

Effect of State Food Stamp and TANF Policies on Food Stamp Program Participation

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Abstract

The effectiveness of the Food Stamp Program (FSP) depends on the extent to which it reaches those who are entitled to benefits. In the mid- to late 1990s, participation fell sharply. In recent years, it rebounded somewhat, reaching 65.1 percent in 2005. Changes in participation patterns can be attributed partly to economic fluctuations, but they were also shaped by the rapidly changing State policy environment. This study combines data from the Survey of Income and Program Participation, 1996-2003, with data on State-level food stamp, welfare, minimum wage, and Earned Income Tax Credit policy to investigate the effects of policy on food stamp participation. The findings show strong evidence that some FSP policy reforms made after 1999 (such as more lenient vehicle-exemption policies, longer recertification periods, and expanded categorical eligibility) increased food stamp participation. The use of biometric technology, such as fingerprinting, however, lowered participation. The study shows less consistent evidence that more lenient immigrant eligibility rules, simplified reporting, Electronic Benefit Transfers, or outreach spending raised food stamp participation.

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I. Introduction

Food stamps are an important component of low-income families' monthly resources, increasing the chance families are able to meet basic needs. Food stamps have been found to increase by 36 percent the purchasing power of a family of four supported by a full-time, year-round minimum wage worker (Rosenbaum and Super 2005). The effectiveness of the Food Stamp Program (FSP), however, depends on the extent to which persons take up the benefits to which they are entitled. In the mid- to late-1990s, the food stamp participation rate fell sharply, from 74.8 percent in 1994 to 57.9 percent in 1999 (Barrett and Poikolainen 2006). The participation rate fell further in 2000 and 2001, but increased in recent years and was 65.1 percent in 2005 (Wolkwitz 2007).¹

In response to the falling participation of the 1990s, many states made changes to their Food Stamp Programs to improve accessibility. While benefits and income limits are set at the federal level, the Food Stamp Program is state administered, so states had discretion to change some aspects of their programs, such as the length of recertification periods, the application process, and outreach spending. During the same period, the federal government increased state flexibility. During the late 1990s and early years of the current decade, new options such as simplified reporting for earners, expansion of categorical eligibility to include those receiving in-kind TANF-funded benefits, and vehicle exemptions for applicants were made available through administrative actions and legislation.

These changes culminated in the Farm Security and Rural Investment Act of 2002 (the Farm Bill), which provides broader flexibility to states along many dimensions. States, for example, were given 10 new options designed to improve the delivery of food stamp benefits to eligible households (Dean and Rosenbaum 2002). Many of these options make the program more accessible to working families, who are larger shares of FSP eligibles and of FSP participants now than in the early 1990s (Wolkwitz 2007; Cunnyngham 2002). Other options allow states to modify some of the effects of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996, which restricted food stamp eligibility for non-citizens and placed time limits on participation by unemployed Able-Bodied Adults Without Dependents (ABAWDs).

¹ The number of individuals eligible for food stamp benefits has been increasing. The U.S. Department of Agriculture, for example, estimates that 4.1 million additional individuals became eligible for the FSP in 2002 because of increases in the value of vehicles recipients can own and changing economic conditions (U.S. Department of Agriculture 2004).

States have been making changes to their Food Stamp Programs with limited information on how different policies and rules affect decisions to receive food stamp benefits. Results from this study provide states with information on the extent to which 15 specific state food stamp policies (and rules) affect households' food stamp receipt. Our analysis also examines how Temporary Assistance to Needy Families (TANF) policies (and rules),² the minimum wage, and the Earned Income Tax Credit (EITC) affect food stamp receipt. We consider these non-FSP programs because food stamp receipt may be influenced by factors beyond state FSP policy. State TANF policies, for example, can affect food stamp receipt because TANF and food stamp receipt are often linked administratively and in terms of program rules and populations.³ We focus on the working-age population and examine two key research questions:

- (1) To what extent have FSP policies affected food stamp receipt?
- (2) To what extent have TANF, minimum wage, and EITC policies affected food stamp receipt?

Individual-level data for this analysis come from the 1996 and 2001 panels of the Survey of Income and Program Participation (SIPP), providing monthly data from January 1996 through December 2003 (with the exception of March 2000 through September 2000). Policy data come from a unique data set we have compiled from a variety of sources including the United States Department of Agriculture (USDA) Food and Nutrition Service (FNS) National Databank Public Elements (NDPE), FNS waiver database, FNS State Options Reports, and the Urban Institute's Welfare Rules Database.

Increases in the flexibility states have to set FSP policies have resulted in variation in FSP policies across states. It is this variation across states and over time that has allowed researchers to examine the effect of specific FSP policies on FSP participation and caseloads. This paper contributes to the growing body of literature in this area in two important ways. First, we examine a comprehensive set of FSP policies, while most studies examine only a limited set of FSP policies. If states implement multiple FSP policies that are related, then excluding a particular policy from the analysis can lead to biased estimates. Our analysis includes a comprehensive set of 15 FSP policies that fall into five categories—eligibility requirements,

² PRWORA replaced the Aid to Families with Dependent Children (AFDC) program with TANF, so TANF was the welfare program in place for the vast majority of the time period covered by this study. For ease of exposition, we refer to the welfare program as TANF.

³ Only a subset of food stamp participants also received TANF benefits. In fiscal year 2004, for example, 16.1 percent of FSP households had income from TANF (Barrett 2006).

recertification periods and reporting requirements, interactions with other welfare programs, issuance and outreach, and biometrics (e.g., fingerprint imaging).

Second, we contribute to the literature with an empirical analysis that incorporates detailed measures of states' TANF policies, as well as state minimum wage and EITC policies. Because policies aimed at the low-income are often related, a model that includes a fuller set of policy variables is less likely to have biased estimates that result from omitting important variables. In addition, including these additional policies in our analysis provides important information on how these non-FSP policies affect FSP participation. Much of the literature defines welfare reform as the implementation of any major waiver or TANF (e.g., Hanratty 2006, Danielson and Klerman 2006). Examining the relationship between specific welfare reform policies and FSP participation provides a more complete picture because different welfare reform policies (e.g., earnings disregards and time limits) can have opposite effects on FSP participation; these opposite effects can offset one another to create no overall effect. We also estimate models similar to the literature that include indicators of welfare reform implementation (any major waiver and TANF) rather than the specific TANF policies.

Results from this study suggest that a number of FSP policies affect households' receipt of food stamp benefits. Consistent with our hypotheses, we find evidence that more lenient vehicle exemption rules, restoration of benefits to non-citizens, longer recertification periods, simplified reporting requirements, expanded categorical eligibility, electronic benefit transfer (EBT) implementation, and outreach spending increase food stamp receipt. We also find that biometric procedures (e.g., fingerprint imaging and facial matching) lead to lower food stamp receipt. In terms of TANF policies, our results suggest that more lenient earnings disregards and higher benefit levels lead to higher food stamp receipt, while more severe sanction policies lead to lower food stamp receipt. Finally, we find evidence that increases in the minimum wage and the EITC reduce food stamp receipt.

Below we begin with a discussion of the relevant literature. This is followed by a description of the study population and data used for the analysis, including the individual-level SIPP data, the state-level policy data, and the economic data. Next we present the empirical model, followed by the results. The last section concludes.

II. Literature and Contributions

Several studies have estimated the effect of specific FSP policies on food stamp participation and caseloads. The FSP policies examined in the literature vary across studies and

include length of recertification, reporting requirements, presence of the electronic benefit transfer (EBT), vehicle asset limits, sanction policies, and ABAWD policies. Recertification periods and EBT have been examined in numerous studies, while most other policies have been examined in relatively few studies.

In general, the studies in the food stamp literature examine a relatively limited set of food stamp policies. A recent paper by Hanratty (2006), for example, uses SIPP data from 1996 through 2003 to analyze recertification periods, reporting requirements, and vehicle asset limits, and Danielson and Klerman (2006) use FSP Quality Control (QC) data from 1988 through 2004 to examine the effect of simplified reporting, EBT, and transitional benefits.⁴ Bartlett, Burstein, and Hamilton (2004) are an exception and examine a host of policies and office practices including recertification periods, reporting requirements, ABAWD time limits, outreach activities, fingerprinting of applicants, restrictiveness of office hours, supervisor attitudes, and child-friendliness of the office. This study is based on a survey of 109 local food stamp offices, which allowed the researchers to obtain more detailed information on food stamp office practices. While informative, this study also has drawbacks; it includes policy information for only one point in time (June 2000) and the sample size is relatively small.

The literature on the effects of specific food stamp policies provides some important findings. Shorter recertification periods have consistently been found to reduce food stamp participation (Currie and Grogger 2001; Hanratty 2006; Kabbani and Wilde 2003; Kornfeld 2002; McKernan and Ratcliffe 2003; Mills, et al. 2004; Rosenbaum 2000). These consistent findings come from studies that define the recertification period somewhat differently and use different data sources. For example, Currie and Grogger (2001) and Kabbani and Wilde (2003) use data from the March Current Population Survey (CPS), Hanratty (2006) and McKernan and Ratcliffe (2003) use the SIPP, and Mills, Laliberty, and Rodger (2004) use the QC data.

Research on the effect of the EBT program on FSP participation is mixed. Kabbani and Wilde (2003) and Kornfeld (2002) find that the EBT increases participation, while McKernan and Ratcliffe (2003) and Ziliak, Gundersen, and Figlio (2003) find no significant relationship.⁵ Findings related to food stamp reporting requirements are also mixed. Our review shows that

⁴ Danielson and Klerman's analysis also includes an index variable that measures the extent to which ABAWDs are subject to time limits. This variable, however, was collected at only a single point in time and "turns on" when a state implemented its TANF program" (p. 12), so it is difficult to interpret. In addition to these policies, Danielson and Klerman's analysis includes states' over-and under-payment errors.

⁵ Kornfeld's findings suggest that the effects differ by household type. He finds, for example, that the EBT program significantly increases the caseload of single adults with children, but reduces the caseload of elderly living separately. Kabbani and Wilde also find some differences across working and non-working households.

two studies find no effect of reporting requirements on participation (Hanratty 2006; Bartlett, et al. 2004), while one study finds that simplified reporting increases participation (Danielson and Klerman 2006).⁶ Waivers from ABAWD time limits have been found to increase FSP caseloads (Ziliak, et al. 2003; Wilde, et al. 2000). Consistent with this finding, Bartlett, Burstein, and Hamilton (2004) find that imposing time limits on benefits to ABAWDs leads to lower rates of food stamp application completion (which would likely lower food stamp participation).

The literature to date also suggests that easing vehicle asset limits does not affect FSP participation (Hanratty 2006), but that providing transitional benefits to TANF leavers increases FSP caseloads (Danielson and Klerman 2006). Findings from Bartlett, Burstein, and Hamilton (2004) suggest that requiring fingerprinting of applicants leads to lower rates of food stamp application completion. Their study also finds that greater outreach activities lead to greater awareness of eligibility (which would likely lead to higher food stamp participation).

The food stamp literature has also examined the effect of state and federal welfare reforms on food stamp participation and caseloads. Much of this literature focuses on the extent to which welfare reform (AFDC waivers and TANF) explains declines in the food stamp caseload from the mid- to late 1990s. The literature finds that welfare reform explains 5 to 24 percent of the FSP caseload decline (Wallace and Blank 1999; Gleason, et al. 2000; Wilde, et al. 2000; Kornfeld 2002). Most of these studies measure welfare reform with indicator variables for the implementation of AFDC waivers and TANF, although Kornfeld (2002) is an exception and examines specific welfare policies, including earnings disregards, TANF work sanctions, and time limits.

While informative, the food stamp literature leaves gaps in our understanding of how FSP policies affect food stamp receipt. First, most studies examine a limited set of policies. If states implement policies that are related, then excluding a particular policy from the analysis will lead to biased estimates. Our study addresses this by incorporating a comprehensive set of 15 FSP policy variables. In addition, we contribute to the literature by including in our analysis specific measures of states' TANF policies (i.e., eligibility requirements, benefits, sanctions, and time limits), as well as state minimum wage and EITC policies. Including these non-FSP policies in our analysis both provides information on how non-FSP policies affect food stamp receipt and reduces the likelihood that our model suffers from omitted variable bias.

⁶ The outcomes examined differ slightly across these studies. The dependent variables are food stamp participation, completion of food stamp application, and food stamp caseload, respectively.

III. Study Population

Food stamp participation rates are defined as the percentage of the food stamp eligible population who take up food stamp benefits, so one might select the study population to include only individuals eligible for the FSP. Defining the study population this narrowly, however, excludes individuals at the margin who can slightly alter their behavior to become eligible for benefits but choose not to do so. Ashenfelter (1983), for example, argues that if the elasticity of labor supply does not equal zero, the pool of persons that should be examined as eligible for a program is larger than those who qualify for the program. Limiting the sample to the FSP eligible population results in a sample of persons who are disproportionately more likely to alter their behavior to become eligible for benefits.

Our primary study population is working-age low-income households, defined as living below 175 percent of the poverty threshold. In addition to examining all low-income households, we estimate our models on three household subpopulations—households with children, single female-headed households with children, and two-adult headed households with children.⁷ We focus on households where the head is between ages 18 and 55. We also examine a fourth subpopulation of individuals—able-bodied adults without dependents (ABAWDs). Our ABAWD population is defined as non-disabled persons (i.e., no physical or mental work-limiting condition) age 18 to 50 living in a household without children, people over age 60, or disabled persons. Carrying out analyses on these five populations provides information on the extent to which food stamp and other welfare policies differently affect the food stamp receipt of these different populations.⁸ Because the FSP's gross income test requires income to be below 130 percent of the poverty threshold, we carry out robustness checks with this more narrowly defined study population.

IV. Data

Survey of Income and Program Participation

Our individual-level data come from the 1996 and 2001 SIPP panels. Each SIPP panel contains a nationally representative (non-institutional) sample of roughly 36,000 households and when combined provides monthly data from January 1996 through December 2003 (with the exception of a seven-month gap from March 2000 through September 2000). These data capture

⁷ Two-adult headed households include married-couple households and cohabiting-couple households.

⁸ In preliminary analyses, we also estimated separate models for (non-citizen) immigrants, but the sample sizes were not large enough to support the analysis. As a result, we include immigrants and non-immigrants in the same models, but interact the immigrant-related FSP policy variables with an indicator variable for immigrant status.

FSP participation at a time when key FSP policies were changing and during strong and weak economic times.

A primary strength of the SIPP is in its monthly data on FSP participation, income, and household composition. At each interview, data are collected on these and other variables for each of the preceding four months. Food stamps are received monthly, so the monthly SIPP data allow us to examine participation over the same time period that benefits are received. Households are categorized as receiving food stamps if anyone in the household received food stamp benefits and ABAWDs are identified as food stamp recipients if they received benefits. The SIPP also provides key demographic and household characteristics including age, race/ethnicity, gender, marital status, educational attainment, and citizenship status, as well as household composition variables such as female-headed household, two-adult headed household, and number of children and adults in household.

Potential weaknesses of the SIPP involve concerns about the “seam phenomenon,” underreporting of food stamp receipt, and attrition bias, and are discussed in detail in Appendix A. The analysis includes a dummy variable to control for the seam month. SIPP weights are used to account for nonresponse, sample attrition, and the complex sample design.

Food Stamp Program receipt in a given month for our primary study population and sub-populations is 20.0 percent for all low-income households, 24.4 percent for low-income households with children, 44.3 percent for single female-headed low-income households with children, 9.2 percent for married-couple low-income households with children, and 2.6 percent for low-income able-bodied adults without dependents.⁹

Food Stamp Program Policy Variables

The FSP policy data come from a variety of sources including the Food and Nutrition Service’s (FNS) National Databank Public Elements (NDPE) database, FNS Waiver Database, FSP Quality Control (QC) data, FNS State Options Reports, as well as other FNS documents. In addition, we have obtained data from documents published by other organizations and government agencies including the Center on Budget and Policy Priorities, National Immigration Law Center, and U.S. General Accountability Office. Many of these data sources were identified in consultation with the U.S. Department of Agriculture’s ERS and FNS, and have been provided to us by these agencies. Source data are available for each month from 1996 through 2003 for

⁹ As described in the Study Population section, low-income is defined as living below 175 percent of the poverty threshold.

some, but not all, of the FSP policy variables. In cases where source data are not available for each month, months with missing data are imputed based on the subset of months for which source data are available.¹⁰ Appendix B provides detailed information on each policy variable.

FSP policies hypothesized to affect FSP participation are grouped into five categories: eligibility requirements, recertification periods and reporting requirements, interactions with other welfare programs, issuance and outreach, and biometrics. Within these categories, we identify specific policy variables that jointly describe a state's policy. The top panel of Table 1 presents a brief description of the 15 food stamp policy variables included in our analysis along with their hypothesized effect on food stamp receipt.

Eligibility Requirements: We examine two eligibility requirement policies—vehicle exemptions for applicants and immigrant eligibility rules—and hypothesize that more lenient eligibility requirements increase food stamp receipt. We capture vehicle exemptions with two variables—one vehicle exempt from asset rules and more than one vehicle exempt from asset rules (omitted category: no vehicle fully exempt). At the beginning of our analysis period (January 1996), two states (Connecticut and Michigan) exempted one vehicle and no states exempted more than one vehicle (top panel of Table 2). By the end of the period (December 2003), the balance had shifted—six states exempted one vehicle and 29 states exempted more than one vehicle.¹¹

We also see substantial variation in immigrants' eligibility for food stamp benefits over this time period (Table 2). In January 1996, all (legal) immigrants were eligible for food stamp benefits in all states. The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) included restrictions that made most noncitizen immigrants ineligible for benefits, and these restrictions became fully effective by September 1997. Subsequent federal legislation restored benefits for some of the affected immigrants. The Agricultural Research, Extension, and Education Reform Act of 1998 removed the restrictions on benefits to noncitizen children, elderly, and disabled who were legally residing in the U.S. when PRWORA was signed into law on August 22, 1996. The 2002 Farm Bill restored eligibility to children and the disabled regardless of their date of entry, and to nondisabled adults who had been legally residing in the country for at least five years. Some states also used their own funds to fully or partially restore eligibility to noncitizens who would have been eligible under the pre-PRWORA rules. In

¹⁰ We fill in the months of missing data using the closest available data.

¹¹ Note that all of the numbers presented in Table 2 are for the 46 states (including DC) that we are able to identify in the SIPP. North Dakota, South Dakota, Wyoming, Maine, and Vermont cannot be individually identified in the SIPP and so are excluded from our analysis.

January 1998, for example, four states provided full eligibility for immigrants and seven states provided partial eligibility. By December 2003, when all of the 2002 Farm Bill restorations had taken effect, five states had fully restored eligibility to all legal immigrants, while the federal restorations provided partial eligibility for noncitizen immigrants in the rest of the states.

Recertification Periods and Reporting Requirements: Longer recertification periods and more lenient reporting requirements are hypothesized to decrease the cost of FSP participation and thus increase participation. In addition, having these more lenient policies reduces the likelihood that a food stamp participant with increased earnings will have their benefit reduced or have a change in their eligibility status (from eligible to ineligible) detected, which also makes participation more likely.¹² We capture recertification requirements with three variables generated from the QC data. These variables identify the percentage of food stamp units with earnings that have recertification periods of four to six months, seven to 12 months, and 13 or more months. The means of these variables are presented in Table 2 and show that by December 2003, 94 percent of food stamp recipients had recertification periods that were four months or longer.

Reporting requirements are captured with two variables that identify whether states have quarterly reporting for earners and whether they have simplified (semi-annual) reporting for earners.¹³ At the start of our analysis period five states had quarterly reporting, but no state offered simplified reporting. Simplified reporting for earners did not become available until January 2001. Eleven states offered quarterly reporting in 2001, but this fell with the introduction of simplified reporting (only four states offered quarterly reporting in December 2003). The number of states with simplified reporting for earners increased from 14 states in January 2002 to 33 states in December 2003.

¹² Participants who are on simplified reporting must report earnings changes that make them income-ineligible (i.e., their gross income rises above 130 percent of poverty). Participants on quarterly reporting, however, do not have to report earnings changes between reports, as long as the quarterly report form covers income, moves in and out of household, home moves and changes in shelter costs, receipt of non-excluded auto, increased assets putting above resource limits, change in child support obligations, and average hours of work if subject to ABAWD rules.

¹³ The omitted group includes states that have monthly reporting or “change” reporting. Monthly reporting of income, employment, and other information that affects eligibility and benefits places the most burden on participants. Under change reporting, changes in monthly earned or unearned income within the certification period only have to be reported if they exceed a threshold; during the period studied, federal regulations set the threshold for earned income at \$25, but some states received waivers for thresholds up to \$100. Quarterly reporting requires a new report every three months, whether the information has changed from the previous report or not. Under simplified reporting, reports are due every six months unless changes put the household above the gross income limit of 130 percent of Federal Poverty Guidelines.

Interactions with Other Welfare Programs: Interactions with other welfare programs (typically TANF) are hypothesized to both increase and decrease participation. These interactions tend to be with the TANF program, so we expect a relationship (between these variables and food stamp receipt) for households with children, but not other populations, such as our ABAWD population. Expanded categorical eligibility extends categorical eligibility for food stamps to units that receive TANF services (not just TANF cash benefits). Since this policy makes food stamp eligibility more likely, it is hypothesized to increase food stamp receipt. This option was not available to states until July 1999, and by April 2002, 38 states had taken up the option.¹⁴ From April 2002 through December 2003, the composition of states that had this option changed a bit. Three states dropped the option (California, Indiana, and Mississippi) and two states took up the option (Pennsylvania and Texas).

States with comparable disqualification policies discontinue food stamp benefits to recipients if they fail to meet requirements of another program (usually TANF). This policy restricts benefit eligibility, so is hypothesized to reduce food stamp receipt. Over the January 1996 through December 2003 period, the number of states with comparable disqualification policies ranged from a minimum of zero states to a maximum of 12 states. The third policy in this category, months of transitional benefits to TANF leavers, is hypothesized to increase food stamp receipt, as this policy ensures that TANF leavers remain eligible for food stamp benefits. New York was the first state to implement this policy in October 2001 and offered transitional benefits for three months. By December 2003, 10 states offered transitional benefits to TANF leavers and each state offered these benefits for 5 months.

Issuance and Outreach: Use of EBT is captured with a variable that identified the percentage of food stamp benefits issued electronically. Because electronic issuance (EBT) lowers the non-pecuniary cost of participation (e.g., stigma), we hypothesize that higher electronic issuance leads to increased food stamp participation. Electronic issuance made up only 12.0 percent of benefits issued in January 1996, but this increased steadily to 99.2 percent in December 2003. Higher outreach spending is hypothesized to increase food stamp receipt via an increase in the number of food stamp applicants. We measure outreach spending on a per capita basis, where the target population is those living below 150 percent of the poverty threshold who are not food stamp recipients. Per capita outreach spending has varied over the years from a low of less than one cent per person to a high of 3.5 cents per person.

¹⁴ We were unable to obtain information on categorical eligibility between July 1999 and April 2002.

Biometrics: The use of biometric technology (typically fingerprint imaging) is hypothesized to increase the costs of participation and thus decrease participation. Fingerprint imaging is used, in part, to reduce multiple participation fraud. New York was the only state using biometric technology in January 1996. By January 2001, four additional states—Arizona, California, Massachusetts, and Texas—had begun using biometric technology.

Welfare and Other Related Policy Variables

Welfare Policies: Welfare policies may affect FSP participation because welfare and food stamp participation are often linked administratively and in terms of program rules and populations served. These policies are hypothesized to affect households likely to participate in TANF—households with children. We do not, for example, expect to find a significant relationship between welfare policies and ABAWD’s food stamp receipt, since this population is not eligible for TANF benefits. The welfare policy data for this analysis come from the Urban Institute’s Welfare Rules Database and the First Annual TANF Report to Congress (U.S. DHHS 1998). Appendix B provides detailed information on each policy.

Welfare policies hypothesized to affect FSP participation are grouped into four categories: eligibility requirements, benefits, sanctions, and time limits. The specific welfare policies included in the analysis are described in Table 1. The middle panel of Table 2 shows how the policies have evolved from January 1996 through December 2003. These welfare policies are hypothesized to have an ambiguous affect on FSP participation, as food stamp benefits can be a complement to welfare benefits or a substitute for welfare benefits. If food stamp benefits complement welfare benefits, then stricter welfare policies (e.g., strict time limit policies) would reduce FSP participation. On the other hand, if food stamp benefits substitute for welfare benefits, then stricter welfare policies (e.g., strict time limit policies) would increase FSP participation.

Other Related Policies: Other policies hypothesized to affect FSP participation are the minimum wage and earned income tax credit, which are described in Table 1 and Table 2 (bottom panels). Data for these policies come from the U.S. Department of Labor, Hotz and Scholz (2001), Neumark and Wascher (2001) and other sources detailed in Appendix B.

We measure the minimum wage with two policies—the applicable minimum wage for federally covered categories and the state minimum wage for non-federally covered categories.

In 1999, for example, 72 percent of all workers were federally covered.¹⁵ Workers in non-federally covered categories include most workers in small businesses or in businesses where no interstate commerce is involved; workers in seasonal or recreational jobs; workers delivering newspapers or engaged in fishing operations; many workers in private households; and executive, administrative, and professional employees (U.S. Department of Labor 2001). A higher minimum wage is expected to decrease food stamp participation through its positive effect on earned income (via a higher wage rate). However, a potentially opposite effect comes from the demand side; as the minimum wage increases, it could induce employers to hire fewer (and lay off more) low-skilled workers, thus increasing food stamp participation.

We measure the EITC as the sum of the maximum (i.e. at the end of the phase-in range) federal and state refundable income tax credits. If increases in the EITC raise employment and earnings, then we expect the EITC to reduce FSP participation. Theoretically, the EITC can increase or decrease employment and earnings, and thus, has an ambiguous affect on FSP participation. However, research strongly suggests that the EITC has led to increased employment (Grogger 2003; Eissa and Liebman 1996; Meyer and Rosenbaum 2000, 2001), suggesting that increases in the EITC lead to lower food stamp receipt.

Economic Characteristics

To control for changes in the economy, our SIPP data are supplemented with (1) monthly state unemployment rates, (2) annual state per capita income, (3) monthly state employment-population ratio,¹⁶ and (4) quarterly gross domestic product (GDP) from the U.S. Department of Commerce (2005).

V. Empirical Model

The empirical model measures the effect of food stamp, welfare, and other related policies on food stamp benefit receipt. Identifying the effect of these policies on FSP participation requires disentangling the effect of state and federal policies from other factors that affect participation, such as economic conditions (e.g., unemployment rate) and unobservable state characteristics (e.g., public sentiment toward recipients). Our model captures unobservable state and time differences with state, year, and month fixed effects.

¹⁵ That is, covered by the Fair Labor Standards Act (FLSA).

¹⁶ For the employment-population ratio we use monthly employment data but annual population data.

Our model uses the variation across states and in the timing of different state policies to identify the effect of FSP and welfare policies on FSP participation. States implemented different changes to their food stamp and cash welfare programs at different times from 1996 to 2003, and we use this variation across states and time to identify the effect of policies on FSP participation. A benefit of this eight-year time period is that we capture participation during the economic boom of the late 1990s and during the weak labor market that occurred in 2001 through 2003, including the March 2001 to November 2001 recession (National Bureau of Economic Research 2005).

The food stamp participation model is based on a utility maximization framework where a household (1) participates in the FSP if the net benefit of participation—the benefit minus the cost—is greater than zero and (2) does not participate in the FSP if the net benefit of participation is less than or equal to zero. We estimate linear regression models for FSP participation (Y) for household i in state s at time t :¹⁷

$$Y_{ist} = \alpha + \delta_1' FSP_{st} + \delta_2' WP_{st} + \beta_1' X_{ist} + \beta_2' S_{st} + \mu_s + \tau_t + \eta_t + v_{ist} .$$

FSP_{st} represents the vector of state-level specific food stamp policies in state s in month t and WP_{st} represents the vector of state-level specific welfare and other related policies in state s in month t . X_{ist} represents household composition and demographic characteristics of the head of household i in state s in month t , including age, age-squared, race and ethnicity (black, Hispanic), educational attainment (less than high school, high school only), number of children in household, number of adults in household, live in metropolitan area, and household structure (female-headed household, two-adult headed household).¹⁸ S_{st} represents state-level non-policy variables in month t . Finally, μ_s is the state fixed-effect, τ_t is the year fixed effect, η_t is the month fixed effect, and v_{ist} is the random error term. We estimate a weighted least squared regression model weighting for heteroscedasticity, with weights based on the SIPP individual weights for each state/month. To account for potential serial correlation in the error term, we cluster our standard errors by state as recommended by Bertrand et al. (2004).

¹⁷ Sensitivity checks show similar results across linear (probability) regression models and non-linear probit models, although we follow much of the literature and use linear regression models (e.g., Bitler et al. 2005, Grogger 2003, Hanratty 2006). Key benefits of linear probability models are that they are easy to estimate and interpret. One drawback is that they can lead to predicted probabilities that are less than zero or greater than one. This is not an important drawback for our analysis since our goal is to estimate how policies affect the probability of FSP participation (not calculating the predicted probability of FSP participation for individuals in our sample).

¹⁸ Household structure variables are only included in models estimated on the population of “all households” and “all households with children.”

Our model does not control for potential unobservables that vary within states over time. If the $\text{Cov}(\text{FSP}_{st}, v_{ist}) \neq 0$, then δ_1 will be biased. Some of the literature has addressed this issue by including linear state-specific time trends, which control for unobservables within states that trend smoothly over time. If there are no linear state-specific time trends, however, then including them in the model does not improve the consistency of the estimates, yet produces estimates that are less precise. With 25 specific policy variables, there is concern about identification in a model that allows state-specific trends, so this is not our preferred specification. However, we have carried out specification tests that include state-specific trends, and many of our major findings remain.¹⁹

While our main model examines the contemporaneous relationship between food stamp receipt and food stamp policies, we carry out specification checks and estimate models that include lagged food stamp policies. After a policy is implemented, households may immediately respond to the new policy by changing their food stamp participation status (i.e., take-up benefits or exit the program), but there could also be longer run behavioral responses to the policy change. We expect short run, contemporaneous relationships to dominate because most FSP rules are designed to directly affect FSP participation. To examine both the short and longer run effects, we estimate models with policies measured in month t , month $t-12$ (12 months earlier), and month $t-24$ (24 months earlier). Because several of the food stamp policy variables only began to show variation after 2000, there is less variation over time in the lagged policy variables.

Our primary specification includes *specific* welfare policies, but we also estimate models (similar to those in the literature) that capture welfare reform with two dummy variables that indicate whether the state (1) implemented a major AFDC waiver and (2) implemented TANF.²⁰ We do this to measure whether the estimated relationship between food stamp policies and food stamp receipt are sensitive to the specification of welfare policies. Because policies aimed at the low-income are often related, a model that excludes specific welfare policies could produce biased results. Regardless of the issue of bias, models that include specific welfare policies are preferred, as they provide information to states about how decisions about TANF program rules affect food stamp receipt.

¹⁹ We continue to find that more lenient vehicle exemption policies, more lenient immigrant eligibility rules, longer recertification periods, and expanded categorical eligibility significantly increase food stamp receipt. In addition, several of the TANF policies, the minimum wage, and EITC significantly affect food stamp receipt.

²⁰ Information on when states implemented a major AFDC waiver and when states implemented their TANF plan comes from tables available on the Department of Health and Human Services website (Crouse 1999).

VI. Results

This section presents results from our multivariate analysis. We begin by presenting results for our primary study population of all low-income households (living below 175 percent of the poverty threshold) and four low-income subpopulations—households with children, single female-headed households with children, two-adult headed households with children, and able-bodied adults without dependents. We discuss the food stamp policy variables, followed by the welfare and related (i.e., minimum wage and EITC) policy variables. Then, we discuss results from alternate specifications—measuring policies with lagged values, measuring welfare with indicators of reform rather than specific policies, and examining the population living below 130 percent of the poverty threshold.

Results: Primary Specification

Food Stamp Program Policies

Eligibility Requirement, Vehicle Exemption for Applicants: We find that vehicle exemptions for applicants increase FSP participation (Table 3). For our sample of all households, we find a significant effect for exempting one vehicle. The estimated coefficient suggests that exempting one vehicle when determining eligibility increases the probability that a household receives food stamps by 3.4 percentage points. For the subset of households with children, we find that exempting one or more vehicles increases food stamp receipt (i.e., increases the probability that a household receives food stamps) by 2 percentage points. Twenty percent of all households and 24.4 percent of households with children receive food stamp benefits (top row of Table 3), so these *percentage point* increases represent an 8 to 17 percent increase in FSP receipt. These relatively large increases could result from an expansion in the number of households eligible for the Food Stamp Program. We also find that vehicle exemptions increase food stamp receipt among female-headed households with children. Our results show a larger and more significant coefficient for exempting more than one vehicle (versus exactly one vehicle), however, these two coefficients are not statistically different from one another. Our results suggest that vehicle exemption policies may increase these households' food stamp receipt by as much as 4.7 percentage points. Finally, we find that vehicle exemptions increase ABAWDs' food stamp receipt by 2.5 percentage points.

Our results differ somewhat from Hanratty (2006), who finds that vehicle exemption policies do not significantly affect food stamp receipt.²¹ Hanratty's analysis includes models

²¹ No other study (known to the authors) has examined the effect of vehicle exemption policies on food stamp participation.

estimated on several subpopulations including single-parent families and two-parent families living below 130 percent of the poverty threshold. As mentioned above, we also estimate our models on those living below 130 percent of the poverty threshold (for our five subpopulations). Consistent with our earlier results, we find that vehicle exemption policies increase food stamp receipt among those living below 130 percent of the poverty threshold for all subpopulations except for single-female headed households with children (results not shown). One difference across the two studies is that Hanratty categorized a state as exempting a vehicle from asset tests if the state allowed the fair market value of the vehicle to be \$8,000 or higher. We did not do this. Taken together, the results from these two analyses suggest that exempting a vehicle leads to higher food stamp participation than setting a relatively high vehicle exemption value.

Eligibility Requirement, Immigrant/Non-Citizen Eligibility Rules: Our analysis suggests that making all legal immigrants eligible for food stamp benefits (i.e., pre-PRWORA and/or full restoration of non-citizen eligibility) increases food stamp receipt among two-adult headed immigrant households with children by 3.1 percentage points. We do not, however, find a significant relationship between immigrant eligibility rules and FSP receipt for our other four low-income populations. Recent research that focuses on the relationship between immigrant rules and immigrant food stamp receipt finds that the restoration of food stamp benefits had a limited positive effect on food stamp participation, but led to a significant increase in the level of food stamp benefits received by immigrant households (because more people in the households became eligible for benefits) (Capps, et al. 2004).

Recertification Periods and Reporting Requirements: Consistent with the literature, we find that longer recertification periods lead to higher food stamp receipt. Much of the literature has focused on the effect of having 1-3 month recertification periods versus longer (four or more month) recertification periods. Our results suggest that a finer breakdown of these recertification lengths provides additional information. In general, the magnitude of the coefficients increase as we move from 4-6 month recertification periods, to 7-12 month recertification periods, to 13 month or longer recertification periods.²² Comparing the results across households (columns 1-4, Table 3) shows that while there are differences in the magnitudes and statistical significance of the coefficients across the groups, the pattern is the same. The results for ABAWDs (column 5) do not show the same consistent pattern over time. Only 7-12 month recertification periods

²² This positive relationship between recertification periods and FSP participation is consistent with our hypotheses that shorter recertification periods could (1) deter (i.e., reduce) participation through higher costs and (2) reduce participation by detecting income-ineligible participants. Our analysis of those below 130 percent of the poverty threshold (discussed below) should include only the income-eligible population, so the estimated coefficient in this analysis captures only the deterrent effect.

(relative to 1-3 months) statistically significantly increase food stamp receipt. This weaker relationship for ABAWDs could happen if ABAWDs' food stamp participation is less sensitive to recertification periods because of the three-month ABAWD time limit.²³

Our analysis of reporting requirements suggests that simplified (semi-annual) reporting increases the food stamp receipt of ABAWDs by 1.1 percentage points, although we find that simplified reporting has no significant effect on our four household populations. We find no effect of quarterly reporting on food stamp receipt for any of our five populations. Because simplified reporting became available relatively recently (January 2001), future analyses using more recent data may find more robust effects of simplified reporting. Only two studies previously examined reporting requirements. Danielson and Klerman (2006), who use data through mid-2004, find that simplified reporting requirements increase food stamp caseloads. Using data through December 2003, Hanratty (2006) finds no effect of reporting requirements on the food stamp participation of single-parent or two-parent families.

Interactions with Other Welfare Programs: Among our four household populations, we find that expanded categorical eligibility increases food stamp receipt, as hypothesized, by 1.6 to 2.1 percentage points. The estimated coefficient is not statistically significant (at the 10 percent level) for female-headed households with children, although the magnitude of the coefficient is almost identical to the coefficient for all households with children. Also, as hypothesized, we find no significant relationship between categorical eligibility and food stamp receipt for our ABAWD population (the coefficient is zero).

Contrary to expectations, we find that comparable disqualification increases food stamp receipt for female-headed households with children, as well as ABAWDs. We hypothesized a negative relationship for households with children and no relationship for ABAWDs, since comparable disqualification is typically linked with TANF (which does not affect ABAWDs). An earlier study by Kornfeld (2002) does, however, find a significant negative relationship between comparable disqualification and food stamp receipt. We find a similarly unexpected pattern for transitional benefits to TANF leavers. We hypothesize that providing transitional food stamp benefits to TANF leavers would increase the receipt of food stamp benefits among

²³ Ideally, our model estimated on the ABAWD population would include information on whether the state received a waiver from ABAWD time limits; however, we were not able to obtain this information from USDA. We also estimated models that included a variable measuring state spending for ABAWDs' employment and training activities. This variable was not statistically significant in any of the models. We do not include this variable in our final specification because this variable could be correlated with ABAWD waivers (e.g., states could have worked to help ABAWDs with employment and training activities rather than time limit waivers, or vice versa), which would bias the coefficient on the ABAWD employment and training variable.

households with children, but we find a negative relationship for all four of our populations (although the coefficient is statistically significant for only two of the four populations). We also find a negative and significant relationship for ABAWDs, whereas we expected to find no relationship. Our finding of significant relationships between these two TANF related policies and ABAWDs' food stamp receipt suggests that there could be some spurious relationship that we are picking up in our estimates for these policy variables. The estimated impact of transitional benefits on food stamp receipt for ABAWDs and our household populations shows no statistically significant difference. The estimated impact of transitional benefits on food stamp receipt for ABAWDs and our household populations shows no statistically significant difference. Danielson and Klerman (2006) find some evidence that transitional benefits lead to increased food stamp receipt.

Issuance and Outreach: Consistent with several studies in the literature (e.g., Currie and Grogger 2001, Kabbani and Wilde 2003, Kornfeld 2002), we find evidence that the EBT increases food stamp receipt. Specifically, we find that the EBT increases food stamp receipt among two-adult households with children by 2.3 percentage points, but has no significant effect on our other four population groups. Receiving food stamp benefits in the form of a card (similar to a debit card) rather than in the form of paper coupons may lead to larger increases in food stamp benefit receipt among two-adult households—who typically have less interaction with public assistance programs so might experience more stigma with use of paper coupons—than female-headed households.

Results from our primary specification show no significant relationship between outreach activities and food stamp receipt. However, results from our alternate specifications that include lagged food stamp policies do find some significant relationships as discussed below. A positive relationship between outreach spending and food stamp receipt is suggested by the literature, as Bartlett et al. (2004) find that greater outreach spending leads to greater awareness of eligibility.

Biometrics: Our results suggest that the use of biometric technology can lead to as much as a 4.3 percentage point decline in food stamp receipt. We find a significant negative relationship between the use of biometric technology and food stamp receipt for all four of our household populations. This finding is consistent with Bartlett et al. (2004) who find that biometric technology reduces the likelihood that food stamp applicants will complete the application process.

Welfare and Other Related Policies

Welfare Policies: Results from our analysis suggest that several specific TANF policies affect the food stamp receipt of households with children.²⁴ We find no evidence that TANF vehicle exemption policies significantly affect households' food stamp receipt decisions. We do, however, find that having more earned income disregarded from TANF income eligibility determination leads to higher food stamp receipt, as hypothesized. We find this positive and significant relationship for two populations—all households with children and female-headed households with children. We also find some evidence that higher welfare benefit levels lead to higher food stamp receipt among households with children.

Stricter welfare sanction policies are found to lower food stamp receipt, as hypothesized. We find this relationship for three of our low-income household populations—all households, households with children, and female-headed households with children.²⁵ Stricter time limit policies are hypothesized to decrease food stamp receipt, but we find somewhat mixed results. We find that having no time limit significantly increases food stamp receipt among two-adult households with children, but we do not find a significant relationship for the other populations. Contrary to our expectations, we find longer lifetime time limits lead to lower food stamp receipt.

Other Policies: Our results suggest a strong relationship between the minimum wage and food stamp receipt. Increases in the minimum wage reduce food stamp receipt for all four of our household populations, although we find no effect of the minimum wage on the food stamp receipt of ABAWDs. We find that increases in the minimum wage for both federally and non-federally covered categories are important and the estimated effects are substantial.²⁶ Increasing the minimum wage for federally covered categories by \$1 decreases food stamp receipt among female-headed households with children by 8.3 percentage points. The estimated magnitudes are more modest, although substantial, for all households and households with children—2.5 and 3.6 percentage points, respectively. A \$1 increase in the minimum wage for non-federally covered

²⁴ We expected to find no significant relationship between the welfare policies and ABAWDs' food stamp receipt. However, we do find a significant coefficient on one of the seven TANF policies—vehicle exemption for applicants.

²⁵ We were not able to obtain data on state FSP sanction policies, so FSP sanction policies are not included in our model. If state welfare and FSP sanction policies are positively correlated, then our finding that stricter welfare sanctions reduced food stamp participation could, in part, be picking up the effect of stricter FSP sanctions on FSP receipt.

²⁶ As mentioned above, workers in non-federally covered categories include most workers in small businesses or in businesses where no interstate commerce is involved; workers in seasonal or recreational jobs; workers delivering newspapers or engaged in fishing operations; many workers in private households; and executive, administrative, and professional employees.

categories is found to decrease food stamp receipt between 1.6 and 2.6 percentage points for our four household populations. Together, these results suggest an important role for the minimum wage in assisting low-income households and their need for public assistance. Our results also suggest that increases in the EITC reduce food stamp receipt among female-headed households with children.

Result: Alternate Specifications

Lagged Policies: The analysis presented above examines the contemporaneous relationship between food stamp policies (measured in month t) and food stamp receipt. Over time, however, individuals may learn about and respond differently to changes in the Food Stamp Program. To examine these potential changes over time, we also estimate a model with FSP policies measured in month $t-12$ and another model with policies measured in month $t-24$. These results are presented for our primary population of all low-income households in columns 1 through 3 of Table 4.²⁷ We also estimated models with FSP policies measured in month (1) t and $t-12$ and (2) t , $t-12$ and $t-24$. Results from these two models provide additional information about patterns over time, and are discussed below but not shown in the table.

In general, the results are similar across models estimated with policies measured in month t , $t-12$, and $t-24$. Contemporaneous policies are generally more important than lagged policies, with the exception of outreach spending, where it may take time for spending to translate into increases in food stamp receipt.

In each model, we find that vehicle exemptions for applicants increase FSP participation, although the magnitude of the effect is larger in month t than in months $t-12$ and $t-24$ (Table 4, columns 1 through 3). Analyses that include policy variables at multiple points in time (t and $t-12$; t , $t-12$ and $t-24$) show a significant positive relationship between vehicle exemption policies and food stamp receipt at all points in time, highlighting the importance of vehicle exemption policies in making the food stamp program accessible to low-income households.

Longer recertification periods are found to increase food stamp receipt at all three time periods (Table 4, columns 1 through 3), although the coefficient is only statistically significant for recertification periods that are 13 months or longer in the models estimated in months $t-12$ and $t-24$.

²⁷ For ease of comparison, we have repeated column 1 from Table 3.

We find that expanded categorical eligibility increases food stamp receipt when food stamp policies are measured in month t , but find no significant relationship when food stamp policies are measured in month $t-12$ or $t-24$. Additional models with FSP policies measured in month (1) t and $t-12$ and (2) t , $t-12$, and $t-24$ suggest that contemporaneous categorical eligibility is most important, as only the coefficient on contemporaneous categorical eligibility is statistically significant in these models. Similar to our month t analysis, results from our month $t-12$ analysis show a negative relationship between transitional food stamp benefits to TANF leavers and food stamp receipt.

Our analysis suggests a lagged relationship between outreach spending and food stamp receipt. When outreach spending is lagged 24 months ($t-24$), we find that increases in per capita outreach spending increase food stamp receipt. This result is small and suggests that increasing per capita outreach spending by \$0.10 (from \$0.01 to \$0.11) per person would increase food stamp receipt by only 0.34 percentage points. We find a similar result for our model that includes FSP policies measured in months t , $t-12$ and $t-24$. Finally, our results suggest a contemporaneous relationship between biometric technology and food stamp receipt.

Measuring Welfare Reform with Indicator Variables: While our primary specification includes specific welfare policies, we also estimated models (similar to those in the literature) that capture welfare reform with two dummy variables that indicate whether the state (1) had a major welfare waiver and (2) implemented TANF. We find very similar results for the FSP policy variables across these two models (see columns 1 and 4 of Table 4). The similarity of these results suggests that omitting specific welfare policies from the model may not lead to omitted variable bias. Models that include specific welfare policies are preferred, however, as they provide information on how state decisions regarding the TANF program affect individuals' decisions to participate in the Food Stamp Program.

Population Below 130 Percent of the Poverty Threshold: As mentioned above, we also examine the relationship between specific policies and food stamp receipt using a more disadvantaged population—households living below 130 percent of the poverty threshold. The results of this analysis are similar, although not identical, to the results estimated on the broader population of households below 175 percent of the poverty threshold (see columns 1 and 4 of Table 4). Like our analysis of households living below 175 percent of the poverty threshold, our analysis of households living below 130 percent of the poverty threshold suggests that more lenient vehicle exemption policies, longer recertification periods, and offering expanded categorical eligibility increase food stamp receipt. We do not find a significant relationship between biometric technology and food stamp receipt for this more disadvantaged population,

although the coefficients are similar across the two models.²⁸ We also find similar effects for welfare sanction policies and the minimum wage.

VII. Conclusion

Using monthly SIPP data from 1996 through 2003 and state-level policy data, this paper examines the extent to which food stamp policies affect the food stamp receipt of the low-income. In addition, we examine the role of welfare policies, the minimum wage, and the EITC in influencing food stamp receipt. In total, our empirical models include 25 specific policies hypothesized to affect FSP participation—15 food stamp policies, seven welfare policies, two minimum-wage variables, and one EITC measure. In our primary analysis, we examine these relationships for five low-income (below 175 percent of the poverty threshold) populations—all households, households with children, single female-headed households with children, two-adult households with children, and able-bodied adults without dependents.

We find that several food stamp policies states implemented since the mid-1990s have affected food stamp receipt. We find strong evidence that more lenient vehicle exemption policies, longer recertification periods, and expanded categorical eligibility increase food stamp receipt and that the use of biometric technology reduces food stamp receipt. We also find some (but less consistent) evidence that more lenient immigrant eligibility rules, simplified reporting, implementation of the EBT program, and outreach spending increase food stamp receipt. Our analysis of outreach spending suggests that there may be a lagged relationship between outreach spending and subsequent food stamp receipt.

In terms of welfare policies, our results suggest that higher earned income disregards, higher benefit levels, and more lenient welfare sanction policies lead to higher food stamp receipt. Further, we find that social policies linked to earnings also affect food stamp receipt. Specifically, we find that a higher minimum wage and higher EITC amounts reduce food stamp receipt.

These findings are generally consistent with our hypotheses. The findings are robust across numerous specifications, including specifications that use policy variable lags of different lengths, replace the specific welfare policy variables with welfare reform implementation

²⁸ However, we do find a significant relationship between biometric technology and food stamp receipt for our three household populations with children who have income below 130 percent of the poverty threshold.

indicator variables (similar to much of the literature), and examine a more disadvantaged population (those living below 130 percent poverty threshold).

Overall, this research provides empirical evidence that a number of specific state policies influence the food stamp receipt of low-income populations. By designing the FSP to increase food stamp receipt, states can boost low-income households' purchasing power and increase their well-being. From the perspective of states, the FSP is an effective way to improve the well-being of their residents as most of the cost of the program is borne by the federal government, which pays the full cost of benefits and about half the costs of administering the program.

Our evidence that more lenient vehicle exemption policies, longer certification periods, simplified reporting, and outreach efforts increase food stamp receipt may be of particular interest to states looking for ways to expand working families' participation. Working families with children make up a larger share of FSP participants than before welfare reform, but these families are still less likely to participate if eligible than other kinds of households. Employed parents may need reliable automobiles to get to work, and they may have little time available to meet recertification and reporting requirements. Outreach spending can also be targeted to this population. All of these options are already available to states. Congress and the USDA, however, might use the reauthorization of FSP in 2007 to reexamine the remaining constraints on state FSP policies and the default policies in effect when states do nothing.

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IX. Tables

Table 1. Description of Food Stamp , Welfare, and Related Policies

Policy Variables	Description	Hypothesized Effect on FSP Receipt
<u>Food Stamp Policies</u>		
<u>Eligibility Requirements</u>		
<i>Vehicle Exemption for Applicants</i>		
(1) One vehicle exempt	One vehicle per unit exempt from asset rules	(+)
(2) More than one vehicle exempt ¹	More than one vehicle per unit exempt from asset rules	(+)
<i>Immigrant Eligibility Rules</i>		
(3) Pre-PRWORA or full restoration	All noncitizens under age 65 who meet other program requirements are eligible for federal or state-funded food assistance benefits	(+)
(4) Partial restoration	Some, but not all, noncitizens under age 65 who meet other program requirements are eligible for federal benefits or state-funded food assistance	(+)
<u>Recertification Periods and Reporting Requirements</u>		
(5) 4-6 month recertification	Percentage of units with earnings that have 4-6 month recertification periods	(+)
(6) 7-12 month recertification	Percentage of units with earnings that have 7-12 month recertification periods	(+)
(7) 13+ month recertification	Percentage of units with earnings that have certification periods of 13 months or more	(+)
(8) Quarterly reporting	Quarterly reporting for earners	(+)
(9) Simplified reporting	Simplified (semi-annual) reporting for earners	(+)
<u>Interactions with Other Welfare Programs</u>		
(10) Expanded categorical eligibility	State uses expanded categorical eligibility (receipt of TANF services (with or without cash assistance) makes unit automatically eligible for food stamps)	(+)
(11) Comparable disqualification	State disqualifies recipient for failure to meet requirements of another program (usually TANF)	(-)
(12) Transitional benefits to TANF leavers	Months of transitional benefits (TANF leavers remain eligible for food stamp benefits at same level as last month of TANF receipt, with adjustment for loss of TANF income)	(+)
<u>Issuance and Outreach</u>		
(13) Percentage of benefits issued by EBT	Percentage of dollar value of FSP benefits issued by EBT	(+)
(14) Outreach spending per capita	Dollar value of state outreach spending (federal, state, and grants) divided by the population below 150% of the poverty line that are not FSP recipients	(+)
<u>Biometrics</u>		
(15) Use of fingerprint imaging ²	State uses fingerprint imaging	(-)
<u>TANF Policies</u>		
<u>Eligibility Requirements</u>		
(1) Vehicle asset exemption for applicants	Dollar value of vehicle exempt from asset rules	(+)/(-)
(2) Earned income disregard for income eligibility purposes	Dollar value of earned income disregarded from income eligibility tests	(+)/(-)
<u>Benefits</u>		
(3) Maximum monthly benefit for family of 3	Maximum monthly benefit for a family of 3 with no income	(+)/(-)
<u>Sanctions</u>		
(4) Most severe sanction amount	Dollar reduction in benefits for noncompliance with work requirements	(+)/(-)
<u>Time Limits</u>		
(5) No time limit	State does not have a lifetime or other time limit	(+)/(-)
(6) Duration of lifetime time limit	Months that a family can receive benefits over a lifetime	(+)/(-)
(7) Intermittent time limit	State has a limit on how long a recipient can continuously receive benefits	(+)/(-)
<u>Other Related Policies</u>		
<u>Minimum Wage</u>		
(1) Applicable minimum wage for FLSA covered categories	Higher of the state or federal minimum wage	(+)/(-)
(2) State minimum wage for non-FLSA covered categories	State minimum wage for non-federally covered categories	(+)/(-)
<u>EITC</u>		
(3) EITC (refundable state and federal)	Sum of the federal and state refundable EITCs	(+)/(-)

¹ Captures policies that exempt one vehicle per adult and policies that exempt all vehicles.

² Some states have experimented with other methods such as facial recognition and retinal scanning, but fingerprint imaging is the predominant method used.

Table 2. State Food Stamp, Welfare, and Related Policies: Number of States with Policy or Mean Value of Policy by Year¹

Policy Variables	Jan-96	Jan-97	Jan-98	Jan-99	Jan-00	Jan-01	Jan-02	Jan-03	Dec-03
Food Stamp Policies									
<u>Eligibility Requirements</u>									
(1) One vehicle exempt	2	3	3	3	2	2	7	6	6
(2) More than one vehicle exempt	0	0	0	0	0	0	20	24	29
(3) Pre-PRWORA or full restoration	46	0	4	7	8	8	8	7	5
(4) Partial restoration	0	46	7	39	38	38	38	39	41
<u>Recertification Periods and Reporting Requirements</u>									
(5) 4-6 month recertification periods ²	34.1	31.1	24.2	23.3	22.7	24.6	35.1	44.8	50.6
(6) 7-12 month recertification periods ²	47.4	45.7	48.0	45.4	41.0	40.0	40.3	40.5	43.4
(7) 13+ month recertification periods ²	3.7	3.6	2.7	2.1	2.4	1.9	1.5	1.2	0.9
(8) Quarterly reporting	5	5	5	5	3	11	7	4	4
(9) Simplified reporting	0	0	0	0	0	0	14	23	33
<u>Interactions with Other Welfare Programs</u>									
(10) Expanded categorical eligibility	0	0	0	0	0	38	38	37	36
(11) Comparable disqualification	0	0	9	9	9	12	12	9	9
(12) Transitional benefits to TANF leavers	0	0	0	0	0	0	1	6	10
<u>Issuance and Outreach</u>									
(13) Percentage of benefits issued by EBT	12.0	16.0	36.2	62.0	74.2	77.0	80.4	92.0	99.2
(14) Outreach spending per capita	\$0.004	\$0.002	\$0.001	\$0.005	\$0.007	\$0.022	\$0.035	\$0.023	\$0.009
<u>Biometrics</u>									
(15) Use of fingerprint imaging	1	3	4	4	4	5	5	5	5
<u>TANF Policies³</u>									
(1) Vehicle asset exemption for applicants	\$6,078	\$7,645	\$10,387	\$10,407	\$10,487	\$10,380	\$10,415	\$10,044	\$10,333
(2) Earned income disregard for income eligibility	\$102	\$111	\$144	\$150	\$149	\$145	\$146	\$141	\$141
(3) Maximum monthly benefit for family of 3	\$415	\$405	\$403	\$401	\$395	\$394	\$389	\$385	\$383
(4) Most severe sanction amount	\$105	\$169	\$257	\$270	\$278	\$278	\$274	\$283	\$297
(5) No time limit	43	24	7	5	5	5	6	9	9
(6) Duration of lifetime time limit	59	57	56	56	56	55	55	55	55
(7) Intermittent time limit	2	10	12	12	12	11	11	11	11
<u>Other Related Policies</u>									
(1) Applicable minimum wage for FLSA covered categories	\$4.67	\$5.09	\$5.42	\$5.38	\$5.32	\$5.27	\$5.22	\$5.18	\$5.18
(2) State minimum wage for non-FLSA covered categories	\$2.84	\$2.98	\$3.23	\$3.22	\$3.18	\$3.18	\$3.17	\$3.11	\$3.13
(3) EITC (refundable state and federal) ⁴	\$3,594	\$3,703	\$3,825	\$3,903	\$4,003	\$4,152	\$4,295	\$4,373	\$4,373

¹ This table presents data for the 46 states (including DC) that can be identified in the SIPP. North Dakota, South Dakota, Wyoming, Maine, and Vermont are excluded.

² In the regression analysis, recertification periods are measured as ratios (i.e., they are not multiplied by 100).

³ In the regression analysis, TANF vehicle exemptions are measured in 1,000s of dollars and TANF earned income disregards, maximum benefits, and sanction amounts are measured in 100s of dollars.

⁴ In the regression analysis, the EITC is measured in 100s of dollars.

**Table 3. Determinants of Food Stamp Receipt -- Primary Result
Populations Below 175 Percent of Poverty Threshold**

Policy Variables	All Households	Households with Kids	Female-Headed Households with Kids	Two-Adult Households with Kids	ABAWDs
Percent Receiving Food Stamps	20.0%	24.4%	44.3%	9.2%	2.6%
<u>Food Stamp Policies</u>					
<u>Eligibility Requirements</u>					
One vehicle exempt	0.034 [0.009]**	0.020 [0.011]+	0.021 [0.020]	0.013 [0.013]	0.025 [0.012]*
More than one vehicle exempt	0.011 [0.008]	0.021 [0.010]*	0.047 [0.019]*	0.002 [0.009]	0.003 [0.005]
Pre-PRWORA or full restoration * non-citizen	0.021 [0.016]	0.016 [0.019]	0.060 [0.065]	0.031 [0.016]+	-0.008 [0.008]
Partial restoration * non-citizen	0.009 [0.012]	0.012 [0.014]	0.064 [0.049]	0.009 [0.014]	-0.010 [0.007]
<u>Recertification Periods and Reporting Requirements</u>					
4-6 month recertification periods	0.009 [0.016]	0.036 [0.021]	0.016 [0.026]	0.063 [0.025]*	-0.013 [0.008]
7-12 month recertification periods	0.034 [0.016]*	0.042 [0.022]+	0.012 [0.029]	0.061 [0.025]*	0.026 [0.012]*
13+ month recertification periods	0.078 [0.025]**	0.136 [0.034]**	0.168 [0.048]**	0.114 [0.040]**	0.008 [0.019]
Quarterly reporting	0.000 [0.012]	-0.007 [0.013]	-0.007 [0.019]	0.000 [0.010]	0.008 [0.005]
Simplified reporting	-0.006 [0.006]	-0.012 [0.008]	-0.015 [0.016]	-0.004 [0.009]	0.011 [0.006]+
<u>Interactions with Other Welfare Programs</u>					
Expanded categorical eligibility	0.016 [0.006]*	0.021 [0.007]**	0.020 [0.016]	0.019 [0.009]+	0.000 [0.006]
Comparable disqualification	0.003 [0.006]	0.013 [0.008]	0.027 [0.014]+	0.002 [0.013]	0.011 [0.006]*
Transitional benefits to TANF leavers	-0.006 [0.002]*	-0.006 [0.003]*	-0.005 [0.004]	-0.004 [0.002]	-0.003 [0.001]**
<u>Issuance and Outreach</u>					
Percentage of benefits issued by EBT	0.000 [0.009]	0.017 [0.012]	0.001 [0.018]	0.023 [0.012]+	-0.008 [0.006]
Outreach spending per capita	0.007 [0.016]	0.017 [0.023]	-0.027 [0.046]	0.046 [0.032]	-0.015 [0.019]
<u>Biometrics</u>					
Use of fingerprint imaging	-0.013 [0.006]+	-0.023 [0.011]*	-0.043 [0.022]+	-0.033 [0.011]**	0.008 [0.006]
<u>TANF Policies</u>					
Vehicle asset exemption for applicants	0.000 [0.001]	0.000 [0.001]	0.002 [0.002]	-0.001 [0.001]	-0.002 [0.001]+
Earned income disregard for income eligibility purposes	0.005 [0.004]	0.012 [0.005]*	0.016 [0.009]+	0.007 [0.004]	0.002 [0.002]
Maximum monthly benefit for family of 3	0.002 [0.009]	0.031 [0.012]*	0.031 [0.029]	0.015 [0.010]	-0.001 [0.009]
Most severe sanction amount	-0.006 [0.003]+	-0.008 [0.004]*	-0.018 [0.007]**	0.001 [0.003]	0.004 [0.003]
No time limit	-0.004 [0.007]	0.003 [0.009]	-0.002 [0.016]	0.020 [0.006]**	0.002 [0.006]
Duration of lifetime time limit	-0.001 [0.001]	-0.001 [0.001]*	-0.001 [0.001]	-0.001 [0.000]**	-0.001 [0.000]
Intermittent time limit	-0.007 [0.009]	-0.004 [0.012]	0.011 [0.017]	0.008 [0.012]	-0.002 [0.009]

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**Table 3 (continued). Determinants of Food Stamp Receipt -- Primary Result
Populations Below 175 Percent of Poverty Threshold**

Policy Variables	All Households	Households with Kids	Female-Headed Households with Kids	Two-Adult Households with Kids	ABAWDs
<u>Other Related Policies</u>					
Applicable minimum wage for FLSA covered categories	-0.025 [0.007]**	-0.036 [0.008]**	-0.083 [0.024]**	-0.002 [0.009]	0.001 [0.005]
State minimum wage for non-FLSA covered categories	-0.016 [0.006]**	-0.026 [0.006]**	-0.023 [0.011]*	-0.022 [0.006]**	0.000 [0.004]
EITC (refundable state and federal)	-0.004 [0.003]	-0.005 [0.004]	-0.012 [0.006]*	-0.001 [0.003]	0.001 [0.001]
Number of observations	401,580	259,869	115,180	127,510	107,177
R-squared	0.200	0.230	0.150	0.050	0.030

Note: **, *, and + indicate statistical significance at the 1, 5, and 10 percent levels, respectively.

Linear probability regression models with standard errors adjusted for clustering by state. All models also include controls for: age, age-squared, black, Hispanic, less than high school education, high school education, number of children in household, number of adults in household, and metropolitan area; state-level monthly unemployment, per-capita income, and employment-population ratio; quarterly GDP; seam bias dummy; and state, year, and month fixed effects. Models estimated on the population of all households and all households with children also include indicators for single female-headed household and single male-headed household. All dollar values are in year 2000 dollars.

Table 4. Determinants of Food Stamp Receipt - Sensitivity Analysis
All Households Below 175 Percent and 130 Percent of Poverty Threshold

Policy Variables	Below 175% of Poverty			Non-Specific Welfare Policies	Below 130% of Poverty
	Time <i>t</i>	Time <i>t-12</i>	Time <i>t-24</i>		
FSP Policies Over Time					
<u>Food Stamp Policies</u>					
<u>Eligibility Requirements</u>					
One vehicle exempt	0.034 [0.009]**	0.021 [0.011]+	0.023 [0.008]**	0.036 [0.010]**	0.038 [0.011]**
More than one vehicle exempt	0.011 [0.008]	0.015 [0.009]	-0.003 [0.010]	0.010 [0.008]	0.011 [0.010]
Pre-PRWORA or full restoration * non-citizen	0.021 [0.016]	0.010 [0.025]	-0.005 [0.021]	0.022 [0.015]	0.034 [0.023]
Partial restoration * non-citizen	0.009 [0.012]	0.003 [0.019]	-0.017 [0.020]	0.009 [0.012]	0.018 [0.019]
<u>Recertification Periods and Reporting Requirements</u>					
4-6 month recertification periods	0.009 [0.016]	0.017 [0.017]	0.027 [0.022]	0.011 [0.016]	0.004 [0.019]
7-12 month recertification periods	0.034 [0.016]*	0.005 [0.016]	-0.007 [0.015]	0.035 [0.017]*	0.032 [0.024]
13+ month recertification periods	0.078 [0.025]**	0.116 [0.025]**	0.123 [0.027]**	0.071 [0.025]**	0.095 [0.032]**
Quarterly reporting	0.000 [0.012]	0.002 [0.014]	0.003 [0.008]	-0.001 [0.012]	-0.004 [0.016]
Simplified reporting	-0.006 [0.006]	-0.010 [0.010]	-0.015 [0.011]	-0.007 [0.006]	-0.006 [0.008]
<u>Interactions with Other Welfare Programs</u>					
Expanded categorical eligibility	0.016 [0.006]*	0.014 [0.008]	-0.008 [0.006]	0.016 [0.006]*	0.015 [0.008]+
Comparable disqualification	0.003 [0.006]	0.004 [0.005]	0.007 [0.006]	0.002 [0.006]	0.004 [0.009]
Transitional benefits to TANF leavers	-0.006 [0.002]*	-0.009 [0.004]*	-0.003 [0.004]	-0.006 [0.002]*	-0.007 [0.003]*
<u>Issuance and Outreach</u>					
Percentage of benefits issued by EBT	0.000 [0.009]	0.004 [0.009]	0.008 [0.009]	-0.002 [0.008]	0.000 [0.011]
Outreach spending per capita	0.007 [0.016]	0.009 [0.016]	0.034 [0.017]+	0.007 [0.016]	0.028 [0.023]
<u>Biometrics</u>					
Use of fingerprint imaging	-0.013 [0.006]+	-0.005 [0.006]	-0.002 [0.006]	-0.016 [0.007]*	-0.014 [0.010]
<u>TANF Policies</u>					
Vehicle asset exemption for applicants	0.000 [0.001]	0.000 [0.001]	-0.001 [0.001]		0.000 [0.001]
Earned income disregard for income eligibility purposes	0.005 [0.004]	0.002 [0.005]	0.004 [0.007]		0.002 [0.004]
Maximum monthly benefit for family of 3	0.002 [0.009]	0.001 [0.010]	0.000 [0.012]		0.007 [0.012]
Most severe sanction amount	-0.006 [0.003]+	-0.008 [0.004]+	-0.007 [0.007]		-0.006 [0.004]+
No time limit	-0.004 [0.007]	0.000 [0.007]	0.006 [0.009]		-0.001 [0.009]
Duration of lifetime time limit	-0.001 [0.001]	-0.001 [0.001]+	-0.001 [0.001]		-0.001 [0.001]
Intermittent time limit	-0.007 [0.009]	-0.003 [0.015]	0.002 [0.016]		-0.009 [0.010]

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Table 4 (continued). Determinants of Food Stamp Receipt - Sensitivity Analysis
All Households Below 175 Percent and 130 Percent of Poverty Threshold

Policy Variables	Below 175% of Poverty				Non-Specific Welfare Policies	Below 130% of Poverty
	FSP Policies Over Time					
	Time <i>t</i>	Time <i>t-12</i>	Time <i>t-24</i>			
AFDC waiver				0.000		
				[0.007]		
TANF implemented				-0.004		
				[0.006]		
<u>Other Related Policies</u>						
Applicable minimum wage for FLSA covered categories	-0.025	-0.034	-0.041	-0.022	-0.029	
	[0.007]**	[0.008]**	[0.011]**	[0.007]**	[0.010]**	
State minimum wage for non-FLSA covered categories	-0.016	-0.016	-0.021	-0.014	-0.018	
	[0.006]**	[0.007]*	[0.007]**	[0.006]*	[0.008]*	
EITC (refundable state and federal)	-0.004	-0.005	-0.007	-0.005	-0.007	
	[0.003]	[0.003]	[0.004]+	[0.003]	[0.004]+	
Number of observations	401,580	329,636	263,279	401,580	281,237	
R-squared	0.200	0.190	0.180	0.200	0.220	

Note: **, *, and + indicate statistical significance at the 1, 5, and 10 percent levels, respectively.

Linear probability regression models with standard errors adjusted for clustering by state. All models also include controls for: age, age squared, black, Hispanic, less than high school education, high school education, single female-headed household, single male-headed household, number of children in household, number of adults in household, and metropolitan area; state level monthly unemployment, per-capita income, and employment-population ratio; quarterly GDP; seam bias dummy; and state, year, and month fixed effects. All dollar values are in year 2000 dollars.

**Appendix Table A1. Determinants of Food Stamp Receipt - Primary Results
Populations Below 175 Percent of Poverty Threshold (Full Set of Coefficients)**

Policy Variables	All Households	Households with Kids	Female-Headed Households with Kids	Two-Adult Households with Kids	ABAWDs
<u>Food Stamp Policies</u>					
<u>Eligibility Requirements</u>					
One vehicle exempt	0.034 [0.009]**	0.020 [0.011]+	0.021 [0.020]	0.013 [0.013]	0.025 [0.012]*
More than one vehicle exempt	0.011 [0.008]	0.021 [0.010]*	0.047 [0.019]*	0.002 [0.009]	0.003 [0.005]
Pre-PRWORA or full restoration * non-citizen	0.021 [0.016]	0.016 [0.019]	0.060 [0.065]	0.031 [0.016]+	-0.008 [0.008]
Partial restoration * non-citizen	0.009 [0.012]	0.012 [0.014]	0.064 [0.049]	0.009 [0.014]	-0.010 [0.007]
<u>Recertification Periods and Reporting Requirements</u>					
4-6 month recertification periods	0.009 [0.016]	0.036 [0.021]	0.016 [0.026]	0.063 [0.025]*	-0.013 [0.008]
7-12 month recertification periods	0.034 [0.016]*	0.042 [0.022]+	0.012 [0.029]	0.061 [0.025]*	0.026 [0.012]*
13+ month recertification periods	0.078 [0.025]**	0.136 [0.034]**	0.168 [0.048]**	0.114 [0.040]**	0.008 [0.019]
Quarterly reporting	0.000 [0.012]	-0.007 [0.013]	-0.007 [0.019]	0.000 [0.010]	0.008 [0.005]
Simplified reporting	-0.006 [0.006]	-0.012 [0.008]	-0.015 [0.016]	-0.004 [0.009]	0.011 [0.006]+
<u>Interactions with Other Welfare Programs</u>					
Expanded categorical eligibility	0.016 [0.006]*	0.021 [0.007]**	0.020 [0.016]	0.019 [0.009]+	0.000 [0.006]
Comparable disqualification	0.003 [0.006]	0.013 [0.008]	0.027 [0.014]+	0.002 [0.013]	0.011 [0.006]*
Transitional benefits to TANF leavers	-0.006 [0.002]*	-0.006 [0.003]*	-0.005 [0.004]	-0.004 [0.002]	-0.003 [0.001]**
<u>Issuance and Outreach</u>					
Percentage of benefits issued by EBT	0.000 [0.009]	0.017 [0.012]	0.001 [0.018]	0.023 [0.012]+	-0.008 [0.006]
Outreach spending per capita	0.007 [0.016]	0.017 [0.023]	-0.027 [0.046]	0.046 [0.032]	-0.015 [0.019]
<u>Biometrics</u>					
Use of fingerprint imaging	-0.013 [0.006]+	-0.023 [0.011]*	-0.043 [0.022]+	-0.033 [0.011]**	0.008 [0.006]
<u>TANF Policies</u>					
Vehicle asset exemption for applicants	0.000 [0.001]	0.000 [0.001]	0.002 [0.002]	-0.001 [0.001]	-0.002 [0.001]+
Earned income disregard for income eligibility purposes	0.005 [0.004]	0.012 [0.005]*	0.016 [0.009]+	0.007 [0.004]	0.002 [0.002]
Maximum monthly benefit for family of 3	0.002 [0.009]	0.031 [0.012]*	0.031 [0.029]	0.015 [0.010]	-0.001 [0.009]
Most severe sanction amount	-0.006 [0.003]+	-0.008 [0.004]*	-0.018 [0.007]**	0.001 [0.003]	0.004 [0.003]
No time limit	-0.004 [0.007]	0.003 [0.009]	-0.002 [0.016]	0.020 [0.006]**	0.002 [0.006]
Duration of lifetime time limit	-0.001 [0.001]	-0.001 [0.001]*	-0.001 [0.001]	-0.001 [0.000]**	-0.001 [0.000]
Intermittent time limit	-0.007 [0.009]	-0.004 [0.012]	0.011 [0.017]	0.008 [0.012]	-0.002 [0.009]

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Appendix Table A1 (continued). Determinants of Food Stamp Receipt - Primary Results
Populations Below 175 Percent of Poverty Threshold (Full Set of Coefficients)

Policy Variables	All Households	Households with Kids	Female-Headed Households with Kids	Two-Adult Households with Kids	ABAWDs
Other Related Policies					
Applicable minimum wage for FLSA covered categories	-0.025 [0.007]**	-0.036 [0.008]**	-0.083 [0.024]**	-0.002 [0.009]	0.001 [0.005]
State minimum wage for non-FLSA covered categories	-0.016 [0.006]**	-0.026 [0.006]**	-0.023 [0.011]*	-0.022 [0.006]**	0.000 [0.004]
EITC (refundable state and federal)	-0.004 [0.003]	-0.005 [0.004]	-0.012 [0.006]*	-0.001 [0.003]	0.001 [0.001]
Economic and Demographic Characteristics					
Monthly unemployment	0.002 [0.005]	0.001 [0.006]	0.001 [0.011]	0.006 [0.005]	0.001 [0.003]
Quarterly GDP	-0.007 [0.016]	-0.024 [0.020]	-0.033 [0.041]	0.000 [0.025]	-0.002 [0.015]
State per-capita income	0.005 [0.006]	0.006 [0.006]	-0.002 [0.011]	0.009 [0.006]	0.003 [0.004]
State employment population ratio	-0.571 [0.458]	-0.398 [0.566]	0.454 [1.198]	-0.396 [0.622]	-0.265 [0.271]
Immigrant	-0.079 [0.021]**	-0.068 [0.025]*	-0.156 [0.071]*	-0.026 [0.017]	-0.008 [0.007]
Age	-0.011 [0.001]**	-0.020 [0.003]**	-0.019 [0.005]**	-0.017 [0.003]**	0.001 [0.002]
Age-squared	0.000 [0.000]**	0.000 [0.000]**	0.000 [0.000]*	0.000 [0.000]**	0.000 [0.000]
Black	0.102 [0.010]**	0.104 [0.012]**	0.140 [0.015]**	0.037 [0.012]**	0.045 [0.007]**
Hispanic	0.023 [0.030]	0.011 [0.038]	0.080 [0.043]+	-0.036 [0.031]	0.007 [0.008]
Education less than high school	0.169 [0.011]**	0.152 [0.011]**	0.232 [0.018]**	0.087 [0.011]**	0.031 [0.010]**
High school education only	0.061 [0.006]**	0.057 [0.006]**	0.100 [0.012]**	0.023 [0.005]**	0.007 [0.004]+
Number of children in household	0.031 [0.003]**	0.042 [0.002]**	0.072 [0.006]**	0.021 [0.004]**	0.000 [0.000]
Number of adults in household	-0.065 [0.005]**	-0.042 [0.006]**	-0.074 [0.010]**	0.008 [0.007]	-0.005 [0.002]**
Female-headed household	0.234 [0.010]**	0.281 [0.011]**	0.000 [0.000]	0.000 [0.000]	0.002 [0.005]
Male-headed household	-0.006 [0.009]	0.001 [0.017]	0.000 [0.000]	0.000 [0.000]	-0.005 [0.009]
Metro area	-0.008 [0.011]	-0.016 [0.014]	-0.032 [0.020]	-0.009 [0.017]	-0.009 [0.007]
Seam bias	0.004 [0.001]**	0.006 [0.001]**	0.009 [0.002]**	0.004 [0.001]**	0.001 [0.000]
Constant	-0.007 [0.005]	-0.009 [0.006]	-0.011 [0.010]	0.000 [0.007]	0.002 [0.005]
Number of observations	401,580	259,869	115,180	127,510	107,177
R-squared	0.200	0.230	0.150	0.050	0.030

Note: **, *, and + indicate statistical significance at the 1, 5, and 10 percent levels, respectively.

Linear probability regression models with standard errors adjusted for clustering by state. All models include state, year, and month fixed effects. All dollar values are in year 2000 dollars.

X. Appendix A: Additional Details about the SIPP

The SIPP's many strengths make it a key data source for studying low-income populations and food assistance outcomes (Citro and Michael 1995; Logan, et al. 2002). The SIPP's potential weaknesses—concerns about the “seam phenomenon,” underreporting of food stamp receipt, and attrition bias—also need to be considered and are discussed in turn below.

Studies of welfare program dynamics (i.e., AFDC/TANF and food stamps) using SIPP data have been concerned with the “seam phenomenon”—transitions are more likely to occur between interview waves than months within the same wave. Some studies have used wavelly data rather than monthly data, although several researchers have used monthly data (Blank and Ruggles 1996; Fitzgerald 1991; Gleason, et al. 2000). To control for the seam phenomenon in their monthly analyses, Blank and Ruggles and Fitzgerald include a dummy variable that identifies the seam month. As a primary strength of the SIPP lies in its monthly data, we too use the monthly data and include a dummy variable to control for the seam month.²⁹ The seam phenomenon is of less concern in our analysis, which focuses on FSP participation, than in an analysis that focuses on transitions into and out of the FSP.

Underreporting is a concern when using survey data to analyze food stamp receipt. Estimates suggest that the SIPP underreports food stamp receipt by seven percent to 19 percent (Cody and Christina Tuttle 2002; Bitler, et al. 2002). Cody and Tuttle provide a range of seven percent to 19 percent (p. 21), while Bitler, et al. estimate food stamp receipt is underreported by 10 percent (p. 13).³⁰ Both of these studies compare the SIPP to the Current Population Survey (CPS) and find that the underreporting of food stamp receipt is lower in the SIPP than in the CPS. Cody and Tuttle, for example, find that the CPS underreports food stamp receipt by 26 percent to 37 percent (p. 21). While estimates suggest that food stamp underreporting is smaller in the SIPP than in the CPS, the estimated underreporting in the SIPP is not negligible. One could consider adjusting the SIPP data to account for the underreporting, but this requires understanding the root cause(s) of the underreporting. Cody and Tuttle's analysis suggests that "it may not be possible to identify the root causes [of the underreporting]" and that "underreporting is most likely the result of multiple causes, making it difficult to identify the right adjustment" (p. 28). These authors also suggest that choosing the wrong adjustment

²⁹ The seam phenomenon may be a lesser concern when examining the food stamp program as compared to other programs. Food stamp entry and exit rates derived from SIPP data are close to the rates derived from administrative data, which is not the case with other programs, such as the Social Security program (Citro and Michael 1995).

³⁰ Estimates suggest that underreporting is lower in the 1996 SIPP panel than in the 1990 SIPP panel (Cody and Tuttle 2002, p. 23).

strategy could lead to greater biases (Cody and Tuttle 2002, p. 25). Bitler, et al. (2002) also examine underreporting of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) in the SIPP and find that the SIPP underreports WIC participation to a greater extent than FSP participation—25 percent versus 10 percent, respectively (p. 13). Their analysis further suggests that the underreporting of WIC participation in the SIPP is randomly distributed across categorically eligible WIC groups (Bitler, et al. 2002, p. 15), suggesting that any bias from the underreporting is likely to be small.

Attrition bias is a concern in the SIPP, as it is in other longitudinal survey data. Research suggests that poorer persons are more likely to leave the SIPP sample prior to the end of the panel (Citro and Michael 1995, p. 414-15). We weight the data using SIPP weights to account for attrition, non-response, and a complex sample design.

Even with its weaknesses, the National Research Council Panel on Poverty and Family Assistance recommends that the SIPP replace the March CPS to become the official source of U.S. poverty statistics (Citro and Michael 1995, p. 391), suggesting that the SIPP is a strong data set for studying the low-income population. And Logan, et al. (2002) identify the SIPP as a “principal data source” for conducting research on food assistance and nutrition program outcomes. The SIPP’s strengths—relatively high reporting of food stamp receipt and monthly data on FSP participation, income, and family composition—likely outweigh its weaknesses.

XI. Appendix B: Policy Data Documentation

Food Stamp Policies

Eligibility Requirements

1. One vehicle exempt

Description: one automobile per unit exempt from asset rules
Sources: Center on Budget and Policy Priorities (2001-2005); FNS State Options Reports 1; FNS waiver documentation
Time frame: Monthly: January 1996-June 2001, October 2001, February 2002, February 2003, January 2004; January 1996-September 2001 (Connecticut); February 1996-December 2003 (Montana)
Variable type: binary
Variable range: 0, 1
Assumptions: Ignores special provisions for vehicles used to earn a living (for example, taxicabs and delivery trucks).
Notes: An option to apply vehicle rules from TANF or other low-income programs, if they were more liberal than the standard FSP rules, was extended to all states as of July 2001. On the basis of waiver documentation, three states are coded as exempting one vehicle per unit before then: Connecticut (January 1996 through September 2001), Michigan (January 1996 through September 1999), and Montana (February 1996 through December 2003). All other states are coded as zero for January 1996 through June 2001.

2. More than one vehicle exempt

Description: more than one automobile per adult exempt from asset rules
Sources: Center on Budget and Policy Priorities; FNS State Options Reports
Time frame: Monthly: January 1996-June 2001, October 2001, February 2002, February 2003, January 2004; January 1996-September 2001 (Connecticut); February 1996-December 2003 (Montana)
Variable type: binary
Variable range: 0, 1
Assumptions: Ignores special provisions for vehicles used to earn a living (for example, taxicabs and delivery trucks)
Includes policies that provide additional exemptions for children who require a car for employment, training, or school.
Notes: All states are coded as zero for January 1996 through June 2001 (see #1).

3. Pre-PRWORA or full restoration

Description: all noncitizens under age 65 eligible for federal benefits or state-funded food assistance benefits
Sources: USDA (1997-2004); PL 104-193, 104-208, 105-185, 107-71; Zimmerman and Tumlin (1999); National Immigration Law Center (2002); Schwartz and Haywood (2002)
Time frame: monthly
Variable type: binary

¹ FNS State Options reports refers to U.S. Department of Agriculture 2002c, 2003a, 2003b, and 2004b.

Variable range: 0 (No), 1 (Yes)

Notes: Measures the combined effect of statutes governing eligibility for federal benefits and the availability of state-funded food assistance. All states are coded Yes for the period before January 1997, when the citizenship restrictions in the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 took effect.

4. Partial restoration

Description: some, but not all, noncitizens under age 65 eligible for federal benefits or state-funded food assistance benefits

Sources: USDA (1997-2004); PL 104-193, 104-208, 105-185, 107-71; Zimmerman and Tumlin (1999); National Immigration Law Center (2002); Schwartz and Haywood (2002)

Time frame: monthly

Variable type: binary

Variable range: 0 (No), 1 (Yes)

Notes: Measures the combined effect of statutes governing eligibility for federal benefits and the availability of state-funded food assistance. Because the Agricultural Research, Extension, and Education Reform Act of 1998 restored eligibility to all disabled adults who were lawfully residing in the U.S. on August 22, 1996, all states are coded Yes from November 1998 through December 2004 unless state-funded benefits provided full eligibility.

Recertification Periods and Reporting Requirements

5. 4-6 month recertification

Description: percentage of units with earnings that have 4-6 month certification periods

Sources: FSP QC data

Time frame: January 1996-December 2003

Variable type: continuous

Variable range: 0-100

Estimation procedure: computed as retrospective six-month moving average

Notes: includes elderly with earnings

6. 7-12 month recertification

Description: percentage of units with earnings that have 7-12 month certification periods

Sources: FSP QC data

Time frame: January 1996-December 2003

Variable type: continuous

Variable range: 0-100

Estimation procedure: computed as retrospective six-month moving average

Notes: includes elderly with earnings

7. 13+ month recertification

Description: percentage of units with earnings that have certification periods of 13 months or more
Sources: FSP QC data
Time frame: January 1996-December 2003
Variable type: continuous
Variable range: 0-100
Estimation procedure: computed as retrospective six-month moving average
Notes: includes elderly with earnings
Status: Done through FY 2004. Need FY 2005 data.

8. Quarterly reporting

Description: quarterly reporting for earners
Sources: U.S. Department of Agriculture 2002b, 2002d; FNS State Options Reports; FNS Waiver Database
Time frame: Monthly: January 1996-June 1999, August 2001, January 2002, April 2002, February 2003, October 2003, September 2004
Variable type: binary
Variable range: 0 (no), 1 (yes)
Notes: Waivers approved before 1996 allowed Alabama, Arkansas, New York, Oregon, and West Virginia to provide quarterly reporting for earners. For all other states, quarterly reporting for earners was not an option from January 1996 through June 1999, so coded as zero in these months.
California (August 2001) had quarterly reporting in some counties but was mostly monthly, so coded as 0.
Massachusetts (August 2001-April 2002) coded as 1
South Carolina (August 2001-April 2002) coded as 1

9. Simplified reporting

Description: simplified reporting for earners
Sources: U.S. Department of Agriculture 2002b, 2002d; FNS State Options Reports
Time frame: Monthly: January 1996-February 2001, August 2001, January 2002, April 2002, February 2003, October 2003, September 2004
Variable type: binary
Variable range: 0 (no), 1 (yes)
Notes: Simplified reporting for earners was not an option from January 1996-January 2001, so coded as zero for all states in these months.
Massachusetts (February 2003-September 2004) coded as 1
Oregon (October 2003-September 2004) coded as 1

Interactions with Other Welfare Programs

10. Expanded categorical eligibility

Description: state uses expanded categorical eligibility (receipt of TANF services, with or without cash assistance, makes unit automatically eligible for benefits)

Sources: FNS State Options Reports, Federal Register (2000), FNS “Letter to Regions on Categorical Eligibility” (1999)
 Time frame: Monthly: January 1996-June 1999, April 2002, February 2003, October 2003, September 2004
 Variable type: binary
 Variable range: 0 (no), 1 (yes)
 Notes: all states coded as 0, January 1996-June 1999

11. Comparable disqualification

Description: state disqualifies recipient for failure to meet requirements of another program (usually TANF)
 Sources: FNS State Options Reports, Gabor and Botsko (1998),
 Time frame: Monthly: January 1996-August 1996, November 1997-December 1997,² April 2002, February 2003, October 2003, September 2004
 Variable type: binary
 Variable range: 0 (no), 1 (yes)

12. Transitional benefits to TANF leavers

Description: number of months of transitional benefits to TANF leavers
 Sources: FNS State Options Reports, Office of the Governor of New York (2001), Rosenbaum (2003)
 Time frame: Monthly: January 1996-April 2002, February 2003, October 2003, September 2004; May 2002-November 2003 (New Mexico)
 Variable type: integer
 Variable range: 0-5

Issuance and Outreach

13. Percentage of benefits issued by EBT

Description: percentage of dollar value of FSP benefits issued by EBT (electronic benefits transfer)
 Time frame: January 1996-December 2003
 Variable type: continuous
 Variable range: 0-100
 Estimation procedure: Other/EBT Total Valid Issuance divided by sum of Authorized Documents, Direct Access, Direct Mail, Over Counter, Direct Delivery, and Other/EBT Total Valid Issuance
 Assumptions: “Other” accounts for insignificant share of “Other/EBT” category in issuance data

² Data are not available for all states during this time period.

14. Outreach spending per capita

Description:	combined federal and state outreach spending
Sources:	National Databank Public Elements; FNS Outreach Grant Awards; state poverty data from Current Population Survey
Time frame:	quarterly, 1996-2003
Variable type:	continuous (in real dollars)
Variable range:	0-
Estimation procedure:	sum of FSP Outreach Federal Outlays, FSP Outreach Nonfederal Outlays, and FNS Outreach Grant Awards to nonprofits in state, divided by population below 150 percent of federal poverty threshold minus current FSP participants
Assumptions:	outreach effort from grants to nonprofits occurs within single state and is spread equally over months of fiscal year of award; quarterly federal and nonfederal grants are spread evenly over the months in the quarter of award; population below 150 percent of federal poverty threshold, minus current FSP participants, is measure of target population for outreach; population below 150 percent of federal poverty threshold is an annual figure assumed constant in all months of the year in which it is reported

Biometric Technology

15. Use of fingerprint imaging

Description:	states uses fingerprint imaging to reduce multiple participation fraud
Sources:	Sticha et al. (1999); California State Auditor (2003)
Time frame:	January 1996-December 2003
Variable type:	binary
Variable range:	0 (no biometric identification), 1 (uses biometric identification)
Assumptions:	no changes in states using since January 2003

Welfare and Other Related Policies

These variables are available monthly from January 1996 through December 2003.

Eligibility Requirements

1. Vehicle Exemption for Applicants

Sources: Welfare Rules Database (WRD) and Urban Institute databases
First Annual TANF Report to Congress (August 1998), “Specific Provisions of State Programs,” <http://www.acf.dhhs.gov/news/welfare/congress/tanfp9.htm>.

Assumptions:

- One adult and two (uncapped) children in family
- One vehicle per driver/adult = One vehicle per household
- No asset test = All vehicles owned by unit
- All vehicles owned by unit = One vehicle (one adult family)
- One vehicle = 15% above state with highest capped value in given month
- Equity values to fair market value (conversion): Add \$3,100

Notes: Measured in fair market value.

2. Earned Income Disregard for Income Eligibility Purposes

Sources: Welfare Rules Database (WRD) and Urban Institute databases
First Annual TANF Report to Congress (August 1998), “Specific Provisions of State Programs,” <http://www.acf.dhhs.gov/news/welfare/congress/tanfp9.htm>.

Assumptions:

- One adult and two (uncapped) children in family
- Adult works 20 hours at federal minimum wage
- No explicit net income test = use net income test for benefit computation for applicants during the first month.

Notes: This is only earned income disregards and does not include child care disregards or disregards of any other type.

Benefits

3. Maximum Monthly Benefit for Family of 3

Sources: Welfare Rules Database (WRD)
Transfer Income Model (TRIM3), “Rules of Simulated Programs,”
<http://trim.urban.org/T3Welcome.php>.

Assumption: One adult and two (uncapped) children in family

Notes: Values come from TRIM3 (1986-1995) and the WRD (1996-2000)

Sanctions

4. Most Severe Sanction Amount for Noncompliance with Work Requirements for Single-Parent Head of Unit

Sources: Welfare Rules Database (WRD) and Urban Institute databases
First Annual TANF Report to Congress (August 1998), "Specific Provisions of State Programs," <http://www.acf.dhhs.gov/news/welfare/congress/tanfp9.htm>.

Assumptions:

- Family of one adult and two children with no income receiving the maximum monthly benefit prior to sanction.
- Adult portion of benefit is calculated with the formula:
$$\frac{\text{Maximum Benefit Family of 3} - \text{Maximum Benefit Family of 2}}{\text{Maximum Benefit Family of 2}}$$
- Case is closed = 100% of max monthly benefit
- Vendor Payment (shelter costs) = 40% of max monthly benefit
- Pro rata portion of benefit = max monthly benefit divided by 3 (# of individuals in the prototypical family)
- Benefits vendored to third party = 10% of max monthly benefit
- MN (7/98-12/00): (0.10) (0.40) (Maximum Benefit Family of 3) + (0.30) (Transitional Standard)
- State for which recipients are not required to participate in work activities and therefore have no sanctions are coded as zero

Time Limits

5. No Time Limit

Sources: Welfare Rules Database (WRD) and Urban Institute databases
First Annual TANF Report to Congress (August 1998), "Specific Provisions of State Programs," <http://www.acf.dhhs.gov/news/welfare/congress/tanfp9.htm>.

Values: 0/1 (limits exist/no limits): If the state has not implemented any time limit during the given month, this variable receives a 1; if not, it receives a 0.

6. Intermittent Lifetime Time Limit

Sources: Welfare Rules Database (WRD) and Urban Institute databases
First Annual TANF Report to Congress (August 1998), "Specific Provisions of State Programs," <http://www.acf.dhhs.gov/news/welfare/congress/tanfp9.htm>.

Values: 0/1 (no/yes): If the state an intermittent time limit, this variable receives a 1; if not, it receives a 0.

Assumptions:

- Family of one adult and two children
- Rules are for family which has not recently moved from another state
- Time limit exists during first month that is counted toward the limit
- Rules are for time limits affecting majority of state at any given time
- Use implementation date
- Implementation date = Effective date when implementation not specified

Minimum Wage

1. Applicable Minimum Wage for Federally (FLSA) Covered Categories

- Sources:* U.S. Department of Labor, “History of Federal Minimum Wage Rates,”
<http://www.dol.gov/esa/minwage/chart.htm>.
Richard Nelson (1985-2001), *Monthly Labor Review*.
Council of State Governments, *The Book of States*, Vols. 27, 28, 30, 31, 33.
Labor Commission of Utah, “Minimum Wage,”
http://www.labor.state.ut.us/Utah_Antidiscrimination___Labo/Employment_Standards/minwage/minwage.htm.
Jim Mosley (3 May 1990), *St. Louis Post-Dispatch*, “State Minimum Wage To Take Effect Aug. 28,” pg 8A.
Larry Tye (2 April 1991), *Boston Globe*, “Minimum Wage Increases To \$4.25,” pg 3.
- Notes:* This wage is the higher of the state or federal minimum wage. In general, it is the minimum wage covering the majority of workers in a state for the majority of the month. Although not all state minimum wages cover FLSA-covered occupations, it is assumed that if a state has a higher minimum wage than the federal level, that state minimum wage is effective for FLSA-covered workers (which was the case in 1999 and 2000).

2. State Minimum Wage for Non-FLSA Covered Categories

- Sources:* Richard Nelson (1985-2001), *Monthly Labor Review*.
Council of State Governments, *The Book of States*, Vols. 27, 28, 30, 31, 33.
Labor Commission of Utah, “Minimum Wage,”
http://www.labor.state.ut.us/Utah_Antidiscrimination___Labo/Employment_Standards/minwage/minwage.htm.
Wage and Hour Administration of Alaska, “Minimum Wage Standard and Overtime Hours,” <http://www.labor.state.ak.us/lss/whact.htm>
Industrial Welfare Commission of California, “Summary of Interim Wage Order—2000,”
<http://www.dir.ca.gov/Iwc/SummaryInterimWageorder2000.html>
Connecticut General Assembly, “Wages,” <http://www.cga.ct.gov/2001/pub/Chap558.htm>
Office of Labor Law Enforcement of Delaware, “Minimum Wage,”
<http://www.delcode.state.de.us/title19/c009/index.htm>
Department of Employment Services of the District of Columbia, “Minimum Wages,”
<http://www.does.dc.gov/does/cwp/view,a,1234,q,539346.asp>
State Legislature of Iowa, “Iowa Code 2003: Section 91D.1,”
<http://www.legis.state.ia.us/IACODE/2003/91D/1.html>
Massachusetts General Laws, “Minimum Fair Wages,”
<http://www.mass.gov/legis/laws/mgl/gl-151-toc.htm>
State Legislature of Minnesota, “Labor Standards and Wages,”
<http://www.revisor.leg.state.mn.us/stats/177/>
New Hampshire General Court, “Minimum Wage Law,”
<http://www.gencourt.state.nh.us/rsa/html/NHTOC/NHTOC-XXIII-279.htm>
- Jim Mosley (3 May 1990), *St. Louis Post-Dispatch*, “State Minimum Wage To Take Effect Aug. 28,” pg 8A.
Larry Tye (2 April 1991), *Boston Globe*, “Minimum Wage Increases To \$4.25,” pg 3.

Assumptions:

- A state minimum wage at or below the federal minimum wage for the majority of a state's state-month observations from 1986-2000 is assumed to cover Non-FLSA workers in that state at all times. Otherwise, it is assumed to cover only FLSA workers, in which case the Non-FLSA minimum wage is 0. This assumption is based on the similarities between the exceptions to state minimum wage coverage in states with a higher-than-federal minimum wage and the exceptions to FLSA minimum wage coverage.

Notes: The state minimum wage is often used to cover workers who are not covered by the FLSA, 28 percent of workers in 1999. In most states (82 percent of our state-month observations), the state minimum wage is less than or equal to the federal minimum wage, suggesting non-FLSA coverage. For some states with a state minimum wage higher than the federal minimum wage, the higher wage covers FLSA workers only. The FLSA does not cover most workers in small businesses or in businesses where no interstate commerce is involved, workers in seasonal or recreational jobs, workers delivering newspapers or engaged in fishing operations, many workers in private households, and executive, administrative, and professional employees.

Earned Income Tax Credit

1. EITC (refundable state and federal)

Sources: V. Joseph Hotz and John Karl Scholz (January 2001), "The Earned Income Tax Credit," NBER Working Paper 8078, Table 1, 64.
 Internal Revenue Service (2001), "Publication 596."
 Internal Revenue Service (2000), "Publication 596."
 David Neumark and William Wascher (June 2001), "Using the EITC to Help Poor Families: New Evidence and a Comparison with the Minimum Wage," *National Tax Journal*, Vol. 54 (2).
 Nicholas Johnson (December 2001), Center on Budget and Policy Priorities, "A Hand Up: How State Earned Income Tax Credits Help Working Families Escape Poverty in 2001."
 State of Minnesota (January 2000), "The Federal Earned Income Tax Credit and The Minnesota Working Family Credit,"
<http://www.house.leg.state.mn.us/hrd/pubs/feicwfc.pdf>.

Assumptions:

- Family of one adult and two or more qualifying children
- Earned income at end of the phase-in range (maximum Federal EITC benefit)

Notes: Minnesota's EITC (1999-2000) varies from other states as the state does not offer a percentage of the Federal EITC. Minnesota offers an EITC composed of varying percentages of earnings dependent on recipient income level.

Non-Specific Welfare Policy Variables

1. AFDC Waiver in Place

Sources: Crouse 1999. "State Implementation of Major Changes to Welfare Policies, 1992-1998," http://aspe.hhs.gov/hsp/Waiver-Policies99/policy_CEA.htm.

Assumptions:

- If a waiver is in effect on or before the 15th day of a month, it is treated as being in place for the entire month.

Values: 0/1 (no/yes): If the state has a major AFDC waiver in place, the variable receives a 1; if not, it receives a 0.

2. TANF Implemented

Sources: Crouse 1999. "State Implementation of Major Changes to Welfare Policies, 1992-1998," http://aspe.hhs.gov/hsp/Waiver-Policies99/policy_CEA.htm.

Assumptions:

- If TANF is in effect on or before the 15th day of a month, it is treated as being in place for the entire month.

Values: 0/1 (no/yes): If the state has implemented TANF, the variable receives a 1; if not, it receives a 0.