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Current Perspectives on Food Stamp Program Participation

Food Stamp Program Participation Rates Among the Poverty Population, 1980–1987

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Food Stamp Program Participation Rates Among the Poverty Population, 1980–1987

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**Food Stamp Program
Participation Rates
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1980–1987**

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I. INTRODUCTION

The Bureau of the Census has estimated that in 1987 the number of Americans living in poverty was 32.6 million. Since the Food Stamp Program (FSP) is the only assistance program without categorical restrictions that is widely available to low-income households, the question naturally arises as to what proportion of persons in poverty actually participate in the FSP. That question is the subject of this paper. Answering it is more difficult than might be assumed, however, for two reasons.

The first reason concerns differences between the definitions of the two groups: the poverty population and the population eligible for food stamps. These differences preclude meaningful comparison unless the definitions are adjusted to make the two groups more comparable. The definition of poverty used by the Bureau of the Census to measure the poverty population differs substantially from the legislative definition of need used by FSP administrators in determining eligibility for benefits. More specifically, the differences are fourfold: (1) in the composition of the unit across which each person's income is summed in determining unit income (household composition dynamics); (2) in the asset test for FSP eligibility (asset limits); (3) in the time period over which the income is summed (the accounting period); and (4) in the definition of a unit for purposes of including an individual in the poverty population or the FSP population (unit/income definition). As a result, the population below the poverty line differs in both size and composition from the poverty population eligible for food stamps. In short, because of these differences, the more meaningful version of the question asked here is what percentage of the poverty population eligible for food stamps actually receives food stamps.

Second, the modified question is still difficult to answer because of limitations in the available data. In the first published study examining the poverty population and FSP participants on a consistent basis, the U.S. Department of Agriculture (USDA, 1984)

relied on estimates of the adjustment factors from four different sources in concluding that about 78 percent of the eligible poverty population received food stamps. The availability of more detailed data from the Survey of Income and Program Participation (SIPP) has alleviated, but certainly not eliminated, the data limitations inherent in the USDA analysis. The 1984 panel of SIPP contains monthly longitudinal information on household income, some assets, and household composition, allowing us to employ a more accurate and consistent set of adjustments to estimate the percentage of the eligible poverty population participating in 1984 and, by extrapolation, percentages for the other years over the period 1980 through 1987.

Although the estimates reported in this paper represent an improvement over those in the USDA study, they should still be considered preliminary because not all of the SIPP data in the 1984 panel were available when the analysis was conducted and because of the inherent limitations of using household survey data for this purpose. For example, when this study was conducted, SIPP data on household financial asset balances were not available for use in determining how many households with income below the poverty line were not eligible because their asset holdings exceeded the FSP limits. Instead, we inferred financial asset balances from reported financial asset income. On the other hand, information on vehicular assets, which make up a large portion of countable assets for this population, were available from SIPP.

The remainder of this paper proceeds as follows. Section II discusses problems in estimating consistent numbers of the poverty population and the food stamp population. Section III reviews the previous estimate for 1982 produced by the USDA. Section IV describes the procedure for estimating the rate for calendar year 1984 based on the improved adjustment factors now available with the SIPP data. The last section applies those improved adjustment factors to data on the poverty population and food stamp participants for the years 1980 through 1987 to examine trends in the proportion of the eligible poverty population receiving food stamps.

II. PROBLEMS IN ESTIMATING AN FSP PARTICIPATION RATE FOR THE ELIGIBLE POVERTY POPULATION

The FSP participation rate for the poverty population is a ratio, with the numerator being the number of program participants at or below the poverty line and the denominator being the total number of program eligibles in poverty. To estimate the denominator, researchers must adjust the annual Census count of persons in poverty to exclude those whose households are not eligible for the FSP. They must also adjust the count to place it on a monthly basis, consistent with FSP eligibility criteria and participant counts. To form the numerator, researchers must adjust FSP administrative counts of program participants to exclude those whose households have income above the poverty line.

A. PROBLEMS IN COMPARING POVERTY COUNTS AND ESTIMATES OF THE FSP-ELIGIBLE POPULATION

As noted in the Introduction, four main types of problems arise in attempting to compare counts of the poverty population and estimates of the FSP-eligible population.

- o Household composition dynamics: A measurement problem in using the Census definition of poverty causes more persons to be classified as being in poverty than are classified as being in poverty and eligible for the FSP by standards set in the food stamp legislation. In other words, in addition to differences in unit/income definition (outlined below), problems in measuring household composition lead to differences in the magnitudes of the two populations. Specifically, the Bureau of the Census includes a person in the poverty count if the person's family as of March of the given year had a total family income, in the previous calendar year, at or below the official poverty line. This poverty count is therefore distorted to the extent that families change in composition over time. If, for example, a couple separated in January 1988, the income of the departed spouse would not be counted in the March 1988 survey, and the remaining family members might be misclassified as poor for calendar year 1987. Although the resulting misclassifications can work in either direction, empirical research indicates their net effect is to bias the annual poverty count upward (Czajka and Citro, 1982; Scardamalia, 1978).

- o **Asset limits:** The Bureau of the Census defines poverty strictly on the basis of the household's cash income in the previous calendar year. In contrast, FSP criteria for eligibility encompass a much broader set of available financial resources, including certain assets held by the household. The current asset limit for FSP eligibility is \$2,000, or \$3,000 for households containing at least one person age 60 or older. As a result, a substantial number of families classified in the poverty population are ineligible for food stamps because their countable asset holdings exceed the FSP limits (Bickel and MacDonald, 1981).

- o **Accounting period:** FSP criteria for eligibility are based on monthly income, whereas the Census definition of poverty is based on annual cash income. As a result, households may have income that is less than one-twelfth of the poverty line in one or more months--and be eligible for the FSP--but not meet the Census definition of poverty because their income in the other months raises their annual income over the poverty line. Research indicates that a monthly measure of the poverty population would result in a slightly larger count of persons in poverty than the count based on the official annual measure (Williams, 1986).

- o **Unit/income definition:** The Census definition of the family unit used for classifying persons as being in poverty includes persons related by blood, marriage, or adoption and residing together. In determining food stamp eligibility, program administrators use the legislated definition of a food stamp unit, which may differ from the family unit concept used by the Census. Differences in the unit definitions may lead to differences in the size of the two populations. For example, Supplemental Security Income (SSI) recipients are excluded from the food stamp unit for purposes of determining eligibility in states that cash out food stamp benefits, but would be included in Census measurements. In addition, there are minor technical differences in the types of income counted in assessing food stamp eligibility in the FSP, and in classifying persons as poor by the Census. The differences in the unit and income definitions between the Census and FSP measures of poverty can affect the magnitude of the poverty count in both directions.

B. PROBLEMS IN COMPARING COUNTS OF FSP PARTICIPANTS AND FSP PARTICIPANTS IN POVERTY

The most accurate data on the number of FSP participants are available from administrative data that are based on the count of households and persons issued food stamp benefits in each state each month. These data, however, include FSP participants with income above the poverty line. The total count of FSP participants must be adjusted to exclude those participants whose household income is above the poverty line.¹

¹Households can have gross income up to 130 percent of the poverty line if, after deductible expenses are subtracted from gross income, their net income is at or below the poverty line. Elderly and disabled households are not subject to a gross income limit.

III. THE PREVIOUS ESTIMATE USING 1982 DATA

The most pertinent published research to date on the topic of interest here is the section on poverty rates in the USDA's Interim Report to Congress on the "Effects of Legislative Changes in 1981 and 1982 on Food Stamp Program Benefits, Interim Report to Congress" (USDA 1984). In that study a series of adjustments were made to account for the differences in the food stamp and Census measures discussed above and to place the average monthly number of FSP participants and the size of the poverty population on as consistent a basis as possible. Specifically, as outlined in Table 1, the calendar year 1982 poverty count of 34.4 million was adjusted to produce an estimate of the number of food stamp eligibles at or below the poverty line in a typical month of 1982--the denominator of the participation rate. The adjustments were the following.

- **Household composition dynamics:** The adjustment for household composition was based on a study by Scardamalia (1978). That study, using monthly income data from the control group families in the Denver and Seattle Income Maintenance Experiments, indicated that annual poverty estimates would be about 13.6 percent lower if they were derived from monthly, contemporaneous measures of family composition and income.
- **Asset limits:** The adjustment for the asset limits in the FSP eligibility criteria was based on a study by Bickel and MacDonald (1981). Using the 1979 Income Survey Development Program Research Test Panel (ISDP), these authors reported that 24.6 percent of the persons in households meeting the income test for eligibility were excluded from eligibility by the asset test. Since a portion of the income-eligible households had income above the poverty line and those households above the poverty line tended to have more assets, the 24.6 percent was adjusted downward to 22.4 percent to account for the lower asset holdings of persons in households below the poverty line.²

²The adjustment factor was based on MATH microsimulation model results on the impact of assets on eligibility for households as compared to persons in households that were income eligible and classified as above or below the poverty line. These results were based on asset income using a 6 percent rate of return to infer asset stocks. The adjustment factor was .909.

TABLE 1

Data and Procedures for Constructing the USDA
Estimate of the FSP Participation Rate Among
the Poverty Population, 1982

Number of Persons
(in Millions)

A. Estimating the Denominator		
1. Census Annual Count of the Poverty Population ^a		34.4
Adjusted for: ^b		
Household composition dynamics	(-13.6%)	-4.7
Asset limits	(-22.4%)	-6.6
Accounting period	(+7.1%)	<u>+1.6</u>
2. Resulting Estimate of the Average Monthly Number of FSP Eligibles in Poverty		24.7
B. Estimating the Numerator		
3. Average Monthly Count of FSP Participants ^c		20.6
Adjusted for:		
Nonpoor participants	(-6.5%)	<u>-1.3</u>
4. Resulting Estimate of the Average Monthly Number of FSP Participants in Poverty		19.3
C. Calculating the Participation Rate		
5. The Percentage of the FSP-Eligible Poverty Population Receiving Food Stamps (line 4 ÷ line 2)		78.1%

Source: U.S. Department of Agriculture, Food and Nutrition Service, "The Effects of Legislative Changes in 1981 and 1982 on Food Stamp Program Benefits; Interim Report to Congress." Alexandria, VA: Food and Nutrition Service, U.S. Department of Agriculture, 1984, p. 57, Table 4.1.

^aU.S. Department of Commerce, Bureau of the Census. "Money Income and Poverty Status of Families and Persons in the United States: 1982 (Advance Data from the March 1983 Current Population Survey)," Current Population Reports, series P-60, no. 140. Washington, D.C.: U.S. Government Printing Office, 1983, p. 4.

^bAdjustment calculations are: $[34.4 + (34.4 \times -.136) = 29.7]$, $[29.7 + (29.7 \times -.224) = 23.1]$, $[23.1 + (23.1 \times .071) = 24.7]$.

^cAverage monthly number of FSP participants in calendar year 1982 for the 50 states, the District of Columbia, and the territories, excluding Puerto Rico. Derived from Food Stamp Program Statistical Summary of Operations data, Public Information Data Bank, Food and Nutrition Service, U.S. Department of Agriculture, 1982.

- Accounting period: The adjustment of the poverty population for a monthly rather than an annual accounting period was based on the estimate that the number of persons below the poverty line in a typical month was 7.1 percent higher than the number of persons in poverty based on annual income. The 7.1 percent estimate was derived from the allocation of Current Population Survey (CPS) annual income to a typical month for sample households based on other CPS data such as weeks worked.³
- Unit/income definition: The USDA study did not account for the difference between the Census and FSP household unit and income definitions because appropriate data for estimating the adjustment were not available at the time.

The numerator of the participation ratio was formed by adjusting the number of monthly food stamp participants to remove participants with income above the poverty line. The MATH model was used to estimate that 6.5 percent of participating persons lived in households with monthly income above the poverty line. The estimate of 20.6 million for the average monthly number of food stamp participants was therefore adjusted downward by 6.5 percent, resulting in an adjusted estimate of 19.3 million FSP participants in poverty. Dividing the 19.3 by the adjusted estimate of the total eligible poverty population of 24.7 million produced the estimate that 78.1 percent of the eligible poverty population received food stamps in calendar year 1982.

³The estimate was based on a MATH microsimulation model run on the CPS using the monthly income allocation module MOINC and then tabulating the number of persons at or below the poverty line on a typical-month as well as an annual basis. The results indicated 31.34 million persons were at or below poverty on a monthly basis and 29.26 million were at or below poverty on an annual basis, for a 7.1 percent difference.

IV. AN ESTIMATE BASED ON 1984 DATA AND IMPROVED ADJUSTMENT FACTORS

Recently available data from the Survey of Income and Program Participation (SIPP) allow the construction of improved adjustment factors for reconciling the differences between measures of the poverty population, as defined by the Bureau of the Census, and measures of the eligible food stamp population in poverty. Although the adjustments made for the 1984 Interim Report described above were based on the best information available at the time, the information was limited, and the adjustments included many assumptions.

The SIPP data⁴ are well suited for estimating the adjustment factors because they include income and household composition information on a consistent monthly basis, as well as some asset information. The data were collected using many of the same measurement concepts as those the FSP uses in determining eligibility, and thus they allow more accurate estimates of the adjustments needed to place the two populations on a consistent basis. In particular, SIPP measures income, and hence the poverty population, on a monthly (rather than annual) basis; collects information on family composition and income for the same month (rather than collecting the previous year's income for the family composition in March); and allows construction of a measure of many unit composition characteristics. The SIPP data also measure most assets considered countable under the FSP.⁵

The SIPP data therefore make possible improved adjustment factors for differences in household composition and accounting periods, and for estimating the number of the

⁴For a complete explanation of SIPP, see U.S. Department of Commerce (1987).

⁵Household financial asset balances were unavailable on the initial SIPP data file, and so total countable assets are based on a proxy for financial assets and on the actual reported data on vehicular assets. The financial assets proxy was created from the reported income received from financial assets (Doyle and Post, 1988). Future work on eligibility and the effect of the asset test can be conducted using the financial asset balance data that are now available.

poor who are ineligible for food stamps because of their asset holdings. The resulting estimates should still be considered preliminary, however, because of incomplete asset information, as well as the inherent limitations of household survey data.

In addition to the SIPP-based refinements, we also adjusted the estimate of FSP participants by excluding those participants living in the territories of the United States (Guam and the Virgin Islands). We did so to put the Census poverty counts and the FSP participant estimates on a more consistent basis. Excluding FSP participants who live in the territories lowers the participation rate estimate by only .1 percent.

For this analysis we replicated the procedure used in the USDA study for 1984 data, using the improved adjustment factors developed from the 1984 SIPP data and the refined estimate of FSP participants. We employed data for 1984, rather than data for 1982, because the SIPP-based eligibility estimates (Doyle and Post, 1988) pertain to August 1984. After making all the adjustments to put the average number of FSP participants in poverty on a consistent basis with the size of the poverty population, we estimated the percentage of the FSP eligibles in poverty who received food stamps in calendar year 1984, as shown in Table 2.

More specifically, we first adjusted the annual Census poverty count for calendar year 1984 (33.7 million) to provide an average monthly poverty estimate for 1984 (32.1 million). We then further adjusted that estimate to produce an estimate of the number of FSP eligibles in poverty in an average month in 1984. The adjustment factors constructed using the SIPP data were as follows.

- o Household composition dynamics, accounting period, recall error: The adjustment for these three factors is based on a study by Williams (1986). Using the SIPP 1984 panel, Williams linked individual records for each of five waves of data to create monthly files for calendar year 1984. Based on the monthly income data, Williams estimated poverty rates for each of the 12 months of 1984 and then calculated a simple average of the monthly rates (13.7 percent). This monthly poverty rate is 4.9 percent lower than the Census 1984 annual rate (14.4 percent) based on the CPS. It is difficult to isolate the three factors determining the differences in the two

TABLE 2

Data and Procedures for Constructing the 1984
Estimate of FSP Participation Among the
Poverty Population

Number of Persons
(in Millions)

A. Estimating the Denominator		
1.	Census Annual Count of the Poverty Population ^a Adjusted for:	33.7
	Household composition dynamics/accounting period/recall error (-4.9%)	<u>-1.6</u>
2.	Resulting Estimate of the Average Monthly Poverty Population Adjusted for: ^b	32.1
	Asset limits (-19.5%)	-6.3
	Unit/income definition (-3.9%)	<u>-1.0</u>
3.	Resulting Estimate of the Average Monthly Number of FSP Eligibles in Poverty	24.8
B. Estimating the Numerator		
4.	Average Monthly Count of FSP Participants ^c Adjusted for:	20.5
	Nonpoor participants ^d (-6.3%)	<u>-1.3</u>
5.	Resulting Estimate of the Average Monthly Number of FSP Participants in Poverty	19.2
C. Calculating the Participation Rate		
6.	The Percentage of the FSP-Eligible Poverty Population Receiving Food Stamps (line 5 + line 3)	77.5%

^aU.S. Department of Commerce, Bureau of the Census, "Money Income and Poverty Status of Families and Persons in the United States: 1984 (Advance Data from the March 1985 Current Population Survey)," Current Population Reports, series P-60, no. 149. Washington, D.C.: U.S. Government Printing Office, 1985, p. 3.

^bAdjustment calculations are: $[32.1 + (32.1 \times -.195) = 25.9]$, $[25.9 + (25.9 \times -.039) = 24.8]$

^cAverage monthly number of FSP participants in calendar year 1984 for the 50 states and the District of Columbia, excluding Puerto Rico and the territories. Derived from Food Stamp Program Statistical Summary of Operations data, Public Information Data Bank, Food and Nutrition Service, U.S. Department of Agriculture, 1984.

^dSpecial tabulation of the August 1984 sample of the Integrated Quality Control System (IQCS).

measures because they work in different directions. The Census measure is adjusted downward as a result of the contemporaneous measures of family composition and income in SIPP, adjusted upward as a result of the monthly rather than annual accounting period, and adjusted downward as a result of the lower recall error in SIPP than in the CPS.⁶ The net adjustment, however, is downward. We therefore reduced the annual poverty count 4.9 percent to produce an average monthly poverty count.

- o Asset limits: The adjustment in the monthly poverty count for persons with assets exceeding the FSP asset limits is based on special tabulations of the August 1984 SIPP file. That file identifies persons in poverty who would fail the food stamp eligibility asset test based on the value of their vehicular assets and a proxy for other financial assets. The proxy for other financial assets was estimated by dividing monthly asset income by .00525 (equivalent to an annual rate of return on investment of 6.5 percent) (Doyle and Post, 1988). A tabulation of the persons in families at or below the poverty line failing the asset test shows that 19.5 percent of the poverty population in August 1984 would have been ineligible for food stamps because of the household's asset holdings.
- o Unit/income definition: A further adjustment was made to the Census estimates based on special tabulations of the August 1984 SIPP file. The SIPP data indicate that the percentage of persons in poor households on a monthly basis who were not in an eligible food stamp unit is 3.9 percent. That 3.9 percent includes persons in poor households containing an eligible food stamp unit who were themselves not part of the unit (e.g., SSI recipients in SSI cash out states), persons who were excluded from the food stamp unit because they lived in group quarters, and persons excluded due to differences in income definitions. Although the difference in the unit and income definitions between the Census and FSP measures can affect the poverty count in either direction, the net effect is to decrease the poverty count by 3.9 percent.

These adjustments to the annual Census poverty count resulted in an estimate of 24.8 million FSP eligibles in the poverty population in an average month in 1984, as shown in Table 2. This estimate provides the denominator for the calculation of the participation rate.

⁶Recall error is generally higher in household surveys when there is a longer time period between receiving income and collection of data, as in the CPS data. The SIPP recall period is at most 4 months, whereas the CPS recall period can be as long as 15 months.

To form the numerator of the rate, we adjusted the average monthly number of FSP participants (20.5 million) to remove from the count participants with incomes above

V. TRENDS IN FSP PARTICIPATION AMONG THE POVERTY POPULATION, 1980-1987

To produce a time series of FSP participation rate estimates for the poverty population, we applied the same adjustment factors as those described in the preceding section to estimates of the poverty and FSP populations for each of the years 1980 through 1987.

Table 3 shows that the percentage of FSP-eligible persons in poverty who participated in the FSP ranged from 74.4 percent to 81.5 percent over the eight-year period. Interestingly, the participation rate estimate for 1982 shown in the table, 77.4 percent, is very close to the estimate for 1982 obtained in the USDA study, 78.1 percent.

The time series shows the FSP participation rate for eligibles in poverty declined between 1980 (82 percent) and 1982 (77 percent), then remained close to the 1982 level through 1986, and again declined slightly in 1987 (74 percent). The decline during the first years of the decade may be attributable to the large increase (17.5 percent) in the number of persons in poverty between 1980 and 1982. The "new poor" of that period may have been less likely to participate in the FSP than the poverty population before 1980, thereby contributing to the decrease in the participation rate. The "new poor" may have had greater assets, for example, or associated a greater stigma with the use of food stamps, than the poverty population of earlier years.

The results shown in Table 3 represent one approach to developing a straightforward time series of FSP participation rates for the poverty population. It is important to recognize, however, that these rates have limitations beyond those of the 1984 estimate. In particular, they are based on the assumption that the adjustment factors developed from the SIPP data for 1984 were equally pertinent for the other years 1980 through 1987. It is likely, however, that the differences between the measures of the poverty population and the food stamp population have varied over the period. Hence, the further removed in time from 1984, the more tenuous is the assumption that

TABLE 3

Data and Procedures for Constructing the
Time-Series Estimates of FSP Participation
Among the Poverty Population,
Calendar Years 1980-1987

Number of Persons
(in Millions)

	1980	1981	1982	1983	1984	1985	1986	1987
A. Estimating the Denominator								
1. Census Annual Count of the Poverty Population ^a	29.3	31.8	34.4	35.3	33.7	33.1	32.4	32.6
Adjusted for:								
Household composition dynamics/accounting period/recall error (-4.9%)	-1.4	-1.5	-1.7	-1.7	-1.6	-1.6	-1.6	-1.6
2. Resulting Estimate of the Average Monthly Poverty Population Adjusted for: ^b	27.8	30.3	32.7	33.6	32.1	31.5	30.8	31.0
Asset limits (-19.5%)	-5.4	-5.9	-6.4	-6.5	-6.3	-6.1	-6.0	-6.0
Unit/income definition (-3.9%)	-0.9	-1.0	-1.0	-1.1	-1.0	-1.0	-1.0	-1.0
3. Resulting Estimate of the Average Monthly Number of FSP Eligibles in the Poverty Population	21.5	23.4	25.3	26.0	24.8	24.3	23.8	24.0
B. Estimating the Numerator								
4. Average Monthly Count of FSP Participants ^c	19.8	20.5	20.6	21.5	20.5	19.7	19.3	18.9
Adjusted for:								
Nonpoor participants ^d	-2.2	-1.9	-1.0	-1.4	-1.3	-1.1	-1.1	-1.2
5. Resulting Estimate of the Average Monthly Number of FSP Participants in Poverty	17.6	18.7	19.6	20.2	19.2	18.6	18.2	17.8
C. Calculating the Participation Rate								
6. Percentage of the FSP-Eligible Poverty Population Receiving Food Stamps (line 5 ÷ line 3)	81.5%	79.7%	77.4%	77.6%	77.5%	76.4%	76.4%	74.4%

^aU.S. Department of Commerce, Bureau of the Census, "Money Income and Poverty Status of Families and Persons in the United States: (1980-1987) (Advance Data from the March 1981 - 1988 Current Population Survey)," *Current Population Reports*, series P-60, nos. 127-161. Washington, D.C.: U.S. Government Printing Office, 1981-1988.

^bAdjustment calculations are (for example, for calendar year 1984): $[32.1 + (32.1 \times -.195) = 25.9]$, $[25.9 + (25.9 \times -.039) = 24.8]$

^cAverage monthly number of FSP participants in calendar years 1980-1987 for the 50 states and the District of Columbia, excluding Puerto Rico and the territories. Derived from Food Stamp Program Statistical Summary of Operations data, Public Information Data Bank, Food and Nutrition Service, U.S. Department of Agriculture, 1980-1987.

Table 3 (continued):

^dThe estimated percentage of FSP participants in households with income higher than 100 percent of the poverty line is based on the percentage of nonpoor FSP households in each year times the ratio of the percentage of nonpoor FSP participants to the percentage of nonpoor FSP households in 1984 (.8873). The resulting estimated percentage of FSP participants in households with income above the poverty line is: 1980, 11.3 percent; 1981, 9.1 percent; 1982, 4.7 percent; 1983, 6.4 percent; 1984, 6.3 percent; 1985, 5.6 percent; 1986, 5.9 percent 1987; 5.6 percent. Special tabulations of the August 1980-1987 samples of the Integrated Quality Control System (IQCS).

the adjustment factors remain pertinent. Nevertheless, in spite of this limitation, the time series provides insight into the relative changes in the participation rates.

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