THE SURVEY OF INCOME AND PROGRAM PARTICIPATION

Survey of Income and Program Participation (SIPP) Sample Loss and the Efforts to Reduce It

No. 31

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PREFACE

This paper brings together material from a variety of sources on sample loss in the 1984 SIPP Panel. The sample loss at the end of the Panel in July 1986 was slightly over 22 percent. Comparisons are made with the rates for some other longitudinal surveys. Efforts to understand the noninterview problem by analyzing reports generated by field interviewers are described. Efforts to reduce sample loss by motivating respondents are described also. One of these efforts involves an experiment in giving a small gift to SIPP households.

INTRODUCTION

The Survey of Income and Program Participation (SIPP) is a new and complex survey. As such, it is the subject of considerable research and evaluation aimed at determining what methodological and operational problems exist and how improvements can be made. One important area under study concerns noninterviews which can affect the overall quality of SIPP data. These data are intended to provide the best available information on the economic situation of households and persons in the United States. This paper brings together a variety of information on our experience with noninterviews in the first SIPP panel to be completed, the 1984 SIPP panel. The focus is primarily on noninterviews due to the loss of eligible sample units through nonresponse or through unsuccessful efforts to trace sample members to their new addresses when they move.

The purpose of this paper is to assess the current situation in SIPP as to the level of sample losses and possible causes, and to describe our efforts to reduce losses in current and future panels of the survey. The paper begins with a definition of terms and measures used to describe household noninterviews, followed by a discussion of SIPP sample loss. The next section compares SIPP rates for sample losses with those reported for other panel surveys. The paper concludes with a description of recent efforts to understand and reduce sample loss due to nonresponse by a household. Information on nonresponse to only some questions on the questionnaire, referred to as item nonresponse, is available elsewhere (see Coder and Feldman 1984; Lamas and McNeil 1984; McMillen and Kasprzyk 1985; and the appendix on data quality in the SIPP report series P-70.)

NONINTERVIEW TYPES

Normally, the Census Bureau uses the same terms and approaches to describe and measure noninterviews in all of its personal visit surveys. The longitudinal design of SIPP, however, has complicated the measurement process and the interpretation of its noninterview rates. As a result, some additional noninterview measures were developed for SIPP.

The common definition of a noninterview unit is a household for which no questionnaire has been completed. Noninterview households are classified into three major types- Types A, B, and C--for most surveys; SIPP has a fourth classification, Type D. In addition, in surveys like SIPP that require separate questionnaires to be completed for each person, it is possible to have a noninterview person in an interviewed household. This type of noninterview is called a Type Z, and, although important in assessing sample loss, it will not be discussed in this paper (see McArthur and Short 1985, 1986). A brief description of the major household noninterview types that apply to SIPP follows.

A Type A noninterview household is a unit occupied by persons <u>eligible</u> for an interview but for whom no questionnaire is completed. The major reasons for Type A noninterviews include: no one at home, occupants temporarily absent, occupants refused to give information. Refusals comprise the majority of this type of noninterview and are the most troublesome because we depend upon the cooperation of respondents to produce accurate and reliable survey

information. The Census Bureau uses the Type A rate in measuring sample loss and in evaluating interviewers. Type A's are compensated for by adjustments to the household weights to reflect the entire population more adequately (see Bailey, Chapman, and Kasprzyk 1986).

Unlike Type A's, which represent households eligible for interview but not interviewed, Type B and C noninterviews represent sample units that are not eligible at the time of the interview. For example, sample units that are either unoccupied or households that have no eligible persons are generally classified as Type B noninterviews. These noninterviews include vacant units, units temporarily converted to a business, slated to be demolished, or under construction, and units occupied solely by persons whose usual residence is elsewhere. In addition, Type B's include units for which a building permit has been granted but construction has not started or been completed. Type C noninterviews, on the other hand, include units that no longer exist because they were demolished, converted permanently to a business, or merged with another unit. Type B and C units are considered ineligible for sample, and therefore, are not used as measures of sample loss and are not adjusted for in the weighting of the survey results.

The final noninterview type, Type D, is unique to SIPP and was developed to account for sample loss related to the survey's longitudinal nature. This designation is used to identify eligible households (or part of an eligible household) that move to an undetermined location or to a location more than 100 miles from a SIPP PSU and cannot be interviewed by telephone.

NONINTERVIEW MEASUREMENT

The longitudinal design of SIPP also accounts for some of the differences in the way noninterview cases are handled in the field and in measuring sample loss through noninterview rates. In single-time surveys in which only one personal visit interview is planned for each household, the interviewer attempts to locate the sample address and conduct an interview. If the interviewer is not successful in either respect, i.e., locating or interviewing, the unit is recorded as a Type A, B, or C noninterview depending on the reason for failure.

In most recurring surveys, where repeated interviews are scheduled at each sample unit, a rotating sample design is used. This means that at each interview period some portion of the sample is comprised of units that have never been visited by an interviewer, and other units are dropped.

All interviewed units plus Type A and B units are revisited at scheduled intervals until they rotate (drop) out of the sample because the status of these units may change at a subsequent visit. For example, a vacant unit (Type B) may become occupied and eligible for interview. Such changes affect the rates, of course. On the other hand, Type C's discovered at the first visit are not recontacted during the life of a recurring survey. However, new Type C's may occur at any interview period because of new sample entering and change in the current sample; e.g., a unit is converted to a business. These new Type C's are not reassigned for additional visits either. The planned addition and deletion of some sample units each time also affects the noninterview rates. For example, units that have been Type A since the beginning of the survey may

rotate out and be replaced by units that provide interviews. Of course, the reverse may happen also; a unit that has been providing interviews may be replaced by a unit that does not participate.

Although the SIPP survey is a recurring survey, a longitudinal design is used rather than a rotating one. A sample of units, called a panel, is selected and interviewed at 4 month intervals for 2 1/2 years. The two main differences in this type of design are: 1) The people living at the sample address at the first visit, not the address itself, are considered the sample. Thus, if all (or some) of the people move away from the sample address they are followed and interviewed, if possible, in subsequent waves. (A wave is the 4 month period that is required to interview the entire sample; one fourth of the sample, called a rotation group, is interviewed each month of the wave. Subsequent interviews for all units interviewed in a designated month are 4 months apart.) The original sample address is not revisited unless some of the original sample persons remain there. 2) New people are only added to the panel if they start living with an original sample person (identified at the first interview). Thus, the composition of the persons in sample remains nearly the same for 2 1/2 years.

New panels are introduced every year; consequently, two or sometimes three panels are in the field concurrently. This overlapping panel design allows cross-sectional estimates to be produced from a larger sample by combining the concurrent panel samples. However, noninterview rates are only calculated for each panel separately. (See Nelson, McMillen, and Kasprzyk 1985 for a more detailed explanation of the sample design.)

As a result of SIPP's longitudinal design, Type B noninterviews are only possible at Wave 1. It is assumed that everyone has a usual residence at the time the sample is drawn; therefore, vacant units are not revisited after Wave 1 because any new occupants could have been sampled at some other unit. Also, units left vacant after Wave 1 are of no consequence because the sample persons who leave the unit are followed. As in recurring surveys, regular Type C's discovered in Wave 1, such as demolished units, are not assigned for further visits either. After Wave 1, units that become Type C are not a factor because the people who were living in the unit (now demolished, etc.) are kept in sample at their new location. However, some households do drop out due to the death, institutionalization, etc. of <u>all</u> the sample persons living there. A whole household that drops out in this way is considered a Type C noninterview. The special SIPP noninterview type, Type D's (households moved to an undetermined location or more than 100 miles from a SIPP PSU), can only occur after Wave 1. Thereafter, new Type D's occur in every wave.

The Type A and D noninterview rates are typically used to describe the SIPP sample completeness at each wave of interviewing. The Type A rate for each wave is calculated by dividing the Total A's which equal the number of Type A's in that wave plus the Wave 1 Type A's by the Adjusted Number of Households, i.e., the number of households eligible for interview plus the Wave 1 Type A's. (Eligible households are those not classified as Type B or C noninterviews.) Type D rates for each wave are calculated by dividing the number of Type D's by the number of eligible households (unadjusted because Type D's were not possible in Wave 1). Table 1 shows the Type A and D rates calculated for each of the nine waves of the 1984 Panel. The Type A rate

increased from 4.9 percent in Wave 1 to 15.8 percent in Wave 9. It should be noted, however, that the Type A rates are cumulative; i.e., the Type A's from one wave that are not converted to an interview in the next are added to the new Type A's in that wave to determine the rate. This has a substantial impact because only about 17 percent of the Type A's in one wave are converted to an interview in the next. Since Type A's from Wave 1 were never revisited in the 1984 Panel, Wave 1 Type A's were always added to the numerator and denominator when calculating the rate for another wave.

The Type D rates are also cumulative. Type D's were not possible until the second wave when we first tried to track movers. The movers that we did not interview at that time were designated as Type D noninterviews. Thereafter, the new Type D's in each wave were added to the Type D's from the previous waves to calculate the rate. Table 1 shows that the Type D rate had increased from 1.0 percent to 5.8 percent by the end of the panel.

Together, the Type A and D rates represent the overall sample loss which is shown in the last column on Table 1. The two rates are not simply added together because an adjustment must be made for unobserved growth in the Type A noninterview units discovered in Wave 1. The number of noninterviewed households may increase due to splits in which sample persons originally living together separate and become two or more households (e.g., a child moving out of his/her parents household and setting up his/her own household). To account for this unobserved growth, a factor is applied to adjust the Type A noninterviews in Wave 1. (For a detailed description of the formula used to develop this factor, see memorandum referenced U.S. Department of Commerce, Bureau of the Census 1985.) Therefore, the sample loss for each wave accounts for additional Type A units created by splits in Type A households.

At the end of Wave 9, the sample loss was 22.3 percent with Type A's accounting for a little over 70 percent of the loss. The largest sample loss was experienced in Wave 1 (4.9 percent). After Wave 1, the percentage point change in sample loss between waves actually decreased each time, except between Waves 3 and 4. By the end of the panel, the difference between the Wave 8 sample loss (22.0%) and the Wave 9 loss (22.3%) was less than 1 percentage point (see Figure 1).

Another way to look at the sample loss is shown in Figure 2, which is a graph of only the new Type A's and D's picked up at each wave. Type A's and D's from a previous wave are not included. The graph shows that the number of new Type A's and D's generally declined throughout the life of the panel.

Table 1. 1984 SIPP Panel Eligible Sample Loss

WAVE	ELIGIBLE HH's	ADJUSTED HH's	TOTAL A's	TYPE A RATE	TOTAL D's	TYPE D RATE	SAMPLE LOSS
1	20897	20897	1019	4.88%	0		4.88%
2	15261	16023	1332	8.31%	159	1.04%	9.42%
3	20794	21813	2219	10.17%	403	1.94%	12.28%
4	21228	22247	2693	12.11%	622	2.93%	15.37%
5	19477	20408	2741	13.43%	689	3.54%	17.42%
6	17696	18533	2754	14.86%	718	4.06%	19.38%
7	17842	18679	2908	15.57%	869	4.87%	20.99%
8	13459	14073	2212	15.72%	765	5.68%	21.99%
9	18081	18918	2993	15.82%	1040	5.75%	22.33%

NOTES:
- o Adjusted HH's include Wave 1 Type A noninterview households
- o Wave 1 A's included in Total A's for Wave 2 and beyond.
- o Waves 2 and 8 only had three-fourths of the sample; Wave 1 A's included in Total A's and Adjusted HH's for these waves were adjusted accordingly.
- o Beginning with Wave 5, sample was cut by 17.8%. A factor of 83/101 was applied to Wave 1 A's to reduce them by 17.8% before including them in Total A's and Adjusted HH's for the wave.
- o Type A rate = Total A's / Adjusted Households
- o Type D rate = Total D's / Eligible HH's
- o See text for explanation of Sample Loss.

Figure 1. Percentage Point Change in Sample Loss: 1984 SIPP Panel

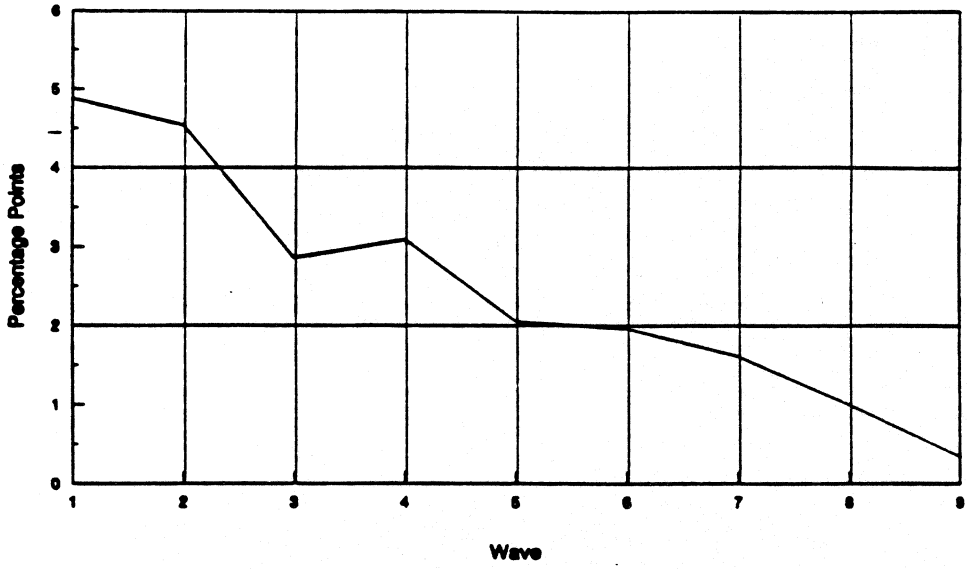
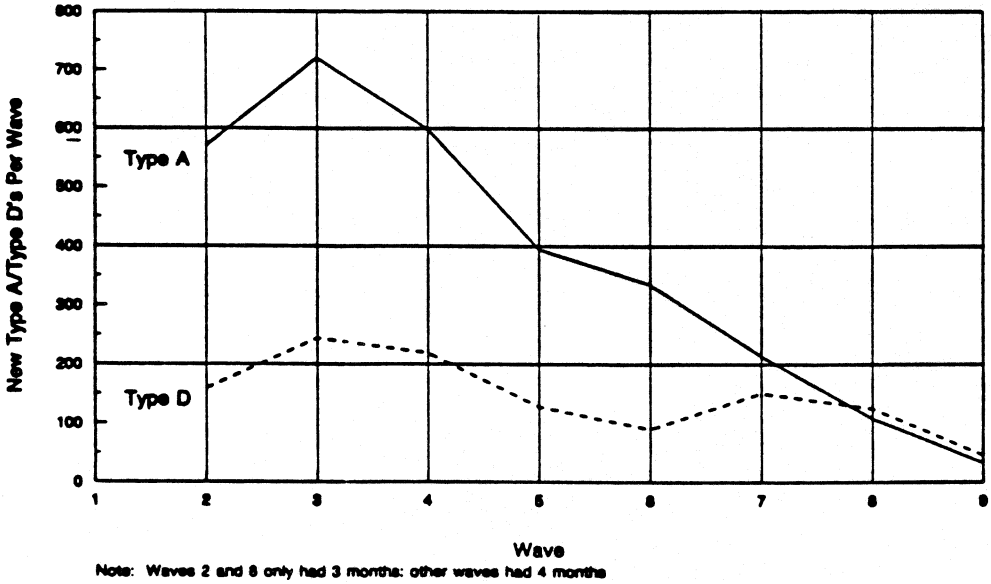


Figure 2. New Type A's and D's: 1984 SIPP Panel



Note: Waves 2 and 8 only had 3 months: other waves had 4 months

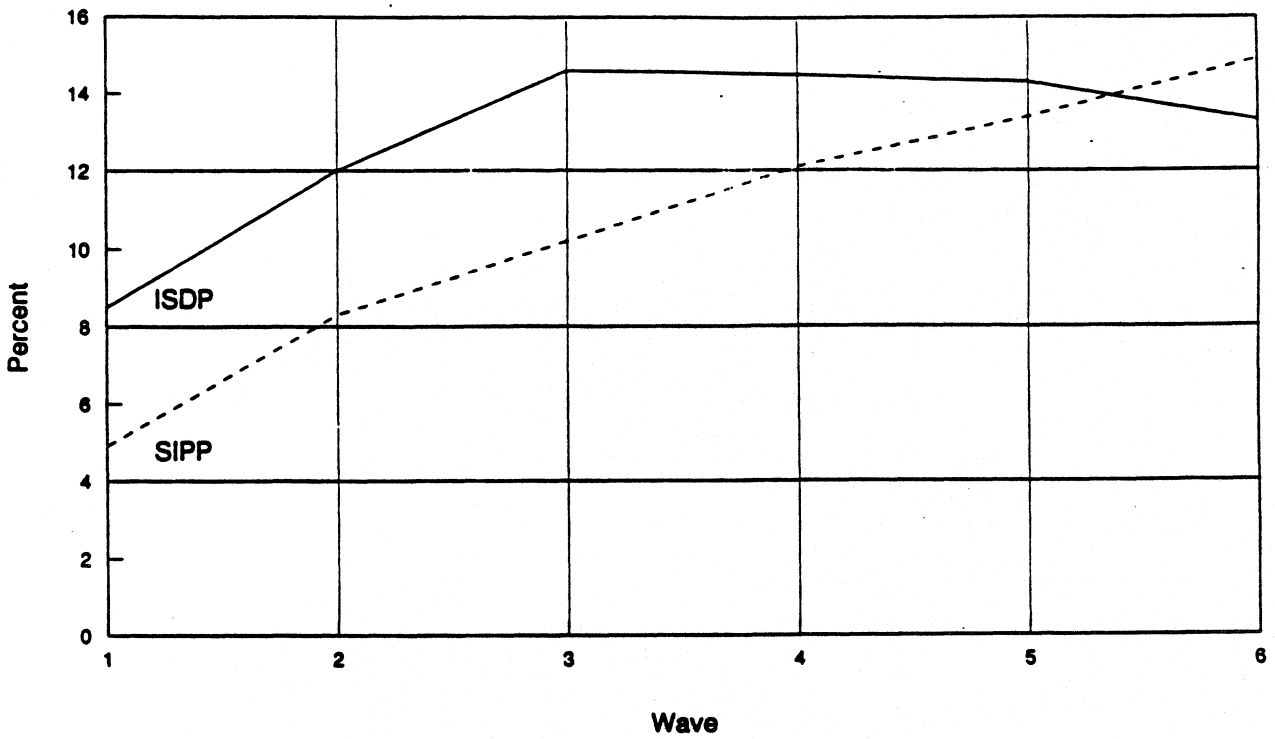
PRIOR EXPECTATIONS AND COMPARISONS WITH OTHER SURVEYS

Our expectations about SIPP noninterview rates cannot be based on the rates achieved in other recurring Census Bureau surveys because of differences in the content and design. For example, the Current Population Survey and the National Crime Survey interviews only take 10 to 15 minutes each time compared to the hour required for SIPP. Also, the topics of unemployment and crime seem to be more interesting to respondents than income and program participation. New households that enter these surveys when an original sample household moves or because of the rotating design also affect the noninterview rates differently. Therefore, we generally use the Income Survey Development Program (ISDP) 1979 Research Panel survey noninterview rates for comparative purposes with SIPP.

The ISDP was a 5-year experimental development and testing program that led to SIPP (see Ycas and Lininger 1981). The 1979 Research Panel survey was the largest of the ISDP field tests, consisting of a nationally representative sample of households. Although it seems that the SIPP and ISDP rates would be very comparable, there are still problems with such a comparison due to differences between the surveys. The ISDP survey only had 6 waves and SIPP has 9. Also, each ISDP household was interviewed every 3 months whereas SIPP households are interviewed every 4 months. Finally, the 1979 Research Panel included several experimental tests which required special treatment by the interviewers, making it more difficult to conduct than a regular survey. Therefore, the Type A rates were expected to be high and they generally were higher than the SIPP rates (see Figure 3). The 1979 ISDP survey Type A rates ranged between 8.5 percent and 14.6 percent. After collecting data for a year in the 1979 ISDP Panel, the cumulative Type A noninterview rate was 14.5 percent. After a year in SIPP, the rate was only 10.2 percent. Because of sample design differences however, one year corresponds to four waves of interviewing in ISDP and three waves in SIPP. (NOTE: The number of waves basically equals the number of visits.[1/]) Therefore one might assume that the ISDP rate was higher because the respondents were visited one more time than the SIPP respondents. This assumption, however, is not supported by the SIPP data. The SIPP cumulative Type A noninterview rate was only 12.1 percent after four waves, which is still less than the ISDP rate. However, the ISDP cumulative Type A rate remained about the same in Waves 3 through 5. This leveling off of the rate did not occur in SIPP. It should also be noted that the decline of the Type A rate in Wave 6 of the 1979 survey was probably due to an intensive effort to convert Type A's from earlier waves. This extra effort was not made in Wave 6 of SIPP. Thus, at the end of the ISDP Panel, the Type A rate was 13.3 whereas the SIPP rate in Wave 6 was 14.9 percent. However, it appears that we did a better job of tracking movers in SIPP than ISDP. The Type D rate for ISDP in Wave 6 was 4.8 percent, but in SIPP it was only 4.1 percent.

1/ In ISDP, one rotation group, or one third of the sample, was not scheduled for the fourth wave interview. Therefore, two of the rotation groups had four visits and one group had 3 visits during the first year of operation. In SIPP, one rotation group, or one quarter of the sample, was not scheduled for the second wave interview. Therefore, three of the rotation groups had three visits and one group only had two during the first year.

Figure 3. 1984 SIPP vs. 1979 ISDP Type A Rates



Note: ISDP waves had 3 rotations; SIPP's had 4 rotations

The Bureau has experience with another longitudinal survey called the National Longitudinal Survey. It is sponsored by the Employment and Training Administration of the Department of Labor. Approximately 5,000 sample persons were selected in 1966-68 from each of four age-sex groups: men 45-59, women 30-44, and young men and young women 14-24 years old. Interviews have occurred at intervals of 1 or 2 years since then. Nonresponse rates are available from a study by the Center for Human Resource Research (Ohio State University). Although the rates are for persons, not households, they are useful in trying to understand SIPP rates.

Like SIPP, there was a fairly large sample loss at the first visit: 9.0 percent for the Older Men, 5.5 percent for the Older Women, 8.3 percent for the Young Men, and 5.8 percent for the Young Women. Also like SIPP, the sample loss continued to rise but the subsequent losses between each visit were not as large as this initial loss. The last reported noninterview rates for each group in the study (based on the number of respondents in the first interview) were: 47.7 percent for the Older Men in 1983, 30.3 percent for the Older Women in 1982, 35.1 percent for the Young Men in 1981, and 31.3 percent for the Young Women in 1983. Despite these high noninterview rates after 15 years of interviewing, the study by the Center concluded that the noninterviews had not seriously distorted the representativeness of the sample. (Rhoton 1986)
Outside the Census Bureau, there are two major longitudinal surveys that can be compared with SIPP. They are the Panel Survey of Income Dynamics (PSID)

conducted by the Institute for Social Research (University of Michigan) and the National Medical Care Utilization and Expenditure Survey (NMCUES) conducted by the Research Triangle Institute and two subcontractors [2/].

In the national component of NMCUES, an interviewer contacted each reporting unit (7,244 households in the first visit, yielding 17,123 persons) in the survey sample five times at approximately 3-month intervals during 1980 and early 1981. Household respondents were paid a nominal incentive of $5 for the first 2 interviews and $10 for the last interview. It should also be noted that the subject matter of NMCUES is considered to be of more interest to respondents than the SIPP subject matter. A report on NMCUES showed that 8.9 percent of the eligible households were noninterviews at the first visit; the SIPP rate was 4.9 percent (Wright 1984). The reported noninterview rates for subsequent visits were based on the number of persons enumerated in the first visit who were not interviewed again; therefore, the rates are not cumulative. Also, since Type A and D noninterviews were not distinguished, only overall sample loss figures are available.

Using the existing information, we were able to calculate cumulative rates for NMCUES persons. Although not strictly comparable to SIPP, the cumulative sample loss in NMCUES after collecting data for a year (4 visits) was only slightly lower, 11.6 percent, than SIPP's loss (12.3 percent in 3 visits). A comparison based on the number of visits rather than time shows more of a difference--11.6 percent versus 15.4 percent.[3/] (See Footnote 1 for an explanation of "number of visits" in SIPP.) NMCUES is also like SIPP in that the largest sample loss was experienced at the first visit and the percentage point change in sample loss between visits decreased; for example, between the fourth and fifth visits it was 0.5 of a percentage point.

The PSID is much more similar to SIPP in terms of content, but its design and structure are very dissimilar. Interviewing began in 1968 with a national sample of about 5,000 heads of families who have been reinterviewed, if possible, once a year since then. Like SIPP, families who moved were followed and original family members who formed a separate household were added to the sample. The first interviews took about 1-2 hours and respondents were paid $10 from the second interview forward and $5 for sending in an annual address verification postcard. The PSID is like SIPP and NMCUES in that the largest sample loss occurred at the first visit; however, it was considerably larger than the loss in either of the other surveys--24 percent versus 4.9 percent (SIPP) and 8.9 percent (NMCUES). Also, the percentage point change in sample loss between visits did decrease between the first and second visit (from 24 to 8 percentage points), and between the second and third visit (from 8 to 2 percentage points). Thereafter, however, the change in sample loss remained at

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2/ Funding for the Panel Survey of Income Dynamics came from the Office of Economic Opportunity in the beginning and later from the Office of the Assistant Secretary for Planning (Department of Health, Education, and Welfare), and the National Science Foundation. The National Medical Care Utilization and Expenditure Survey was funded by the National Center for Health Statistics and the Health Care Financing Administration.

3/ The SIPP rate was 15.8 percent if it is calculated after four visits for all four rotation groups.

about 2 percentage points each time (Duncan and Morgan 1978). Although the PSID cumulative sample loss was up to 54 percent by 1982, a study by Becketti, et al (UCLA Department of Economics) in 1985 found no evidence that attrition has reduced the representativeness of the sample. That is, the attrition does not seem to be correlated with individual characteristics in a way that biases estimates of behavioral relationships.

In summary, SIPP sample losses appear to be comparable to those experienced by other longitudinal surveys. We see the same pattern repeated in all these surveys; that is, a heavy initial loss which increases at a much slower rate throughout the subsequent interviews until it levels off. Evidence from the National Longitudinal Surveys and the PSID suggests that this attrition is not likely to have a biasing affect on conclusions drawn from SIPP data; however, this supposition should be examined further now that the 1984 SIPP panel data are available.

CAUSES OF SAMPLE LOSS AND EFFORTS TO REDUCE IT

What has been discussed to this point is the level of the sample loss measured by household noninterview rates. This discussion would not be complete without also addressing the possible causes of sample loss and our efforts to reduce it.

The largest proportion of the sample loss is due to refusals. In Wave 1 of the 1984 Panel, about 76 percent of the Type A's were refusals. This percentage increased throughout the panel until it reached 94 percent in Wave 9. A number of hypotheses have been formulated regarding the reasons people refuse to participate in SIPP. Some people suspect that interview length, frequency, and content are the prime candidates. Others believe that interviewer characteristics--age, experience, understanding of the survey, etc. might be related to refusals. And still others think that the problem is generic--people are just reluctant to participate in surveys in general.

In an attempt to improve our understanding of the reasons for noninterviews, SIPP interviewers have been asked to provide a detailed description of each Type A noninterview household encountered since the survey began. For each Type A household in a wave, interviewers fill a Form 4068 (Noninterview Record) providing information on the type of noninterview, the demographic characteristics of a refuser, the reason for refusal, and information on the followup attempts. Because of the longitudinal survey design, more than one form could be completed for each household throughout the nine waves, since a Type A in one wave could be revisited in the next wave and remain a Type A. The first data to be analyzed are from Waves 1 through 6, and the results are presented here. Because the majority of Type A noninterviews are refusals, we have focused on refusal households only. Following is a demographic profile of these households based on interviewer observed characteristics of the household and the person who refused for the entire households.

> Most refusals (about 80 percent) occur in either central city or suburban area households. Only around 20 percent of the refusals occur in rural area households (see Table 2).
>
> Most refusals (approximately 73 percent) occur in middle income range households (see Table 3). NOTE: Interviewers were asked to mark either high, middle, or low income (undefined in terms of dollars) based on their own observation of the sample unit and its location.

The average age of the person who refused household participation is between 46 and 47 (see Table 4).

More females (about 60 percent) refuse household participation than males (see Table 5).

Consistent with the population distribution, whites account for the majority of household refusals, that is, over 87 percent (see Table 6).

Table 2. Percent Distribution of the Location of the Refusal Households by Wave

Location	Wave 1	2	3	4	5	6
Central City	40.2	38.3	36.1	37.3	39.9	44.1
Suburb	39.1	42.4	40.3	41.4	40.0	36.4
Rural	20.7	19.3	23.6	21.3	20.2	19.5
Total	100.0	100.0	100.0	100.0	100.1	100.0

Table 3. Percent Distribution of Income Level of Refusal Households

Income*	Wave 1	2	3	4	5	6
High	10.9	13.8	10.8	9.1	8.7	7.6
Middle	73.9	72.2	72.2	73.2	75.4	72.7
Low	15.2	14.0	17.1	17.7	15.9	19.7

* The level was self-defined by the interviewer.

Table 4. Percent Distribution of the Age Categories of Respondents that Refuse to Participate

Age Category	Wave 1	2	3	4	5	6
Less than 20	0.2	0.2	0.7	0.8	0.4	0.5
20-24	1.7	3.7	5.6	4.8	7.2	7.7
25-29	8.1	10.5	10.4	10.7	12.3	9.5
30-34	13.5	8.6	10.8	11.1	10.2	16.4
35-39	15.1	11.6	9.1	11.7	10.3	11.1
40-44	11.4	10.5	8.9	9.1	7.8	9.0
45-49	8.3	6.4	8.4	8.0	9.1	7.4
50-54	9.6	8.3	8.0	8.8	7.4	10.6
55-59	7.6	8.1	8.2	7.5	10.2	6.9
60-64	9.3	9.5	10.2	8.7	7.6	7.4
65-69	8.1	7.7	6.7	7.2	6.6	4.2
70-74	3.8	7.9	6.5	5.4	3.7	4.5
75 or older	3.2	7.2	6.6	6.3	7.0	5.0
TOTAL	99.9	100.2	100.1	100.1	99.8	100.2
Average age of person refusing	42.6	49.4	48.1	47.4	46.8	44.9

Table 5. Percent Distribution of Sex of Person Refusing to Participate

Sex	Wave 1	2	3	4	5	6
Male	44.4	41.0	39.9	39.9	39.2	36.8
Female	55.6	59.0	60.1	60.1	60.8	63.2

Table 6. Percent Distribution of Race of Person Refusing

	Wave 1	2	3	4	5	6
White	87.8	88.8	87.7	86.5	88.2	86.1
Black	7.9	9.9	10.7	11.3	10.1	12.6
American Indian	-	0.2	-	0.4	0.1	-
Asian	1.0	0.9	1.4	1.2	1.1	0.8
Other	0.5	0.2	0.2	0.5	0.3	0.3
Don't know	2.8	-	-	-	0.2	0.3
TOTAL	100.1	100.0	100.0	99.9	100.0	100.1

Information is also available on why a household refused to participate in the survey during Waves 1-6 (1984 Panel). Only one reason for refusing was coded per household even though multiple reasons may have been given. The major reasons for refusing to be interviewed are presented in Table 7. The reasons for refusing the interview in Waves 1 and 2 were similar.
Mainly, persons just "were not interested in participating in the survey." This was reported 18.7 percent of the time in Wave 1 and 13.2 percent of the time in Wave 2. The next most frequently given reason was "the respondent was too busy to answer the questions; they did not have the time" (14.7% Wave 1 and 13.3 % Wave 2). In both Waves 1 (9.9%) and 2 (12.8%), "invasion of privacy" was the third reason given for not participating. "Voluntary survey" (9.3%) and "questions were too personal" (9.1%) were reported next most frequently in Wave 1. These two reasons were not as important in Wave 2 (6.8% and 3.2% respectively) as the fact that the respondent had only reluctantly participated in Wave 1 (8.8%). Also, 6.2 percent of the people refused in Wave 2 because they did not understand we would be returning.

The main reason for refusing to participate in Wave 3 changed from Waves 1 and 2. The major reason cited in Wave 3 was that "we answered the questions in earlier visits, we refuse to answer any more questions." This accounted for 24.1 percent of all reasons given in Wave 3. "Too busy to answer the questions" (7.6 percent) and "just not interested in participating" (6.8 percent) were cited less frequently than in Waves 1 and 2. In Wave 3, 6.1 percent of the households who had participated earlier refused now because they felt the questions were too personal. This is a larger percentage than was reported for this reason in Wave 2 (3.2 percent). Another 6.1 percent who had reluctantly participated earlier were lost in Wave 3. By this wave, almost 4 percent of the households had indicated that the "interview is too long."

In Waves 4, 5, and 6 the main reason for refusing continued to be that "respondents answered the questions in earlier waves; refused to answer any more questions." The other reasons were in the same vein. In these waves, more people were becoming angry and cited "harassment" as their reason for refusing to participate. Also, people indicated they were "tired of all the visits and that the survey goes on too long." Many people felt participating in earlier waves was enough.

Table 7. Why Respondents Refused to Participate in Waves 1 and 2

Reason Given	Percent of Households	
	Wave 1	Wave 2
Not interested in participating	18.7	13.2
No time, too busy	14.7	13.3
Invasion of privacy	9.9	12.8
Voluntary survey	9.3	6.8
Offended by income questions, too personal	9.1	3.2
Didn't believe information was confidential	3.4	
All other reasons (e.g., Angry with government, Illness, No reason)	34.9	35.7
Wave 1 Total	100.0	
Reluctantly agreed to participate in Wave 1, refused to participate in Wave 2		8.8
Refused in Wave 2, didn't understand we would be back		6.2
Wave 2 Total		100.0

Why Respondents Refused to Participate in Waves 3, 4, 5, and 6

Reason	Percent of Households			
Wave	3	4	5	6
Answered in earlier waves, refused to answer any more questions	24.1	28.7	29.5	25.4
No time, too busy	7.6	6.4	-	-
Not interested	6.8	-	-	-
Reluctant to participate earlier, now refusing	6.1	-	-	-
Felt questions were too personal	6.1	4.4	3.9	-
Voluntary survey	4.5	3.4	4.4	-
No change in household income status, no need to repeat survey	4.4	-	3.2	-
Interview is too long	3.9	3.8	3.2	-
Responding would cause family problems	3.0	3.7	-	3.1
Tired of being harrassed, very angry	-	7.6	9.4	9.6
Tired of all the visits, survey goes too long	-	5.0	9.0	10.4
Confirmed Type A	-	-	5.8	13.5
All other reasons	33.5	37.0	31.6	38.0
Total	100.0	100.0	100.0	100.0

Considerable effort is spent trying to convert these refusal households into interviews. One way is by sending a letter from the regional office to the respondent asking them to reconsider participation. Another way of converting refusals is by making a followup visit. Table 8 shows the number of refusal households that received followup visits. In Wave 1, approximately 85 percent of the refusal households had at least one followup visit. This drops to 55.3 percent in Wave 6 because there are more confirmed refusals which are not eligible to receive followup visits. Once a household refuses to participate for two consecutive waves, it becomes a confirmed refusal and no additional letters are sent or visits made to that household. Table 8 also shows the number of households converted during followup. Around 30 percent of the refusal households receiving followup visits were converted. This number remained stable during the six waves.

Table 8. Number of Refusal Households That Had Followup Visits

	Wave					
	1	2	3	4	5	6
Total Households Eligible for Followup Visit*	878	495	677	699	559	564
No followup visit	134	97	245	243	216	252
Confirmed refusal	69	56	166	132	157	172
Other reason	65	41	79	111	59	80
Followup visit reported	744	398	432	456	343	312
% of eligible households	84.7	80.4	63.8	65.2	61.4	55.3
Households converted	254	131	120	133	104	88
% of visits reported	34.1	32.9	27.8	29.2	30.3	28.2

* The following number of households were also eligible for followup visits but are excluded because information on the visits was missing: Wave 1-125; Wave 2-60; Wave 3-226; Wave 4-294; Wave 5-357; Wave 6-208. Wave 2 only had 3 rotation groups.

The record of followup visits is shown in Table 9. In Wave 1, 29.0 percent of the 744 households visited were converted to an interview during the first followup visit. Interviewers spent approximately 69 minutes trying to convert the household on this followup visit. This includes travel to and from the household. Over half of these households were converted by a supervisory field representative (SFR) who generally has more experience and is considered to be a better interviewer. The same interviewer that encountered the refusal was able to convert the interview only 15.8 percent of the time.

After the first followup visit in Wave 1, 528 households had not been converted. Of those 528 households, 99 were visited a second time. Twenty-seven percent of the households visited a second time were converted. The field staff spent 82 minutes on the second followup visit. Very few households were visited a third time. Only three percent of the households left to convert after the second visit were attempted a third time, but a large percentage were converted.

During the other five waves, at least 24 percent of all refusal households visited were converted to an interview in the first followup visit. The majority of the time, the SFR was the person that was able to convert the refusal. With the exception of Wave 4, the same interviewer that encountered the original refusal was the next most successful in converting the interview. Very few households were visited a third time.

Table 9. Record of Followup Visits

	HH's Visited	HH's Converted	Percent Converted	Time Spent (Min.)	Person Completing the Followup Conversion: RO Staff	SFR	Same Int.	Dif Int.	Don't Know
Wave 1									
First Followup Visit	744	216	29.0	69.4	4.2	51.9	15.8	12.0	16.2
Second Followup Visit	99	27	27.3	82.7	18.5	33.3	18.5	11.1	18.5
Third Followup Visit	15	11	73.3	85.1	-	90.9	-	9.1	-
Wave 2									
First Followup Visit	398	100	25.1	54.9	4.0	66.0	14.0	6.0	10.0
Second Followup Visit	78	26	33.3	21.2	7.7	61.5	-	3.8	26.9
Third Followup Visit	6	5	83.3	34.3	-	60.0	-	-	40.0
Wave 3									
First Followup Visit	432	112	25.9	59.9	5.4	57.1	15.2	5.4	17.0
Second Followup Visit	44	7	15.9	45.3	14.3	71.4	14.3	-	-
Third Followup Visit	1	1	100.0	45.0	-	100.0	-	-	-
Wave 4									
First Followup Visit	456	121	26.5	40.5	2.5	57.0	8.3	14.0	18.2
Second Followup Visit	34	12	35.3	46.4	8.3	41.7	25.0	8.3	16.7
Third Followup Visit	-	-	-	-	-	-	-	-	-
Wave 5									
First Followup Visit	343	99	28.9	37.8	1.0	59.6	11.1	6.1	22.2
Second Followup Visit	18	4	22.2	27.3	25.0	50.0	-	-	25.0
Third Followup Visit	1	1	100.0	40.0	-	-	-	100.0	-
Wave 6									
First Followup Visit	312	76	24.4	18.8	2.6	73.7	7.9	7.9	7.9
Second Followup Visit	30	8	26.7	70.4	-	50.0	-	50.0	-
Third Followup Visit	4	4	100.0	30.0	-	50.0	50.0	-	-

By Wave 6, 15.4 percent of the interviews were converted when a telephone interview was conducted instead of a personal visit.

Table 10. Reason Interview Given

	Wave					
I. Why interview was given	1	2	3	4	5	6
Different household member	22.7	19.0	14.7	12.4	17.8	7.5
Other reason	77.3	81.0	85.3	87.6	82.2	92.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
II. Other Reason Given for Conversion						
Reconsidered after reading Regional Ofc letter	19.1	9.5	1.0	11.8	2.2	5.1
No reason given by respondent	5.7	5.7	7.1	6.7	2.2	2.6
Convinced of the benefits of the survey	21.1	25.7	21.2	23.5	40.7	33.3
Related more to an experienced interviewer or SFR	10.8	22.9	23.2	15.1	19.8	5.1
Interviewer persistence	8.9	5.7	5.1	8.4	13.2	10.3
Convinced respondent of confidentiality	1.5	3.8	4.0	1.7	-	-
Different interviewer	8.2	-	6.1	5.9	-	-
Agreed to answer only certain questions	8.8	5.7	2.0	6.7	2.2	-
Unable to reach respondent earlier	0.5	-	-	-	-	-
Would only answer questions by phone	1.0	5.7	5.1	5.9	4.4	15.4
Convinced of the legitimacy of the survey	0.5	-	-	-	-	-
Religious beliefs encouraged them to participate	0.5	-	-	-	-	-
Better, more convenient time for respondent	8.2	3.8	14.1	4.2	3.3	7.7
Translator needed for respondent's participation	1.0	-	-	1.5	-	-
Another Regional Ofc interviewed respondent away from home	-	-	-	1.7	-	-
Participate only if names and social security numbers not used	1.0	1.0	2.0	-	-	-
Proxy respondent agreed to be interviewed	1.0	1.9	-	0.8	-	-
One household member agreed to participate, but other members refused	1.5	1.9	4.0	4.2	3.3	10.3
Convinced respondent this interview would be shorter than the initial one	0.5	6.7	5.1	1.7	8.8	10.3
Total	99.8	100.0	100.0	99.8	100.1	100.1

Other more general efforts are also being made to maintain and improve the SIPP response rate. First, we are trying to educate the interviewering staff regarding the importance of the survey and the intended uses of the data. We believe that if the interviewers understand the need for the Federal Government to undertake such an ambitious survey, they can convey the survey's importance to the respondents. Second, we are trying to educate the respondents concerning the importance of their continued participation in the survey. The respondents need to understand why the survey design requires them to be interviewed every 4 months over a 2 1/2 year period.

We have been fairly successful in educating interviewers and respondents by providing them with various papers and articles that have been published about the survey. These include newspaper articles, articles in the Census Bureau's Data Users News, Public Information Office releases, and papers written by Census Bureau staff and outside researchers. We have also developed a special four page brochure for the respondents entitled "SIPP DATA NEWS". This publication contains a brief summary about the survey, explains why the

information collected is so important, and provides interesting data results in graphic form and nontechnical narrative. The DATA NEWS is updated every 4 months and is given to each respondent at the beginning of each new wave of interviewing. In February 1986, interviewers began distributing a portfolio in which the respondents can store financial records and data of the type we collect each wave to make it more readily available for the interview. This folder contains a yearly reference calendar and a copy of "America's Fact Finder" and "USA Statistics in Brief: 1986." Each regional office also can include other SIPP-related materials in the portfolio, such as a personalized letter from the regional director and copies of newspaper articles that contain SIPP data.

Our third approach involves improvements in interviewer training. A session at each interviewer training (held two times a year) is devoted to a discussion of the nonresponse problem, what is causing it, and what interviewers are doing to convince respondents to continue their participation and to locate respondents who have moved. In addition, at some sessions we have had a SIPP data user tell the interviewers how they use the data. We think this will help the interviewers explain the data uses to respondents which may help to convince them to participate.

Our fourth approach focuses on offering respondents some form of compensation or tangible incentive for participating. We originally proposed a lottery in which respondents would receive a lottery ticket each time they were interviewed and extra tickets if they stayed in the survey until the last interview. At the end of the Panel, we would hold a drawing and the winner(s) would receive a prize(s). However, provisions in the Federal Codes that govern the activities of the Census Bureau appear to prohibit the use of a lottery. These statutes would have to be revised to give the Census Bureau the direct authority to conduct a lottery.

As an alternative, we suggested giving respondents a small gift as a form of appreciation and are now conducting an experiment to test whether it helps motivate respondents to cooperate. The first interview period of the 1987 Panel (February-May 1987) was chosen for the experiment because Wave 1 has consistently shown the highest rate of new Type A noninterviews. One rotation group (approximately 2,900 households distributed nationally) will receive a small hand-held solar-powered calculator imprinted with the Census Bureau logo. The other three rotations from Wave 1 will not receive a gift and will serve as the control groups. Rotations are convenient to use as treatment and control groups since by design they contain a random sample of approximately one-fourth of the entire sample of a panel. In addition, because survey operations and controls are carried out by rotation, it is most convenient operationally and least confusing to implement.

We will analyze the results of the experiment by comparing the treatment group with the control groups for the following rates:

(1) The Type A household noninterview rate in Wave 1 and

(2) The rate of increase in Type A noninterview rates between the treatment and control groups over the life of the panel.

It should be noted that this experiment will not be effective in detecting improvements in the Type A noninterview rates unless differences in the rates for the group receiving a gift and those not receiving a gift are large. If the Type A noninterview rate of the control groups is 6.7 percent then the rate of the treatment group under our planned design must be 4.4 percent or less for us to conclude that gifts are effective.

IN SUMMARY

The SIPP is an ambitious data collection effort that attempts to measure extremely complex phenomena: detailed income and asset sources, program participation, weekly labor force status, health, child care, and taxes. As in all surveys, the quality of the data is of major concern. The conclusions drawn from SIPP data are affected by both sampling and nonsampling errors. This paper examines one of the major sources of nonsampling error: sample loss through household nonresponse.

We are just beginning to measure and understand sample loss in SIPP. It appears that sample loss in SIPP is no worse than that experienced by other longitudinal surveys. The main cause of this loss is refusal to participate. Most of these refusals occur at the initial interview, and thereafter the number of new refusals at each wave generally decreases. This suggests that more effort should be expended at the initial interview to avoid a refusal. The reasons given most frequently for refusing the initial interview are that the respondent just is not interested or is too busy. We are hoping that a gift at the first visit will overcome these feelings and persuade the respondent to participate. Therefore, we plan to conduct a gift experiment during the first wave of the 1987 Panel. If the gift succeeds in increasing participation in SIPP, it may prove to be useful in other nonlongitudinal surveys also.

REFERENCES

BECKETTI, S., W. GOULD, L. LILLARD, and F. WELCH (1985), "The Panel Study of Income Dynamics After Fourteen Years: An Evaluation," Working Paper #361, UCLA Department of Economics.

CHAPMAN, D.W., L. BAILEY, and D. KASPRZYK (1986), "Nonresponse Adjustment Procedures at the U.S Census Bureau," Forthcoming in Survey Methodology.

CODER, J. and A. FELDMAN (1984), "Early Indications of Item Nonresponse on the Survey of Income and Program Participation." Proceedings of the Section on Survey Research Methods, American Statistical Association, Washington, D.C.

DUNCAN, G.J. and J.N. MORGAN, Eds. (1978), Five Thousand American Families - Patterns of Economic Progress, Vol. V1, p. 450, Institute for Social Research, The University of Michigan: Ann Arbor, Michigan.

LAMAS, E.J. and J.M. MCNEIL (1984), "The Measurement of Household Wealth in SIPP," Proceedings of the Social Statistics Section, American Statistical Association, Washington, D.C.

MCARTHUR, E. and K. SHORT (1985), "Characteristics of Sample Attrition in the Survey of Income and Program Participation," Proceedings of the Section on Survey Research Methods, American Statistical Association, Washington, D.C.

MCARTHUR, E. and K. SHORT (1986), "Life Events and Sample Attrition in the Survey of Income and Program Participation," Proceedings of the Section on Survey Research Methods, American Statistical Association, Washington, D.C.

MCMILLEN, D.B. and D. KASPRZYK (1985), "Item Nonresponse in the Survey of Income and Program Participation," Proceedings of the Section on Survey Research Methods, American Statistical Association, Washington, D.C.

NELSON, D., D.B. MCMILLEN, and D. KASPRZYK (1985), "An Overview of the Survey of Income and Program Participation: Update 1," Working Paper 8401, Bureau of the Census, Washington, D.C.

RHOTON, P. (1986), "Attrition and the National Longitudinal Surveys of Labor Force Behavior: Avoidance, Control, and Correction," IASSIST Quarterly, Vol. 10/No. 2.

U.S. Department of Commerce, Bureau of the Census (1985), "SIPP: Formula for Total Eligible SIPP Sample Loss," internal Census Bureau memorandum from D. Hubble to D. Judkins, April 18.

WRIGHT, R.A. (1984), "Survey Design and Administration of the National Medical Care Utilization Expenditure Survey" NCHS Working Paper Number 21, pp 1-4, National Center for Health Statistics, Washington, D.C.

YCAS, M. and C. LININGER (November 1981), "The Income Survey Development Program: Design Features and Initial Findings," Social Security Bulletin, Vol. 44, No. 11. Social Security Administration, Baltimore, Maryland.