

## Reaching Those in Need:

### ESTIMATES OF STATE SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM PARTICIPATION RATES IN 2013



The Supplemental Nutrition Assistance Program (SNAP) 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 and Nutrition Act of 2008). SNAP 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 2015, the program served nearly 46 million people in an average month at a total annual cost of almost \$70 billion in benefits.

The national SNAP participation rate is the percentage of eligible people in the United States who actually participate in the program. SNAP provides an important support for the “working poor”—people who are eligible for SNAP benefits and live in households in which someone earns income from a job. On average during fiscal year 2014, 19 million SNAP participants—42 percent of all SNAP participants—lived in households that had income from earnings, up from 30 percent of all participants in 1996, the year in which passage of the Personal Responsibility and Work Opportunity Reconciliation Act placed more emphasis on work for public assistance recipients.

Recent studies have examined national SNAP participation rates, rates for members of socioeconomic and demographic subgroups (Eslami 2015), and State rates for all eligible people and for the working poor (Cunyngham 2015). This document presents estimates of State SNAP participation rates for all eligible people and for the working poor for fiscal year 2013. These estimates can be used to assess recent program performance and focus efforts to improve access.

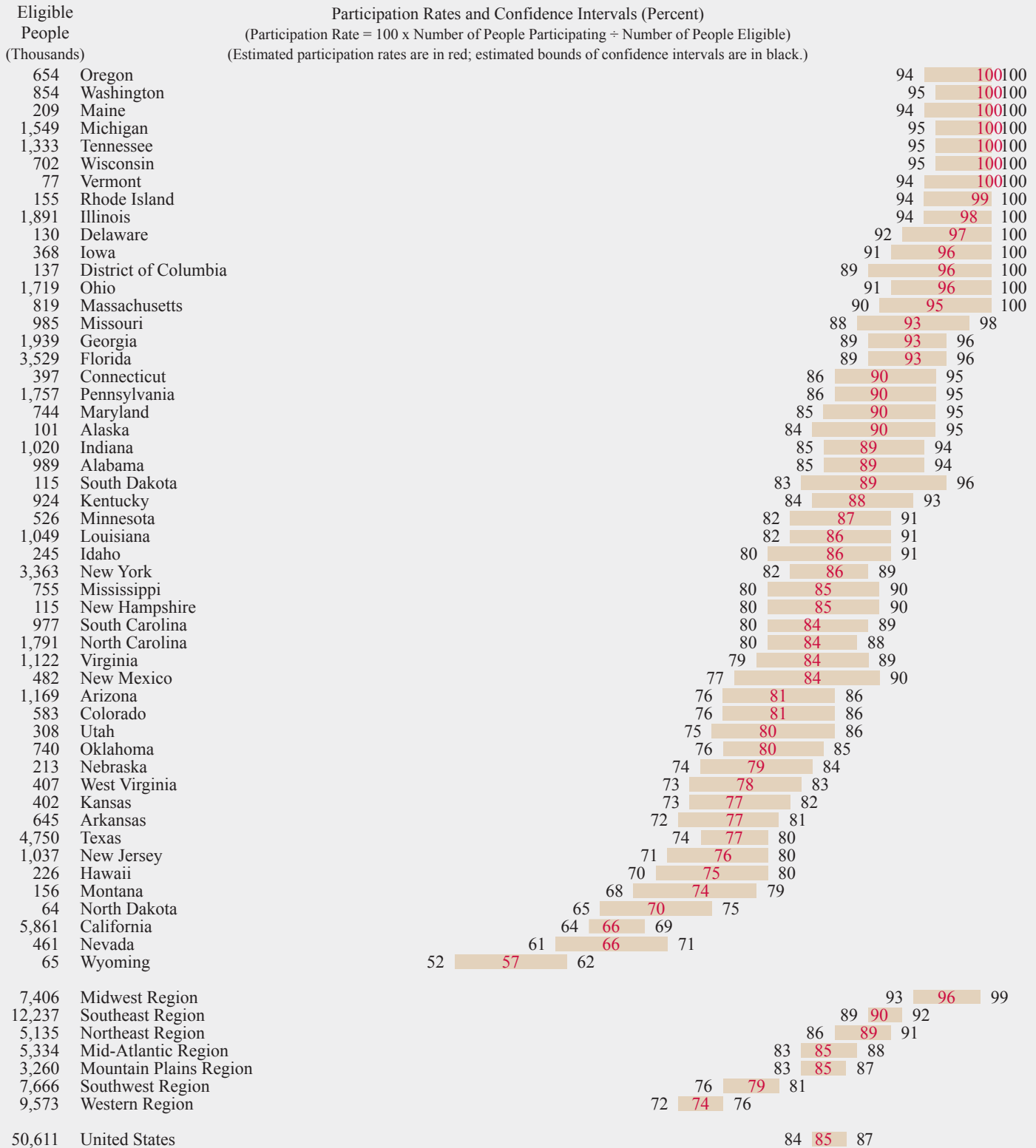
#### Participation Rates in 2013

An estimated 85 percent of eligible people in the United States received SNAP benefits in fiscal year 2013. Participation rates varied widely from State to State, however. In 22 States, the rates were significantly higher (in a statistical sense) than the national rate, and in 16 States, the rates were significantly lower. Among the regions, the Midwest Region’s participation rate of 96 percent was significantly higher than the rates for all of the other regions. The Western Region’s participation rate of 74 percent was significantly lower than the rates for all of the other regions. (See the last page for a map that shows regional boundaries.)

An estimated 74 percent of eligible working poor people in the United States participated in SNAP in fiscal year 2013. As with participation rates for all eligible people, rates for the working poor varied widely across States. In 23 States, SNAP participation rates for the working poor were significantly higher than the national rate for the working poor, and in 6 States they were significantly lower.

In 2013, the national SNAP participation rate for eligible working poor was significantly lower than the national rate for all eligible people. In 31 States, the participation rate for the working poor was likewise significantly lower than the rate for all eligible people. In 8 of these States, the difference between the rate for the working poor and the rate for all eligible people was significantly greater than the 11 percentage point difference between the national

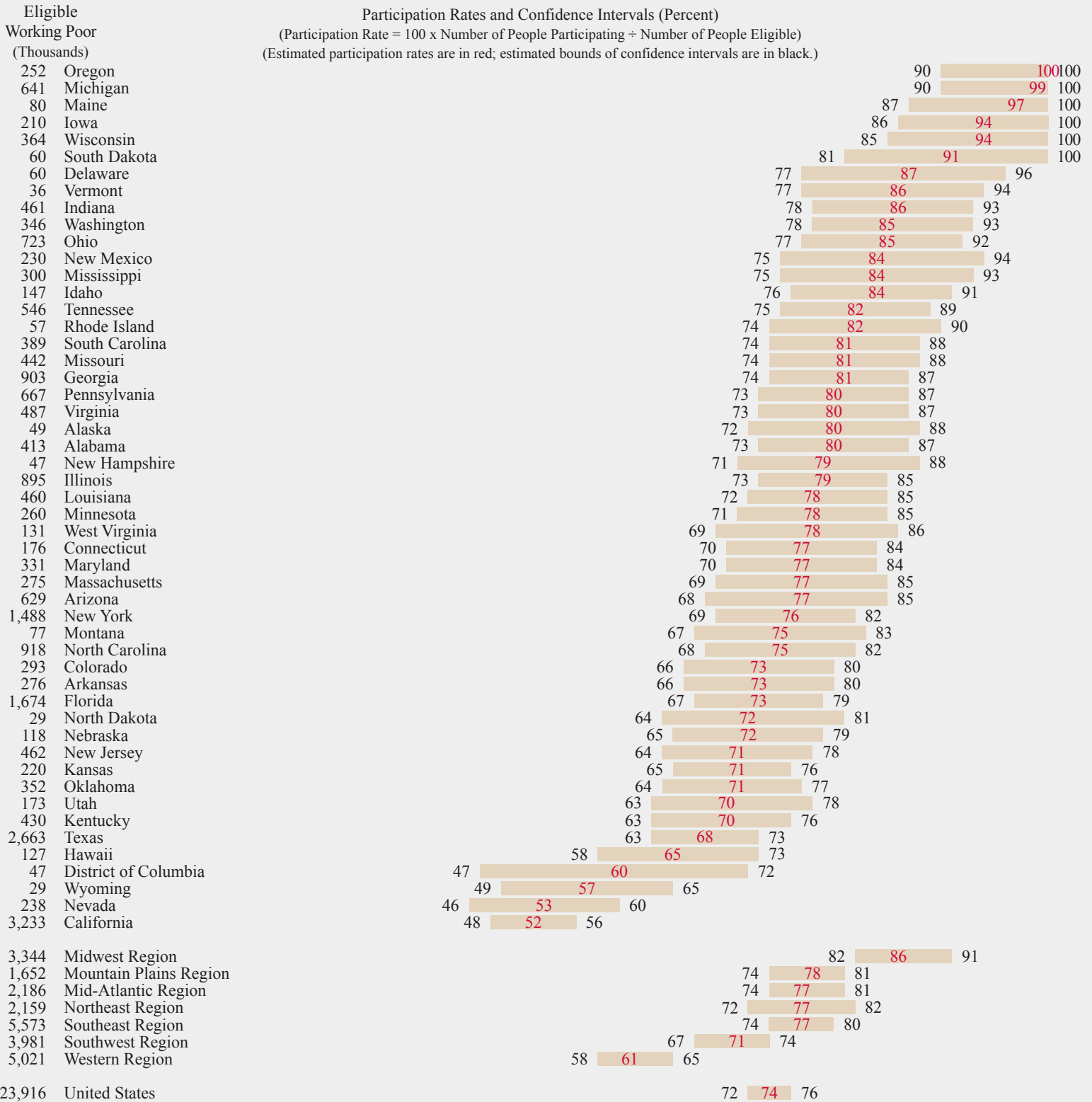
## How Many Were Eligible in 2013? What Percentage Participated?



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 Minnesota's participation rate was 87 percent in 2013, the true rate may have been higher or lower. However, the chances are 90 in 100 that the true rate was between 82 and 91 percent.

See Estimation Method section for information on participation rates of 100 percent.

## How Many Working Poor Were Eligible in 2013? What Percentage Participated?



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 Minnesota's working poor participation rate was 78 percent in 2013, the true rate may have been higher or lower. However, the chances are 90 in 100 that the true rate was between 71 and 85 percent.

See Estimation Method section for information on participation rates of 100 percent.

rates. In no State was the rate for the working poor significantly higher than the rate for all eligible people.

## State Comparisons

The estimated SNAP 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 2013 show whether a State's participation rate for all eligible people was probably at the top, at the bottom, or in the middle of the distribution. Oregon was very likely at the top, with a higher rate for all eligible people than all other States. In contrast, Wyoming likely had a lower rate than other States.

Similarly, it is possible to determine that some States were probably at the top, at the bottom, or in the middle of the distribution of rates for the working poor in 2013. Oregon, Michigan, and Maine were very likely at the top, with higher rates for the working poor than most States. In contrast, California, Nevada, and Wyoming likely had lower rates than most States.

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 for all eligible people and the working poor suggest that some States have been fairly consistently in the top or bottom of the distribution of rates in recent years. In all 3 years from 2011 to 2013, Maine, Michigan, Oregon, Tennessee, Vermont, Washington, and Wisconsin had significantly higher participation rates for all eligible people than two-thirds of the States. The District of Columbia, Delaware, Georgia, Massachusetts, and Missouri had significantly higher rates than half of the States. Arkansas, Colorado, and Nebraska had significantly lower rates than half of the States in all 3 years, while California, Hawaii, Kansas, Montana, North Dakota, New Jersey, Nevada, Texas, and Wyoming had significantly lower rates than two-thirds of the States.



A State ranked near the top or bottom of the distribution of SNAP participation rates for all eligible people is likely to be ranked near the top or bottom, respectively, of the distribution of participation rates for the working poor. Yet, although the rankings of States by participation rates for the working poor and for all eligible people are generally similar, they do not exactly match. Seven States (Iowa, Indiana, Mississippi, North Dakota, South Carolina, South Dakota, and West Virginia) are ranked significantly higher for all 3 years when ranked by their participation rate for the working poor than when ranked by their participation rate for all eligible people. In contrast, 6 States—Florida, Illinois, Kentucky, Massachusetts, Tennessee, and Washington—and the District of Columbia are ranked significantly lower for all 3 years when ranked by their participation rate for the working poor than when ranked by their participation rate for all eligible people.

## Estimation Method

The estimates presented here were derived using shrinkage estimation methods developed to improve precision when sample sizes are small, as they are for most States in the Current Population Survey (Cunningham et al. 2015, and Cunningham et al. forthcoming). Drawing on data from the Current Population Survey, the American Community Survey, and administrative records, the shrinkage estimator averaged direct sample estimates of participation rates with predictions from a regression model. To further improve precision, the shrinkage estimator used data for all the States, all 3 years, and both groups (all eligible individuals and the working poor) to derive each estimate.

## Estimates of Participation Rates (Percent)

	All Eligible People			Working Poor		
	2011	2012	2013	2011	2012	2013
Alabama	84	89	89	75	81	80
Alaska	79	83	90	63	69	80
Arizona	78	82	81	71	75	77
Arkansas	72	77	77	69	74	73
California	55	63	66	40	49	52
Colorado	67	74	81	58	66	73
Connecticut	81	86	90	67	73	77
Delaware	86	96	97	77	86	87
District of Columbia	92	97	96	43	52	60
Florida	83	89	93	68	73	73
Georgia	87	92	93	77	81	81
Hawaii	63	66	75	48	53	65
Idaho	80	85	86	76	81	84
Illinois	84	93	98	68	75	79
Indiana	79	87	89	78	87	86
Iowa	84	96	96	84	94	94
Kansas	67	72	77	62	67	71
Kentucky	84	91	88	67	74	70
Louisiana	76	84	86	71	76	78
Maine	100	100	100	95	97	97
Maryland	78	85	90	61	69	77
Massachusetts	87	92	95	66	71	77
Michigan	100	100	100	100	99	99
Minnesota	75	85	87	71	80	78
Mississippi	79	85	85	76	84	84
Missouri	90	91	93	79	82	81
Montana	71	74	74	67	70	75
Nebraska	70	76	79	62	69	72
Nevada	61	65	66	51	51	53
New Hampshire	79	83	85	72	79	79
New Jersey	67	73	76	62	70	71
New Mexico	81	86	84	77	81	84
New York	79	80	86	64	67	76
North Carolina	79	84	84	67	74	75
North Dakota	70	70	70	66	69	72
Ohio	86	90	96	74	79	85
Oklahoma	78	80	80	67	72	71
Oregon	100	100	100	87	91	100
Pennsylvania	85	90	90	76	81	80
Rhode Island	84	91	99	69	74	82
South Carolina	79	86	84	77	83	81
South Dakota	82	89	89	79	87	91
Tennessee	95	100	100	75	81	82
Texas	72	74	77	65	69	68
Utah	78	84	80	67	75	70
Vermont	94	97	100	77	81	86
Virginia	75	81	84	69	76	80
Washington	98	100	100	73	77	85
West Virginia	80	80	78	78	81	78
Wisconsin	91	98	100	84	90	94
Wyoming	58	61	57	54	61	57
Mid-Atlantic Region	78	84	85	69	75	77
Midwest Region	87	93	96	79	84	86
Mountain Plains Region	78	83	85	69	76	78
Northeast Region	81	84	89	66	70	77
Southeast Region	84	90	90	72	77	77
Southwest Region	73	77	79	67	71	71
Western Region	66	72	74	51	58	61
United States	78	83	85	67	72	74

There is substantial uncertainty associated with most of these estimates. Confidence intervals that measure the uncertainty in the estimates for 2011 and 2012 are presented in Cunyningham et al. (forthcoming). These confidence intervals are generally about as wide as the confidence intervals that are presented in this document for the 2013 estimates.

See Estimation Method section for information on participation rates of 100 percent.

The direct sample estimates were obtained by applying SNAP eligibility rules to households in the Current Population Survey to estimate numbers of eligible people and by using SNAP administrative data to estimate numbers of participating people. Eslami (2015) presents details on the estimation methods used to derive the direct sample estimates.

The regression predictions of participation rates were based on observed indicators of socioeconomic conditions, such as the percentage of the total State population receiving SNAP benefits. Because of differences between the years being estimated, the regression model differs slightly from the one developed for Cunyningham (2015). The regression model developed for this year's report was chosen for its strong predictive ability for all 3 years and its consistency with the model developed for the prior report.

The shrinkage estimates presented here are substantially more precise than the direct sample estimates from the Current Population Survey. Estimates for 2011 and 2012 differ from estimates presented in Cunyningham (2015) because of differences in the 3 years being jointly estimated and the regression model.

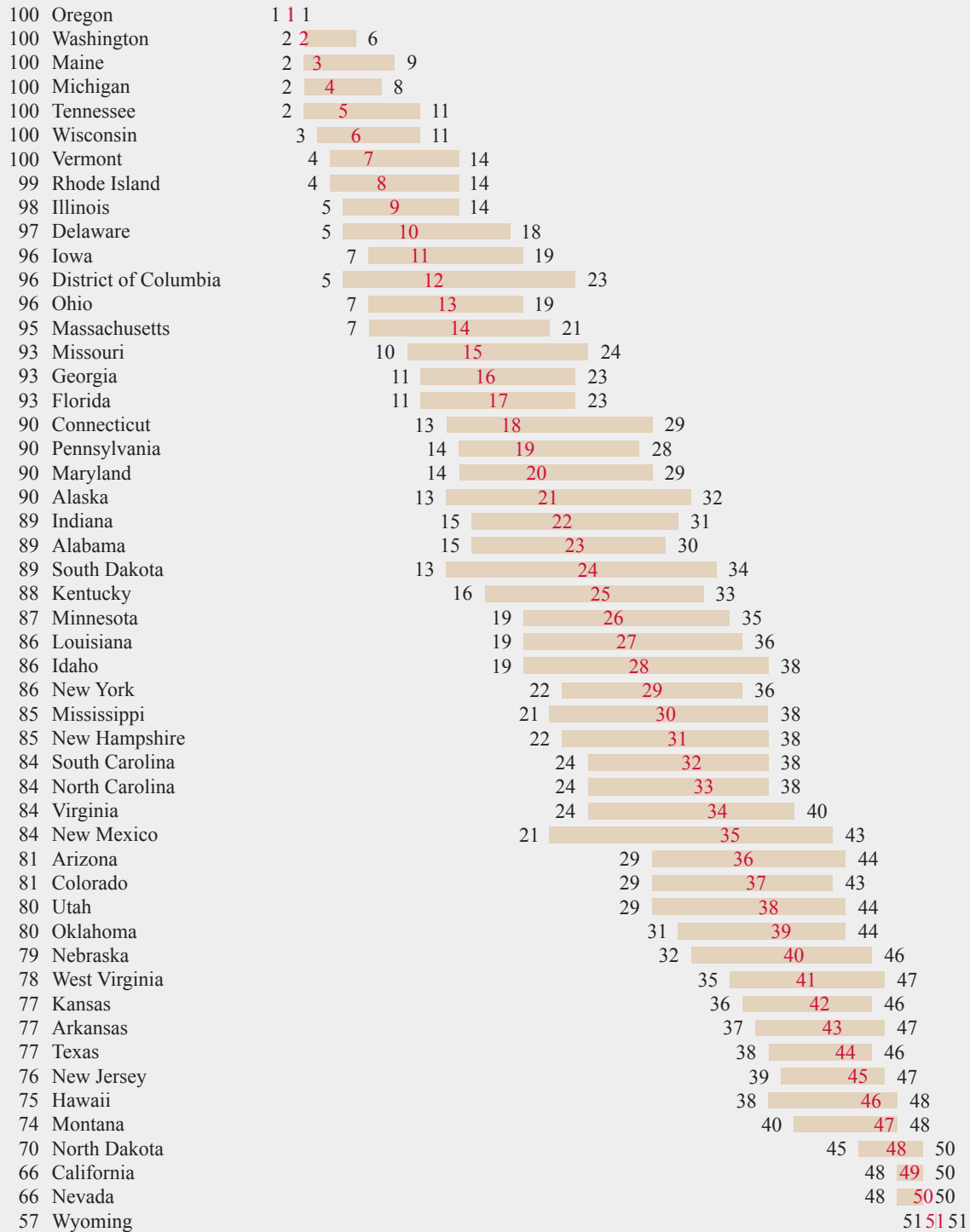
The estimates for all eligible people include individuals in households that pass all applicable federal SNAP income and asset tests or in which all members receive cash public assistance. People eligible solely through State categorical eligibility policies are not included in the estimates presented here. The estimates for eligible working poor include people who are eligible for SNAP as defined above and live in a household in which a member earns money from a job.

An estimated State participation rate of 100 percent is the result of differences between the data used to estimate the number of eligible people and the number of participants and should not be interpreted to mean that every eligible person in the State is participating in SNAP. Using different data sources to estimate rate denominators and numerators can result in a preliminary estimate of eligible people in a particular State that is lower than the corresponding estimate of participants, leading to a participation rate that exceeds 100 percent. We capped participation rates at 100 percent by adjusting estimates of eligible people so no

## How Did Your State Rank in 2013?

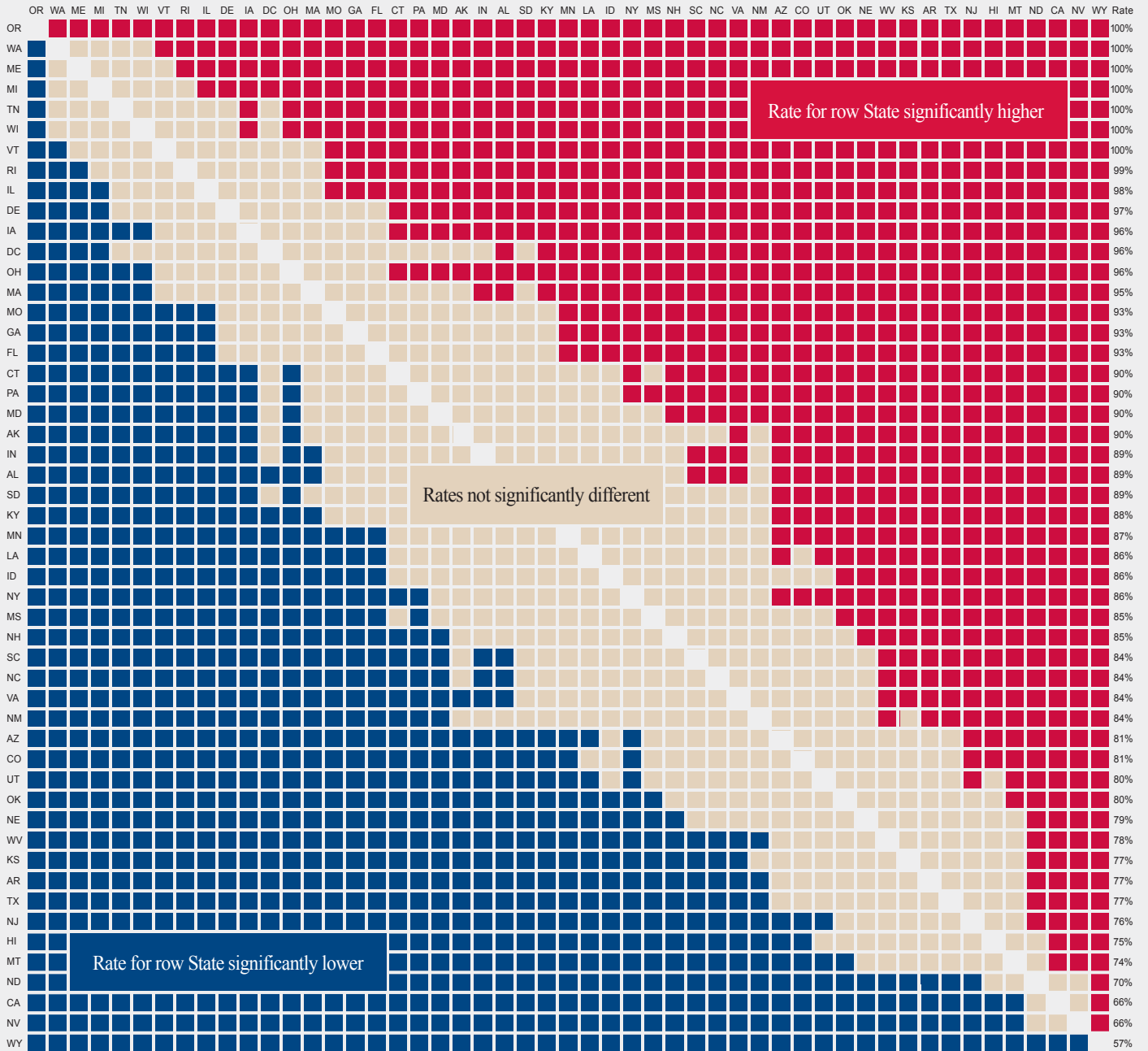
Participation  
Rate for  
All Eligible  
People (Percent)

Ranks and Confidence Intervals  
(Estimated ranks are in red; estimated bounds of confidence intervals are in black.)



A confidence interval expresses our uncertainty about the true value of a State's rank. 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 rank falls within the estimated bounds. For example, while our best estimate is that Minnesota had the 26th highest participation rate in 2013, the true rank may have been higher or lower. However, the chances are 90 in 100 that the true rank was between 19 and 35 among all of the States. To determine how Minnesota or your State compares with any other State, see the chart on page 7.

## How Did Your State Compare with Other States in 2013 for All Eligibles?



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 Minnesota, the State in the middle of the distribution, as an example, we see that it had a significantly lower participation rate than 17 other States (Oregon, Washington, Maine, Michigan, Tennessee, Wisconsin, Vermont, Rhode Island, Illinois, Delaware, Iowa, the District of Columbia, Ohio, Massachusetts, Missouri, Georgia, and Florida) and a significantly higher rate than 16 other States (Wyoming, Nevada, California, North Dakota, Montana, Hawaii, New Jersey, Texas, Arkansas, Kansas, West Virginia, Nebraska, Oklahoma, Utah, Colorado, and Arizona). Its rate was neither significantly higher nor significantly lower than the rates for the other 17 States, suggesting that Minnesota is probably in the broad center of the distribution, unlike, for example, Oregon and Wyoming, 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 10 percentage points, a difference that seems important as well as significant, and all of them were at least 5 percentage points.

See Estimation Method section for information on participation rates of 100 percent.

State had fewer eligible people than participants. See Cunyningham et al. (2015) and Cunyningham et al. (forthcoming) for details on how the adjustments were made.

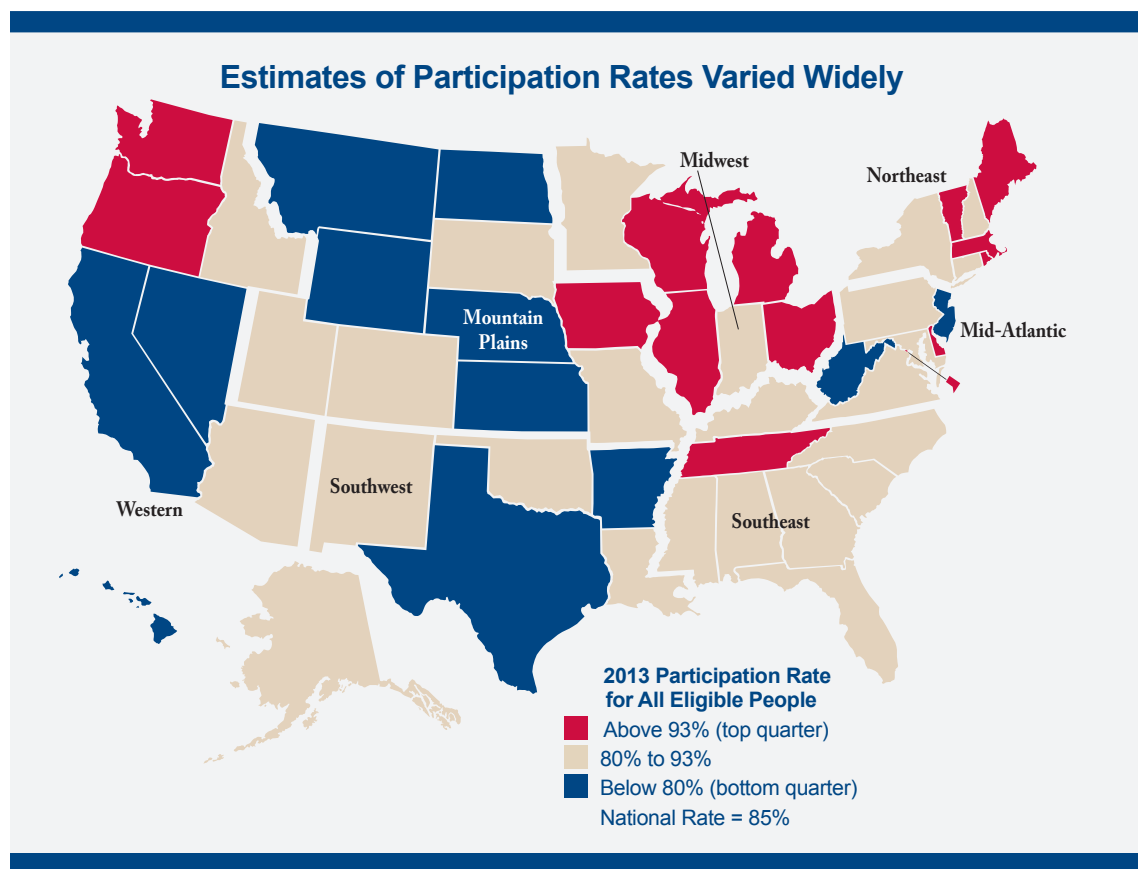
Because the Current Population Survey does not collect data on participation in the Food Distribution Program on Indian Reservations, the estimates presented here were not adjusted to reflect the fact that participants in that program were not eligible to receive SNAP benefits at the same time (Eslami 2015). The Food Distribution Program on Indian Reservations served about 76,000

people in 2013, so the effects of such adjustments would be negligible in almost all States. Because the focus in this document is on participation among people who were eligible for SNAP, 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 SNAP benefits because they receive cash instead.<sup>1</sup> However, in some other contexts it might be useful to consider participation rates among those eligible for SNAP benefits or a cash substitute.

## References

Cunyningham, Karen E., Amang Sukasih, and Laura A. Castner. “Empirical Bayes Shrinkage Estimates of State Supplemental Nutrition Assistance Program Rates in Fiscal

<sup>1</sup>About 1.3 million Supplemental Security Income recipients in California receive a small food assistance benefit through the State supplement. In the absence of the State rule excluding these individuals from receiving SNAP benefits, about 700,000 more California residents would be eligible for SNAP.



Year 2011 to Fiscal Year 2013 for All Eligible People and the Working Poor.” Washington, DC: Mathematica Policy Research, forthcoming.

Cunyningham, Karen E., Amang Sukasih, and Laura A. Castner. “Empirical Bayes Shrinkage Estimates of State Supplemental Nutrition Assistance Program Rates in Fiscal Year 2010 to Fiscal Year 2012 for All Eligible People and the Working Poor.” Washington, DC: Mathematica Policy Research, February 2015.

Cunyningham, Karen E. “Reaching Those in Need: State Supplemental Nutrition Assistance Program Participation Rates in 2012.” Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, February 2015.

Eslami, Esa. “Supplemental Nutrition Assistance Program Participation Rates: Fiscal Year 2010 to Fiscal Year 2013.” Alexandria, VA: Food and Nutrition Service, U.S. Department of Agriculture, August 2015.