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**State Food Stamp
Participation Rates for the
Working Poor in 2002**

Final Report

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I. INTRODUCTION

The Food Stamp Program (FSP) is a key source of nutrition assistance for many people who are working but earning little from their jobs. Recent legislation and regulatory reforms have bolstered the role of the FSP as a critical work support during transitions to self-sufficiency.

Of the 19 million people who received food stamps in an average month in 2002, over 7 million—39 percent¹—lived in households that had income from earnings, up from 30 percent of all food stamp recipients in 1996, the year in which more emphasis was placed on work for public assistance recipients.² Despite the fact that the “working poor”—that is, people who are eligible for food stamps but live in households in which a member earns income from a job—make up a larger portion of the program caseload, many such people still do not participate in the program. The rate of participation by the working poor in 2002 (46 percent) remained significantly lower than the rate for all eligible people (54 percent).³ The gap between the rates has narrowed some since 2000. The 8-percentage-point difference for 2002 is significantly smaller than the 10-percentage-point difference in 2000, when the participation rate for the working poor was also 46 percent but the rate for all eligible people was 56 percent.⁴

¹ This 39-percent figure, which is from the report “Characteristics of Food Stamp Households: Fiscal Year 2002” (Rosso and Faux, 2003), is different from the 42-percent figure that we will present later in this report for the percentage of participants who live in households in which a member earns income from a job. Because of limitations in the underlying data, we expanded the definition beyond those living in households that have earnings to include those living in households where it appears likely that at least one member earned income from a job. We believe that this improved the accuracy of our estimates. (See Chapter II for more information.)

² The percentage of participating households that have earnings, as opposed to the percentage of participating people who live in households that have earnings, increased from 23 to 28 between 1996 and 2002. The person-level measure is higher because households with earnings are larger than average.

³ The participation rate for the working poor is calculated as the number of participating working poor divided by the number of eligible working poor, with the result expressed as a percentage.

⁴ The estimates of participation rates for 2000 and 2001 presented in this report differ from estimates presented in Castner and Schirm (2004a). The revisions are due to improvements in data and methods and are described in more detail in Chapter II.

Reasons for low participation among the working poor include lack of knowledge of the program and expected low benefits (McConnell and Ponza 1999). While some working poor believe that they are not eligible for the program, those who expect to be eligible for only a small benefit believe the benefit is not worth the time associated with filling out applications and the out-of-pocket expense and wages lost due to traveling to the food stamp office to apply initially or periodically reapply. In recognition of these barriers to participation, the U.S. Department of Agriculture's strategic plan for 2002 to 2007 includes strategies to "enhance support and access for working families" and to "target outreach efforts to special audiences such as the working poor."

In order to effectively meet the needs of their residents who are working but still poor, states now have the flexibility to change certain food stamp eligibility rules. For instance, to ensure that a working parent who needs a reliable vehicle to get to work is not ineligible for food stamps because of the value of that vehicle, states can revise the food stamp asset test rules related to calculating the value of a vehicle. Also, the Farm Security and Rural Investment Act of 2002 allowed states to extend the period of time that transitional food stamp benefits are available to those who are leaving Temporary Assistance to Needy Families (TANF).⁵ Meanwhile, states have adopted simpler income reporting options that reduce barriers to participation for the working poor so that not all minor changes in income and employment need to be reported to the food stamp office.

In this report we build upon recent studies examining national participation rates for socioeconomic and demographic subgroups (Cunyngham 2004) and rates for states among the entire eligible population (Castner and Schirm 2005). In Chapter II we focus on the derivation of

⁵ States have the option to automatically continue providing food stamp benefits to most families transitioning off the TANF program. A family's transitional food stamp benefit is set at the time the family leaves public assistance and is not impacted by increases in family income during the transition period.

participation rates for the working poor by state, discussing steps to overcome data limitations and small sample sizes, the estimation methods that we use, and the approach for measuring uncertainty in the estimates. In Chapter III we present the rates, discussing the variation across states and comparing a state's rate for all eligible people with its rate for the working poor. In particular, we examine whether some states have a rate for the working poor that is high relative to their rate for all eligible people and if some states have a rate for the working poor that is low relative to their rate for all eligible people. We also examine how rankings of states by rates for the working poor are different from rankings by rates for all eligible people.

This report presents our best estimates of participation rates in each state for the years 2000 to 2002 using the data and simulation methods that were available at the commencement of the study. For the reasons discussed in Chapter II, these estimates are less precise than estimates for all eligible people, and we continue to assess our methods for identifying the working poor and develop tools to compare participation rates for the working poor with rates for all eligible people. This report does not seek to explain the variation in the state estimates, except in those cases where we point out how a data limitation leads to a result that may be inaccurate for that state. Assessing sources of variation in the rates or measuring the impact of state programs and policies on a state's participation rate requires the examination of both household- and state-level influences on participation, a substantially more extensive analysis than can be undertaken in this study.

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II. METHODOLOGY

A. SHRINKAGE ESTIMATION

In deriving state estimates of food stamp participation rates, even for all eligible people, we are limited by the small samples for most states in the leading national surveys used to determine eligibility. The “direct” estimates from these surveys are imprecise because of the substantial sampling error that results when using only the information in the small sample (e.g., using only 2002 data on households from Mississippi to compute a 2002 estimate for Mississippi). To improve precision, we use an “indirect” estimator, which “borrows strength” from other states, time periods, or data sources (e.g., assuming that what happened in other states in 2002 or what happened in Mississippi and other states in earlier years is relevant to estimating what happened in Mississippi in 2002). The indirect estimator we use for estimating state participation rates is a “shrinkage” estimator, or one that averages estimates obtained from different methods. This estimator combines direct sample and regression estimates and borrows strength across states and over time (2000-2002).⁶ It also borrows strength from data outside the main sample survey (the Current Population Survey), specifically, data from administrative records systems and the decennial census.⁷

To improve precision even further, we borrow strength across groups—all eligible people and the working poor—by jointly deriving estimates of state participation rates for the working

⁶ Regression estimates are predictions based on nonsample or highly precise sample data, such as census and administrative records data, from all of the states and all of the years for which estimates are sought.

⁷ Full details on the shrinkage estimation process are provided in Castner and Schirm (2004b and forthcoming).

poor with those of all eligibles.⁸ Along with allowing us to borrow strength across the two groups (all eligible people and the working poor), jointly deriving the estimates also allows us to formally test the difference between the rates for the two groups. From this, we are able to determine whether a state's rate for the working poor is significantly different from its rate for all eligible people.

B. USE OF FSPQC DATA AND IDENTIFICATION OF THE WORKING POOR

A food stamp participation rate is obtained by dividing an estimate of the number of people receiving food stamps by an estimate of the number of people eligible for food stamps, with the resulting ratio expressed as a percentage. We define as “working poor” any person who is eligible for food stamps and lives in a household in which a member earns money from a job. To derive direct sample estimates of participation rates, we use Current Population Survey (CPS) data to estimate the total percentage of the population that is eligible as well as the percentage that is eligible and working poor.⁹ We use the Food Stamp Program Quality Control (FSPQC) data to estimate the percentage of recipients who are correctly receiving benefits and the percentage who are working poor and correctly receiving benefits.^{10,11}

⁸ We have been deriving estimates of food stamp participation rates for all eligible people for several years. We examined the impact of the joint derivation on the estimates for all eligible people and found there was little effect on participation rates, the rankings of states by rates, or the precision of the estimates.

⁹ We multiply the percentage eligible in a state and the percentage working poor and eligible in a state by the Census Bureau's state population estimate for July 1 of each year to obtain the number eligible and the number working poor and eligible.

¹⁰ We exclude from our estimates of participants those people who were ineligible for food stamps and, thus, are not included in our estimates of eligibles.

¹¹ We multiply the percentage correctly receiving benefits in a state and the percentage working poor and correctly receiving benefits in a state by the number of participants in the state according to food stamp Statistical Summary of Operations data to obtain the number of participants who are correctly receiving benefits and the number of participants who are working poor and correctly receiving benefits. We use Statistical Summary of Operations data that have been adjusted to remove individuals receiving disaster assistance benefits.

Use of the FSPQC data for estimating the number of working poor participants presents three issues:

1. The use of sample data introduces sampling error that contributes to the overall imprecision of the estimated rates.
2. The estimates of the percentage of participants who are correctly eligible and the percentage who are working poor and correctly eligible are correlated because both are derived from the FSPQC data.
3. The FSPQC data might not allow us to identify all households with earners.

To reduce the impact of using sample data in estimating numbers of participants, we changed from a 1-month focus for the estimates to a monthly average over the fiscal year, which increased the sample size. We then accounted for the correlation between the percentage of participants who are correctly eligible and who are working poor and correctly eligible in our calculations. Finally, to improve the identification of households with earnings in the FSPQC data, we developed an algorithm that we describe in more detail below that takes into account various potential indicators of earnings, not just the presence of earned income as recorded in the FSPQC data.

Although the FSPQC data are collected primarily to estimate payment error rates, they also have information about household characteristics. This secondary information, though, can be prone to error and may not contain all of the information relevant for the purposes of identifying the working poor. For example, the FSPQC data record only income that is counted toward the food stamp benefit. In households where earned income may have been excluded from the benefit calculation (e.g., a few states had waivers to exclude earned income from the benefit calculation for households receiving Temporary Assistance for Needy Families (TANF)), we would not be aware that the household had earnings.

To develop an algorithm to identify households that were very likely to have a member who worked, we reviewed data from many households to determine how we might use other information available (besides earned income), such as the earned income deduction and workforce participation information.¹² We also reviewed information FNS provided concerning waivers that allowed states to exclude earned income from the benefit calculation for households with TANF income. The algorithm based on our analysis identifies a household as working poor if two of the three earnings indicators (earned income, earned income deduction, workforce participation) suggest that a member of the household was working. Additionally, if a household member had earned income and the total earned income and unearned income for this household summed to the recorded total income, we identified the household as working poor. Finally, in the two states with earned income waivers (Indiana and Connecticut), we identified households as working poor if the household had both reported TANF income and a member with workforce participation information indicating that the person was working. (More details pertaining to our algorithm are provided in Appendix A.)

In Table II.1 we show the percentage of participating households that are correctly eligible and working poor based on the different indicators that suggest a member was working. The first column shows the percentage of participants in households identified as working poor because the household data showed both earned income and an earned income deduction. The second column shows the additional percentage that were counted as working poor because the household had earned income (but no recorded earned income deduction) that is consistent with other information on the file, and the third column shows the addition from households that had an earned income deduction (but no recorded earned income) that was consistent with other

¹² Any household with earnings should have some portion of that earnings deducted from household income before the final benefit calculation. This earned income deduction is recorded in addition to the earned income.

information on the file. The fourth column shows the additional percentage included by examining the workforce participation information. At the national level, we found that about 42 percent of participants were correctly eligible and working poor, but across the states, this percentage ranged from approximately 16 to 56.

Because of unresolved problems in the FSPQC data from California, we may be underestimating the number of participating working poor in that state, which would lead to underestimating the participation rate for the working poor. The earned income deduction information is missing for most households in the 2000 FSPQC data for California, which removes the deduction as a possible indicator of earnings in the household. In addition, the workforce participation information is missing for many households. As Table II.1 suggests, these two indicators are important in identifying households with earnings. Thus, incomplete or incorrect information makes it difficult to identify such households accurately. In FSPQC data for 2001 and later, the earned income deduction information is available, and this will help us continue to improve the estimates. However, the workforce participation information remains missing for many individuals in California.¹³

C. MEASURING UNCERTAINTY IN THE ESTIMATED RATES

Estimates of participation rates are subject to uncertainty that is attributable to several sources of potential estimation error, including the possibly large errors that might arise when estimates must be derived from fairly small samples of households. We measure this uncertainty using confidence intervals, specifically, 90-percent confidence intervals. One interpretation of

¹³ We do not know the extent to which the workforce participation information would add to the number of households in California that we would be able to identify as working poor. It may be that the algorithm already captures the working poor households.

such a confidence interval is that there is a 90-percent chance that the true participation rate falls within the estimated bounds of the interval.

Confidence intervals around rates for the working poor are almost always wider than confidence intervals around the rates for all eligible people, reflecting greater uncertainty in the rates for the working poor. In Table II.2 we present the ratio of the width of the confidence interval for the rate for the working poor to the width of the confidence interval for the rate for all eligible people, by state for 2000-2002. On average, the confidence intervals for the working poor are about 50 percent wider than those for all eligible people.

D. DIFFERENCES FROM PREVIOUSLY PUBLISHED RATES

The estimates of participation rates for the working poor presented here differ by several percentage points from the estimates in Castner and Schirm (2004a) because of improvements in the methodology for estimating the eligible food stamp population. One of the key changes reflected in these estimates pertains to our approach for determining whether households have asset holdings below the FSP eligibility requirements. Since 2001, several programmatic changes have been made to the vehicle portion of the FSP asset test. First, the federal rules were changed to exclude low-equity vehicles (equity less than \$1,500) from the asset test. Then, states were given the freedom to align their FSP vehicle rules with their TANF vehicle rules, as long as the rules were less restrictive than the FSP federal rules. Since that time, many states have chosen to revise their vehicle rules, often excluding vehicles from the asset test entirely.

The impacts of the expansions to vehicle policies were not captured in the rates presented in the previous report, nor were several other changes in data and methods. The changes are discussed in more detail in Cunnyngham (2004).

TABLE II.1

PERCENTAGE OF FOOD STAMP PARTICIPANTS WITH EARNERS IN THE HOUSEHOLD, BY INDICATORS OF EARNINGS, 2002

	Both Earned Income and Earnings Deduction	No Earnings Deduction But Earned Income Consistent with Other Income	No Earned Income But Earnings Deduction Consistent with Other Income	Earned Income or Deduction Consistent with Other Non-Income Information	Total
Alabama	36.6	0.6	0.3	0.0	37.5
Alaska	44.9	0.0	0.4	0.0	45.3
Arizona	41.0	0.8	5.4	0.1	47.3
Arkansas	36.7	0.8	0.3	0.0	37.8
California	23.9	4.3	7.1	0.5	35.8
Colorado	38.3	0.0	3.1	0.0	41.5
Connecticut	26.1	0.4	0.0	2.1	28.5
Delaware	42.7	0.0	0.3	0.0	43.0
District of Columbia	13.7	2.0	0.1	0.0	15.8
Florida	35.7	0.3	2.4	0.1	38.4
Georgia	35.9	0.3	1.9	0.1	38.2
Hawaii	37.1	0.2	2.0	0.0	39.2
Idaho	48.3	0.6	2.8	1.3	52.9
Illinois	39.5	0.6	2.3	0.1	42.5
Indiana	35.6	1.6	1.5	2.1	40.8
Iowa	39.1	0.4	0.0	0.5	40.0
Kansas	39.5	0.0	1.5	0.2	41.1
Kentucky	36.5	0.2	0.8	0.2	37.8
Louisiana	48.2	0.1	0.5	0.0	48.7
Maine	31.6	0.3	0.3	0.5	32.7
Maryland	27.2	0.6	0.8	0.0	28.6
Massachusetts	17.9	0.5	1.9	0.5	20.8
Michigan	44.3	0.0	0.6	0.4	45.3
Minnesota	24.9	1.1	0.1	2.9	28.9
Mississippi	31.2	0.2	2.2	0.2	33.8
Missouri	42.6	0.5	0.8	0.4	44.3
Montana	42.5	0.8	0.3	0.9	44.6
Nebraska	38.9	1.7	0.9	0.4	41.9
Nevada	28.5	0.3	2.8	0.1	31.7
New Hampshire	26.3	0.0	0.0	0.0	26.3
New Jersey	20.0	1.0	1.7	0.7	23.3
New Mexico	41.5	0.2	3.3	0.2	45.2
New York	27.9	1.6	1.9	0.9	32.3
North Carolina	38.7	0.3	1.8	0.0	40.7
North Dakota	54.7	0.4	0.5	0.3	55.8
Ohio	34.4	0.0	2.4	1.4	38.2
Oklahoma	41.2	2.0	2.4	0.9	46.4
Oregon	42.6	0.6	2.5	4.4	50.1
Pennsylvania	35.6	0.6	0.2	0.2	36.6
Rhode Island	17.3	0.3	3.8	0.0	21.4
South Carolina	34.2	0.3	0.3	0.0	34.8
South Dakota	46.4	0.2	0.3	2.7	49.5
Tennessee	36.8	0.7	1.2	0.2	38.8
Texas	45.6	0.2	6.1	0.4	52.2
Utah	41.8	0.6	2.9	2.6	48.0
Vermont	36.1	0.0	0.0	0.5	36.6
Virginia	37.4	1.6	1.0	0.6	40.6
Washington	26.2	0.3	3.0	1.3	30.8
West Virginia	32.3	0.3	0.4	0.4	33.4
Wisconsin	45.2	1.8	1.8	0.2	49.0
Wyoming	48.1	0.0	1.5	0.0	49.6
United States	36.3	1.3	3.7	0.4	41.6

TABLE II.2

RATIOS OF WIDTH OF CONFIDENCE INTERVAL FOR PARTICIPATION RATE
FOR WORKING POOR TO WIDTH OF CONFIDENCE INTERVAL FOR
PARTICIPATION RATE FOR ALL ELIGIBLE PEOPLE

	2000	2001	2002
Alabama	1.545	1.654	1.567
Alaska	1.369	1.431	1.316
Arizona	0.917	1.172	1.365
Arkansas	1.382	1.476	1.410
California	1.441	0.941	1.225
Colorado	1.169	1.332	1.270
Connecticut	1.509	1.545	1.360
Delaware	1.783	1.694	1.724
District of Columbia	1.317	1.085	1.422
Florida	1.522	1.798	1.880
Georgia	1.773	1.506	1.300
Hawaii	1.530	1.454	1.465
Idaho	1.472	1.597	1.552
Illinois	1.851	1.657	1.929
Indiana	1.534	1.586	1.467
Iowa	1.028	1.183	1.254
Kansas	1.442	1.531	1.394
Kentucky	1.329	1.404	1.290
Louisiana	1.639	1.765	1.674
Maine	1.593	1.577	1.394
Maryland	1.370	1.340	1.402
Massachusetts	1.307	1.270	1.416
Michigan	1.919	1.919	2.032
Minnesota	1.104	1.145	1.117
Mississippi	1.556	1.432	1.682
Missouri	1.488	1.494	1.358
Montana	1.431	1.297	1.635
Nebraska	1.322	1.378	1.333
Nevada	1.022	1.037	1.012
New Hampshire	1.353	1.248	1.372
New Jersey	1.280	1.940	1.530
New Mexico	1.210	1.530	1.543
New York	1.576	1.287	2.442
North Carolina	1.821	2.026	1.388
North Dakota	1.621	1.770	1.880
Ohio	1.343	1.639	1.250
Oklahoma	1.496	1.522	1.627
Oregon	1.435	1.264	1.550
Pennsylvania	1.670	1.739	1.630
Rhode Island	1.514	1.491	1.281
South Carolina	1.397	1.438	1.569
South Dakota	1.566	1.620	1.805
Tennessee	1.462	1.522	1.390
Texas	1.793	1.016	2.208
Utah	1.195	1.152	1.076
Vermont	1.676	1.877	1.837
Virginia	1.290	1.501	1.455
Washington	1.313	1.265	1.368
West Virginia	1.832	1.849	1.838
Wisconsin	1.466	1.565	1.511
Wyoming	1.333	1.578	1.482
United States	1.539	1.382	1.624

III. PARTICIPATION RATES FOR THE WORKING POOR

Using the estimation procedures described in Chapter II, we jointly derived estimates of food stamp participation rates for the working poor and for all eligible people for 2000-2002. The results are presented and discussed here.

A. PARTICIPATION RATES FOR THE WORKING POOR

For all 3 years from 2000 to 2002, 46 percent of the eligible working poor in the United States participated in the FSP, but rates varied widely across states, with some over 60 percent and some under 40 percent. In 2002, 19 states had rates that were significantly higher than the national rate, and 15 states had rates that were significantly lower. Table III.1 shows the participation rates by state for 2000-2002. Tables III.2 to III.4 present the participation rates by state for each year separately, along with 90-percent confidence intervals.

Although there is substantial uncertainty associated with the participation rates for the working poor, it is still 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. Oregon and West Virginia were very likely at the top, with higher rates than most states in 2002. In contrast, Massachusetts, New Jersey, and Nevada, likely had lower rates than most states (Table III.5). New Hampshire, California, Maryland, Utah, the District of Columbia, and New York probably fell in the bottom half of the distribution, while Louisiana, Michigan, Missouri, Hawaii, Kentucky, Indiana, Tennessee, Maine, Oklahoma, South Carolina, South Dakota, Alaska, Illinois, and Wisconsin were probably in the top half in 2002.¹⁴

¹⁴ Through a series of pairwise comparisons (comparing each state to every other state), we determined for each state the number of states that had rates that were significantly higher and the number that had rates that were significantly lower than that state's rate.

Changes in participation rates over time reflect true changes in participation patterns as well as statistical variability. As a result, a large change in a state's rate from a prior year should be interpreted cautiously; the change does not necessarily imply that the program's performance in the state has improved or deteriorated dramatically. Similarly, differences between states should be interpreted cautiously.

Despite the uncertainty, the estimated rates suggest that some states have fairly consistently been in the top or bottom of the distribution in recent years. In all three years from 2000 to 2002, Oregon, West Virginia, Louisiana, Michigan, Missouri, Hawaii, Kentucky, and Maine had significantly higher participation rates for the working poor than two-thirds of the states, and Indiana, South Dakota, and Illinois had significantly higher rates than half of the states. Utah and New Hampshire had significantly lower rates for the working poor than half of the states in all three years, and California, Nevada, New Jersey, and Massachusetts had significantly lower rates than two-thirds of the states.¹⁵

B. COMPARING RATES FOR THE WORKING POOR AND ALL ELIGIBLE PEOPLE

While 54 percent of all eligible people in the United States participated in 2002, only 46 percent of the eligible working poor participated, a significant difference of 8 percentage points (Tables III.1 and III.6). In 31 states the participation rate for the working poor in 2002 was—like the national rate for the working poor—significantly lower than the rate for all eligible people. (Tables III.7-III.9 show the differences in rates and the corresponding confidence intervals for 2000-2002.) Twelve of these states (New York, Maryland, Washington, Minnesota, Connecticut, New Hampshire, Rhode Island, Massachusetts, Nevada, California, New Jersey, and the District

¹⁵ As discussed in Chapter II, the participation rate for the working poor in California may be underestimated due to limitations in the FSPQC data received from California.

of Columbia¹⁶) had a participation rate “deficit”—the participation rate for all eligible people minus the participation rate for the working poor—that was significantly larger than the national deficit of eight percentage points.

In contrast to the pattern observed for the nation, and the states listed above, 15 states (West Virginia, Louisiana, Michigan, Oregon, North Dakota, Wisconsin, South Dakota, Indiana, Oklahoma, Missouri, Pennsylvania, Kentucky, South Carolina, Idaho, and Florida) had participation rate deficits that were significantly smaller than the national deficit of 8-percentage-points. However, in no state was the rate for the working poor significantly higher than the rate for all eligible people.

Having compared the difference in states’ participation rates for the working poor and these participation rates for all eligible people, we can also compare how states are ranked according to the two sets of rates. In 2002, we find that nine states (North Dakota, Wisconsin, Idaho, Wyoming, Florida, North Carolina, Texas, Colorado, and Michigan) are ranked significantly higher when ranking by their participation rate for the working poor than when ranking by their participation rate for all eligible people, while seven states (Hawaii, California, Minnesota, Washington, Connecticut, Rhode Island, and the District of Columbia) are ranked significantly lower (Tables III.5 and III.10).

The estimated participation rates presented in this report shed light on how the rates for the working poor vary across states and how participation rates differ between the working poor and

¹⁶ In the District of Columbia, which had a participation rate for the working poor that was substantially lower than the rate for all eligible people, we find that the percentage of participants with earnings according to the FSPQC data is very low (16 percent in 2002, compared to the national average of 42 percent). This leads to direct estimates of participation rates that are also very low. Although the District of Columbia might truly have a participation rate for the working poor that is low relative to its rate for all eligible people or the rates in other states, further assessment of the accuracy of the FSPQC data might be warranted. Also, it is important to keep in mind that the confidence intervals around the estimated rates for the District of Columbia are relatively wide, reflecting the substantial uncertainty associated with the rates.

all eligible people. The estimates also lead to questions, especially related to why the rates vary so much across states. Other types of analyses could help identify the impact of outreach to inform eligible people of their potential eligibility and the impact of state policies and practices on the participation decisions of eligible people. Studies focusing on participation in other assistance programs, such as the Temporary Assistance for Needy Families program, could identify if success in keeping workers in these programs also leads to success in keeping workers in the Food Stamp Program.

TABLE III.1

PARTICIPATION RATES FOR THE WORKING POOR, 2000-2002

	2000	2001	2002
Alabama	49	49	47
Alaska	52 ⁺	51	55 ⁺
Arizona	32 ⁻	35 ⁻	45
Arkansas	46	46	49
California	33 ⁻	29 ⁻	31 ⁻
Colorado	45	44	39 ⁻
Connecticut	48	47	43
Delaware	47	46	45
District of Columbia	46	35 ⁻	37 ⁻
Florida	42	40 ⁻	41 ⁻
Georgia	48	46	48
Hawaii	75 ⁺	66 ⁺	65 ⁺
Idaho	42 ⁻	41 ⁻	43
Illinois	56 ⁺	58 ⁺	54 ⁺
Indiana	58 ⁺	62 ⁺	65 ⁺
Iowa	43	44	41 ⁻
Kansas	42	43	41 ⁻
Kentucky	66 ⁺	66 ⁺	65 ⁺
Louisiana	64 ⁺	65 ⁺	71 ⁺
Maine	65 ⁺	66 ⁺	60 ⁺
Maryland	42	40 ⁻	35 ⁻
Massachusetts	29 ⁻	28 ⁻	23 ⁻
Michigan	67 ⁺	68 ⁺	68 ⁺
Minnesota	47	47	41
Mississippi	45	48	52 ⁺
Missouri	65 ⁺	67 ⁺	67 ⁺
Montana	48	47	46
Nebraska	46	45	43
Nevada	21 ⁻	22 ⁻	25 ⁻
New Hampshire	38 ⁻	38 ⁻	31 ⁻
New Jersey	32 ⁻	33 ⁻	24 ⁻
New Mexico	39 ⁻	48	50
New York	41 ⁻	37 ⁻	39 ⁻
North Carolina	42 ⁻	43	41 ⁻
North Dakota	55 ⁺	62 ⁺	54 ⁺
Ohio	50 ⁺	53 ⁺	50
Oklahoma	50	50	56 ⁺
Oregon	67 ⁺	73 ⁺	84 ⁺
Pennsylvania	61 ⁺	59 ⁺	53 ⁺
Rhode Island	47	44	41
South Carolina	52 ⁺	54 ⁺	56 ⁺
South Dakota	59 ⁺	60 ⁺	55 ⁺
Tennessee	55 ⁺	57 ⁺	61 ⁺
Texas	41 ⁻	41 ⁻	41 ⁻
Utah	39 ⁻	39 ⁻	35 ⁻
Vermont	60 ⁺	57 ⁺	50
Virginia	48	48	45
Washington	44	43	44
West Virginia	81 ⁺	77 ⁺	77 ⁺
Wisconsin	54 ⁺	56 ⁺	54 ⁺
Wyoming	51 ⁺	52 ⁺	45
United States	46	46	46

⁺ Participation rate is significantly higher than national rate.

⁻ Participation rate is significantly lower than national rate.

TABLE III.2

PARTICIPATION RATES FOR THE WORKING POOR, WITH CONFIDENCE INTERVALS, 2000

	Participation	90-Percent Confidence Interval	
	Rate	Lower Bound	Upper Bound
Alabama	49	42	55
Alaska	52	45	59
Arizona	32	28	37
Arkansas	46	41	52
California	33	29	36
Colorado	45	40	50
Connecticut	48	41	55
Delaware	47	39	55
District of Columbia	46	37	56
Florida	42	37	47
Georgia	48	42	54
Hawaii	75	63	86
Idaho	42	36	47
Illinois	56	49	62
Indiana	58	50	65
Iowa	43	38	47
Kansas	42	36	48
Kentucky	66	59	73
Louisiana	64	56	71
Maine	65	58	73
Maryland	42	35	48
Massachusetts	29	23	34
Michigan	67	60	75
Minnesota	47	40	54
Mississippi	45	37	52
Missouri	65	56	73
Montana	48	41	55
Nebraska	46	39	53
Nevada	21	17	25
New Hampshire	38	32	44
New Jersey	32	28	36
New Mexico	39	34	44
New York	41	36	46
North Carolina	42	37	47
North Dakota	55	47	63
Ohio	50	46	54
Oklahoma	50	45	56
Oregon	67	59	75
Pennsylvania	61	54	69
Rhode Island	47	40	55
South Carolina	52	46	58
South Dakota	59	51	67
Tennessee	55	49	61
Texas	41	37	45
Utah	39	34	45
Vermont	60	52	67
Virginia	48	42	54
Washington	44	39	49
West Virginia	81	70	91
Wisconsin	54	47	60
Wyoming	51	45	57
United States	46	45	47

TABLE III.3

PARTICIPATION RATES FOR THE WORKING POOR, WITH CONFIDENCE INTERVALS, 2001

	Participation Rate	90-Percent Confidence Interval	
		Lower Bound	Upper Bound
Alabama	49	44	55
Alaska	51	44	58
Arizona	35	30	41
Arkansas	46	41	51
California	29	26	32
Colorado	44	39	49
Connecticut	47	40	54
Delaware	46	38	54
District of Columbia	35	27	44
Florida	40	36	45
Georgia	46	41	52
Hawaii	66	57	76
Idaho	41	36	46
Illinois	58	51	64
Indiana	62	54	70
Iowa	44	38	49
Kansas	43	38	48
Kentucky	66	59	74
Louisiana	65	58	73
Maine	66	59	74
Maryland	40	34	47
Massachusetts	28	23	33
Michigan	68	61	75
Minnesota	47	40	55
Mississippi	48	41	55
Missouri	67	59	76
Montana	47	41	54
Nebraska	45	37	52
Nevada	22	18	25
New Hampshire	38	32	44
New Jersey	33	28	37
New Mexico	48	41	54
New York	37	33	41
North Carolina	43	39	47
North Dakota	62	54	70
Ohio	53	48	57
Oklahoma	50	44	56
Oregon	73	66	80
Pennsylvania	59	52	67
Rhode Island	44	37	52
South Carolina	54	48	60
South Dakota	60	51	68
Tennessee	57	50	63
Texas	41	38	43
Utah	39	33	44
Vermont	57	49	65
Virginia	48	42	55
Washington	43	39	48
West Virginia	77	67	86
Wisconsin	56	50	63
Wyoming	52	45	58
United States	46	44	47

TABLE III.4

PARTICIPATION RATES FOR THE WORKING POOR, WITH CONFIDENCE INTERVALS, 2002

	Participation	90-Percent Confidence Interval	
	Rate	Lower Bound	Upper Bound
Alabama	47	41	54
Alaska	55	48	61
Arizona	45	38	52
Arkansas	49	43	54
California	31	28	34
Colorado	39	35	44
Connecticut	43	36	49
Delaware	45	37	53
District of Columbia	37	27	47
Florida	41	36	45
Georgia	48	43	54
Hawaii	65	55	74
Idaho	43	37	48
Illinois	54	48	61
Indiana	65	57	72
Iowa	41	35	47
Kansas	41	36	46
Kentucky	65	58	72
Louisiana	71	63	80
Maine	60	54	66
Maryland	35	27	42
Massachusetts	23	18	28
Michigan	68	60	76
Minnesota	41	34	48
Mississippi	52	45	59
Missouri	67	60	75
Montana	46	38	53
Nebraska	43	36	50
Nevada	25	21	28
New Hampshire	31	25	37
New Jersey	24	21	28
New Mexico	50	43	57
New York	39	34	43
North Carolina	41	37	45
North Dakota	54	46	62
Ohio	50	46	53
Oklahoma	56	51	62
Oregon	84	75	92
Pennsylvania	53	45	60
Rhode Island	41	35	48
South Carolina	56	50	62
South Dakota	55	47	63
Tennessee	61	55	68
Texas	41	38	44
Utah	35	31	40
Vermont	50	43	58
Virginia	45	39	52
Washington	44	38	49
West Virginia	77	69	85
Wisconsin	54	47	61
Wyoming	45	38	51
United States	46	45	47

TABLE III.5

RANKS OF PARTICIPATION RATES FOR THE WORKING POOR, 2000-2002

	2000	2001	2002
Alabama	22	22	25
Alaska	17	20	14
Arizona	48	46	30
Arkansas	31	31	23
California	47	49	47
Colorado	33	34	42
Connecticut	26	28	33
Delaware	29	30	28
District of Columbia	30	47	44
Florida	37	42	41
Georgia	24	29	24
Hawaii	2	6	6
Idaho	40	39	34
Illinois	13	13	15
Indiana	12	9	8
Iowa	36	35	37
Kansas	38	38	40
Kentucky	5	5	7
Louisiana	8	8	3
Maine	6	7	10
Maryland	41	41	46
Massachusetts	50	50	51
Michigan	3	3	4
Minnesota	28	26	38
Mississippi	34	24	19
Missouri	7	4	5
Montana	25	27	26
Nebraska	32	32	32
Nevada	51	51	49
New Hampshire	46	44	48
New Jersey	49	48	50
New Mexico	45	25	21
New York	42	45	43
North Carolina	39	37	36
North Dakota	14	10	17
Ohio	20	18	22
Oklahoma	21	21	11
Oregon	4	2	1
Pennsylvania	9	12	18
Rhode Island	27	33	35
South Carolina	18	17	12
South Dakota	11	11	13
Tennessee	15	15	9
Texas	43	40	39
Utah	44	43	45
Vermont	10	14	20
Virginia	23	23	27
Washington	35	36	31
West Virginia	1	1	2
Wisconsin	16	16	16
Wyoming	19	19	29

TABLE III.6

PARTICIPATION RATES FOR ALL ELIGIBLE PEOPLE, 2000-2002

	2000	2001	2002
Alabama	56	53	53
Alaska	62	58	62
Arizona	46	47	53
Arkansas	57	55	56
California	54	49	49
Colorado	49	46	45
Connecticut	61	58	58
Delaware	52	49	51
District of Columbia	86	73	66
Florida	49	45	44
Georgia	53	50	54
Hawaii	89	77	74
Idaho	44	41	46
Illinois	63	62	59
Indiana	60	61	66
Iowa	54	51	52
Kansas	50	49	49
Kentucky	72	69	67
Louisiana	65	64	67
Maine	72	67	64
Maryland	52	50	48
Massachusetts	42	41	39
Michigan	68	64	65
Minnesota	57	54	56
Mississippi	52	52	56
Missouri	70	68	69
Montana	53	51	50
Nebraska	56	52	54
Nevada	38	40	42
New Hampshire	49	46	46
New Jersey	50	45	43
New Mexico	54	53	55
New York	57	52	50
North Carolina	48	47	46
North Dakota	50	55	51
Ohio	57	54	56
Oklahoma	56	54	58
Oregon	72	75	81
Pennsylvania	64	58	55
Rhode Island	63	60	57
South Carolina	56	55	59
South Dakota	58	57	56
Tennessee	64	61	66
Texas	46	45	47
Utah	47	43	43
Vermont	70	63	60
Virginia	54	52	52
Washington	56	54	57
West Virginia	85	75	72
Wisconsin	53	53	55
Wyoming	51	50	49
United States	56	53	54

TABLE III.7

DIFFERENCES BETWEEN PARTICIPATION RATES FOR THE WORKING POOR AND
ALL ELIGIBLE PEOPLE, WITH CONFIDENCE INTERVALS, 2000
(Rate for Working Poor - Rate for All Eligible People)

	Difference	90-Percent Confidence Interval	
		Lower Bound	Upper Bound
Alabama	-7	-13	-2
Alaska	-10	-16	-5
Arizona	-13	-17	-9
Arkansas	-11	-15	-6
California	-21	-24	-18
Colorado	-4	-8	0
Connecticut	-14	-19	-8
Delaware	-5	-11	1
District of Columbia	-39	-48	-31
Florida	-6	-11	-2
Georgia	-5	-9	0
Hawaii	-14	-23	-5
Idaho	-2	-7	2
Illinois	-8	-13	-2
Indiana	-3	-8	3
Iowa	-11	-15	-6
Kansas	-8	-13	-3
Kentucky	-6	-12	0
Louisiana	-1	-7	5
Maine	-6	-12	0
Maryland	-11	-16	-6
Massachusetts	-13	-18	-9
Michigan	0	-7	6
Minnesota	-10	-17	-4
Mississippi	-7	-13	-1
Missouri	-5	-12	2
Montana	-5	-11	0
Nebraska	-10	-15	-4
Nevada	-17	-21	-13
New Hampshire	-11	-16	-6
New Jersey	-18	-21	-14
New Mexico	-15	-20	-11
New York	-16	-20	-11
North Carolina	-6	-10	-2
North Dakota	5	-2	12
Ohio	-6	-10	-3
Oklahoma	-6	-10	-1
Oregon	-5	-11	1
Pennsylvania	-3	-8	3
Rhode Island	-16	-22	-10
South Carolina	-5	-10	0
South Dakota	0	-6	7
Tennessee	-9	-14	-4
Texas	-5	-8	-2
Utah	-8	-13	-3
Vermont	-10	-17	-4
Virginia	-6	-11	-1
Washington	-13	-17	-9
West Virginia	-5	-13	3
Wisconsin	1	-5	6
Wyoming	0	-5	5
United States	-10	-11	-9

TABLE III.8

DIFFERENCES BETWEEN PARTICIPATION RATES FOR THE WORKING POOR AND
ALL ELIGIBLE PEOPLE, WITH CONFIDENCE INTERVALS, 2001
(Rate for Working Poor - Rate for All Eligible People)

	Difference	90-Percent Confidence Interval	
		Lower Bound	Upper Bound
Alabama	-4	-9	0
Alaska	-8	-13	-2
Arizona	-12	-16	-7
Arkansas	-8	-12	-4
California	-20	-23	-16
Colorado	-3	-7	2
Connecticut	-11	-17	-5
Delaware	-3	-10	3
District of Columbia	-38	-47	-30
Florida	-4	-8	-1
Georgia	-4	-9	0
Hawaii	-10	-18	-3
Idaho	0	-5	4
Illinois	-4	-9	1
Indiana	1	-5	7
Iowa	-8	-12	-3
Kansas	-6	-9	-2
Kentucky	-2	-8	4
Louisiana	1	-5	7
Maine	-1	-7	5
Maryland	-9	-15	-3
Massachusetts	-13	-17	-8
Michigan	4	-2	9
Minnesota	-7	-13	0
Mississippi	-4	-9	1
Missouri	-1	-7	6
Montana	-4	-9	1
Nebraska	-7	-13	-1
Nevada	-19	-22	-15
New Hampshire	-8	-14	-3
New Jersey	-12	-16	-8
New Mexico	-6	-11	-1
New York	-15	-19	-11
North Carolina	-4	-7	0
North Dakota	7	0	14
Ohio	-2	-6	2
Oklahoma	-4	-9	1
Oregon	-2	-8	4
Pennsylvania	1	-5	7
Rhode Island	-15	-21	-9
South Carolina	-1	-6	4
South Dakota	2	-4	9
Tennessee	-4	-9	1
Texas	-5	-7	-2
Utah	-5	-9	0
Vermont	-6	-12	0
Virginia	-3	-9	2
Washington	-11	-15	-7
West Virginia	2	-6	10
Wisconsin	3	-2	8
Wyoming	2	-3	8
United States	-7	-9	-6

TABLE III.9

DIFFERENCES BETWEEN PARTICIPATION RATES FOR THE WORKING POOR AND
ALL ELIGIBLE PEOPLE, WITH CONFIDENCE INTERVALS, 2002
(Rate for Working Poor - Rate for All Eligible People)

	Difference	90-Percent Confidence Interval	
		Lower Bound	Upper Bound
Alabama	-6	-11	-1
Alaska	-8	-13	-2
Arizona	-8	-13	-2
Arkansas	-7	-11	-3
California	-18	-21	-15
Colorado	-6	-10	-2
Connecticut	-15	-20	-10
Delaware	-6	-12	0
District of Columbia	-30	-38	-21
Florida	-4	-7	0
Georgia	-5	-10	-1
Hawaii	-9	-17	-1
Idaho	-4	-8	1
Illinois	-5	-10	1
Indiana	-1	-7	4
Iowa	-11	-16	-7
Kansas	-8	-12	-4
Kentucky	-3	-8	3
Louisiana	4	-3	11
Maine	-4	-9	1
Maryland	-13	-19	-7
Massachusetts	-16	-20	-12
Michigan	3	-3	10
Minnesota	-14	-21	-8
Mississippi	-4	-10	1
Missouri	-2	-8	4
Montana	-4	-10	2
Nebraska	-11	-17	-5
Nevada	-17	-21	-14
New Hampshire	-15	-20	-10
New Jersey	-19	-22	-15
New Mexico	-5	-10	0
New York	-12	-16	-8
North Carolina	-5	-9	-2
North Dakota	2	-4	9
Ohio	-6	-10	-3
Oklahoma	-2	-6	3
Oregon	3	-4	10
Pennsylvania	-2	-8	3
Rhode Island	-16	-21	-10
South Carolina	-3	-8	2
South Dakota	-1	-8	5
Tennessee	-5	-10	0
Texas	-6	-9	-4
Utah	-8	-12	-4
Vermont	-10	-16	-4
Virginia	-7	-13	-1
Washington	-14	-18	-9
West Virginia	5	-1	12
Wisconsin	-1	-6	4
Wyoming	-4	-9	1
United States	-8	-9	-7

TABLE III.10

RANKS OF PARTICIPATION RATES FOR ALL ELIGIBLE PEOPLE, 2000-2002

	2000	2001	2002
Alabama	25	28	30
Alaska	15	15	12
Arizona	48	41	31
Arkansas	21	21	23
California	30	40	38
Colorado	43	43	46
Connecticut	16	17	17
Delaware	37	38	35
District of Columbia	2	4	8
Florida	44	46	47
Georgia	34	35	29
Hawaii	1	1	2
Idaho	49	49	44
Illinois	13	11	14
Indiana	17	12	9
Iowa	31	34	32
Kansas	40	39	40
Kentucky	4	5	6
Louisiana	10	9	5
Maine	5	7	11
Maryland	35	36	41
Massachusetts	50	50	51
Michigan	9	8	10
Minnesota	19	24	24
Mississippi	36	30	20
Missouri	8	6	4
Montana	32	33	37
Nebraska	27	31	28
Nevada	51	51	50
New Hampshire	42	44	45
New Jersey	41	47	49
New Mexico	28	26	25
New York	20	29	36
North Carolina	45	42	43
North Dakota	39	20	34
Ohio	22	23	22
Oklahoma	26	25	16
Oregon	6	3	1
Pennsylvania	11	16	26
Rhode Island	14	14	19
South Carolina	23	19	15
South Dakota	18	18	21
Tennessee	12	13	7
Texas	47	45	42
Utah	46	48	48
Vermont	7	10	13
Virginia	29	32	33
Washington	24	22	18
West Virginia	3	2	3
Wisconsin	33	27	27
Wyoming	38	37	39

REFERENCES

- Castner, Laura A., and Allen L. Schirm. "Empirical Bayes Shrinkage Estimates of State Food Stamp Participation Rates in 2000-2002 for All Eligible People and the Working Poor." Washington, DC: Mathematica Policy Research, Inc., forthcoming.
- Castner, Laura A., and Allen L. Schirm. "Reaching Those in Need: State Food Stamp Participation Rates in 2002." Alexandria, VA: Food and Nutrition Service, U.S. Department of Agriculture, March 2005.
- Castner, Laura A., and Allen L. Schirm. "State Food Stamp Participation Rates for the Working Poor in 2001." Washington, DC: Mathematica Policy Research, Inc., November 2004a
- Castner, Laura A., and Allen L. Schirm. "Empirical Bayes Shrinkage Estimates of State Food Stamp Participation Rates in 1999-2001 for All Eligible People and for the Working Poor." Washington, DC: Mathematica Policy Research, Inc., July 2004b
- Cunyngham, Karen. "Trends in Food Stamp Program Participation Rates: 1999 to 2002." In *Current Perspectives on Food Stamp Program Participation*. Alexandria, VA: Food and Nutrition Service, U.S. Department of Agriculture, September 2004.
- McConnell, Sheena and Michael Ponza. "The Reaching the Working Poor and Poor Elderly Study: What We Learned and Recommendations for Future Research." Washington, DC: Mathematica Policy Research, Inc., December 1999.
- Rosso, Randy and Melissa Faux. "Characteristics of Food Stamp Households: Fiscal Year 2002." In *Nutrition Assistance Program Report Series*. Alexandria, VA: Food and Nutrition Service, U.S. Department of Agriculture, December 2003.

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APPENDIX A

IDENTIFYING HOUSEHOLDS WITH EARNINGS IN THE FSPQC DATA

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For each household, the FSPQC data provide information that is necessary to calculate the food stamp benefit for the household, including types and amounts of income and types and amounts of deductions from income.¹⁷

We identified households with earnings as those who had two indicators of earnings in the household, using the following algorithm:

1. Identify at least one person with recorded earned income, AND
 - a. A recorded earned income deduction, or
 - b. Recorded earned and unearned income that sum to the recorded total income, or
 - c. Recorded earned income with the earned income deduction already subtracted and unearned income that sum to the recorded total income (some states subtract the earned income deduction from income deemed by an ineligible member before recording it on the file), or
 - d. At least one person with a recorded workforce participation variable indicating they are employed

2. OR, identify the household as having a recorded earned income deduction, AND
 - a. At least one person with recorded earned income, or
 - b. Earnings implied by the recorded earned income deduction and recorded unearned income that sum to the recorded total income, or
 - c. Recorded gross income that is more than the earned income implied by the earned income deduction and both unearned and earned income equal zero (to account for household records that have no recorded individual income amounts but do have what appear to be consistent household-level indicators), or

¹⁷ Under contract with FNS, Mathematica Policy Research cleans and edits the FSPQC data to ensure that the income amounts provided on the file are consistent with the benefit. Any earnings that were not included in the benefit calculation but were recorded on the file may make the household appear to be ineligible. In the process of editing the file, households whose income cannot be reconciled with the income tests are dropped. Less than five percent of the households on the file were dropped, but these households were slightly more likely to have earnings and they were not equally distributed across States. To avoid bias resulting from dropping these households, we identified working poor households using the unedited data, but use of the unedited data makes it important to check for multiple indicators to compensate for recording errors.

- d. At least one person with a recorded workforce participation variable indicating that they are employed
3. OR, in households with TANF in Connecticut and Indiana (the two states with waivers allowing TANF recipients to have earned income excluded from the benefit calculation), at least one person with a recorded employment status variable indicating they are employed