The Food Stamp Program is a central component of American policy to alleviate hunger and poverty. The program's main purpose is "to permit low-income households to obtain a more nutritious diet . . . by increasing their purchasing power" (Food Stamp Act of 1977, as amended). The Food Stamp Program is the largest of the domestic food and nutrition assistance programs administered by the U.S. Department of Agriculture's Food and Nutrition Service. During fiscal year 2003, the program served over 21 million people in an average month at a total annual cost of over $21 billion in benefits. The average monthly food stamp benefit was about $195 per household.

The Government Performance and Results Act calls for policymakers to assess the effects of programs, and one important measure of a program's performance is its ability to reach its target population. The national food stamp participation rate – the percentage of eligible people in the United States who actually participate in the program – has been a standard for assessing performance for over 15 years. The U. S. Department of Agriculture's Strategic Plan for 2002 to 2007 includes a performance target to "reach 68% of the eligible population" by 2007.

Recent studies have examined national participation rates as well as participation rates for socioeconomic and demographic subgroups (Cunnyngham 2003) and rates for States (Schirm and Castner 2002). This document presents estimates of food stamp participation rates for States for fiscal year 2001. These estimates can be used to assess recent program performance and focus efforts to improve performance.

Participation Rates in 2001

About 60 percent of eligible people in the United States received food stamps in fiscal year 2001. (Cunnyngham (2003) reports both this rate for fiscal year 2001 and a 62 percent rate for September 2001.) Participation rates varied widely from State to State, however, with some rates under 55 percent and some over 70 percent. Twenty States had rates that were significantly higher (in a statistical sense) than the national rate, and 13 States had rates that were significantly lower. Among the regions, the Midwest had the highest participation rate. Its 69 percent rate was significantly higher than the rates for all of the other regions. The Mountain Plains and Mid-Atlantic Regions had participation rates that at 64 and 63 percent, respectively, were significantly higher than the rates for all of the regions except the Midwest. (See the last page for a map showing regional boundaries.)

State Comparisons

The estimated participation rates presented here are based on fairly small samples of households in each State. Although there is substantial uncertainty associated with the estimates for some States and with comparisons of estimates from different States, the estimates for 2001 show whether a State's participation rate was probably at the top, at the bottom, or in the middle of the distribution. West Virginia and Hawaii were very likely at the top, with higher rates than most States. In contrast, Massachusetts and Nevada likely had lower rates than most States. Florida, Idaho, Texas, New Jersey, Arizona, North Carolina, Colorado, Georgia, California, Utah, and Kansas probably fell in the bottom half of the distribution, while Oregon, Maine, Missouri, Kentucky, the District of Columbia, Michigan, Illinois, Louisiana, Vermont, Alaska, Indiana, Tennessee, and Pennsylvania were probably in the top half in 2001.

How a State compares with other States may fluctuate over time due to statistical variability in estimated rates and true changes in rates. The statistical variability is sufficiently great that a large change in a State's rate from the prior year should be interpreted cautiously, as should differences between the rates of that State and other States. It may be incorrect to conclude that program performance in the State has improved or deteriorated dramatically. Despite this uncertainty, the estimated participation rates suggest that some States have fairly consistently been in the top or bottom of the distribution of rates in recent years. In all three years from 1999 to 2001, West Virginia, Hawaii, Maine, Kentucky, the District of Columbia, Michigan, and Vermont had significantly higher participation rates than two-thirds of the States, and Missouri, Illinois, Louisiana, Alaska, Tennessee, and Pennsylvania had significantly higher rates than half of the States. Kansas, Colorado, New Jersey, and Florida had significantly lower rates than half of the States in all three years, and North Carolina, Arizona, Texas, Idaho, Nevada, and Massachusetts had significantly lower rates than two-thirds of the States.

Estimation Method

The estimates presented here were derived using shrinkage estimation methods (Castner and Schirm, 2003, and Castner and Schirm, forthcoming). Drawing on data from the Current Population Survey, the decennial census, and administrative records, the shrinkage estimator averaged sample estimates of participation rates with predictions from a regression model. The sample estimates were obtained by applying food stamp eligibility rules to
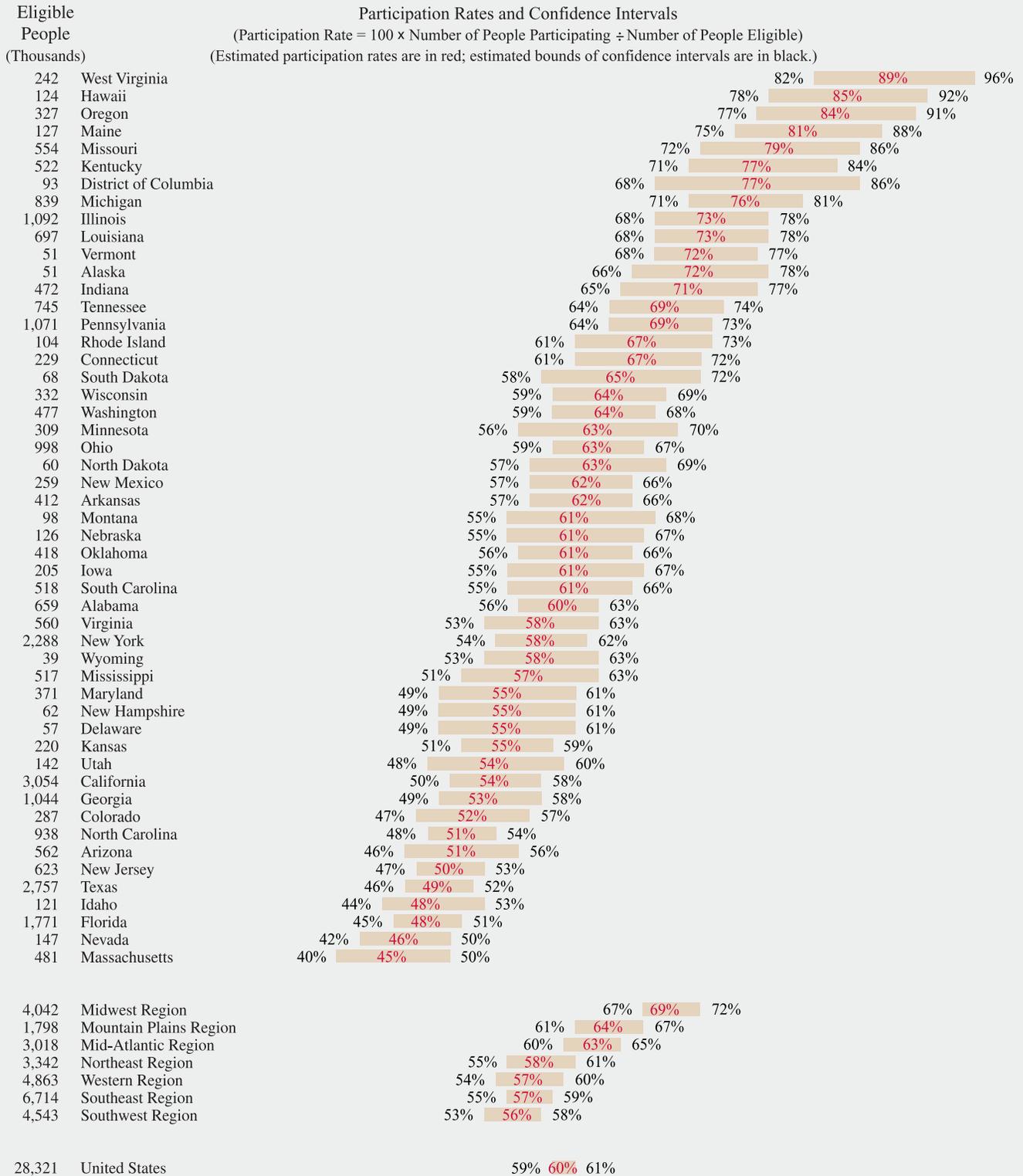
BY LAURA A. CASTNER AND ALLEN L. SCHIRM • MATHEMATICA POLICY RESEARCH, INC.

How Many Were Eligible in 2001? What Percentage Participated?

Eligible People (Thousands)

Participation Rates and Confidence Intervals

(Participation Rate = 100 × Number of People Participating ÷ Number of People Eligible)

(Estimated participation rates are in red; estimated bounds of confidence intervals are in black.)

Eligible People (Thousands)		Lower	Estimate	Upper
242	West Virginia	82%	89%	96%
124	Hawaii	78%	85%	92%
327	Oregon	77%	84%	91%
127	Maine	75%	81%	88%
554	Missouri	72%	79%	86%
522	Kentucky	71%	77%	84%
93	District of Columbia	68%	77%	86%
839	Michigan	71%	76%	81%
1,092	Illinois	68%	73%	78%
697	Louisiana	68%	73%	78%
51	Vermont	68%	72%	77%
51	Alaska	66%	72%	78%
472	Indiana	65%	71%	77%
745	Tennessee	64%	69%	74%
1,071	Pennsylvania	64%	69%	73%
104	Rhode Island	61%	67%	73%
229	Connecticut	61%	67%	72%
68	South Dakota	58%	65%	72%
332	Wisconsin	59%	64%	69%
477	Washington	59%	64%	68%
309	Minnesota	56%	63%	70%
998	Ohio	59%	63%	67%
60	North Dakota	57%	63%	69%
259	New Mexico	57%	62%	66%
412	Arkansas	57%	62%	66%
98	Montana	55%	61%	68%
126	Nebraska	55%	61%	67%
418	Oklahoma	56%	61%	66%
205	Iowa	55%	61%	67%
518	South Carolina	55%	61%	66%
659	Alabama	56%	60%	63%
560	Virginia	53%	58%	63%
2,288	New York	54%	58%	62%
39	Wyoming	53%	58%	63%
517	Mississippi	51%	57%	63%
371	Maryland	49%	55%	61%
62	New Hampshire	49%	55%	61%
57	Delaware	49%	55%	61%
220	Kansas	51%	55%	59%
142	Utah	48%	54%	60%
3,054	California	50%	54%	58%
1,044	Georgia	49%	53%	58%
287	Colorado	47%	52%	57%
938	North Carolina	48%	51%	54%
562	Arizona	46%	51%	56%
623	New Jersey	47%	50%	53%
2,757	Texas	46%	49%	52%
121	Idaho	44%	48%	53%
1,771	Florida	45%	48%	51%
147	Nevada	42%	46%	50%
481	Massachusetts	40%	45%	50%
4,042	Midwest Region	67%	69%	72%
1,798	Mountain Plains Region	61%	64%	67%
3,018	Mid-Atlantic Region	60%	63%	65%
3,342	Northeast Region	55%	58%	61%
4,863	Western Region	54%	57%	60%
6,714	Southeast Region	55%	57%	59%
4,543	Southwest Region	53%	56%	58%
28,321	United States	59%	60%	61%

A confidence interval expresses our uncertainty about the true value of a participation rate. Each interval displayed here is a 90 percent confidence interval. One interpretation of such an interval is that there is a 90 percent chance that the true participation rate falls within the estimated bounds. For example, while our best estimate is that Wyoming's participation rate was 58 percent in 2001, the true rate may have been higher or lower. However, the chances are 90 in 100 that the true rate was between 53 and 63 percent.

How Did Your State Compare with Other States in 2001?

Column headers (left to right): WV HI OR ME MO KY DC MI IL LA VT AK IN TN PA RI CT SD WI WA MN OH ND NM AR MT NE OK IA SC AL VA NY WY MS MD NH DE KS UT CA GA CO NC AZ NJ TX ID FL NV MA Rate

Rate for row State significantly higher

Rates not significantly different

Rate for row State significantly lower

State	Rate
WV	89%
HI	85%
OR	84%
ME	81%
MO	79%
KY	77%
DC	77%
MI	76%
IL	73%
LA	73%
VT	72%
AK	72%
IN	71%
TN	69%
PA	69%
RI	67%
CT	67%
SD	65%
WI	64%
WA	64%
MN	63%
OH	63%
ND	63%
NM	62%
AR	62%
MT	61%
NE	61%
OK	61%
IA	61%
SC	61%
AL	60%
VA	58%
NY	58%
WY	58%
MS	57%
MD	55%
NH	55%
DE	55%
KS	55%
UT	54%
CA	54%
GA	53%
CO	52%
NC	51%
AZ	51%
NJ	50%
TX	49%
ID	48%
FL	48%
NV	46%
MA	45%

Whether one State has a significantly higher participation rate than a second State can be determined from this figure by finding the row for the first State at the left of the figure and the column for the second State at the top of the figure. If the box where the row and column intersect is red, there is at least a 90 percent chance that the first State (the row State) has a higher true participation rate. If the box is blue, there is at least a 90 percent chance that the second State (the column State) has a higher true participation rate. Equivalently, there is less than a 10 percent chance that the first State has a higher rate. If the box is tan, there is more than a 10 percent chance but less than a 90 percent chance that the first State has a higher rate; thus, we conclude that neither estimated rate is significantly higher.

Taking Montana, the State in the middle of the distribution, as an example, we see that it had a significantly lower participation rate than 15 other States (West Virginia, Hawaii, Oregon, Maine, Missouri, Kentucky, the District of Columbia, Michigan, Illinois, Louisiana, Vermont, Alaska, Indiana, Tennessee, and Pennsylvania) and a significantly higher rate than 13 other States (Kansas, Utah, California, Georgia, Colorado, North Carolina, Arizona, New Jersey, Texas, Idaho, Florida, Nevada, and Massachusetts). Its rate was neither significantly higher nor significantly lower than the rates for the other 22 States, suggesting that Montana was probably in the broad center of the distribution, unlike, for example, West Virginia and Massachusetts, which were surely at or near the top and bottom of the distribution, respectively. Although we use the statistical definition of "significance" here, most of the significant differences were at least ten percentage points, and all of them were at least four percentage points, a difference that seems important as well as significant.

Participation Rates

	1999	2000	2001
Alabama	64%	60%	60%
Alaska	71%	73%	72%
Arizona	49%	48%	51%
Arkansas	68%	61%	62%
California	54%	57%	54%
Colorado	54%	52%	52%
Connecticut	66%	68%	67%
Delaware	60%	55%	55%
District of Columbia	93%	87%	77%
Florida	55%	52%	48%
Georgia	60%	55%	53%
Hawaii	90%	94%	85%
Idaho	48%	50%	48%
Illinois	71%	71%	73%
Indiana	64%	67%	71%
Iowa	60%	61%	61%
Kansas	48%	54%	55%
Kentucky	77%	78%	77%
Louisiana	76%	70%	73%
Maine	84%	82%	81%
Maryland	60%	57%	55%
Massachusetts	43%	45%	45%
Michigan	78%	77%	76%
Minnesota	63%	65%	63%
Mississippi	63%	54%	57%
Missouri	73%	77%	79%
Montana	60%	60%	61%
Nebraska	64%	63%	61%
Nevada	39%	43%	46%
New Hampshire	51%	57%	55%
New Jersey	54%	54%	50%
New Mexico	72%	59%	62%
New York	61%	62%	58%
North Carolina	53%	49%	51%
North Dakota	53%	54%	63%
Ohio	60%	62%	63%
Oklahoma	66%	60%	61%
Oregon	70%	77%	84%
Pennsylvania	73%	72%	69%
Rhode Island	67%	69%	67%
South Carolina	64%	59%	61%
South Dakota	63%	63%	65%
Tennessee	74%	68%	69%
Texas	50%	47%	49%
Utah	57%	56%	54%
Vermont	78%	77%	72%
Virginia	58%	58%	58%
Washington	60%	64%	64%
West Virginia	100%	96%	89%
Wisconsin	54%	61%	64%
Wyoming	56%	56%	58%
Northeast Region	60%	61%	58%
Mid-Atlantic Region	67%	66%	63%
Southeast Region	62%	57%	57%
Midwest Region	67%	68%	69%
Southwest Region	58%	53%	56%
Mountain Plains Region	61%	63%	64%
Western Region	56%	59%	57%
United States	61%	60%	60%

There is substantial uncertainty associated with most of these estimates. Confidence intervals that measure the uncertainty in the estimates for 1999 and 2000 are presented in Castner and Schirm (forthcoming). Confidence intervals for the 2001 estimates are presented in this document.

Participation Rates Varied Widely

2001 Participation Rate
- Above 70% (top quarter)
- 55% to 70%
- Below 55% (bottom quarter)

National Rate = 60%
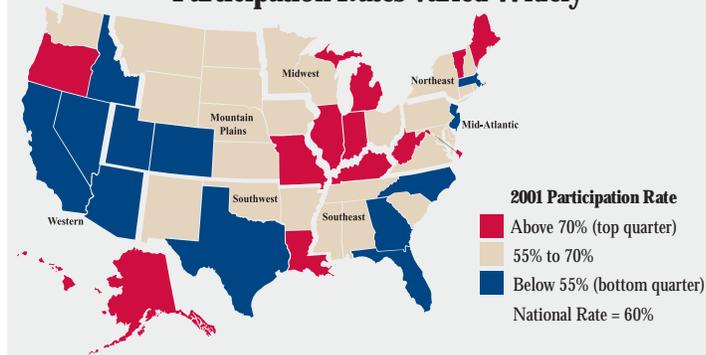
households in the Current Population Survey to estimate numbers of eligible people, while estimating numbers of participating people from food stamp administrative data. The regression predictions of participation rates were based on observed indicators of socioeconomic conditions, such as the percentage of the total State population receiving food stamps.

Shrinkage estimates are substantially more precise than direct sample estimates from the Current Population Survey or the Survey of Income and Program Participation, the leading sources of current data on household incomes and program eligibility. Because these surveys do not collect data on participation in the Food Distribution Program on Indian Reservations, the estimates presented here are not adjusted to reflect the fact that participants in that program are not eligible to receive food stamps at the same time (Cunnyngham 2003). The effects of such adjustments would generally be negligible. Because our focus in this document is on participation among people who are eligible for the Food Stamp Program, the estimates of eligible people were adjusted using available data to reflect the fact that Supplemental Security Income recipients in California are not legally eligible to receive food stamps because they receive cash instead. It might be useful in some other contexts, however, to consider participation rates among those eligible for food stamps or a cash substitute.

The shrinkage estimates of participation rates for 1999 and 2000 presented here differ from the estimates in Schirm and Castner (2002) and Castner and Schirm (2003). The differences are due to changes in the reference period – an average month in the fiscal year, rather than just September – and improvements in data and methods, which are described in Cunnyngham (2003) and Castner and Schirm (forthcoming). In the future, some of the estimates presented here will be revised – and improved – when new data become available.

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