THE SURVEY OF INCOME AND
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FOOD STAMP PARTICIPATION: A COMPARISON OF SIPP WITH ADMINISTRATIVE RECORDS

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PREFACE

The Survey of Income and Program Participation (SIPP) offers important new opportunities for improved policy research and analysis. Validating the new data against existing administrative data sources is an important first step towards capitalizing on these opportunities. This paper compares the distribution of Food Stamp Program participants on selected demographic and income variables obtained from SIPP and from a survey of administrative case records. In general, the two data sources generate similar results. There is, however, a significant improvement in the match when SIPP household units are redefined to correspond more closely to food stamp assistance units.

BACKGROUND

The Survey of Income and Program Participation (SIPP) is a nationwide survey designed to provide comprehensive information on the economic situation of households and persons in the United States. It is the first to collect extensive information on cash and noncash income, eligibility and participation in various government transfer programs, labor force status, assets and liabilities, and many other topics on a regular basis over nearly 3 years for both individuals and households. As such, it presents a major new opportunity for improved policy research and analysis in a wide range of substantive fields (David 1985).

Our particular interest stems from the anticipated contribution that SIPP will make to our understanding of the Food Stamp Program. The Food Stamp Program helps low-income individuals and families increase their food purchasing power and thereby obtain a more nutritious diet. Benefits, in the form of coupons that can be redeemed for eligible food items at retail stores, are available in the 50 States, the District of Columbia, Guam, and the Virgin Islands. The cost of the program will amount to nearly $12 billion in the fiscal year that began October 1, 1985. The program will serve an average of nearly 20 million people a month.

Previous efforts to answer longstanding questions regarding the size and characteristics of the population potentially eligible for food stamp benefits, the determinants of household decisions to participate in the program, and the dynamic patterns of eligibility and participation over time have often been limited by the lack of sufficiently detailed data. Food stamp eligibility and benefits are conditioned on monthly levels of income and

allowable expenses, available assets, and household composition. Few surveys have ever collected this information with the monthly reference periods compatible with Food Stamp Program eligibility rules.

A notable exception was the Income Survey Development Program's (ISDP) 1979 Research Panel. The 1979 Research Panel was one of four experimental field tests conducted by the Department of Health, Education, and Welfare (the predecessor of the current Department of Health and Human Services) in conjunction with the Bureau of the Census (Ycas and Lininger 1981). While it was primarily a vehicle for feasibility tests and controlled experiments of alternative survey design features, the 1979 Research Panel yielded the first nationwide, longitudinal sample with monthly data on household circumstances.

Research sponsored by the Food and Nutrition Service (FNS) in the last 5 years made extensive use of the 1979 Research Panel data and generated important new (albeit preliminary) findings on the economic status and behavior of food stamp recipients (Beebout, Long, and Skidmore 1986). SIPP, with its larger sample, extended duration, and more tested procedures, is expected to support more definitive research into many of the same issues.

To tap this potential resource, it is first important to know if the SIPP data will change our view of the characteristics of food stamp participants. The principal source of information to characterize the food stamp recipient population is a series of cross-sectional surveys conducted or sponsored by FNS since 1975 (see, for example, FNS 1986). In each instance, these surveys are based on an abstraction of data from the actual case records

maintained by the State agencies that run the Food Stamp Program, not household interviews. We may not be surprised if the picture of the food stamp caseload that emerges from these data differs from the picture that emerges from SIPP. It would, however, increase the difficulty of generalizing SIPP-based research results to the food stamp recipient population.

The objective of this paper is to make a first, preliminary comparison between the Agency's administrative record survey data and SIPP to assess (at least informally) the "goodness of fit" between selected income and demographic characteristics of program participants derived from the two sources.

We are especially interested in the prevalence of food stamp participants with earned income. Labor force participation among program participants is an important issue in itself, but our interest is focused more on the tendency of general household surveys to generate higher estimates of the proportion of food stamp households with earned income than the FNS surveys of State agency case records.

Beebout (1981) found sizable differences between administrative records and household survey data in various measures of labor force status among both Aid to Families with Dependent Children (AFDC) and food stamp participants. Table 1 extends Beebout's observation using FNS survey records, the ISDP Research Panel, the Current Population Survey (CPS), and the Panel Survey of Income Dynamics (PSID). Note that the household surveys all produce higher estimates of the proportion of food stamp cases with earnings than the FNS survey estimate. Administrative data from State agency records suggest that about 21 percent of all food stamp cases had earned income. In

contrast, the household surveys suggest that anywhere from 30 to 60 percent had earnings.

All of these surveys have reference periods in all or part of 1979, but survey procedures and definitions differ in several important respects. In particular, there are differences in the basic reference or accounting period used to collect information from survey respondents and in the definition of unit composition used to determine employment status and program participation.

First, there are differences in the underlying accounting period used in each survey. The CPS and the PSID collect information on earnings and program participation for the calendar year prior to the interview. (The receipt of program benefits and earned income are not necessarily concurrent in that year, however.) These annual estimates are two to three times larger than comparable monthly estimates from the FNS survey and the ISDP where recipiency and income are defined for a single month. The importance of the accounting period is best illustrated in the PSID data. When employment status is defined at the time of the interview and program recipiency is measured in the month just before the interview, the proportion of food stamp families with earnings is about half the size of the annual PSID estimate and roughly comparable to the ISDP figure. We note, however, that even the monthly estimate from the PSID is substantially higher than the FNS survey estimate.

A second area of variation is in the definition of unit composition. For the purpose of determining eligibility for benefits, the Food Stamp Program defines a household on the basis of shared responsibility for the purchase and preparation of food. Persons living together but usually purchasing and

preparing food separately can receive food stamp benefits as two separate units. This definition is reflected in the case record survey data. But most general purpose surveys (like the CPS) define a household more broadly on the basis of shared living quarters. Others (like the PSID) may structure analysis in terms of families. The figures shown in Table 1 are all based on the receipt of earned income by any member of the unit as defined by each survey. If individuals are combined differently by these definitions, then there may well be differences in the characteristics of the aggregated units.

Table 1. Estimates of Food Stamp Caseload with Earnings.

Source	Definition	Proportion
Administrative data (FNS 1981)	Food stamp units with earned income in November 1979.	21%
Income Survey Development Program (1979 Research Panel)	Food stamp units with earned income in average month of 1979.	34%
Panel Survey of Income Dynamics (1980 Interview Wave)	Families that received food stamps in the month prior to interview where either the head or spouse was employed at the time of interview.	33%
Panel Survey of Income Dynamics (1980 Interview Wave)	Families that received food stamps in at least one month of 1979 where either the family head or spouse had earnings or other members worked some hours.	65%
Current Population Survey (March 1980)	Households that received food stamps in at least one month of 1979 with earned income in 1979.	60%

Source: Special tabulations from each survey.

The SIPP offers the potential to disentangle some of the effects of these differences. Because income and program participation data are collected for each month, differences in accounting periods can be eliminated. The survey also collects sufficiently detailed information on household composition and food stamp recipiency to allow us to construct approximations of food stamp assistance units in addition to the broader household and family units. We can then contrast the characteristics of each type of unit to assess the importance of the unit definition.

METHODOLOGY

Our analysis relies on a comparison of tabulations from two data sets: an FNS survey of administrative case records and early data from SIPP.

The case record data are derived from a sample of about 6,400 cases participating in the Food Stamp Program in August 1983. This sample was originally selected as part of the Food Stamp Quality Control System. The Quality Control System is an ongoing review of household circumstances to determine if food stamp participants are eligible and receiving the correct benefit amount. The system is based on a national probability sample of approximately 70,000 food stamp cases, stratified by the 50 States, the District of Columbia, Guam, and the Virgin Islands. About one-twelfth of the total sample is selected each month. The information contained in this file reflects the characteristics of food stamp participants in August 1983 as recorded in State agency case files.

The second data set is an extract of about 1,500 households interviewed in Wave 1 of the 1984 Panel of the SIPP. Households were selected from the total SIPP sample if they reported receipt of food stamp benefits in September 1983.

All information regarding household income and characteristics recorded in this file uses September 1983 as the reference month. Since the FNS survey reflects program participants in August 1983, we initially wanted to compare the FNS survey data to a SIPP file with an August 1983 reference month. However, only three of the four survey rotation groups (roughly three-fourths of the Wave 1 sample) use August as a reference month. A comparison between the August and September 1983 reference month files shows only trivial differences on the array of characteristics chosen for this preliminary analysis (Appendix Tables A.1 and A.2). We elected to use the September file to augment the sample size by making use of all four rotation groups in Wave 1. (See Nelson, McMillen, and Kaspryzk (1985) for a complete description of the rotational structure of SIPP.)

The SIPP results presented here rely on a household-based file. Person-level data on income recipiency and amounts are aggregated within households. Some detailed information is maintained on the household reference person and spouse, but no information is retained on other household members. In those households that reported food stamp receipt, only a few variables are aggregated across persons within the food stamp unit as a special sub-unit in the household. This approach was intended to simplify data processing with the expectation that the broad household definition of SIPP is more inclusive yet roughly resembles the food stamp unit. The results presented here should be considered preliminary for this reason.

We have not fully examined the implications of Census Bureau imputation procedures on the results of our analysis. Further work is required to determine the extent to which such imputations might alter the results.

RESULTS

Table 2 illustrates the extent of the match between the SIPP household and the food stamp unit definitions in September 1983. About 95 percent of all SIPP households reporting some food stamp benefit contain only one food stamp unit. The remaining 5 percent contain more than one assistance unit. These are cases in which two or more persons in the SIPP household are identified as authorized heads of food stamp units, each with separate food stamp amounts. Other persons in the household may be identified as covered by the benefits given to the authorized heads.

Table 2. Food Stamp Household Composition (in thousands).

Food stamp units	With subunit	No subunit	Total
1	1,103	4,870	5,973 (95%)
2	29	263	292 (5%)
3	4	13	18 (0%)
4	4	0	4 (0%)
Number of observations:			
Weighted	1,140 (18%)	5,147 (82%)	6,287 (100%)
Unweighted	278	1,190	1,468

Note: Numbers and percentages may not sum to totals because of rounding.

Source: Special tabulations from the 1984 Panel of the Survey of Income and Program Participation (Wave 1).

In about 18 percent of the cases, food stamp benefits are received by a subunit within the household. These are cases in which only some of the persons in the household are identified as receiving or covered by food stamps. Other persons in the household are not part of the food stamp

unit. To the extent that the excluded household members differ from members of the food stamp unit, estimates of food stamp unit characteristics based on household characteristics may be biased.

It might be noted in passing that the existence of subunits is not peculiar to SIPP. Special tabulations from the March 1980 and March 1981 CPS show that nearly 25 percent of the households that report receipt of food stamps in the previous calendar year include some member(s) who did not receive benefits. About 19 percent of the households with food stamps in the ISDP Research Panel either contain more than one food stamp unit or include some individuals that are not part of the assistance unit (Lubitz and Whitmore 1982).

Table 3 illustrates the effect of subunits on selected demographic characteristics in September 1983. The table distinguishes between all SIPP households with reported receipt of food stamps and the subset of SIPP households with only one food stamp unit. This limitation is imposed because of the nature of the household based data file used in this analysis. While the data structure of this file enables us to identify the existence of multiple food stamp units within a SIPP household, it does not provide information on each of the individual food stamp units when there is more than one. Recall from Table 2 that this limitation excludes only 5 percent of the observations. Among households with only one food stamp unit, we also distinguish between those with and without subunits. This distinction enables us to assess the relative influence of household members who are not part of the food stamp unit on estimates of the selected characteristics. The first column of Table 3 presents the array of estimates from the FNS survey data for August 1983.

Table 3. Comparison of Selected Demographic Characteristics of Food Stamp Households.

Demographic Characteristic	FNS Survey	SIPP: Only one food stamp unit: No subunit	SIPP: Only one food stamp unit: With subunit	SIPP: All
Age of reference person:				
< 25 years	17%	12%	10%	12%
25 - 44	49	49	39	47
45 - 59	16	16	26	18
> 59 years	18	23	26	23
Educational status of reference person:				
Less than high school	n/a	64%	55%	62%
High school graduate	n/a	25	30	26
At least some college	n/a	11	15	12
Family status:				
Married with children	16%	20%	25%	22%
Single with children	47	43	35	40
Married, no children	4	7	9	8
Single, no children	32	30	31	30
With elderly	20%	23%	33%	25%
With children	64%	64%	67%	65%
Household size:				
1 - 2	50%	45%	24%	41%
3 - 4	34	37	41	37
5+	16	17	35	22
Number of observations:				
Weighted (000s)	7,691	4,870	1,103	6,287
Unweighted	6,371	1,126	269	1,468

Note: Percentages may not sum to 100 percent because of rounding.

Source: Special tabulations from the 1984 Panel of the Survey of Income and Program Participation (Wave 1) and the August 1983 Food Stamp Quality Control sample.

For most of the characteristics shown here, the differences between SIPP and FNS survey data are relatively small. There are slightly fewer food stamp households headed by persons under 25 years old, slightly more households with heads 60 years old or older, and somewhat more households with 5 or more members in SIPP. Note the effect of limiting the tabulations to only those households with one food stamp unit and no subunit. In every instance, this restriction improves the fit between SIPP and the FNS survey. This illustrates the effect of including non-food stamp unit members in tabulations from SIPP. Exclusion of these persons brings SIPP into closer agreement with the FNS administrative records.

Table 4 presents similar comparisons for selected income characteristics. There are somewhat larger differences apparent in the two data sources, although the general fit is still quite close. The largest differences are apparent in the proportion of households reporting wage and salary income (and hence earnings), AFDC, asset income, and other unearned income.

SIPP shows that about one-third of all households receiving food stamps in September 1983 also had earned income (including wages, salaries, and self-employment income). This estimate is considerably higher than the FNS survey estimate of just under 20 percent. Note that households in which food stamps are received by a subunit are much more likely to have earnings than average. Just over 60 percent of these households report earned income.

When the analysis is restricted to households with only one food stamp unit and no subunits, the estimated proportion of households with earnings drops to 28 percent. Roughly 40 percent of the difference between the estimates of food stamp households with earnings based on SIPP and administrative

Table 4. Comparison of Selected Income Characteristics of Food Stamp Households.

Income Characteristic	FNS Survey	SIPP: Only one food stamp unit: No subunit	SIPP: Only one food stamp unit: With subunit	SIPP: All
Source of income:				
Wage and salary	18%	27%	60%	33%
Self-employment	1	2	4	3
AFDC	46	36	34	35
General Assistance	11	10	12	11
SSI	17	20	19	19
Social Security/ Railroad Retirement	19	24	36	26
Other retirement	3	1	8	2
Unemployment Insurance	4	4	6	5
Asset income	1	11	33	15
Other unearned income	7	13	20	14
With earnings	19%	28%	61%	34%
Number of earners:				
0	81%	72%	39%	66%
1	18	23	39	26
2+	1	4	22	8
With public assistance	55%	45%	46%	46%
Number of observations:				
Weighted (000s)	7,691	4,870	1,103	6,287
Unweighted	6,371	1,126	269	1,468

Note: Percentages may not sum to 100 percent because of rounding.

Source: Special tabulations from the 1984 Panel of the Survey of Income and Program Participation (Wave 1) and the August 1983 Food Stamp Quality Control sample.

records can be explained by the unit definition. A separate tabulation prepared for this analysis shows that in almost 40 percent of the households with subunits where earned income is present, all of the earnings are received by household members who are not part of the food stamp unit.

While the treatment of subunits within a household accounts for a substantial portion of the difference between the SIPP and FNS survey estimates of the proportion of food stamp households with earnings, a substantial portion is still left unexplained. The adjusted estimate from SIPP is nearly half again as large as the FNS survey estimate (28 percent compared to 19 percent, respectively). Moreover, it is not entirely clear why earned income is so prevalent among non-food stamp unit members in households with subunits. At this stage, there are no answers to these questions.

There are some circumstances under existing program rules in which persons in the same household can be excluded from a food stamp unit or be part of a separate unit. Roomers and live-in attendants, for example, are not considered part of the food stamp unit. Other exemptions exist for the elderly and disabled. Part of the observed difference may simply reflect the effects of current program practices.

Another possible explanation might be found in the differential incentives for respondents to fully report income to food stamp eligibility workers and to SIPP interviewers. Because food stamp benefit amounts are conditioned on the level of income from other sources, income underreporting and nonreporting can increase the value of a household's food stamps. There are no similar incentives in SIPP interviewing procedures. While

documentation and verification of income is required as part of the application for food stamps, errors can and do arise. In Fiscal Year 1983, for example, 17 percent of the households receiving food stamps were either ineligible or receiving more than permitted under program regulations. By one estimate (SRI International 1984), 17 to 18 percent of the errors leading to food stamp overpayments were attributed to the participants' failure to fully report all earned income.

The precise effect of these errors on the proportion of food stamp households with earnings from the FNS survey data cannot be estimated on the basis of available data. It is not possible to distinguish between complete nonreporting and partial underreporting of earnings. The first type of error gives a downward bias to the estimate of food stamp households with earnings, but the second has no effect in this analysis. Even if all of the earned income reporting errors are of the first type, however, they account for only one-third of the difference between the SIPP and FNS survey estimates. If the FNS survey estimate is adjusted for these errors on this assumption, the estimated percentage of households with earnings increases by about 3 percentage points (equal to 18 percent of the households with overpayment errors), from 19 percent to 22 percent. This adjustment still leaves a sizable, unexplained difference between the two data sets.

SIPP shows considerably fewer households with both food stamps and AFDC than the FNS administrative records (36 percent and 46 percent, respectively). The exclusion of households with subunits has no appreciable effect on this difference. This may be related to the frequency of non-reported income in

SIPP. The Bureau of the Census (1984) estimates that SIPP captures just under 80 percent of all AFDC recipients but about 90 percent of all food stamp recipients. Part of the difference may also be explained by the administrative structure of the Food Stamp Program. The Food Stamp Program and AFDC are often administered by the same State agency (and often by the same worker at the local levels. Because AFDC income is counted in the computation of a household's food stamp benefit, it may be more likely that the presence of an AFDC grant will be recorded in the case files than reported to the SIPP interviewer.

SIPP also shows considerably more households with asset income and other miscellaneous sources of unearned income than the FNS survey. An explanation for these differences is less apparent but may be tied to either differences in survey methodology or behavioral responses to the implicit incentives to record information accurately.

It is useful to recall how SIPP probes for and imputes missing asset income data. Under current procedures, survey respondents are asked for the amount of quarterly interest income. These amounts are then divided evenly over each month in the quarter. If the amount is unknown, the respondent is asked for the asset level, and the Bureau of the Census imputes the interest amount evenly over each reference month of the interview wave. Asset levels are typically quite small among food stamp participants (Bickel and MacDonald 1981). As a result, asset income may be coded as present in SIPP even though the actual or imputed amounts are small.

Small amounts of asset income may not be recorded consistently in food stamp case records, however. Although every effort is made to record all types of

income when determining food stamp eligibility and benefits, there is an implicit tolerance for small amounts of unrecorded income. If the amount of unreported asset income is less than about $17 a month and no other error is present in the case, then the failure of the eligibility worker to record the asset income has no effect on existing measures of benefit accuracy. Therefore, the FNS survey may understate the receipt of asset income relative to SIPP.

Furthermore, although there is a large difference in the recorded receipt of asset and miscellaneous unearned income, the significance of this difference is unknown at this time. Its importance depends on the amount of income in these categories in addition to the frequency of income receipt. In this analysis we focus our attention on the presence of income rather than the amount of income from each source. If the amounts are small, then the effect of the difference between SIPP and the FNS survey data may be unimportant.

CONCLUSIONS

We can draw several conclusions from this initial examination of the SIPP data.

First, the comparability of SIPP to existing information is quite close (at least along the dimensions we examined in this paper). This is encouraging. It suggests that ongoing and anticipated research efforts based on SIPP need not be heavily qualified by concerns that the sample looks radically different than independent program records.

Second, researchers will need to pay particular attention to unit definitions. Unthinking use of the standard SIPP household definition can provide potentially misleading information if the intent of the research is to characterize program participants or model program operations. While we have only examined the consequences of alternative unit definitions in the context of the Food Stamp Program, we suspect that our results are equally applicable to other programs in which the assistance unit differs from the broader household definition. The consequences of using the broad household definition may be of less concern if the research interest is on more general questions of household economic status where food stamp benefits are only part of the resources available.

Third, there is clearly room for additional research. The effort reported here could easily be extended to (1) use a person-based file to develop more refined measures of the composition and characteristics of households with multiple food stamp units and subunits, (2) compare income distributions in addition to the simple measures of receipt reported here, (3) consider the effects of sample attrition over the life of the panel, and (4) verify or refute alternative hypotheses regarding outstanding differences between SIPP and the FNS survey data.

Table A.1. Comparison of Selected Demographic Characteristics between SIPP Reference Months

Demographic Characteristic	August 1983	September 1983
Age of reference person:		
< 25 years	12%	12%
25 - 44	47	47
45 - 59	18	18
> 59 years	23	23
Educational status of reference person:		
Less than high school	64%	62%
High school graduate	25	26
At least some college	11	12
Family status:		
Married with children	22%	22%
Single with children	40	40
Married, no children	9	8
Single, no children	30	30
With elderly	25%	25%
With children	64%	65%
Household size:		
1 - 2	42%	41%
3 - 4	36	37
5+	22	22
Number of observations:		
Weighted (000s)	6,388	6,287
Unweighted	1,121	1,468

Note: Percentages may not sum to 100 percent because of rounding.

Source: Special tabulations from the 1984 Panel of the Survey of Income and Program Participation (Wave 1).

Table A.2. Comparison of Selected Income Characteristics between SIPP Reference Months

Income Characteristic	August 1983	September 1983
Source of income:		
Wage and salary	33%	33%
Self-employment	3	3
AFDC	36	35
General Assistance	12	11
SSI	20	19
Social Security/ Railroad Retirement	26	26
Other retirement	3	2
Unemployment Insurance	4	5
Asset income	15	15
Other unearned income	14	14
With earnings	34%	34%
Number of earners:		
0	66%	66%
1	27	26
2+	8	8
With public assistance	47%	46%
Number of observations:		
Weighted (000s)	6,388	6,287
Unweighted	1,121	1,468

Note: Percentages may not sum to 100 percent because of rounding.

Source: Special tabulations from the 1984 Panel of the Survey of Income and Program Participation (Wave 1).

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