

## **Explaining Recent Declines in Food Stamp Program Participation**

Janet Currie  
UCLA and NBER

Jeffrey Grogger  
UCLA and NBER

February, 2001

The authors thank William Gale, Edward Glaeser, Janet Rothenberg-Pack, John Karl Scholz, and Robert Schoeni for helpful comments, and the NIH for financial support. Robert Schoeni also generously provided the aggregate caseload data used in the paper. The authors are solely responsible for the views expressed. Ming Li and especially Matthew Neidell provided excellent research assistance.

## Abstract

Participation in the Food Stamp Program, a key component of the social safety net, fell precipitously between 1993 and 1998. The strong economy and welfare reform have both been advanced as possible explanations for this decline. We investigate the decline using both administrative and household-level data. We find that among households with incomes less than 300% of poverty, 20% of the decline in FSP utilization can be attributed to lower unemployment, while 30% is due to the implementation of the new Temporary Assistance for Needy Families children. The latter effect is concentrated among single heads and in central cities. We also show that single heads are more sensitive than other households to increases in the transactions costs associated with applying for food stamps. Together, these results suggest that efforts to restore FSP benefits to needy households should focus on reducing application costs for single heads in central cities.

The Food Stamp Program (FSP) is one of the largest transfer programs in the United States, having provided nearly \$24 billion in benefits to 27.5 million families in 1994 (Committee on Ways and Means, 1998). Participation in the FSP hovered around 20 million persons per year during the 1980s, but rose sharply in the early 1990s to a peak of approximately 27 million persons in 1994. Participation then began to fall dramatically, declining back to 20 million participants by 1998. About three-fourths of this decline occurred between 1996 and 1998 (Castner and Cody 1999).

Previous research has shown that most of the fall in the caseload has stemmed from falling numbers of single-parent families that receive food stamps (U.S. Department of Agriculture, 1999). The caseload has also fallen dramatically for two other groups: Able-bodied adults without dependents (ABAWD's) and most legal immigrants. However, since they constitute a relatively small share of the FSP caseload, they account for only 22 percent of the overall caseload decline. Finally, McConnell and Ohls (2000) show that the decline in the caseload has been much more dramatic in urban than in rural areas.

Declines in the food stamp caseload may be either good or bad news, depending on the reasons for the decline. A number of hypotheses have been offered. The first is that welfare reform has caused the decline. The Personal Responsibility and Work Opportunity Restoration Act of 1996 (PRWORA) made it more difficult for single mothers to receive cash welfare, and may have had the largely unintended consequence of making it more difficult for them to access food stamps. PRWORA also included provisions limiting the use of food stamps by ABAWDS and legal immigrants. Hence, PRWORA seems to have impacted precisely those groups which have shown the greatest decline in the food stamp caseload.

A second, closely related hypothesis is that the climate surrounding welfare reform has

increased the stigma and also the transactions costs associated with participating in food stamps. Little direct evidence is available about the importance of stigma and transactions costs, so one contribution of our study is to analyze direct proxies for these concepts.

A third hypothesis is that the decline in the caseload is due to the recent economic boom. If families are leaving the roles because they are better off, then this is presumably a good thing. On the other hand, if needy families are leaving because it has become more difficult for them to access food stamps, then most observers would feel that this was a negative consequence of welfare reform, and one that merited some remedial action. Our paper provides some new evidence on these competing hypotheses, using both aggregate administrative and household-level data.

We find that among households with incomes less than 300% of poverty, 20% of the decline in FSP utilization can be attributed to lower unemployment, while 30% is due to the implementation of the new Temporary Assistance for Needy Families children. The later effect is concentrated among single heads and in central cities. We also show that single heads are more sensitive than other households to increases in the transactions costs associated with applying for food stamps. Together, these results suggest that efforts to restore FSP benefits to needy households should focus on reducing application costs for single heads in central cities.

The rest of the paper is laid out as follows: We begin with some background information about the recent decline in food stamp caseloads and the possible explanations. We then present the empirical model and the data in sections II and III. In section IV, we present the main results, while section V discusses several extensions. Finally, conclusions appear in section VI.

## **I. Background**

### *a) History and Evolution of FSP Rules<sup>1</sup>*

The FSP began as a small pilot program in 1961, but had become a national program by 1974. In contrast to the rules for cash welfare receipt under the old AFDC (Aid to Families with Dependent Children) program and the new TANF (Temporary Aid for Needy Families) program, most rules for the FSP are set at the federal level. This is because the FSP is designed to offset state variation in welfare programs to at least some extent.<sup>2</sup> Moreover, unlike AFDC/TANF, the FSP is available regardless of family structure, which makes it a particularly important part of the social safety-net for low-income households. While PRWORA gave even more control over cash welfare to states, Congress deliberately retained the centralized nature of the FSP. This decision underlines the importance many policy makers attach to providing a minimum federal safety net through the FSP.

Although most FSP rules are set at a federal level, the program is usually operated through the same state welfare agencies and staff that run the AFDC/TANF and Medicaid programs. States do have a say about some administrative features such as the length of eligibility certification periods, the design of outreach programs (which may receive 50% federal cost-sharing), and about any "workfare" requirements for participation in the program, but we

---

<sup>1</sup> Much of the information in this section comes from U.S. Committee on Ways and Means (1999) or from Castner and Anderson (1999).

<sup>2</sup> For example, food stamp benefits amount to less than a third of the combined AFDC/TANF and food stamp benefits in states such as California that have high cash welfare benefit levels, while in low welfare benefit level states such as Texas, FSP income constitutes over half of the household's combined benefits (U.S. Committee on Ways and Means, 1999). There is much more uniformity in the combined benefit levels than in AFDC/TANF

are not aware of any research that has tied variations in these features of the program to participation rates.

Currently, the Food Stamp Program operates as follows: The FSP household is defined as either a person living alone or a group of people who live together and customarily purchase food and prepare meals together. Households made up entirely of AFDC/TANF recipients are automatically eligible for food stamps. For other households, it is necessary to go through an eligibility determination and monthly cash income is the main determinant of eligibility.

The FSP uses both the household's "gross" monthly income and its counted (or "net") monthly income. Gross income includes all of the household's cash income from most sources, including income from welfare programs.<sup>3</sup> Net income is derived by subtracting out a standard deduction, 20% of earned income, and deductions for shelter and child care. Households must have a gross income that does not exceed 130% of the Federal poverty guidelines, and net monthly income that does not exceed the Federal poverty line. Finally, household assets must be less than \$2000. Benefits are calculated by taking the maximum benefit level for a household of a certain size, and subtracting 30% of the net income. In 1998, the maximum food stamp benefit for a family of three was \$321 per month. The rules regarding deductions and assets are somewhat more liberal for households with elderly or disabled members, so that such households generally receive higher benefits than otherwise similar households without these members.

Program benefits have traditionally been provided in the form of coupons that can be exchanged for food at participating stores. These coupons may be used to purchase a wide range

---

benefits alone.

<sup>3</sup> Income from sources such as federal energy assistance and income tax refunds is excluded.

of foods, the most significant exception being hot foods that are for immediate consumption. Food stamp benefits are usually issued monthly by welfare agencies. In the past this was generally done either by mailing recipients an authorization-to-participate card which could be redeemed for coupons at specified places (such as a post office) or by directly mailing food stamp coupons to recipients.

The recent introduction of Electronic Benefit Transfer (EBT) systems represents the first major shift in the way the program has been administered since 1977. Most EBT systems work much like bank debit cards. Recipients are given EBT cards with a magnetic stripe. At the check-out, the recipient enters a personal identification number in a terminal to authorize EBT payment of the food stamp purchase. The terminal connects to the EBT system's central computer, which maintains an account for the recipient. If the PIN is verified, and the recipient has enough funds to cover the transaction, then the purchase is authorized, and the amount is deducted from the recipient's balance. Since Maryland pioneered EBT in 1993, 20 other states have adopted EBT statewide, and 47% of FSP benefits are now in the form of EBT rather than coupons. The PRWORA mandated that all states switch to EBT by October 2002.

*b) Economic Conditions, Welfare Reform, and the FSP*

Cash welfare programs have been the main focus of welfare reform in the 1990s. PRWORA replaced the old AFDC program with a new program called TANF, which differed from AFDC in several important ways. First, under AFDC, states had the power to set benefit levels and thus to influence caseloads. However, given benefit levels, they had little discretion over who was eligible to receive benefits. Under TANF, states have much more power to design their own welfare programs. TANF also sets time limits and stiffer work requirements for

welfare recipients.

In order to understand the ways that welfare reform and economic conditions may have affected FSP caseloads, it is useful to think of the probability of food stamp participation as the product of three quantities:  $P = I * E * T$ , where I indicates the probability that a person is income eligible, E is the probability that the person is eligible conditional on having a low income (i.e. that they meet other program rules), and T is the take-up rate.

By improving economic conditions, boom times will reduce I, and thereby reduce participation in the FSP. Similarly, if women leave poverty for high income jobs as a result of welfare reform, then P will fall because I falls. However, welfare reform may also have reduced P directly by changing the probability that a person with a given income is eligible for the FSP. PRWORA granted states flexibility in specifying sanctions for failure to comply with FSP work requirements and allows states to sanction the food stamp benefits of welfare families who fail to satisfy requirements of the state's TANF program.

Both types of sanctions may reduce or eliminate the family's FSP benefits for a period of up to several months (Gabor and Botsko 1998; GAO 2000). Several analysts have suggested that these sanction policies could have important effects on the FSP caseload (c.f. Dion and Pavetti, 2000). However, other evidence suggests that enforcement of these types of sanctions has been relatively lax--in 1996, 40% of the 5.5 million people technically subject to work and training requirements were exempted (U.S. Committee on Ways and Means, 1998).

PRWORA also required ABAWDs to meet stiff work-requirements, and limited their participation in the FSP to only three to six months in any 36 month period, unless the person is enrolled in a work or training activity. However, again, most states have waived these requirements for at least some fraction of their ABAWD caseloads (Gabor and Botsko, 1998).

And as discussed above, PRWORA disqualified legal immigrants from participation in the FSP, although many states have taken measures to cover these people using funds.

Finally, even in the absence of changes in income or eligibility rules, welfare reform could affect the take-up of FSP benefits by eligibles. As discussed above, families who leave the cash welfare rolls as a result of welfare reform are no longer automatically eligible for food stamps, and must go through certification (and periodic re-certification) of their eligibility.

This process is likely to greatly increase the transactions costs associated with participation for many families. The average FSP application takes nearly 5 hours of time to complete, including at least two trips to an FSP office. Recertification for benefits takes 2.5 hours and at least one trip. Out-of-pocket application costs average about \$10.31 or 6% of the average monthly benefit (Ponza *et al.*, 1999). States generally require families with earnings to be recertified more often than families without earnings because their benefits may change more often. Higher transactions costs are likely to be associated with lower take-up by eligibles, and thus with lower participation, other things being equal.

Welfare diversion policies may also increase the transactions costs associated with applying for food stamps. Many states have established procedures intended to divert would-be welfare recipients from applying for cash welfare. For example, applicants may be told that they must first satisfy job search requirements, or they may be offered lump sum financial assistance on the condition that they do not apply for cash aid within a certain period. While federal law continues to require that food stamp applications be accepted upon an applicant's first visit to the welfare office, these diversion policies may also deter people from applying for food stamps (Dion and Pavetti, 2000).

Finally, the publicity and discussions surrounding welfare reform may have increased the

stigma associated with using food stamps, as well as the stigma associated with using cash welfare. If such stigma is important, then it could result in declines in welfare utilization even among groups who are not directly affected by welfare reform, such as the elderly.

*c) Previous Evidence Regarding the Decline in FSP Caseloads*

The literature regarding trends in the FSP caseload is somewhat under-developed relative to the large and growing literature discussing trends in the use of cash welfare (c.f. Blank, 1997; CEA 1997, 1999; Ziliak *et al.*, 1997; Figlio and Ziliak, 1999; Wallace and Blank, 1999, Grogger and Michalopoulos, 1999; Grogger, 2000; Moffitt, 1999; Schoeni and Blank, 2000; Haider and Klerman, 2000). However, since one of the leading hypotheses about trends in the FSP caseload is that it is driven by changes in the welfare caseload, the literature on welfare caseloads is clearly germane.

The key question addressed in this literature is whether recent declines in the welfare caseload have been driven primarily by welfare reform or by improvements in the economy. Unfortunately, no consensus has emerged. The estimates vary with factors such as the length of the sample used and the data source. Estimates in the literature suggest that declines in unemployment could have accounted for anywhere between a quarter and two thirds of the of the recent decline in welfare caseloads.

The chief source of variation in measures of welfare reform is the fact that various state waivers from federal AFDC rules were granted between 1992 and the passage of PRWORA in 1996. By the time PRWORA became law, 37 states had obtained such waivers allowing them to implement some form of state-level welfare reform (U.S. U.S. Department of Health and Human Services, 1997). After PRWORA, states implemented their new TANF programs between

October 1996 and January 1998, so that there was less variation in the timing of these changes.

While this lack of variation may present a problem for our study, the fact that the FSP caseload is more heterogeneous than the TANF caseload (which consists overwhelmingly of single mothers) offers some additional sources of variation. For example, we might not expect the elderly FSP caseload to be strongly affected by either welfare reform or by the economic boom, although it is possible that increases in welfare-reform-related stigma could reduce caseloads among the elderly. These arguments suggest that it is important to examine the behavior of different segments of the caseload, rather than only looking at aggregate caseloads.

Turning to the evidence regarding changes in the FSP caseload itself, it is useful to keep our disaggregation of the changes into changes in I, E, or T, in mind. First, it is clear from the available evidence that decreases in the fraction of people who are income-eligible for the program cannot explain the whole decline in the caseload. If one examines the FSP caseload as a percentage of the population that is income-eligible, one sees an increase followed by a decline. In 1990, 1995 and 1998 respectively, 40.9, 48.6 and 38.9% of the population with incomes less than 130% of poverty participated in the FSP (U.S. Committee on Ways and Means, 1998). Using data from the Current Population Surveys, Wilde et al.(2000) perform decompositions of the change in the caseload between 1994 and 1998 and find that 26% of the decline can be explained by a falloff in the share of households with low income, while 55% was due to a decline in participation among the income-eligible.

Econometric estimates based on aggregate caseload data find that between 12 and 56% of the decline in FSP caseloads can be attributed to declines in unemployment, suggesting that the remainder may be due either to welfare reform or to other factors (Dion and Pavetti, 2000; Wilde

et al, 2000).<sup>4</sup>

Although some of this decline could be due to sanctions, or to rules limiting the eligibility of ABAWDS and legal immigrants (that is to declines in E), the evidence suggests that there has also been a decline in T (take-up among eligibles), particularly among single mothers. For example, Loprest (1999) found that two years after leaving AFDC/TANF, less than a third of former welfare recipients were receiving food stamps even though most of those who exit welfare for work remain income-eligible for food stamps. This study was based on a national survey of former recipients, but similar findings have been reported using state-level administrative data (Dion and Pavetti, 2000).

The General Accounting Office (GAO 1999) reports that between 1994 and 1997, the number of lunches served to children by the National School Lunch Program rose by 6 percent. During 1998, demand for emergency food assistance provided by Catholic Charities grew by 38 percent (GAO 1999). These figures suggest that declines in FSP usage may have contributed to real hardship for some families.

Zedlewski and Brauner (1999) examine data on households with children who had

---

<sup>4</sup> The estimates surveyed by Dion and Pavetti lie between 28 and 44%. The 12% and 55% estimates are from the Wilde et al. paper. The lower estimate is based on a specification that includes contemporaneous unemployment, while the upper estimate is from a specification that includes a single lag of the caseload. Including 4 lags of the caseload and 4 lags of unemployment yields an estimate of 35%. In our view, much of the controversy over whether or not to include lagged caseloads reflects confusion about whether the short or longer-run effects are being estimated. We have chosen to present models without lagged caseloads, so our estimates correspond to longer run effects. Also, as we will show below, it is difficult to separate out the effects of unemployment and TANF in short time series, which suggests that one should view estimates based on short time periods with some suspicion.

participated in the FSP between January 1995 and the survey date. When surveyed between February and October 1997, one third of these families had left the program. Zedlewski and Brauner find that families who had been on welfare were more likely than other families to have exited, and that the difference was greatest at the lowest levels of income. If families were choosing not to participate because of improvements in their financial positions, then one might expect differences in participation to be greatest at the highest levels of income.

This decline in take-up among eligibles appears to be an entirely urban phenomenon. McConnell and Ohls (2000) show that FSP caseloads declined much more slowly in rural areas and, in sharp contrast to the evidence for urban areas, the decline that did occur in rural areas can be entirely accounted for by a reduction in the number of income-eligible households.

McConnell and Ohls also show that rural households have higher take-up conditional on eligibility than urban households, and that their level of satisfaction with the program is higher. For example, they are more likely to feel that they are treated respectfully by their caseworkers. Because of this difference in perceptions about treatment, McConnell and Ohls speculate that the differences between rural and urban areas may be largely due to higher transactions costs and stigma in urban areas. We investigate this issue further below.

A somewhat older literature also points to stigma and transactions costs as two key determinants of FSP participation. Moffitt (1983) was one of the first to suggest that stigma might deter eligible families from participating in the FSP. However, a recent USDA study of FSP eligibles found that only 7% of eligible non-participating households gave stigma as their main reason for non-participation, although half answered affirmatively to at least one of the survey questions about stigma (Ponza *et al.*, 1999).

These survey results also suggest that transactions costs may be considerable, but do not

establish a direct link between such costs and participation. Blank and Ruggles (1996) found that participation in the FSP increased with the size of the benefit, suggesting that households trade off the costs and benefits when deciding whether or not to participate.

Daponte, Sanders, and Taylor (1999) investigate these issues further using a sample of 405 households in Allegheny County, Pennsylvania. The authors conducted a randomized experiment in which the treatment group was informed about their eligibility status, and about the size of any benefits they were eligible for. The control group was not. Consistent with Blank and Ruggles, those entitled to the largest benefits were most likely to apply for food stamps when given this information: the take-up rate was over 90% for those eligible for over \$202 in benefits, compared to only 40% among those eligible for less than \$41. This finding also suggests that transactions costs and/or stigma are significant barriers to take up.

## II. Empirical Methods

As discussed above, most previous studies of welfare caseloads and all of the existing econometric studies of food stamp caseloads rely on administrative data on aggregate caseloads.

These models generally take the following form:

$$(1) \ln(\text{FDST}_{st}) = a_0 + a_1 \text{UNEMP}_{st} + W_{st}a_2 + \text{STATE}_s a_3 + \text{YEAR}_t a_3 + e_{st},$$

where  $\text{FDST}_{st}$  is the participation rate (i.e. number of households that participate divided by the total number of households) for state  $s$  in year  $t$ ;  $\text{UNEMP}$  is the state unemployment rate;  $W$  is a vector of time-varying attributes of the state's welfare program;  $\text{STATE}$  is a vector of state indicators or state-specific time trends;  $\text{YEAR}$  is a vector of year dummies, and  $e_{ist}$  is an idiosyncratic error term. State-year trends may or may not be included in the model.

We follow this tradition by first estimating model (1) using data on the aggregate

caseload.<sup>5</sup> In our base specification, the vector  $W$  includes several variables that have appeared in previous studies of the effects of welfare reform on welfare use (c.f. Blank, 1997; CEA 1997, 1999; Ziliak *et al.*, 1997; Figlio and Ziliak, 1999; Wallace and Blank, 1999, Grogger and Michalopoulos, 1999; Grogger, 2000; Moffitt, 1999; Schoeni and Blank, 2000). These include the (logarithm of the) maximum welfare benefit payable to a family of three; a dummy variable that is equal to one in all years between the implementation of a state-wide welfare reform and the implementation of TANF in state  $s$ ; and a second dummy equal to one in all years after the implementation of the state's TANF program. These two dummy variables are modified so that if, for example, the waiver or TANF program was implemented mid-year, the value of the dummy variable would be .5 in that year and one in subsequent years.

In our base specification, state and year dummies are included in order to capture unobserved characteristics of states or years that are related to both FSP caseloads and welfare reform. This specification implicitly assumes that the only unobservable determinants of welfare reform that influence food stamp use are either time-invariant characteristics of states or characteristics of years that affect all states in the same way. If time-varying unobservable state-specific characteristics influence the timing of welfare reform, however, then the state-fixed effects approach may yield inconsistent estimates. Hence, we also estimate models including state-specific time trends. These models control for any unobserved characteristics of states that trend smoothly over the sample period.

One contribution of our study is to explicitly compare results obtained using aggregate caseload data with those obtained using data from the Current Population Surveys (CPS). It has

---

<sup>5</sup> We are grateful to Robert Schoeni for this suggestion, and also for generously providing us with the aggregate caseload

been suggested that the aggregate caseload data may provide a better estimate of participation rates than self-reported CPS data. CPS respondents may not recall some spells of FSP use, or may not wish to report them. A particular concern is that increasing stigma associated with welfare programs could be associated with increases in the under-reporting of participation, so that the decline in welfare caseloads calculated using CPS data would be exaggerated.

On the other hand, administrative data also suffers from inaccuracies. For example, the same household may be counted more than once if it goes on and off the program in the course of a year, and policies associated with welfare reform may increase the amount of this type of caseload "churning". In order to make the comparison between the two data sets, we will take the micro-level CPS data, aggregate it up to the state-year level, and estimate model (1).

A further important drawback of administrative data is that it is not possible to control for household characteristics which may be important determinants of food stamp utilization. Nor is it possible to disaggregate the caseload, which is necessary to allow the effects of policy changes to affect different segments of the caseload differently. Hence, the next step in our analysis will involve estimating models using the household-level CPS data of the following form:

$$(2) \text{FDST}_{ist} = a_0 + X_{ist}a_1 + a_2\text{UNEMP}_{st} + W_{st}a_3 + \text{STATE}_s a_5 + \text{YEAR}_t a_6 + e_{ist},$$

where  $\text{FDST}_{ist}$  is an indicator equal to one if family  $i$  participated in the food stamp program in state  $s$  at time  $t$  and  $X_{ist}$  is a vector of family attributes that may affect food stamp use including maternal education, age, and race, the number of children in the family, the age of the youngest child (in models for families with children), the sex of the respondent, and whether the family

---

data.

lives in a central city, the rest of a Metropolitan Statistical Area (MSA) or in a rural area.<sup>6</sup> These variables are highly significant determinants of food stamp participation. Because the policy variables vary only at the state-year level, we correct all of our household-level model standard errors for possible correlations in the  $e_{ist}$  within state-year clusters. Model (2) was first estimated for all households so that the estimates could be compared to those obtained using aggregate data. We then narrowed the scope to households with income less than 300% of the federal poverty line, since these households are likely to be more strongly affected by welfare reform, and also by unemployment. Within this group, we first isolated households with elderly members, since these households are subject to somewhat different rules, as described above, and we estimate models separately for households with elderly members but without children.

In the remaining caseload, we estimated separate models for the following demographic groups: single-headed households, married couples with children, married couples without children, and adults living alone. Single heads are most likely to be affected by welfare reform, since many of them receive welfare. Married couples (with or without children) and households with elderly members but without children make an interesting "control group" since they should not be directly affected by welfare reform (except to the extent that they are headed by immigrants). Finally, most ABAWDS will fall in the adults living alone category. We also

---

<sup>6</sup> Specifically, we include mother's age, mother's age squared, indicators for whether she is a high school dropout, has some college, or has at least a college degree, indicators for whether she is married, dummy variables for 1 child, 2 children, and so on up to 6 or more children, indicators for black or other race, the age of the youngest child, the sex of the respondent (usually the household head), central city residence, residence in the balance of MSA, and undetermined whether central city or balance of MSA. When we examine subgroups, some of these variables are omitted. For example, models for single heads do not include "married" and models for all households do not include age of

estimated separate models for urban, central city, and rural households.

Finally, our review of the literature highlighted the fact that factors that affect the participation of eligibles may be of primary importance. Hence, we estimate models which include two factors which are likely to have a direct influence on stigma and transactions costs: the adoption of the EBT program, and the recertification interval for working families. Although EBT systems were introduced in order to reduce administrative costs and deter fraud, it seems likely that recipients using an inconspicuous debit card would perceive less stigma than those who continue to use the more visible brown coupons. On the other hand, some smaller stores are not equipped to take EBT, so that it is possible that the conversion to EBT could limit access to some food stores. We make use of the fact that there is considerable variation across states in recertification rates and in the adoption of EBT in order to estimate the effect of these policies on FSP utilization. These models take the form:

$$(3) \text{FDST}_{ist} = a_0 + X_{ist}a_1 + a_2\text{UNEMP}_{st} + W_{st}a_3 + a_4\text{EBT}_{st} + a_5\text{RECERT}_{st} + \text{STATE}_s a_6 + \text{YEAR}_t a_7 + e_{ist}.$$

### III. Data

Our CPS data is taken from the 1981 to 1999 waves of the March Current Population Survey (CPS). Since the questions about food stamp participation refer to participation over the last year, these files yield a data set covering the period 1980 to 1998. The unit of observation is the household.

Annual state-level information about welfare policy and unemployment is matched to

---

youngest child.

each household's record. Information on unemployment rates, TANF implementation dates, waiver dates, and maximum welfare benefits are taken from CEA (1999). Data about the EBT program come from the U.S. Department of Agriculture (2000). Information about recertification intervals comes from the FSP quality control (QC) files (USDA, various years), and is unfortunately only available to us from 1989 on, so that regression models including this variable can be estimated only over the 1989 to 1998 period. The QC data consist of representative samples of administrative data provided by the states to the U.S. Department of Agriculture. USDA uses the data for audit purposes, comparing actual payments with the payments prescribed by the program rules. One of the data items included on the files is the household's certification interval. We use these data to compute the average recertification interval for working families with children by state and year.

Recall that working families are generally subject to shorter recertification intervals than those who receive welfare-only. Thus, mean recertification intervals are likely to be affected by both the fraction of welfare families in the caseload, and by the way that working families are treated. By focusing only on working families, we avoid picking up changes in the composition of the FSP caseload (which could itself be affected by welfare reform), and focus only on changes in the treatment of working families.

Table 1 provides an overview of some of our key data series. On aggregate, U.S. participation in the FSP over the 90s went up and down smoothly, although there was considerable variation across states in the timing of these changes. Table 1 also shows that participation rates calculated from the CPS are systematically lower than those calculated using administrative data, with the gap emerging in about 1984 and persisting (and perhaps growing further) during the 1990s. This trend in under-reporting offers an additional rationale for the

inclusion of year effects and state-year trends in our models, and for the comparison of estimates obtained using aggregate administrative data and CPS data.

Table 1 also confirms that the timing and magnitude of recent declines in the food stamp caseload vary considerably between demographic groups, and between urban and rural areas. For example, while the participation rate among single-headed households fell from 46.2 to 32.6% between 1993 and 1998, a decline of 29%, the participation of married households with children and without children fell by 37% and 39% respectively over the same interval. It is most unlikely that the decline in these two groups is directly related to welfare reform, since married households with children are not usually eligible for cash assistance.

Some of the decline among married households could be due to the PRWORA restrictions on participation of immigrants in the FSP, although immigrants do not make up a large enough share of low-income households with married heads to have accounted for declines of these magnitudes. Households with elderly members and no children less than 18 also show declines in FSP participation of 20%, and many of the comments about households with married heads apply equally well to them. Finally, adults living alone, the group that was most directly impacted by PRIOR restrictions on ABAWDS, shows a relatively small decline in FSP participation of only 15% between 1993 and 1998. These figures strongly suggest that while welfare reform may have been important to some groups, there were other factors driving the decline in FSP caseloads.

The second panel of Table 1 shows that the aggregate food stamp caseload follows trends in the unemployment rate. In fact, food stamp participation appears to follow the unemployment rate with a one period lag. We have estimated models using lagged unemployment rather than the contemporaneous unemployment rate in order to account for this pattern. The effects of

unemployment are slightly stronger in these models, but the other coefficients are essentially unchanged, so in what follows, we show the estimates obtained using contemporaneous unemployment for the sake of comparability with other studies. The recertification intervals for the period 1989 to 1998 are also shown. These intervals were fairly constant until 1993, and then declined.

Turning to our measures of welfare reform, the last panel of Table 1 shows the rapid rise in the number of states with waivers from the AFDC program after 1991. Table 1 also indicates that most states implemented TANF either in 1996 or 1997, as discussed above. In contrast, there is a good deal of variation in the timing of the adoption of EBT technology.

#### **IV. Results**

##### *a) Comparisons of Administrative and CPS data*

Estimates of model (1) are shown in columns (1) and (2) of Table 2. The first column shows results estimated using administrative data on aggregate caseloads. These regression models use state-year population counts as weights. The second column shows results estimated using CPS data aggregated to the state-year level. These estimates are weighted using state-year cells sizes. The coefficients in both columns (1) and (2) are scaled for comparability to the estimates using household-level CPS data which are shown in columns (3) and (4).<sup>7</sup> Column (3) shows estimates which do not include the X vector of household characteristics, while column (4) shows what happens when these control variables are included.

The first panel of the table shows estimates without state-year trends, while the second

---

<sup>7</sup> Specifically, they are multiplied by .079, which is the mean participation rate in the

panel shows the effects of including them. A comparison of the estimates in the two panels shows that the differences between the columns are reduced when state-year trends are included in the models. Hence, we focus on these estimates in much of the discussion below.

A comparison of the administrative data and the aggregated CPS data (columns (1) and (2)) shows the following: Welfare waivers are not estimated to have a statistically significant effect in either data set; TANF implementation has a significant negative effect on FSP participation which is of similar magnitude in both data sets; the estimated effect of maximum welfare benefits is negative in both data sets, but larger in the regressions using administrative data; and unemployment has a positive and significant effect on FSP participation which is of similar magnitude in both data sets. Thus, any inferences one could draw about the relative importance of unemployment rates, TANF, and waivers are the same, whether one uses administrative data or data created by aggregating the CPS.

The negative effect of the maximum welfare benefit rate is perhaps surprising, but persists in all of our models (except those for adults living alone, as shown below). Higher welfare benefits should lead to higher welfare caseloads, with corresponding increases in FSP caseloads, other things being equal. A possible explanation for a negative relationship between welfare benefits and FSP caseloads is that in states with lower welfare benefits, a higher fraction of the FSP caseload is food stamps-only and the relative importance of the food stamp benefit is higher. The stigma associated with food stamp participation may also be lower in states where the FSP is less closely associated with welfare.

A comparison of the estimates in columns (2) and (3) shows the effects of aggregation.

---

CPS data.

Note that the estimated effects of TANF and the unemployment rate are similar whether we use the aggregated CPS or the household level data. The biggest change when we move to household-level data is that the effect of waivers becomes more negative and is now statistically significant, although the difference between the column (2) and column (3) estimates is not statistically significant.

Finally, a comparison of columns (3) and (4) shows the effects of controlling for the 'X' variables that are available in household level data. The inclusion of these variables tends to slightly increase the estimated effect of TANF, and to decrease the estimated effect of waivers, bringing it back into line with the column (1) and (2) estimates.

Thus, we conclude that the estimated effects of TANF, welfare waivers, and unemployment are very similar whether one uses administrative or CPS data, and whether one uses aggregate or household-level data. Moreover, the household-level data offers the possibility of controlling for relevant 'X' variables, and also for disaggregating the caseload in interesting ways. Hence, we turn to an more detailed analysis of these data in the next section.

#### *b) Estimates Using CPS Household-Level Data*

Estimates from model (2) are shown in Table 3 for different demographic groups. Once again, the top panel shows estimates without state-year trends, while the second panel shows estimates including these trends. In the models without trends, the coefficient on the unemployment rate is significant for every group. The estimated effects of the unemployment rate are robust to the inclusion of state-year trends except in the case of the elderly, where unemployment becomes statistically insignificant. The panel 2 estimates imply that among families with incomes less than 300 percent of poverty, a one percentage point increase in

unemployment is associated with a 1/2 point decline in FSP participation.

Since the overall 1993 to 1998 decline in participation for this group was 5 points, this estimate implies that the 2 percentage point decline in unemployment that occurred over the same interval was responsible for about 20% of the 5 percentage point decline in the food stamp caseload among those with incomes less than 300% of poverty. Note that in this low income sample, the effects of both TANF and unemployment are greater than in the full sample shown in Table 1.

For single mothers the estimated effect of unemployment is even greater, but so are the declines in the FSP caseload. Our estimates imply that 16% of the 13.6 percentage point decline in participation can be explained by reductions in unemployment. The comparable figures for married heads with children, married heads without children, households with elderly members but without children, and adults living alone are 26%, 43%, 13%, and 44%, respectively. Thus, economic conditions have the least explanatory power for the decline in the FSP caseload among single mothers, and the most explanatory power for married households without children and single adults, as one might expect.

Column (1) shows that in the low-income sample, both welfare waivers and TANF had significant negative effects on FSP participation (though the estimated size of the waiver effect is somewhat sensitive to the inclusion of state-year trends). The panel 2 estimates imply that implementation of a waiver was associated with about a .8 percentage point decline in FSP participation rates, while TANF implementation reduced participation by 1.6 percentage points. Thus, TANF may have been responsible for 30% of the decline in FSP caseloads in this group. The preferred panel 2 estimates suggest that this TANF effect was entirely concentrated among single mothers. For this group, the panel 2 estimates imply that 40% of the decline in FSP

participation is due to TANF.

Both panels suggest (unexpectedly) that much of the effect of welfare waivers was felt by households with elderly members (and no children), and by adults living alone, and that waivers can explain much of the overall decline in FSP participation among these groups. It is possible that states that implemented welfare waivers took other measures that made food stamps less attractive to these households, or that the increasing stigma associated with welfare in those states discouraged participation.

Finally, the estimated effects of central city and balance-of-MSA residence suggest that FSP use is highly concentrated among central city residents and among rural residents. That is, suburban households are much less likely to participate than other households. This pattern is particularly pronounced among single parents.

Table 4 examines the urban/rural dichotomy further by estimating separate models for all urban, central city, and rural residents. This table suggests that welfare reform had no impact on FSP caseloads in rural areas. Moreover, a comparison of columns (1) and (2) suggests that all of the impact of welfare reform in urban areas was felt in central cities. Among central city residents, declines in unemployment can account for 18% of the decline in FSP participation, while TANF accounts for 38%.

### *c) Direct Measures of Transactions Costs and Stigma*

The first panel of Table 5 presents estimates of model (3) which includes our direct measures of transactions costs and stigma: recertification intervals for working families and an indicator for whether the state had adopted EBT. Because we were able to obtain the QC data only from 1989, these models are estimated over the 1989 to 1998 period.

For the sake of comparison, the second panel of Table 5 shows estimates similar to those presented in Tables 3 and 4 above, except that the models are estimated over the shorter time period. Note that it is difficult to obtain precise estimates of the effects of unemployment over this period. The estimated effects of TANF and waivers are qualitatively similar to those estimated above: TANF is significant only for single parent households and households in rural areas, while waivers have significant negative effects on participation for adults living alone.

The estimates in the first column of the first panel suggest that longer recertification intervals increase participation in the FSP among single parents. The coefficient suggests that each 1 month increase in the recertification interval would lead to a 1/2 percentage point increase in the FSP participation rate. Rural households also respond significantly to recertification intervals, though the size of the effect is somewhat smaller. Of our demographic groups, single heads might be expected to have the most difficulty going through the recertification process, since they need to find child care. Similarly, households in rural areas are likely to face larger costs of attending recertification interviews than those in urban areas. Thus, the two groups that one might expect a priori to have the most difficulty going through the recertification process, seem to be most affected by recertification intervals.

The adoption of EBT (which was hypothesized to reduce stigma) has marginally significant positive effects on married households without children and in rural areas. It is possible that married households without children are particularly sensitive to the stigma of using food stamps.

In summary, the estimates in Table 5 provide direct evidence regarding the importance of transactions costs and stigma, and suggest that some groups may be particularly sensitive to these factors. It is worth noting that the recertification interval measures only one dimension of

transactions costs.<sup>8</sup> Unfortunately, we are not aware of any state-level panel data about additional dimensions of transactions costs such as the length and complexity of application forms, fines on states as a result of food stamp quality control audits (which may result in greater vigilance in enforcing rules), or the vigor with which employment and training requirements for FSP recipients are enforced. Our results using the recertification interval suggest that collecting data of this kind may be a fruitful area for future inquiry.

## **V. Extensions**

### *a) More Detailed Measures of TANF Policies*

Welfare waivers and later TANF gave states considerable latitude in designing their welfare programs. It is of potential interest to try to account for the variation in specific policies across states. That is, if TANF reduced participation in the FSP, which specific TANF policies were responsible for this result?

Two policies that may be particularly important are food stamp sanctions and diversion programs, as discussed above. We attempted to measure these policy changes by estimating models similar to those shown in Table 5, except that they included two additional variables. The first is an indicator equal to one if the state had "severe" food stamp sanctions. This

---

<sup>8</sup> A recent report documents many other factors that can be thought of as increasing transactions costs (O'Brien *et al.*, 2000, page 4-5). They find that the mean length of a food stamp application is 12 pages, and that 10 states have applications of 19 pages or more. Much of this length and complexity is due to questions about income or resources that "would not ordinarily count against a food stamp applicant's benefits or eligibility." For example, applications ask about children's income and bank accounts, gifts from churches and synagogues, income from plasma donations, and receipts for garage sales. Forty-three states also ask about assets which cannot legally be considered in determining food stamp eligibility. These assets include burial plots, the

indicator is taken from Gabor and Botsko (1998), who classify states as having stringent sanctions if they: (i) reduced or eliminated a family's food stamp benefit for failing to comply with TANF work requirements; (ii) sanctioned the entire household or imposed lengthy sanction periods for failing to comply with FSP work requirements, and (iii) had few if any waivers exempting able-bodied adults without dependent children from the food stamp time limits imposed by PRWORA. This indicator turns on in 1997, and stays on for the 7 affected states.

The second variable is an indicator equal to one if the state used lump-sum diversion programs. By this we mean a program in which potential welfare applicants are offered cash assistance in return for a pledge to refrain from applying for welfare benefits for a specified period. Information about whether the state used lump-sum diversion comes from Dion and Pavetti (2000). Lump sum diversion programs were generally adopted between 1996 and 1997, though a few states adopted them as early as 1993.

The lump-sum diversion variable was not statistically significant in any of our models. The sanctions variable was insignificant in models without state-year trends, and often positive and significant in models with state-year trends. Given the construction of this variable, the most sensible explanation of this result is that it is difficult to distinguish between our sanctions variable and a state-year trend.

#### *b) Models Controlling for Immigration Status*

PRWORA explicitly limited FSP benefits for legal immigrants, and FSP participation has fallen substantially among this group. Unfortunately, questions about immigration status were

---

value of a home, personal belongings, and life insurance policies.

only added to the CPS in 1994. Borjas (1999, 2000) has analyzed the 1993 to 1997 CPS data and finds that participation differentials between immigrants and natives can be explained entirely by differences in characteristics such as household composition, age and education of the head. Moreover, although FSP use fell faster among immigrants than natives overall, the trends outside of California were similar. In other words, a faster decline among immigrants in California is what drives the diverging national trends for the two groups. These findings cast some doubt on whether welfare reform can be responsible for the decline in FSP participation among immigrants, except perhaps in California.

In our view, the estimates shown in Table 5 cast considerable doubt on the wisdom of attempting to sort out the effects of TANF and unemployment in short time series. Nevertheless, we did attempt to use the 1993 to 1998 data to estimate separate models for immigrant households (i.e. households in which the respondent was an immigrant). We did not find statistically significant effects of either TANF or unemployment in these models.

*c) Models Controlling for Increases in the Generosity of Medicaid*

Yelowitz (2000) suggests that the initial rise in FSP caseloads in the late 1980s and early 1990s may be related to increases in income cutoffs for the Medicaid program over this period. Newly eligible families who applied for Medicaid may have learned of their eligibility for the FSP at the same time, since both programs are generally administered out of welfare offices. Alternatively, families who did not find it worthwhile to incur the transactions costs associated with applying for food stamps may have found it worthwhile to apply for both Medicaid and food stamps. In any case, Yelowitz finds that for every 10 newly eligible families who took up Medicaid benefits, 4 also took up food stamps. Thus, his estimates suggest that changes in

Medicaid eligibility may have accounted for as much as half of the run-up in the FSP caseload in the early 1990s, and that it may be important to control for increases in the generosity of the Medicaid program in our regression models.

Yelowitz suggests including an indicator equal to one if the youngest child in the household is eligible for Medicaid. This specification is awkward in our context, since we examine households with and without children. Hence, as an alternative we experimented with including the Medicaid income cutoffs for children of various ages in regression models similar to those shown in Table 5. This change in specification had little impact on our results.

#### *d) The Earned Income Tax Credit*

Since we infer that TANF and changes in unemployment together account for roughly half of the decline in FSP caseloads, it is worth asking whether we can explain the rest of the decline in caseloads using other important policy changes that took place over the 1990s. The Earned Income Tax Credit may be a particularly important policy among families with children, since the generosity of the credit expanded greatly after 1993. To the extent that the EITC "made work pay", it may have raised families far enough out of poverty to take them off the FSP. Meyer and Rosenbaum (1999) estimate that the EITC can account for 37% of the increase in the employment rate of single mothers between 1992 and 1996. Overall increases in the generosity of the program are captured by the year effects in our models. However, after 1993, the credit expanded more rapidly for families with two children than families with one child as Hotz, Scholz, and Mullin (2000) point out.

We estimated an additional version of our models for single and married heads with children that included the EITC phase-in subsidy rate as a regressor. These estimates suggested

that the EITC had a statistically significant effect among single heads, though not among married heads. Indeed, among the single heads, our estimate suggests that expansion in the generosity of the EITC available to families with more than one child could explain about one-fourth of the decline in the FSP participation of this group. Despite the importance of the EITC for explaining the FSP caseload, however, adding it to our models had essentially no effect on the estimates of the other coefficients.

## **VI. Conclusions**

We find that both decreases in the unemployment rate and TANF have contributed to the recent declines in FSP caseloads. Our estimates are remarkably similar whether we use administrative data or data from the CPS, and whether we use aggregate or household-level data.

They suggest that among households with incomes less than 300% of poverty, changes in unemployment accounted for 20% of the decrease in FSP participation between 1993 and 1998, while TANF accounted for 30%.

This TANF effect was concentrated among single heads -- in this group, declines in unemployment account for only 16% of the decline in the FSP caseload, while TANF accounted for 40%. Turning to residential location, we find that the TANF effect is significant only in central cities. In these locations, changes in unemployment explains 18% of the decline in FSP participation, whereas TANF explains 40%. Thus, TANF was associated with large declines in FSP participation among single heads and in central cities, a finding which suggests that efforts to restore food stamp benefits to households in need should focus on this group.

Our analysis of recertification intervals suggests that single heads have also been impacted disproportionately by recent decreases in certification intervals. It is possible that

other types of transactions costs associated with the food stamp application process may weigh particularly heavily on this group. Since TANF increases the transactions costs that former welfare recipients face in obtaining food stamps, this result suggests that efforts to reduce these costs could reverse some of the effects of TANF on the FSP caseload.

## References

Assistant Secretary for Policy and Evaluation. "Leavers" and Diversion Studies: Summary of Research on Welfare Outcomes Funded by ASPE. Washington: U.S. Department of Health and Human Services, undated.

Blank, Rebecca. "What Causes Public Assistance Caseloads to Grow?" NBER working paper 6343, December 1997.

Blank, Rebecca and Patricia Ruggles. "When Do Women Use AFDC & Food Stamps? The Dynamics of Eligibility vs. Participation," Journal of Human Resources, 31 #1, Winter, 1996, 57-89.

Borjas, George. "Immigration and the Food Stamp Program", xerox, Dept. of Economics, Harvard University, September, 1999.

Borjas, George. "Welfare Reform and Immigration", xerox, Dept. of Economics, Harvard University, July, 2000.

Castner, Laura and Jacquelyn Anderson. Characteristics of Food Stamp Households: Fiscal Year 1998 (Washington D.C.: USDA Food and Nutrition Service) Advance Report, July 1999.

Castner, Laura and Scott Cody. Trends in FSP Participation Rates: Focus on September 1997. Washington: U.S. Department of Agriculture, November 1999.

Committee on Ways and Means. 1998 Green Book. Washington: Government Printing Office, 1998.

Council of Economic Advisers. "Technical Report: Explaining the Decline in Welfare Receipt, 19993-1996." May 1997.

Council of Economic Advisers. "Technical Report: The Effects of Welfare Policy and the Economic Expansion on Welfare Caseloads: An Update." August 1999.

Daponte, Beth Osborne, Seth Sanders and Lowell Taylor. "Why Do Low Income Households Not Use Food Stamps?: Evidence from an Experiment" Journal of Human Resources, 34 #3, Summer 1999, 612-628.

Dion, Robin and LaDonna Pavetti. Access to and Participation in Medicaid and the Food Stamp Program: A Review of the Recent Literature. Washington: U.S. Department of Health and Human Services, March 2000.

Figlio, David N. and James P. Ziliak. "Welfare Reform, the Business Cycle, and the Decline in AFDC Caseloads." In Sheldon Danziger, ed., Welfare Reform and the Economy: What Will Happen When a Recession Comes? Kalamazoo, MI: Upjohn Institute for Employment Research,

1999.

Food and Nutrition Service. Food Stamp Program Electronic Benefits Highlights. Washington: Food and Nutrition Service, October 1999.

Gabor, Vivian and Christopher Botsko. State Food Stamp Policy Choices Under Welfare Reform: Findings of a Fifty-State Survey. Washington: U.S. Department of Agriculture, May 1998.

General Accounting Office. Food Stamp Program: Various Factors Have Led to Declining Participation. Washington: General Accounting Office RCED-99-185, July 1999.

General Accounting Office. Welfare Dynamics: State Sanction Policies and Number of Families Affected. Washington: General Accounting Office HEHS-00-44, March 2000.

Grogger, Jeffrey. "Time Limits and Welfare Use", NBER working paper 7709, May, 2000.

Grogger, Jeff and Charles Michalopoulos. "Welfare Dynamics Under Time Limits." NBER working paper 7353, September 1999.

Haider, Stephen and Jacob Klerman. "A Stock-Flow Analysis of the Welfare Caseload: Insights from California Economic Conditions", Santa Monica CA: RAND, September, 2000.

Hotz, V. Joseph, Charles Mullin, and John Karl Scholz. "The Earned Income Tax Credit and Labor Market Participation of Families on Welfare", Dept. of Economics, UCLA, xerox, Dec. 2000.

Loprest, Pamela. "Families Who Left Welfare: Who are They and How are They Doing?" Washington D.C.: The Urban Institute, Discussion Paper DP 99-02, 1999.

McConnell, Sheena and James Ohls. "Food Stamps in Rural America: Special Issues and Common Themes" (Washington D.C.: Mathematica Policy Research) May 2000.

Meyer, Bruce and Dan Rosenbaum. "Welfare, the Earned Income Tax Credit, and the Labor Supply of Single Mothers", Dept. of Economics, Northwestern University, xerox, September 1999.

Moffitt, Robert A. "An Economic Model of Welfare Stigma", American Economic Review, 1983, 73 #5, 1023-1035.

Moffitt, Robert A. "The Effect of pre-PRWORA Waivers on AFDC Caseloads and Female Earnings, Income, and Labor Force Behavior." Mimeo, Johns Hopkins University, May 1999.

O'Brien, Doug, Kimberly Prendergast, Eleanor Thompson, Marcus Fruchter, and Halley Torres Aldeen. The Red Tape Divide: State-By-State Review of Food Stamp Applications, Washington D.C.: America's Second Harvest, 2000.

Ponza, Michael, James Ohls, Lorenzo Moreno *et al.* Customer Service in the Food Stamp Program

(Washington D.C.: Food and Nutrition Service, U.S. Dept. of Agriculture) contract # 53-3198-40-025, July 1999.

Schoeni, Robert and Rebecca Blank. "What has Welfare Reform Accomplished? Impacts on Welfare Participation, Employment, Income, Poverty, and Family Structure." NBER working paper 7627, March 2000.

U.S. Committee on Ways and Means. Green Book, 1997, Washington D.C.: Government Printing Office, 1998.

U.S. Committee on Ways and Means. Green Book, 1998, Washington D.C.: Government Printing Office, 1999.

U.S. Department of Agriculture. "Who is Leaving the Food Stamp Program? An Analysis of Caseload Changes from 1994 to 1997." Washington: Office of Analysis, Nutrition, and Evaluation, Food and Nutrition Service, March 1999.

U.S. Department of Agriculture. Food Stamp Program Electronic Benefits Transfer (EBT) Project Status, Washington D.C.: USDA, February 2000.

U.S. Department of Agriculture. Technical Documentation for the Fiscal Year [various years] FSP QC Database and QC Minimodel. Washington, DC: USDA, Food and Nutrition Service, various years.

U.S. Department of Health and Human Services. Setting the Baseline: A Report on State Welfare Waivers. <http://aspe.os.dhhs.gov/hsp/isp/waiver2/title.htm>. 1997.

Wallace, Geoffrey and Rebecca M. Blank. "What Goes Up Must Come Down? Explaining Recent Changes in Public Assistance Caseloads." Mimeo, Northwestern University, February 1999.

Wilde, Parke. (2000) "The Decline in Food Stamp Participation in the 1990's", Washington D.C.: USDA, Food and Nutrition Research Program, June.

Yelowitz, Aaron. "Did Recent Medicaid Reforms Cause the Caseload Explosion in the Food Stamps Program?", Dept. of Economics UCLA, unpublished paper, 2000.

Zedlewski, Sheila and Sarah Brauner. "Declines in Food Stamp and Welfare Participation: Is There a Connection?" (Washington D.C.: The Urban Institute) 1999.

Ziliak, James P., David N. Figlio, Elizabeth E. Davis, and Laura S. Connolly. "Accounting for the Decline in AFDC Caseloads: Welfare Reform or Economic Growth?" Mimeo, Institute for Research on Poverty, November, 1997.

**Table 1: Summary Statistics by Year****A. Food Stamp Participation by Group**

Year	1980	1982	1984	1986	1988	1990	1992	1994	1996	1998
Administrative data	0.084	0.088	0.088	0.080	0.076	0.080	0.100	0.105	0.096	0.082
all CPS	0.082	0.086	0.081	0.074	0.071	0.076	0.089	0.091	0.082	0.062
household income <300% poverty	0.142	0.146	0.145	0.137	0.136	0.146	0.163	0.165	0.153	0.122
single parents	0.417	0.430	0.402	0.407	0.400	0.416	0.442	0.447	0.386	0.326
married parents	0.124	0.127	0.124	0.111	0.108	0.128	0.152	0.152	0.139	0.103
married, no children	0.049	0.065	0.067	0.056	0.056	0.055	0.073	0.069	0.067	0.044
elderly members, no children	0.085	0.082	0.081	0.072	0.072	0.070	0.076	0.075	0.069	0.059
adults living alone	0.107	0.117	0.122	0.107	0.110	0.120	0.115	0.130	0.120	0.103
immigrants	-	-	-	-	-	-	-	0.204	0.172	0.132
all urban	0.142	0.145	0.143	0.134	0.140	0.144	0.166	0.171	0.151	0.123
central city	0.185	0.189	0.191	0.174	0.190	0.192	0.210	0.231	0.198	0.165
rural	0.147	0.156	0.155	0.150	0.141	0.157	0.157	0.159	0.158	0.117

**B. Means of Key Policy Variables (Standard deviations in parenthesis)**

Year	1980	1982	1984	1986	1988	1990	1992	1994	1996	1998
Maximum welfare benefits (\$1,000s)	5.910 (2.160)	5.220 (1.920)	5.050 (1.950)	5.190 (1.920)	5.090 (1.920)	4.810 (1.890)	4.580 (1.820)	4.370 (1.720)	4.130 (1.610)	3.970 (1.510)
Unemployment	6.850 (1.600)	9.250 (2.280)	7.290 (2.180)	6.970 (2.230)	5.480 (1.890)	5.470 (1.140)	6.890 (1.610)	5.680 (1.320)	5.210 (1.240)	4.430 (1.190)
Recertification intervals for working families with children	- -	- -	- -	- -	- -	8.800 (2.530)	9.050 (2.480)	8.700 (2.950)	8.110 (3.100)	7.720 (3.350)

**C. Number of States with Policy in Place**

Year	1980	1982	1984	1986	1988	1990	1992	1994	1996	1998
TANF	0	0	0	0	0	0	0	0	24	51
State-wide welfare waiver	0	0	0	0	0	0	3	11	28	0
State-wide EBT system	0	0	0	0	0	0	0	1	5	28

**Table 2: Comparison of Estimates from Aggregate Caseload and CPS Data, 1980-1998****A. No State-Year Trend**

Variable	(1)	(2)	(3)	(4)
	Aggregate Caseload	CPS Aggregated	CPS No Controls	CPS Controls
Welfare waiver	-3.5 (1.6)	-4.6 (2.5)	-7.6 (2.5)	-7.7 (2.0)
TANF	-3.1 (4.3)	-8.1 (5.7)	-10.7 (4.7)	-9.0 (3.7)
Unemployment	4.1 (0.4)	4.9 (0.4)	4.8 (0.4)	3.9 (0.3)
Ln Maximum Welfare Benefits	-30.0 (6.7)	-13.0 (6.9)	-20.3 (7.5)	-16.3 (5.9)
Observations	969	969	1079076	1079076
R-squared	0.885	0.774	0.008	0.164

Standard errors adjusted for state-year clustering in parenthesis

**B. Including State-Year Trend**

Variable	(1)	(2)	(3)	(4)
	Aggregate Caseload	CPS Aggregated	CPS No Controls	CPS Controls
Welfare waiver	-2.5 (1.6)	-2.6 (2.3)	-6.2 (2.3)	-4.4 (2.0)
TANF	-6.1 (2.9)	-7.6 (4.1)	-8.4 (3.4)	-9.5 (3.1)
Unemployment	3.1 (0.3)	4.3 (0.5)	3.3 (0.5)	3.2 (0.4)
Ln Maximum Welfare Benefits	-44.5 (6.4)	-21.7 (7.9)	-28.2 (8.0)	-24.3 (7.1)
Observations	969	969	1079076	1079076
R-squared	0.922	0.813	0.008	0.165

Standard errors adjusted for state-year clustering in parenthesis

Notes: The dependent variable in column (1) is the log of the ratio of the number of households receiving food stamp to the total population in a given state and year. The column (1) regression is weighted by the total population. The dependent variable in column (2) is the log of the ratio of the weighted number of households receiving food stamps to the weighted number of household in a given state and year (where the weight is the March CPS Household weight). The column (2) regression is weighted by the number of households in a given state and year. The coefficients and standard errors in columns (1) and (2) are multiplied by .0789 (the average weighted fraction of households receiving food stamps in the CPS) to adjust them to a comparable measurement as the estimates in columns (3) and (4). The dependent variable in columns (3) and (4) is a dummy variable for whether any member of the household received food stamps. Regressions in columns (3) and (4) are weighted by the March CPS Household Weight. All regressions include year dummies and state dummies. Additional regressors in column (4) include age and age squared of household respondent, gender of respondent, dummies for respondent's education (dropout, some college, college or more), dummies for respondent's race (black, other non-white), dummies for MSA central city, MSA balance, and MSA nonidentifiable, a dummy if respondent married, and dummies for the number of children in household (1, 2, 3, 4, 5, 6 or more). All reported coefficients and standard errors are multiplied by 1000.

**Table 3: Effects of Policy Variables on Food Stamp Usage by Different Groups, 1980-1998**

**A. No State-Year Trend**

Variable	(1)	(2)	(3)	(4)	(5)	(6)
	<300% Pov	Single Heads	Married Parents	Married No Kids	Elderly No Kids	Lone Adults
Welfare waiver	-14.5 (3.5)	-20.4 (9.0)	-7.4 (6.7)	-18.7 (6.7)	-12.8 (4.9)	-22.0 (6.7)
TANF	-17.1 (6.9)	-38.4 (30.8)	8.3 (11.0)	-4.9 (11.0)	-32.2 (16.9)	-21.3 (14.0)
Unemployment	6.5 (0.6)	13.6 (1.8)	8.5 (1.0)	4.1 (1.1)	2.7 (0.8)	4.3 (1.2)
Ln Maximum Welfare Benefits	-24.8 (9.7)	-4.3 (30.3)	-38.7 (18.9)	-41.5 (18.3)	-32.6 (16.1)	37.7 (17.5)
MSA Central City	-1.3 (2.6)	-4.1 (6.9)	-9.4 (3.7)	-2.9 (3.8)	-3.7 (3.4)	-0.4 (4.3)
MSA Balance	-38.2 (1.8)	-70.6 (5.8)	-39.5 (3.0)	-14.5 (3.2)	-22.5 (2.4)	-32.9 (4.0)
Observations	592849	85891	157762	50842	158761	81571
R-squared	0.161	0.211	0.087	0.028	0.072	0.085

Standard errors adjusted for state-year clustering in parenthesis

**B. Including State-Year Trend**

Variable	(1)	(2)	(3)	(4)	(5)	(6)
	<300% Pov	Single Heads	Married Parents	Married No Kids	Elderly No Kids	Lone Adults
Welfare waiver	-7.8 (3.5)	-7.3 (8.9)	-0.4 (7.5)	-13.9 (8.0)	-12.8 (4.6)	-15.4 (6.8)
TANF	-16.2 (5.9)	-54.0 (18.6)	-3.8 (10.6)	-4.1 (12.8)	-17.6 (11.7)	-21.0 (14.2)
Unemployment	5.2 (0.7)	10.9 (2.1)	7.7 (1.2)	5.9 (1.4)	1.5 (1.0)	4.1 (1.3)
Ln Maximum Welfare Benefits	-38.6 (12.2)	-100.1 (35.5)	-58.5 (21.1)	-34.5 (23.3)	-29.7 (16.2)	54.7 (22.1)
MSA Central City	-1.1 (2.6)	-4.7 (7.0)	-9.2 (3.7)	-2.7 (3.8)	-3.0 (3.3)	0.2 (4.4)
MSA Balance	-37.9 (1.9)	-71.3 (5.8)	-39.7 (3.0)	-14.0 (3.3)	-22.1 (2.4)	-32.1 (4.0)
Observations	592849	85891	157762	50842	158761	81571
R-squared	0.161	0.213	0.088	0.029	0.075	0.087

Standard errors adjusted for state-year clustering in parenthesis

Notes: All regressions are weighted by March CPS Household Weight. Additional regressors include age and age squared of household respondent, gender of respondent, dummies for respondent's education (dropout, some college, college or more), dummies for respondent's race (black, other non-white), dummy if MSA nonidentifiable, year dummies, and state dummies. Columns (1) and (5) include a dummy if respondent married. Columns (1) - (3) include dummies for the number of children in household (2, 3, 4, 5, 6 or more). Column (2) includes the age of the youngest child in the household. All reported coefficients and standard errors are multiplied by 1000.

**Table 4: Effects of Policy Variables on Food Stamp Usage by Urban/Rural, 1980-1998**

Variable	A. No State-Year Trend			B. Including State-Year Trend		
	(1)	(2)	(3)	(4)	(5)	(6)
	Urban	Central City	Rural	Urban	Central City	Rural
Welfare waiver	-14.6 (3.9)	-19.8 (6.0)	-20.1 (8.1)	-6.5 (4.3)	-9.2 (7.5)	-12.0 (8.0)
TANF	-24.9 (7.8)	-31.2 (12.3)	-8.3 (23.7)	-23.4 (7.3)	-24.5 (12.4)	-5.2 (22.4)
Unemployment	5.9 (0.7)	7.9 (1.1)	5.3 (1.1)	5.0 (1.0)	6.3 (1.4)	4.0 (1.3)
Ln Maximum Welfare Benefits	-51.0 (12.1)	-50.5 (17.4)	-17.3 (16.8)	-77.5 (14.9)	-67.2 (24.5)	-21.7 (22.0)
MSA Central City	40.5 (2.4)	- -	- -	40.5 (2.4)	- -	- -
Observations	312437	158685	176840	312437	158685	176840
R-squared	0.176	0.202	0.143	0.176	0.202	0.144

Standard errors adjusted for state-year clustering in parenthesis

Notes: All regressions are weighted by March CPS Household Weight. Additional regressors include age and age squared of household respondent, gender of respondent, dummies for respondent's education (dropout, some college, college or more), dummies for respondent's race (black, other non-white), dummy respondent married, dummies for the number of children in household (1, 2, 3, 4, 5, 6 or more), year dummies, and state dummies. All reported coefficients and standard errors are multiplied by 1000.

**Table 5. Effects of Recertification Intervals and EBT, 1989-1998 (including state-year effects)**

**A. Estimates including Recertification Intervals and EBT**

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Single Heads	Married Parents	Married No Kids	Elderly No Kids	Lone Adults	Urban	Central City	Rural
Recertification Interval	5.4 (1.9)	2.8 (1.7)	-0.7 (1.6)	1.1 (0.9)	0.5 (1.9)	1.1 (1.0)	1.4 (1.5)	3.1 (1.4)
EBT System	-13.0 (12.9)	14.7 (12.0)	19.3 (11.2)	6.4 (8.5)	-16.2 (12.6)	-6.4 (9.4)	-10.9 (12.0)	15.9 (9.2)
Welfare waiver	-6.2 (8.8)	2.7 (7.0)	-14.7 (8.0)	-7.5 (4.8)	-13.3 (7.1)	-3.6 (4.2)	-4.0 (6.3)	-8.2 (7.9)
TANF	-34.5 (15.6)	4.1 (12.1)	-3.8 (12.8)	-15.2 (11.2)	-14.2 (14.2)	-17.2 (6.3)	-10.0 (9.6)	-5.2 (20.9)
Unemployment	0.6 (3.7)	4.1 (2.8)	0.6 (3.0)	1.4 (1.9)	2.0 (3.1)	0.0 (1.8)	-3.4 (2.4)	5.4 (3.3)
Ln Maximum Welfare Benefits	16.0 (105.6)	-5.9 (67.2)	-89.6 (77.6)	66.9 (45.8)	-60.8 (62.7)	4.6 (44.4)	48.3 (59.3)	86.0 (53.3)
Observations	46198	70937	23396	80896	41816	160775	79393	83967
R-squared	0.201	0.089	0.031	0.067	0.088	0.175	0.202	0.144

Standard errors adjusted for state-year clustering in parenthesis

**B. Comparison Estimates for 1989-1998 excluding Recertification Intervals and EBT**

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Single Heads	Married Parents	Married No Kids	Elderly No Kids	Lone Adults	Urban	Central City	Rural
Welfare waiver	-8.2 (9.0)	2.2 (7.0)	-13.6 (8.1)	-7.8 (4.7)	-14.1 (7.0)	-4.1 (4.2)	-4.6 (6.4)	-8.1 (8.1)
TANF	-39.0 (16.1)	2.5 (11.9)	-2.3 (12.9)	-16.0 (11.0)	-15.4 (13.8)	-18.0 (6.5)	-11.2 (10.1)	-5.5 (21.0)
Unemployment	-0.5 (3.7)	4.4 (2.7)	1.2 (3.0)	1.5 (1.9)	1.5 (3.0)	-0.4 (1.8)	-4.1 (2.4)	6.4 (3.3)
Ln Maximum Welfare Benefits	10.8 (106.3)	-22.9 (67.3)	-102.9 (79.1)	58.5 (44.2)	-48.6 (62.6)	6.3 (44.1)	49.7 (59.6)	60.8 (52.8)
Observations	46198	70937	23396	80896	41816	160775	79393	83967
R-squared	0.201	0.089	0.031	0.067	0.088	0.175	0.202	0.144

Standard errors adjusted for state-year clustering in parenthesis

Notes: All regressions are weighted by March CPS Household Weight. Additional regressors include age and age squared of household respondent, gender of respondent, dummies for respondent's education (dropout, some college, college or more), dummies for respondent's race (black, other non-white), year dummies, and state dummies. Columns (1) - (5) include dummies for MSA central city, MSA balance, and MSA nonidentifiable. Columns (4) and (6)-(8) include a dummy if respondent married. Columns (1), (2), (6)-(8) include dummies for the number of children in household (2, 3, 4, 5, 6 or more). Columns (6) - (8) also include dummy if 1 child in household. Column (1) includes the age of the youngest child in the household. All reported coefficients and standard errors are multiplied by 1000.