

Section V. Data

Our analysis uses data from the 1990 and 1996 panels of the Survey of Income and Program Participation (SIPP). The SIPP is designed for use in program planning and policy analysis and has been identified as a “principal data source” for conducting research on food assistance and nutrition program outcomes (Logan, et al. 2002). We use the (monthly) core SIPP data as well as the SIPP topical modules on work schedules and migration history. We supplement the SIPP data with FSP policy variables from Kabbani and Wilde (2003) and Kornfeld (2002), monthly state unemployment rates from the U.S. Department of Labor (2001) and quarterly real Gross Domestic Product (GDP) from the U.S. Department of Commerce (2001). The SIPP data and variables generated from them are discussed in turn below.

Each panel of the SIPP is a nationally representative (non-institutional) sample of households whose members are interviewed at four-month intervals (waves) over approximately a two- to four-year period. The sample sizes range from 21,900 households in the 1990 panel to 36,700 households in the 1996 panel. The 1990 SIPP provides data from December 1989 through August 1992 and brings the benefits of capturing food stamp participation prior to welfare reform. The 1996 SIPP panel is the most recently available and provides data from December 1995 through March 2000, allowing us to capture food stamp participation post-welfare reform. While federal welfare reform was not signed into law until August 1996, many states changed their welfare programs under federal waivers prior to 1996, so we broadly refer to our later sample period as post-welfare reform.

A primary strength of the SIPP lies in its monthly data on Food Stamp Program participation, employment, 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, not annually, so the monthly SIPP data allow us to examine participation over the same time that benefits are received. These monthly SIPP data allow for detailed analyses of the relationship between monthly employment characteristics and monthly food stamp receipt. The SIPP work schedule topical module identifies whether individuals work traditional or nontraditional hours. The work schedule topical module is included in the fourth wave of the 1990 panel and the fourth and tenth waves of the 1996 panel. The SIPP migration history topical module measures whether an individual is a U.S. citizen. This module is included in the second wave of

the 1990 and 1996 panels. The SIPP also captures the current Hispanic and immigrant populations, which may be particularly important in examining food stamp participation and changes in participation over time.

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 (reference month one).²¹ The seam phenomenon is of less concern in our logit analysis, which focuses on FSP participation, than in an analysis that focuses on transitions into and out of the FSP. Also, to avoid errors in the reporting of food stamp receipt, we smooth food stamp receipt in the SIPP so that a household must remain in or out of the Food Stamp Program for at least two months before we consider it a change in food stamp receipt status.

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 Tuttle 2002; Bitler, Currie and Scholz 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).²² 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 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 strategy could lead to greater biases (Cody and Tuttle 2002, p. 25).

²¹ 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, 419).

²² Estimates suggest that underreporting is lower in the 1996 SIPP panel than in the 1990 SIPP panel (Cody and Tuttle 2002, p. 23).

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.

The longitudinal nature of the SIPP creates a concern of attrition bias. 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). However, even with this limitation, 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. The SIPP's strengths—relatively high reporting of food stamp receipt and monthly data on FSP participation, income, and family composition—likely outweigh the attrition bias drawback.

To account for nonresponse sample attrition and a complex sample design, we use SIPP person weights throughout the descriptive analyses. Similar to Gleason et al. (1998), we do not use weights in the multivariate analyses because the sampling probabilities for sample member subgroups are defined by our explanatory variables and are not defined by our dependent variable (DuMouchel and Duncan 1983, as cited by Gleason, Schochet, and Moffitt 1998).

Variables Used in the Analysis

Using data from the 1990 and 1996 SIPP, we measure the variables discussed in the conceptual model. Food Stamp Program participation, our dependent variable, is measured as a dichotomous variable that takes the value one if an individual participates in the Food Stamp program during the current month and zero otherwise²³. The unit of analysis for defining participation in the Food Stamp Program is the SIPP household, as food stamp eligibility and benefits are calculated at the household level.²⁴

Although working age adults are our primary study population, many of the explanatory variables are defined at the household level because, as mentioned, food stamp eligibility and benefits are calculated at the household level. The characteristics of both the adult and other household members will affect whether the household and thus

²³ To define FSP participation, we use the response to a SIPP survey question that asked all persons age 15 or over if they received food stamps sometime during the reference month.

²⁴ A SIPP household consists of all persons who occupy a housing unit, including all unrelated persons.

the working age adult participates in the Food Stamp Program. The unit of observation for the dependent and explanatory variables is person-month.²⁵

Employment Characteristics. The household's employment status is measured with three variables that capture varying degrees of household employment.²⁶ The first variable measures whether someone, but not everyone in the household was employed last month (had a job at least one week of the month). The second variable measures whether everyone in the household was employed but not everyone was working full time (more than 35 hours per week). The third variable measures whether everyone in the household was employed and working full time. These variables are interpreted relative to the omitted employment category, no household member employed last month.

We use two variables to capture whether households worked traditional (regular daytime) hours last month.²⁷ These two variables are also based on households' attachment to the labor force, where we only define a household as working traditional hours if all adult household members worked full-time—more than 35 hours per week. With this requirement, the traditional hours variables are designed to identify households where adults are the most likely to have difficulty getting to the food stamp office because of their work schedule. The first variable measures whether *all* household members worked traditional hours (in a household where all adults worked full-time), and the second variable measures whether *some, but not all*, adult household members worked traditional hours (in a household where all adults worked full-time). These variables are interpreted relative to the omitted category which includes individuals in households where (1) all adults in the household are employed full-time, but no one works traditional hours or (2) at least one adult in the household is *not* employed full-time. The traditional hour variables are only available in the work schedule topical module administered during waves four (1990 and 1996 panels) and 10 (1996 panel). To incorporate them into our monthly data, we assume that households that worked traditional hours in the months observed, also worked traditional hours in all other months of the panel (1990 panel) and in surrounding months (1996 panel).²⁸

²⁵ As discussed in the empirical model section, the standard errors in the multivariate analysis are adjusted to account for multiple observations per person.

²⁶ We use a household-level measure of employment because employment of anyone in the household can affect whether an individual participates in the Food Stamp Program. For each adult in our study population, our monthly employment variable captures whether anyone in his or her household had a job at least one week in the month.

²⁷ If an individual reports working evening, night, rotating, split, or irregular hours, then he/she is defined as working non-traditional hours.

²⁸ In the 1996 SIPP panel, we extrapolate the traditional hours variable from wave four to waves one through six, and from wave 10 to waves seven through 12.

Three variables capture the remaining employment characteristics—hours worked, number of jobs held, and employer changes. We measure the total number of hours all adult household members worked last month, the total number of jobs all adult household members held last month, and the number of employment changes the household had last quarter and two quarters ago. We measure the number of employment changes over the past two quarters because a change in employment, which requires reporting to the Food Stamp agency, may only affect participation three months down the line if quarterly recertification is required, or six months down the line if semi-annual recertification is required.

Income Measures. To better isolate the employment-related cost components of food stamp participation, we include a household income volatility measure in all estimation models and a total household income measure in some estimation models. As described in the conceptual model, households with individuals who have frequent employment changes will experience a higher cost of participation and thus be less likely to participate than households whose members have steady jobs, all else equal. But, without holding all else equal, households with frequent employment changes may have less stable income and so be more likely to participate. Our analysis isolates some of the cost component of frequent employment changes by holding constant household income volatility. We use the coefficient of variation measured over the past year as our income volatility measure.²⁹

Total household income is an important determinant of the food stamp benefit amount and thus participation. While our empirical models control for income by holding constant income's reduced form determinants (as described in the conceptual model), we also estimate a secondary set of models that include a measure of total household income in the past month. The concern is that if income is not fully controlled for in the reduced form model, then the employment characteristics in our empirical model might reflect both the costs and benefit of participation, not only the cost.

FSP Policies. We include measures of Electronic Benefit Transfer (EBT) and recertification periods from 1990 through 1999. The EBT variable measures the proportion of the fiscal year in which a statewide EBT system was in effect (Kornfeld 2002). The two recertification periods variables, which are derived from the Food Stamp Quality Control (QC) data, measure the proportion of working food stamp recipients with a one to three month recertification period and the proportion of working food stamp recipients with a four to six month recertification period (Kabbani and Wilde 2003).

²⁹ The coefficient of variation, as measured over a year, is the standard deviation of income over the year divided by the mean of income over the year.

Allowable Income Deductions. Allowable income deductions are imperfectly measured in the data. Excess shelter costs are captured in part by variables measuring the region of the country the household lives in and whether the household lives in a metropolitan area. Medical expense deductions for elderly or disabled household members are captured in part by variables measuring whether any household member is over age 60 in the current month and whether anyone in the household is disabled in the current month. While this is imperfectly measured, 2001 data show that only 13 percent of elderly and seven percent of disabled FSP participating households take a deduction for medical expenses (U.S. Department of Agriculture 2003, p. 44). We do not have information on households that take the dependent care deduction, but this is not of particular concern because like the medical expense deductions, few households take the deduction. For example, only 14 percent of food stamp households with earnings took the dependent care deduction in 2001 (U.S. Department of Agriculture 2003, p. 44).

Household Composition. Household composition is well captured in the data with the following variables. Household headship is captured with two variables measuring whether the household is headed by a single female or a single male in the current month. These variables are interpreted relative to a two-adult headed household, the omitted category. Household composition is further captured with variables measuring the number of adults in the household, the number of children in the household, and whether the individual is an able-bodied (i.e., non-disabled) adult between ages 18 and 50 living in a household without children, elderly, or disabled members. The latter category follows FSP rules in capturing able-bodied adults without dependents (ABAWDs) between the ages of 18 and 50. The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) limited this group of ABAWDs to three months of food stamps in any three year period unless they were working (Dagata 2002).

Demographic Characteristics. Demographic characteristics for our working-age adult (18 through 59) study population are measured during the current month and at the individual-level. Age is measured with indicator variables capturing whether the adult is under age 25, age 26 through 35, or age 36 through 45. These variables are interpreted relative to age 46 through 59, the omitted group. As mentioned, we also include indicators of whether anyone in the household is age 60 or over or disabled. Gender is measured with a variable indicating whether the individual is a female (male being the omitted group). Race and ethnicity are measured with indicators of whether the individual is non-Hispanic black or Hispanic, where non-Hispanic white is the omitted group. Education level is captured with variables measuring whether the individual has a high school education (diploma or equivalent) or has more than a high school education. These variables are interpreted relative to less than a high school education, the omitted group. We also measure whether the adult has never been married and whether the adult is a U.S. citizen. Since U.S. citizenship is provided at only one point in time, we assume

individuals that were U.S. citizens in the month observed, also were U.S. citizens in all other months of the panels.

Household Preferences. Household preferences are captured to some extent with household composition, demographic characteristic, region, and metropolitan area variables. In fixed effect models, time-invariant household preferences are fully controlled for with individual-level fixed effects.

Economic Conditions. Economic conditions are measured with monthly state unemployment rates (not seasonally adjusted) from the U.S. Department of Labor (2001) and quarterly real gross domestic product (GDP) from the U.S. Department of Commerce (2001).