long, on average, do recipients stay in programs continuously once they enter them."
- Median monthly family benefits in (specified year): The monthly benefit amount for each recipient represents the amount of the benefit received by the individual's family in the last month for which they reported
${ }^{20}$ There is no statistical significance between the average monthly participation rates for AFDC/GA and housing assistance. The participation rates for medicaid, food stamps, and unemployment compensation do not differ significantly.
${ }^{21}$ Median duration for each program is derived only for those who begin participating in each program at some point in the survey, while those who are already in the program before the start of the survey (i.e., the left-censored cases) are excluded from the analysis.
${ }^{22}$ The median for a group of recipients cannot be computed when more than half of the spells for the group were continuing in the 33rd month.

Figure 25.
Median Spell Length (in months) by Program: January 1993-September 1995


Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.
that they received benefits. ${ }^{23}$ The data are restricted to recipients who are members of families (data are shown for 1995 because the definition of "monthly benefit amount" means that the 1995 data are reasonably comparable with the data for 1993 and 1994). The median is the amount that divides recipients into two equally-sized groups, one consisting of those whose monthly family benefit falls below the median, the other of recipients whose benefit rises above it. The data refer to the population of recipients living in families existing at the end of the year specified.

[^14]
## Median Duration of Participation Differs by Program

For people who received assistance during the 1993-1995 period, Table A-7 in Appendix A presents data on the median duration of spells of program participation over the course of the 33 months, by type of program and selected demographic characteristics of participants.

The data on spell length must be used with caution, because duration of program participation for a means-tested program is derived only for persons who began participating in the program at some point in the life of the SIPP survey. Persons already on programs at the start of the survey are excluded from the analysis. How this exclusion affects the data is not known.

As shown in Figure 25, among all program participants, the median spell length for participation in general was 5.0 months. The median spell length for housing assistance was 7.8 months, significantly longer than that for food stamps or medicaid, but not significantly dif-
ferent from the median for AFDC/GA. ${ }^{24}$

Within specific groups of participants, housing assistance was the longest continuously used program for Hispanics (12.6 months), children under 18 years old ( 12.4 months), people in families with a female householder with no spouse present (13.1 months), and poor people ( 13.5 months). ${ }^{25}$

## Spell Duration Also Differs by Demographic Group

Table A-7 also reveals that the median spell length for participation in general in means-tested assistance programs varied by demographic group. People 65 years and over had the highest median duration, 7.7 months, compared with 5.1 months for people aged 18 to 64 years, and 4.6 months for people under 18 years. By education, individuals who did not graduate from high school remained on means-tested programs longer ( 7.1 months) than high school graduates (4.9 months) and people with at least some college (4 months). ${ }^{26}$

People in families maintained by a female householder, with no spouse present, had a median spell duration of 7.2 months, which was greater than the 4 months for people in married-couple families. Not

[^15]surprisingly, the median for people who were not in the labor force ( 7.5 months) was greater than that for people employed full-time (3.8 months). ${ }^{27}$

Variations across demographic groups in median spell durations were evident as well for specific programs. Children remained on food stamps ( 7.2 months) and housing assistance (12.4 months) longer than people 18 to 64 did ( 5.0 months and 7.1 months, respectively); people 65 and over participated in medicaid the longest ( 7.8 months) of any age group. ${ }^{28}$

By race and Hispanic origin, White non-Hispanics had shorter stays on AFDC/GA and housing assistance ( 5.4 months and 7.1 months, respectively) than did Blacks (8 months and 11.8 months, respectively) or Hispanics ( 7.6 months and 12.6 months, respectively). They also spent less time at a stretch in the food stamp program ( 5.3 months) than Blacks ( 7.6 months). ${ }^{29}$

By educational attainment, people with at least a year of college spent less time than people with lower

[^16]Figure 26.
Median Monthly Benefits in 1995 for People Receiving Benefits by Selected Characteristics (in dollars)


Note: Amounts include only Aid to Families with Dependent Children, General Assistance, Supplemental Security Income, and food stamps.

Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.
educational levels in the medicaid program. The median spell duration of medicaid for those with at least a year of college education was 4.0 months, compared with 7.1 months and 5.4 months for those who did not graduate from high school and those who graduated from high school but had no college. The median spell length of housing assistance for persons with college attainment was also shorter than the median for those who did not graduate from high school. ${ }^{30}$

Individuals in families maintained by female householders, no spouse present, remained in the AFDC/GA ( 7.9 months), food stamps ( 7.6 months), and medicaid ( 5.5 months) programs longer than their counterparts in married-couple

[^17]families( 5.9 months, 4.8 months, and 4.0 months, respectively). ${ }^{31}$

## Higher Monthly Benefit Amounts Are Associated With Higher Average Monthly Participation

Table A-8 shows the median monthly family benefit amounts received in 1993, 1994, and 1995 by the groups of program participants listed in Table A-1. ${ }^{32}$ For many of the groups, higher average monthly participation rates for assistance programs in general were associated with higher median monthly

[^18]family benefits in 1995, a consequence, perhaps, of the likely relationship of both of these measures to lower family incomes and higher poverty rates. For example, Figure 26 shows that in 1995 Blacks, whose average monthly participation rate was 35.0 percent, had a median monthly family benefit of $\$ 552$, significantly greater that the $\$ 400$ for White non-Hispanics whose average monthly participation rate was 9.2 percent. Likewise, children under 18 years old, whose average monthly participation rate was 26.1 percent, received a median monthly family benefit of $\$ 601$, significantly greater than the $\$ 198$ for the elderly whose average monthly participation rate was 11.6 percent. In 1995, people in families with a female householder, no spouse present, had an average monthly participation rate of 44.2 percent and received a median monthly family benefit of $\$ 606$; in comparison, people in married-couple families had an average monthly participation rate of only 8.6 percent and a median monthly benefit of $\$ 394 .{ }^{33}$

## COMMENTS FROM DATA USERS

The Census Bureau welcomes the comments and advice of data users. If you have suggestions or comments, please write to:

Daniel Weinberg
Chief, Housing and Household Economic Statistics Division
U. S. Bureau of the Census Washington, DC 20233-8500
or contact
Jan Tin
Labor Force and Transfer Program
Statistics Branch
Housing and Household Economic Statistics Division
U.S. Bureau of the Census

301-457-3230
Jan.Siang.Tin@census.gov

For further information on statistical standards and the computation and use of standard errors, contact

Reid A. Rottach
Demographic Statistical Methods
Division
U.S. Bureau of the Census

301-457-4228
Reid.A.Rottach@census.gov

[^19]
## APPENDIX A.

Table A-1.
Average Monthly Program Participation Rates for Any Means-Tested Programs by
Selected Characteristics: $1993-95$


[^20]Table A2.
Average Monthly Program Participation Rates for Aid to Families With Dependent Children or General Assistance by Selected Characteristics: 1993-95

${ }^{1}$ In thousands.
${ }^{2}$ People of Hispanic origin may be of any race.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Table A3.
Average Monthly Program Participation Rates for Supplemental Security Income by Selected Characteristics: 1993-95


- The sample size is too small for analysis.
${ }^{1}$ In thousands.
${ }^{2}$ People of Hispanic origin may be of any race.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Table A-4.
Average Monthly Program Participation Rates for Food Stamps by Selected Characteristics: 1993-95

${ }^{1}$ In thousands.
${ }^{2}$ People of Hispanic origin may be of any race.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Table A-5.
Average Monthly Program Participation Rates for Medicaid by Selected Characteristics: 1993-95

${ }^{1}$ In thousands.
${ }^{2}$ People of Hispanic origin may be of any race.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Table A6.
Average Monthly Program Participation Rates for Housing Assistance by Selected Characteristics: 1993-95

${ }^{1}$ In thousands.
${ }^{2}$ People of Hispanic origin may be of any race.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Table A7.
Median Duration of Spells of Program Participation and Standard Errors by Program: 1993-95
[In months]


[^21]Table A8.
Median Monthly Family Benefits of Program Participants (in 1995 Dollars) by Selected Characteristics: 1993-95

| Characteristic | Monthly Family Benefits (in 1995 dollars) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1993 |  | 1994 |  | 1995 |  |
|  | Median | Standard error | Median | Standard error | Median | Standard error |
| All recipients ${ }^{1}$. | 499 | 4.0 | 489 | 3.5 | 490 | 3.5 |
| Race and Hispanic Origin ${ }^{2}$ |  |  |  |  |  |  |
| White Not of Hispanic origin | 457 411 | 5.0 6.5 | 447 410 | 3.5 4.5 | 457 400 | 3.0 9.5 |
| Black | 576 | 4.0 | 557 | 9.5 | 552 | 6.5 |
| Hispanic origin. | 573 | 18.5 | 572 | 13.0 | 565 | 10.0 |
| Age |  |  |  |  |  |  |
| Under 18 years | 621 | 4.5 | 604 | 6.5 | 601 | 3.5 |
| 18 to 64 years | 457 | 2.0 | 456 | 3.5 | 457 | 3.0 |
| 65 years and over | 210 | 3.5 | 206 | 4.5 | 198 | 10.0 |
| Sex |  |  |  |  |  |  |
| Men | 504 | 8.0 | 493 | 5.5 | 510 | 11.5 |
| Women | 497 | 5.5 | 486 | 6.0 | 487 | 3.5 |
| Educational Attainment (people 18 years and over) |  |  |  |  |  |  |
| Less than 4 years of high school. | 444 | 7.0 | 445 | 5.5 | 440 | 8.5 |
| High school graduate, no college. | 407 | 11.0 | 397 | 10.5 | 416 | 15.0 |
| 1 or more years of college...... | 432 | 13.0 | 445 | 11.0 | 419 | 17.0 |
| Disability Status (people 15 to 64 years old) |  |  |  |  |  |  |
| With a work disability | 472 | 5.0 | 467 | 7.0 | 457 | 1.5 |
| With no work disability | 479 | 9.5 | 461 | 7.0 | 474 | 10.5 |
| Residence |  |  |  |  |  |  |
| Metropolitan | 532 | 6.0 | 536 | 6.0 | 542 | 10.0 |
| Central city | 591 | 7.5 | 580 | 5.0 | 580 | 8.5 |
| Noncentral city | 457 | 5.0 | 460 | 8.0 | 473 | 12.0 |
| Nonmetropolitan. | 412 | 10.0 | 364 | 6.5 | 362 | 10.5 |
| Region |  |  |  |  |  |  |
| Northeast. | 616 | 11.5 | 627 | 13.5 | 601 | 14.0 |
| Midwest. | 554 | 9.5 | 500 | 5.0 | 521 | 19.5 |
| South . | 388 | 2.0 | 378 | 6.0 | 374 | 7.5 |
| West. | 648 | 7.0 | 642 | 7.5 | 620 | 10.5 |
| Family Status |  |  |  |  |  |  |
| In families | 546 | 6.5 | 527 | 7.0 | 534 | 9.5 |
| In married-couple families | 388 | 2.0 | 391 | 4.5 | 394 | 7.0 |
| In families with a female household present | 399 | 4.5 | 616 | 3.0 | 606 | 2.5 |
| Unrelated individuals. . . . . . . . . . . . | 174 | 13.5 | 193 | 13.0 | 189 | 10.5 |
| Employment and Labor Force Status (people 18 years and over) |  |  |  |  |  |  |
| Employed full-time. | 242 | 7.0 | 246 | 10.5 | 260 | 9.5 |
| Employed part-time. | 306 | 6.0 | 307 | 6.5 | 312 | 13.0 |
| Unemployed | 468 | 6.5 | 459 | 9.0 | 517 | 26.0 |
| Not in labor force. | 474 | 3.5 | 471 | 3.5 | 457 |  |
| Marital Status (people 18 years and over) |  |  |  |  |  |  |
| Married | 621 | 8.0 | 604 | 9.5 | 601 | 6.0 |
| Separated, divorced, or widowed | 368 | 11.0 | 369 | 7.5 | 371 | 12.0 |
| Never married | 373 | 12.0 | 382 | 10.0 | 356 | 16.0 |
| Family Income-to-Poverty Ratio |  |  |  |  |  |  |
| Under 1.00 | 574 | 7.0 | 556 | 7.0 | 559 | 7.5 |
| 1.00 and over. | 359 | 11.5 | 374 | 8.0 | 377 | 8.5 |

- The sample size is too small for analysis.
${ }^{1}$ Median monthly family benefits are calculated only for recipients who have reported or imputed amounts for AFDC, General Assistance, SSI, and food stamps only and are expressed in 1995 dollars using the Consumer Price Index (CPI-U).
${ }^{2}$ People of Hispanic origin may be of any race.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

Appendix B．

## THE EFFECT OF SAMPLE ATTRITION ON PROGRAM PARTICIPATION RATES

SIPP contains nonsampling errors common to most surveys，as well as errors that stem from SIPP＇s lon－ gitudinal design．Undercoverage in household surveys is primarily due to within－household omissions， with the omission of entire house－ holds being less frequent．SIPP experiences some differential undercoverage of demographic sub－ groups；for example，the coverage ratio of Black men over 15 years of age is much lower than that for White men in the same age group．${ }^{34}$

Sample attrition，a type of nonre－ sponse error，is another major con－ cern in SIPP because of the need to follow the same people over time． Attrition reduces the available sam－ ple size as the survey progresses． To the extent that those leaving the sample are systematically different
${ }^{34}$ U．S．Census Bureau．Survey of Income and Program Participation User＇s Guide 2001，3rd Edition．Washington，DC．
from those who remain in the sam－ ple，survey estimates will be biased．Of particular concern in this report，is the number of low－ income households．Panel data generally yield a lower estimate of the number of low－income house－ holds over time．${ }^{35}$ Because of the association between low household income and program participation （as described in this report），a dis－ proportionate and continuing loss from the sample over time of peo－ ple in low－income households could result in a growing understatement of both the absolute and relative estimates of the program－partici－ pant universe．This potential understatement could introduce errors into intertemporal compar－ isons of program participation data， such as those described in this report．
${ }^{35}$ Sae－Ung，Smanchai and Franklin Winters （1998）．＂Analysis of Nonresponse Effects on Income and Poverty Time Data from SIPP．＂ Draft Paper．

A considerable amount of research has been conducted to investigate the various sources of nonsampling error in SIPP．The results of the research are summarized in the SIPP Quality Profile（1998）．${ }^{36}$ The research includes，for example，the SIPP Record Check Studies（Marquis and Moore，1989a，b，1990；Marquis et al．，1990）that compared SIPP responses on program participation with administrative records．Using point－in－time estimates of underre－ porting in January of each year，for 1985 through 1993，results show that SIPP estimates of the numbers of recipients for AFDC（and also for food stamps）are much lower than the numbers based on administra－ tive data，and the extent of under－ estimation may have increased over time．${ }^{37}$

[^22]
[^0]:    'Means-tested programs are those that require income and/or assets of the individual or family to be below specified thresholds in order to qualify for benefits. These programs provide cash and noncash assistance to eligible individuals and families.

[^1]:    ${ }^{4}$ The sample of households in SIPP is divided into four interview groups called rotation groups. Each month, one of the four rotation groups is interviewed about the previous 4 months (the reference period). The 1993 SIPP panel covered the period from October 1992 to December 1995, but the data in this report cover only the months in which the full sample is present. Data for all four rotation groups (the full sample) are available only for 33 continuous reference months, the calendar months of January 1993 through September 1995. The Census Bureau will continue to follow the families who participated in the 1992 and 1993 SIPP panels in the Survey of Program Dynamics to provide post-reform longitudinal data.
    ${ }^{5}$ To ensure that the sample remains representative of the noninstitutionalized population of the United States, the survey attempts to follow people in the panel who move.

[^2]:    ${ }^{7}$ Throughout this report, data for 1995 refer not to the entire calendar year, but to the 9 months from January through September.

[^3]:    ${ }^{8} \mathrm{~A}$ person is considered to participate in a program if the person individually receives benefits from the program or is covered under the allotment of another person. If, for example, in a given month two people in a household received food stamps and two additional people in the household were covered by the food stamp program, then the number of people from that household who participated in the food stamp program for that month would be counted as "4."

[^4]:    ${ }^{9}$ The difference between the participation rates in 1994 and 1995 is not statistically significant.

[^5]:    Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

[^6]:    Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

[^7]:    "There is no statistical difference between the percentage of people age 18 to 64 and the percentage of people age 65 years and older who received medicaid benefits.
    ${ }^{12}$ The poverty threshold for a family of three with one related child was \$11,631 in 1993, $\$ 11,929$ in 1994, and $\$ 12,267$ in 1995. Data on poverty thresholds by family size and number of related children under 18 years for the reported years can be found at www.census.gov/hhes/poverty/threshold.html.
    ${ }^{13}$ There is no statistical difference in program participation rates of the non-poor between 1993 and 1994.

[^8]:    'Hispanics may be of any race.
    Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

[^9]:    ${ }^{14}$ There is no statistical difference in program participation rates for Whites or Blacks between 1993 and 1994.
    ${ }^{15}$ Hispanics may be of any race. The information on the Hispanic population shown in this report was collected in the 50 states and the District of Columbia and therefore does not include residents of Puerto Rico.
    ${ }^{16}$ The participation rates in 1993 and 1994 are not statistically different for non-Hispanic Whites. The same statement is true for Hispanics.

[^10]:    ${ }^{17}$ There is no statistical difference between the average monthly poverty rates for Blacks and Hispanics.

[^11]:    Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

[^12]:    ${ }^{18}$ There is no statistical difference between the percentage of people age 18 to 64 and the percentage of people age 65 years and older who received means-tested benefits.

[^13]:    Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

[^14]:    ${ }^{23}$ It is not known how the data are affected by families who do not participate in the program for the entire last month for which they report that they received benefits from the program. If partial-month participation is associated with partial receipt of benefits, then the use of such partial amounts to represent an "average" or "usual" monthly benefit would result in a downward bias in the data.

[^15]:    ${ }^{24}$ The median spell duration for SSI was not determined, because more than half of the spells were still in progress at the end of the survey. The overall median spell duration does not differ from those of food stamps and medicaid. The medians for housing assistance and AFDC/GA do not differ statistically.
    ${ }^{25}$ There are no statistical differences among the median spell durations for housing assistance for any of the demographic groups specified here.
    ${ }^{26}$ There is no statistical difference between the median spell duration for people under 18 years of age and the medians for those 18 to 64 years of age, high school graduates, and those with at least 1 year of college education. The medians for the elderly and those without a high school degree do not differ statistically.

[^16]:    ${ }^{27}$ The median for those in families maintained by female householders does not differ from the median for those who are not in the labor force. The medians for those in marriedcouple families and those who are employed full time are not significantly different.
    ${ }^{28}$ The median for food stamps for children does not differ statistically from the median for housing assistance for those age 18 to 64 years and the median for medicaid for persons 65 and over. The medians of food stamps and housing assistance for people 18 to 64 do not differ statistically from each other. The median of food stamps for persons age 18 to 64 years does not differ from the medians of medicaid for children and for adults age 18 to 64 years.
    ${ }^{29}$ The median of AFDC/GA for non-Hispanic Whites does not differ from their median for food stamps nor from the median of food stamps for Hispanics. The median of AFDC/GA for Blacks does not differ from that for Hispanics and does not differ from their median of food stamps or the median of housing assistance for Whites. The median of AFDC/GA for Hispanic does not differ statistically from their median for food stamps nor the median of food stamps for blacks or the housing assistance for non-Hispanic Whites. The median of housing assistance for blacks and Hispanics do not differ significantly.

[^17]:    ${ }^{30}$ The median of medicaid for those without a high school diploma did not differ significantly from the median for those who were high school graduates nor from their median of housing assistance. The median of medicaid for high school graduates and the median of housing assistance for those who did not graduate from high school did not differ significantly.

[^18]:    ${ }^{31}$ The median of AFDC/GA for people in married couple families does not differ from their median of food stamps and housing assistance nor from the median of food stamps and medicaid for families maintained by female householders. The median of food stamps for married-couple families does not differ from that of medicaid for persons in families maintained by a female householder. The medians of AFDC/GA and food stamps for persons in families maintained by a female householder do not differ significantly.
    ${ }^{32}$ Median monthly benefit amounts include AFDC/GA, SSI, and food stamps only. The Consumer Price Index (CPI-U) compiled by the Bureau of Labor Statistics was used to express the 1993 and 1994 monthly benefit amounts in terms of 1995 dollars.

[^19]:    ${ }^{33}$ The median monthly family benefits for White non-Hispanics and married-couple families do not differ significantly. The medians for children and those in families maintained by female householders are also not statistically different.

[^20]:    ${ }^{1}$ Major means-tested programs include Aid to Families with Dependent Children (AFDC), General Assistance, Supplemental Security Income, food stamps, medicaid, and housing assistance.
    ${ }^{2}$ In thousands.
    ${ }^{3}$ People of Hispanic origin may be of any race.
    Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

[^21]:    X Not applicable.
    ${ }^{1}$ Major means-tested programs include Aid to Families with Dependent Children (AFDC), General Assistance, Supplemental Security Income (SSI), food stamps, medicaid, and housing assistance.
    ${ }^{2}$ Median duration cannot be computed when more than half of the spells are continuing in the last month of data collection. (This situation is especially likely to occur for elderly recipients whose incomes from other sources are unlikely to rise over time.)
    ${ }^{3}$ Median duration for each program is derived only for those who begin participating in each program at some point in the survey, while those who are already in the program before the start of the survey (i.e., the left-censored cases) are excluded from the analysis.
    ${ }^{4}$ Persons of Hispanic origin may be of any race.
    ${ }^{5}$ Age, educational attainment, and other variables are measured at the time the spells begin.
    Source: U.S. Census Bureau, Survey of Income and Program Participation, 1993 Panel.

[^22]:    ${ }^{36}$ For methodology surrounding SIPP，see Source and Accuracy Statement for the Survey of Income and Program Participation（SIPP） 1992 Panel 7－Wave Longitudinal File（www．sipp．cen－ sus．gov／sipp／sourceac／sourceac．htm）and SIPP Quality Profile 1998，SIPP Working Papers， Number 230，3rd Edition，U．S．Census Bureau， Washington，DC．
    （www．sipp．census．gov／sipp／workpapr／wp230．pdf）
    ${ }^{37}$ Shea，M．（1995）．＂SIPP Data Quality，＂ Internal Census Bureau memorandum to V．J． Huggins，February 10.

