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Reaching Those in Need:

ESTIMATES OF STATE SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM PARTICIPATION RATES IN 2012

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 2014, the program served over 46 million people in an average month at a total annual cost of about $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 2013, 20 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 more emphasis was placed on work for public assistance recipients through the enactment of the Personal Responsibility and Work Opportunity Reconciliation Act.

Recent studies have examined national participation rates as well as participation rates for socioeconomic and demographic subgroups (Eslami 2014), and State rates for all eligible people and for the working poor (Cunnyngham 2013). This document presents estimates of SNAP participation rates for all eligible people and for the working poor by States for fiscal year 2012. These estimates can be used to assess recent program performance and focus efforts to improve access.

Participation Rates in 2012

Eighty-three percent of eligible people in the United States received SNAP benefits in fiscal year 2012. Participation rates varied widely from State to State, however. Twenty-two States had rates that were significantly higher (in a statistical sense) than the national rate, and 15 States had rates that were significantly lower. Among the regions, the Midwest Region had the highest participation rate. Its 91 percent rate was significantly higher than the rates for all of the other regions except the Southeast Region. The Western Region's participation rate of 71 percent was significantly lower than the rates for all of the other regions. (See the last page for a map showing regional boundaries.)

In 2012, 72 percent of eligible working poor in the United States participated in SNAP, but as with participation rates for all eligible people, rates for the working poor varied widely across States. Twenty-two States had rates for the working poor that were significantly higher than the national rate for the working poor, and 7 States had rates that were significantly lower.

While 83 percent of all eligible people in the United States participated in 2012, only 72 percent of the eligible working poor participated, a significant difference of 11 percentage points. In 33 States, the participation rate for the working poor in 2012 was—like the national rate for the working poor—significantly lower than the rate for all eligible people. In 10 of these States, the difference

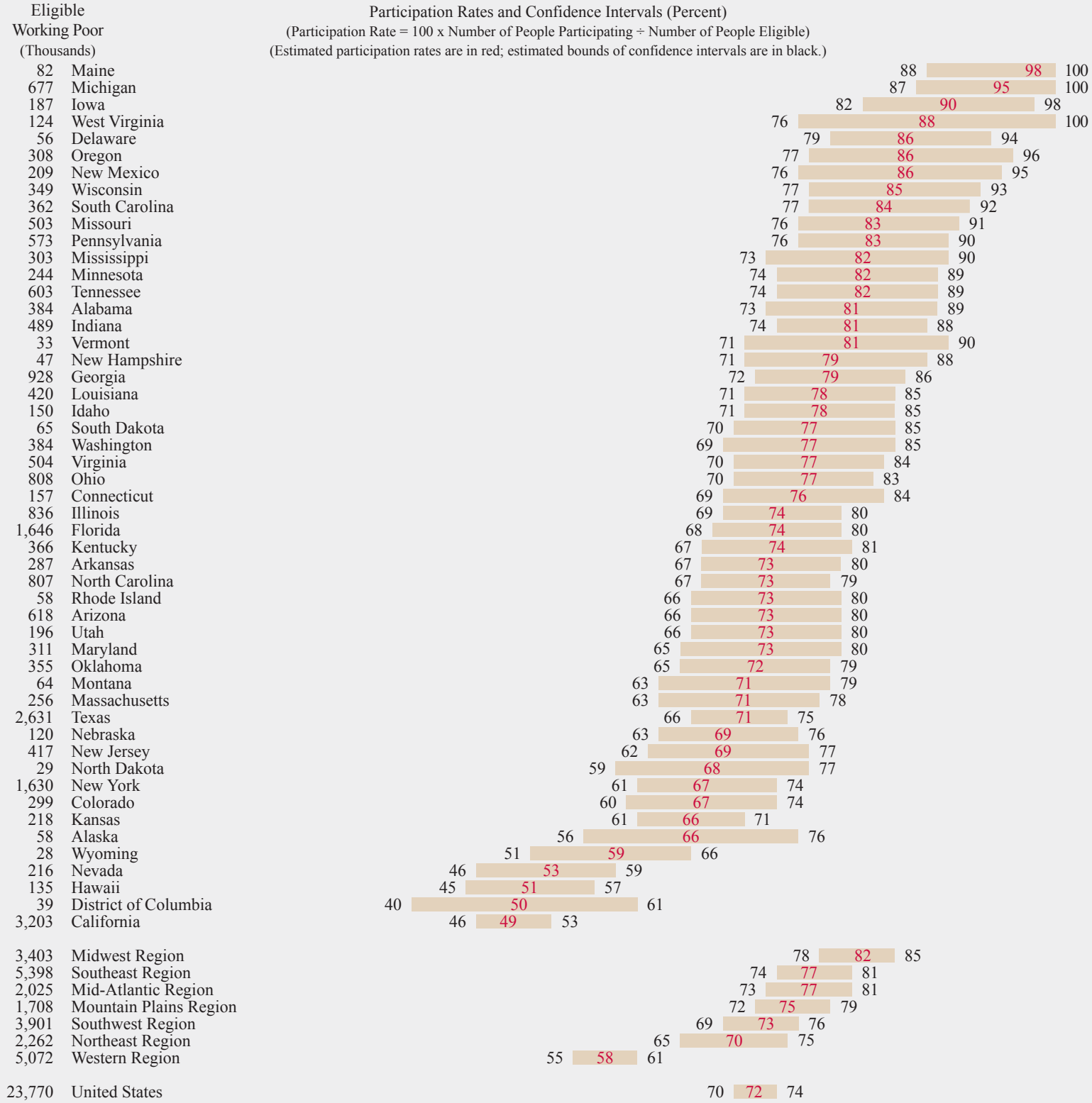
BY KAREN E. CUNNYNGHAM • MATHEMATICA POLICY RESEARCH • FEBRUARY 2015

How Many Were Eligible in 2012? What Percentage Participated?

Eligible People (Thousands)		Participation Rates and Confidence Intervals (Percent) (Participation Rate = 100 x Number of People Participating ÷ Number of People Eligible) (Estimated participation rates are in red; estimated bounds of confidence intervals are in black.)
213	Maine	94 100 100
631	Oregon	94 100 100
1,575	Michigan	95 100 100
132	District of Columbia	91 99 100
74	Vermont	92 98 100
854	Washington	92 98 100
125	Delaware	93 98 100
1,323	Tennessee	93 98 100
360	Iowa	90 96 100
724	Wisconsin	89 94 99
802	Massachusetts	88 93 98
1,867	Illinois	88 92 96
877	Kentucky	86 91 96
157	Rhode Island	86 91 95
378	Connecticut	85 91 96
441	New Mexico	84 90 95
3,451	Florida	86 90 93
1,741	Pennsylvania	86 90 94
2,012	Georgia	85 89 94
1,039	Missouri	84 89 94
991	Alabama	83 88 93
1,906	Ohio	83 88 92
729	Maryland	81 86 92
507	Minnesota	81 86 91
1,710	North Carolina	82 86 90
366	West Virginia	78 86 93
952	South Carolina	81 86 90
113	New Hampshire	79 85 90
743	Mississippi	79 84 90
257	Idaho	79 84 90
1,023	Louisiana	79 84 89
1,085	Virginia	79 84 89
1,071	Indiana	79 84 88
707	Oklahoma	78 82 87
337	Utah	76 81 87
1,174	Arizona	76 81 86
3,504	New York	76 80 83
129	South Dakota	73 78 84
637	Arkansas	72 77 82
951	New Jersey	72 77 82
604	Colorado	71 76 81
214	Nebraska	70 76 81
144	Montana	69 75 82
4,770	Texas	72 75 78
124	Alaska	66 73 80
409	Kansas	68 72 77
65	North Dakota	65 70 76
236	Hawaii	61 66 71
443	Nevada	61 66 70
5,972	California	60 63 65
59	Wyoming	51 56 62
7,651	Midwest Region	89 91 94
12,059	Southeast Region	87 89 92
5,128	Mid-Atlantic Region	83 86 88
5,240	Northeast Region	81 84 87
3,361	Mountain Plains Region	79 82 84
7,578	Southwest Region	76 78 80
9,692	Western Region	70 71 73
50,708	United States	82 83 84

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 86 percent in 2012, the true rate may have been higher or lower. However, the chances are 90 in 100 that the true rate was between 81 and 91 percent.

How Many Working Poor Were Eligible in 2012? 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 Virginia's working poor participation rate was 77 percent in 2012, the true rate may have been higher or lower. However, the chances are 90 in 100 that the true rate was between 70 and 84 percent.

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

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 2012 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. Maine and Oregon were very likely at the top, with higher rates 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 2012. Maine and Michigan were very likely at the top, with higher rates for the working poor than most States. In contrast, California, the District of Columbia, Hawaii, and Nevada 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 2010 to 2012, the District of Columbia, Maine, Michigan, Oregon, Tennessee, Vermont, and Washington had significantly higher participation rates for all eligible people than two-thirds of the States. Iowa, Massachusetts, and Wisconsin had significantly higher rates than half of the States. Alaska, Arkansas, and North Dakota had significantly lower rates than half of the States in all 3 years, while California, Colorado, Hawaii, Kansas, 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 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. 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. Eight States (Arkansas, Indiana, Minnesota, North Dakota, South Carolina, South Dakota,West Virginia, and Wyoming) 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—Illinois, Kentucky, Massachusetts, Oregon, Rhode Island, 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 (Cunnyngham et al. 2014, and Cunnyngham 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

Estimates of Participation Rates (Percent)

	All Eligible People			Working Poor		
	2010	2011	2012	2010	2011	2012
Alabama	73	83	88	68	76	81
Alaska	67	67	73	60	57	66
Arizona	74	77	81	67	68	73
Arkansas	68	72	77	66	68	73
California	51	55	63	39	42	49
Colorado	65	69	76	57	58	67
Connecticut	75	84	91	60	67	76
Delaware	78	90	98	70	79	86
District of Columbia	85	96	99	38	41	50
Florida	74	83	90	63	70	74
Georgia	75	83	89	67	73	79
Hawaii	60	61	66	47	45	51
Idaho	75	80	84	72	74	78
Illinois	79	84	92	62	67	74
Indiana	72	74	84	70	72	81
Iowa	84	87	96	80	82	90
Kansas	63	68	72	57	62	66
Kentucky	84	89	91	68	71	74
Louisiana	70	77	84	65	71	78
Maine	100	100	100	97	98	98
Maryland	67	79	86	53	61	73
Massachusetts	81	88	93	57	64	71
Michigan	94	100	100	90	96	95
Minnesota	72	79	86	69	75	82
Mississippi	69	79	84	66	73	82
Missouri	86	86	89	80	79	83
Montana	69	72	75	69	67	71
Nebraska	69	69	76	63	62	69
Nevada	56	64	66	45	52	53
New Hampshire	79	79	85	73	71	79
New Jersey	62	69	77	53	59	69
New Mexico	73	84	90	72	77	86
New York	72	78	80	59	64	67
North Carolina	70	80	86	59	66	73
North Dakota	67	68	70	66	64	68
Ohio	76	83	88	66	72	77
Oklahoma	76	81	82	65	69	72
Oregon	99	100	100	82	86	86
Pennsylvania	78	84	90	74	78	83
Rhode Island	77	84	91	61	67	73
South Carolina	73	80	86	71	77	84
South Dakota	76	76	78	74	73	77
Tennessee	89	93	98	75	78	82
Texas	63	71	75	58	65	71
Utah	72	77	81	64	67	73
Vermont	90	96	98	74	77	81
Virginia	72	78	84	66	68	77
Washington	91	97	98	72	75	77
West Virginia	88	87	86	93	87	88
Wisconsin	84	91	94	78	83	85
Wyoming	60	56	56	58	55	59
Mid-Atlantic Region	73	80	86	65	69	77
Midwest Region	80	86	91	71	77	82
Mountain Plains Region	75	77	82	69	69	75
Northeast Region	75	81	84	60	66	70
Southeast Region	75	84	89	66	72	77
Southwest Region	66	74	78	61	67	73
Western Region	61	66	71	48	52	58
United States	72	78	83	62	67	72

There is substantial uncertainty associated with most of these estimates. Confidence intervals that measure the uncertainty in the estimates for 2010 and 2011 are presented in Cunnyngham et al. (forthcoming). These confidence intervals are generally about as wide as the confidence intervals that are presented in this document for the 2012 estimates.

with predictions from a regression model. To further improve precision, the shrinkage estimator used data for all the states, all three years, and both groups (all eligible individuals and the working poor) to derive each estimate.

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 (2014) presents details on the estimation methods used to derive the direct sample estimates. The direct sample estimates differ slightly from estimates developed for prior reports. The estimates developed for this report use more recent Survey of Income and Program Participation data to estimate asset eligibility.

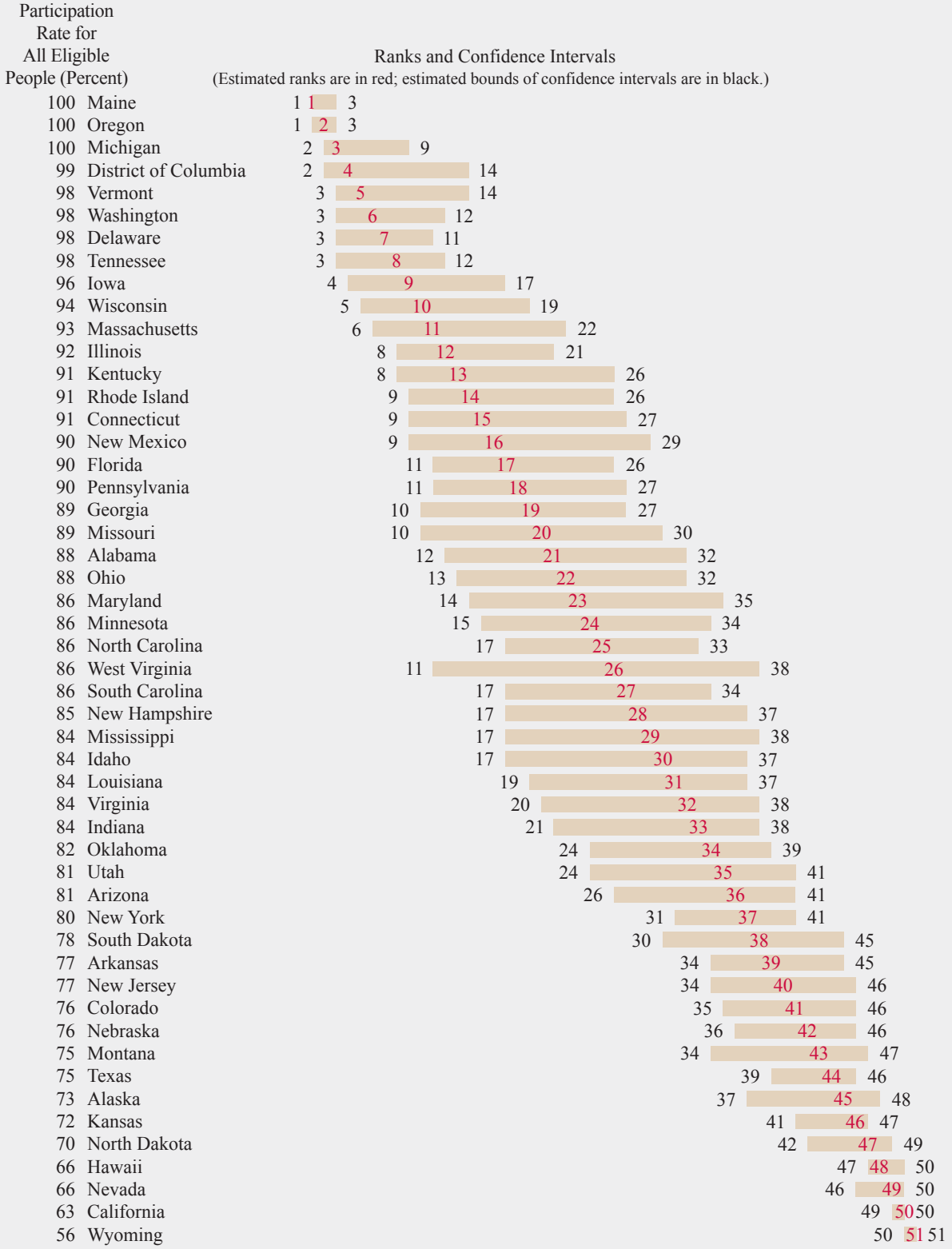
The regression predictions of participation rates were based on observed indicators of socioeconomic conditions, such as the percentage of the total State population receiving SNAP benefits. The regression model was chosen for its strong predictive ability for all three years. Because of differences between the years being estimated as well as the change in Survey of Income and Program Participation data, the regression model differs slightly from the one 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 2010 and 2011 differ from estimates presented in Cunnyngham (2013) because of differences in (1) the three years being jointly estimated, (2) the Survey of Income and Program Participation data used for the direct sample estimation methodology, and (3) 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.

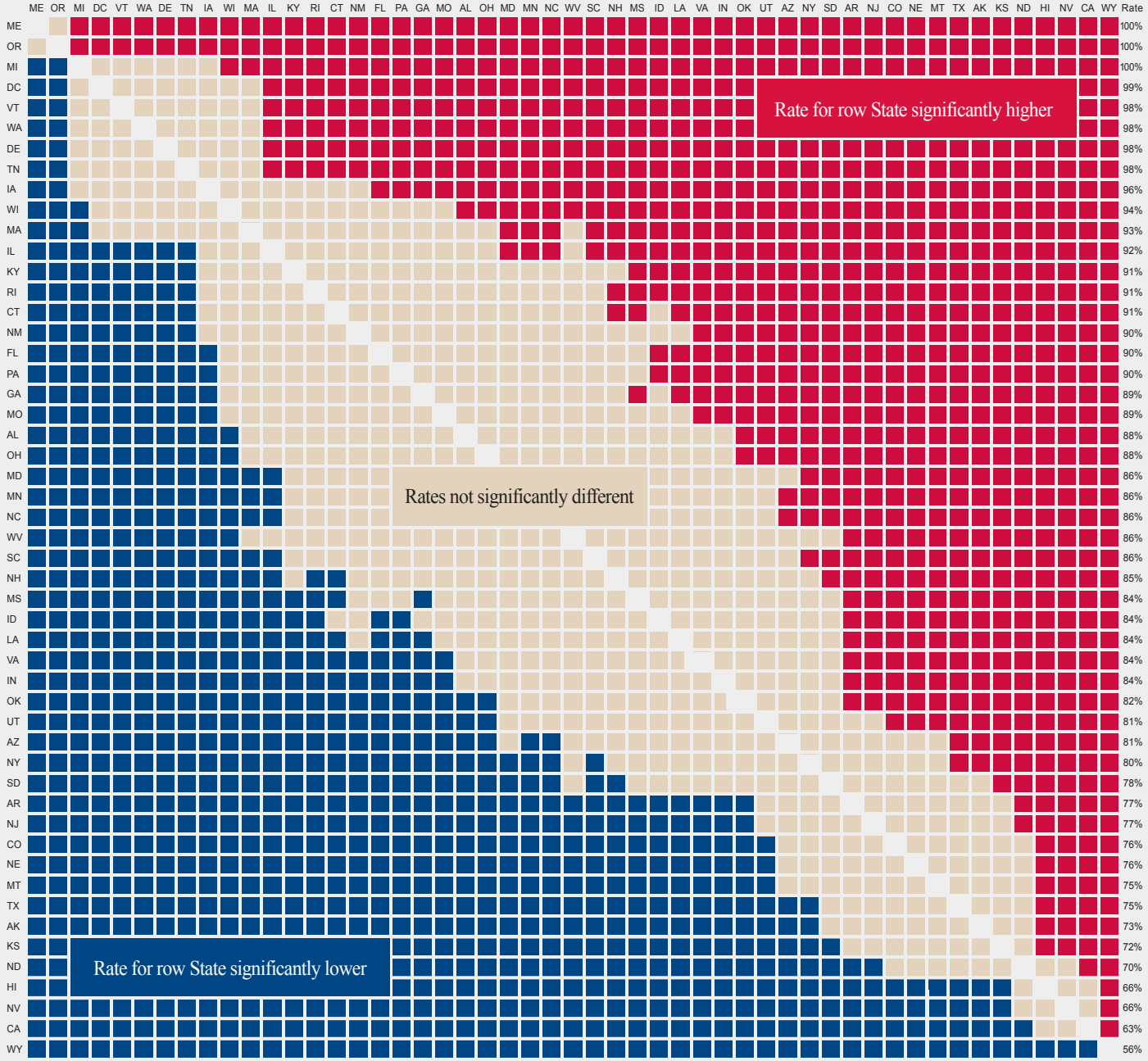
Because the Current Population Survey does not collect data on participation in the Food Distribution Program on

How Did Your State Rank in 2012?



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 West Virginia had the 26th highest participation rate in 2012, the true rank may have been higher or lower. However, the chances are 90 in 100 that the true rank was between 11 and 38 among all of the States. To determine how West Virginia or your State compares with any other State, see the chart on page 7.

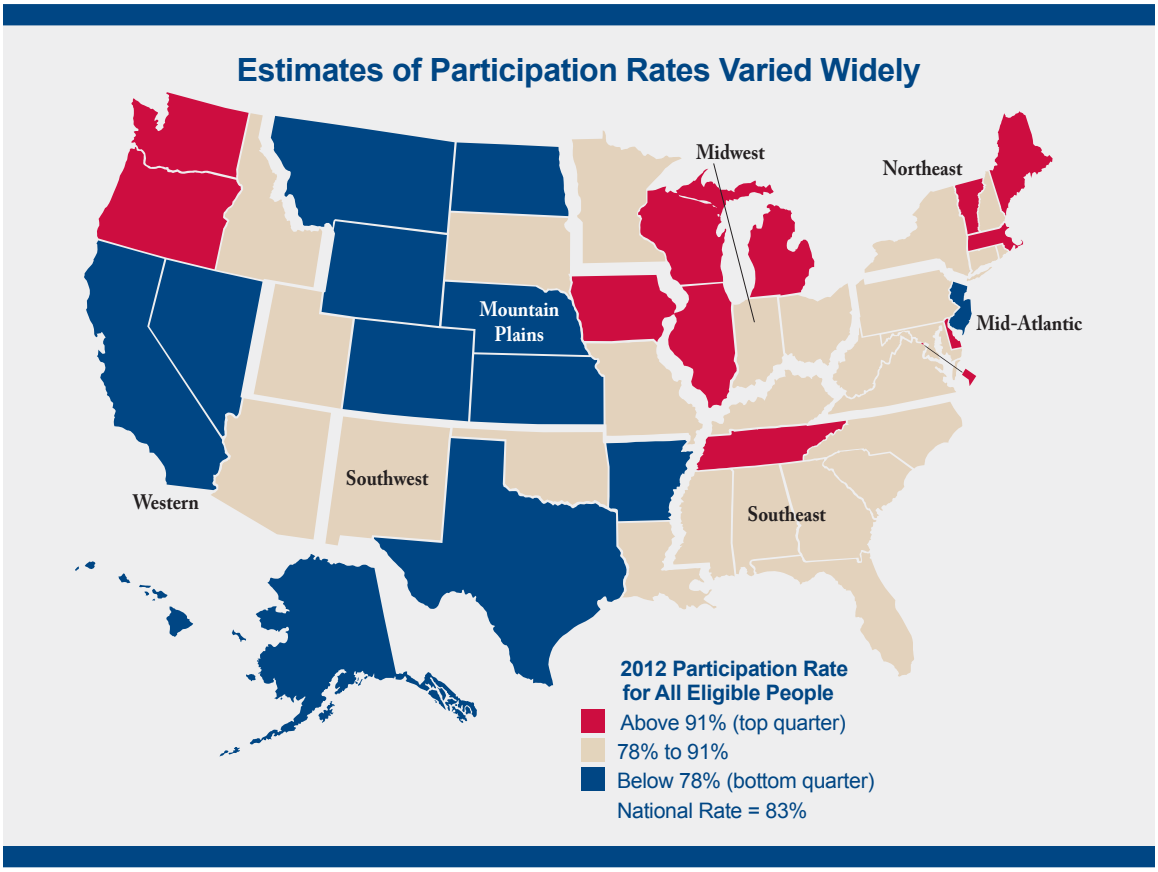
How Did Your State Compare with Other States in 2012 for All Eligibles?



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 West Virginia, the State in the middle of the distribution, as an example, we see that it had a significantly lower participation rate than 10 other States (Maine, Oregon, Michigan, the District of Columbia, Vermont, Washington, Delaware, Tennessee, Iowa, and Wisconsin) and a significantly higher rate than 13 other States (Wyoming, California, Nevada, Hawaii, North Dakota, Kansas, Alaska, Texas, Montana, Nebraska, Colorado, New Jersey, and Arkansas). Its rate was neither significantly higher nor significantly lower than the rates for the other 27 States, suggesting that West Virginia is probably in the broad center of the distribution, unlike, for example, Maine 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.

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 2014). The Food Distribution Program on Indian Reservations served about 77,000 people in 2012, so the effects of such adjustments would be negligible in almost all States. Because our 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.[1] It might be useful in some other contexts, however, to consider participation rates among those eligible for SNAP benefits or a cash substitute.



References

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Eslami, Esa. "Supplemental Nutrition Assistance Program Participation Rates: Fiscal Year 2010 to Fiscal Year 2012." Alexandria, VA: Food and Nutrition Service, U.S. Department of Agriculture, July 2014.

[1]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, slightly less than half this number would become eligible for SNAP under current program rules.

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