

**THE SURVEY OF INCOME AND  
PROGRAM PARTICIPATION**

**USING THE SURVEY OF INCOME AND  
PROGRAM PARTICIPATION FOR  
POLICY ANALYSIS**

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Using the  
Survey of Income and Program Participation  
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Abstract

Longitudinal monthly data from the Survey of Income and Program Participation (SIPP) enable researchers to examine key dynamic events, in the context of a wide range of information about the household. This paper examines the national survey context for the SIPP, provides some basic facts about the survey and its methodological issues such as attrition and seam bias, and discusses some of the remaining challenges the Census Bureau faces in the years ahead.

Key Words: surveys, survey research, income, program participation, poverty

\* The author is Chief of the Housing and Household Economic Statistics Division at the U.S. Census Bureau. This paper reports the results of research and analysis undertaken by Census Bureau staff. It has undergone a more limited review than official Census Bureau publications. This report is released to inform interested parties of research and to encourage discussion. The author wishes to thank the following individuals for their comments and contributions to this paper: Pat Doyle, Judy Eargle, John Hisnanick, Nancy Gordon, Robert Kominski, Charles Nelson, and Carole Popoff.

## Using The Survey of Income and Program Participation for Policy Analysis

### I. INTRODUCTION

Data from the Survey of Income and Program Participation (SIPP) provide a truly unique perspective on economic behavior. SIPP's design enables researchers to examine key dynamic events. It tells us what happened in each household month by month, something no other survey can do with accuracy.<sup>1</sup> Because of its short recall period (four months with monthly accounting), its longitudinal design that follows initial respondents for more than two years (up to four), and the survey's concomitant ability to capture intra-year variations in economic and demographic characteristics, policy analysts have used SIPP data to examine many relevant policy issues. These include:

- Program eligibility and participation rates in the food stamps program, including analysis of dynamics, used in the simulation of proposed changes to the food stamps program;
- The gain or loss of health insurance, used in the development of and debate on President Clinton's health care reform initiative, especially regarding the availability of health insurance to workers losing their jobs, and in development of the legislation improving health insurance portability;
- Income and poverty changes over both short (month-to-month) and multi year periods; for example, documenting that most minimum-wage workers do not stay at that wage level;

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<sup>1</sup> A few annual surveys do ask about monthly behaviors, but they are more likely to have recall bias than the SIPP, which asks about those behaviors three times a year.

- Welfare program participation, used in the development of and debate on the President Clinton's welfare reform initiative, most particularly to understand the effects of limiting the time on welfare;
- The income replacement role of unemployment compensation and its effects on reemployment, used by the recent Presidential Commission on Unemployment Compensation; and
- The dynamics of health insurance coverage of children, used in debates over establishment of the State Child Health Insurance Program.

SIPP also has an important role to play in the next several years, as social transfer programs undergo large-scale change:

- SIPP will be used to evaluate the effectiveness of the Health Insurance Portability and Accountability Act of 1996;
- SIPP will continue to be the only data available to evaluate how the Americans with Disabilities Act of 1990 affects the employment and income of the disabled;
- SIPP may become the official source of income and poverty estimates in the U.S., as recommended by a National Academy of Sciences (NAS) report on poverty measurement;
- Since SIPP provides the most accurate picture of eligibility and participation in social transfer programs of any household survey, it, along with the Survey of Program Dynamics (SPD),<sup>2</sup> will let researchers examine what happens to people as they leave welfare because

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<sup>2</sup> The SPD is a follow-on survey to the 1992 and 1993 SIPP panels, designed to measure the effects of the 1996 welfare reform legislation. For more details on the SPD, see <http://www.sipp.census.gov/spd/>; see also Weinberg and Shipp (2002).

of the reforms enacted in the Personal Responsibility and Work Opportunity Reconciliation Act of 1996; and

- SIPP is the only survey that allows us to understand the short-term relationship between demographic change and economic change; for example, marriage, childbirth, divorce, widowhood, and other life-course events.

In addition to its strengths as a longitudinal survey, SIPP is the only regular source for valuable cross-section data such as the cost and characteristics of child care, nonincome measures of economic hardship, child disability, the relationship between adult disability and economic well-being, pension coverage, housing affordability, and financial assistance for education. Additionally, it is one of the few sources of data on household wealth (assets and liabilities) and employment-based health insurance.

An illustration of the value of having a wide variety of topics on one survey is a recent study by Butrica et al. (2002). They focused on individuals in the 1990 through 1993 SIPP panels; used measures such as marital history, disability status, sources of income, pension coverage, and educational attainment; matched those individuals to administrative records; and used a simulation model to project poverty rates in 2020 for those 62 and older. Such a study could not have been done as effectively without the SIPP.

Section II presents the basics about several major national surveys to provide the context for understanding SIPP's role in providing data for researchers. These are three other longitudinal surveys -- the American Housing Survey (AHS), the Panel Study of Income Dynamics (PSID), and the National Longitudinal Surveys (NLS) of Labor Market Behavior. Also discussed is the Current Population Survey (CPS), a cross-section survey used to produce a wide variety of official measures, including unemployment, income, and poverty.

Section III then presents SIPP's background and discusses some of the key issues an analyst must address when deciding whether to use SIPP such as sampling strategy, attrition and its implications for representativeness, and data accuracy. It also includes a section on the topics covered by the SIPP. Finally, Section IV presents some of the remaining challenges the Census Bureau faces for SIPP.

## II. THE CONTEXT: OTHER KEY NATIONAL SURVEYS

### *Current Population Survey*

Economists and other social scientists have used a variety of survey datasets to study household, family, and individual behavior and well-being. The most famous, long-lived, and widely used of these is the CPS, a sample survey conducted each month for the Bureau of Labor Statistics (BLS) to compute official statistics on employment and unemployment. The CPS is actually a longitudinal survey of housing units -- a housing unit is in the CPS sample for 4 consecutive months, out for 8 months, and then returns for 4 more months. Thus, while households in the entry month are a representative sample of all households in each state, as

months pass, the CPS systematically excludes out-movers and systematically includes in-movers. The sample remains representative in a cross-section sense only, to the extent that refusals for non-movers in month-in-sample 2 through 8 are random.

The data from the “Basic” monthly CPS are used by the Bureau of Labor Statistics to compute the monthly and annual unemployment statistics. As a consequence, the CPS is the premier data set to analyze many cross-section labor force issues. But many researchers concentrate their attention on the data collected in the CPS supplements, most notably the Annual Demographic Supplement (ADS).<sup>3</sup>

The ADS began in 1948 and has continued, with only occasional changes in the questionnaire since 1968, through the present day.<sup>4</sup> After collecting basic (though not complete) demographic information about the household members from a household-level respondent, the ADS collects income information on types of income for the previous calendar year, as well as health insurance coverage. The CPS is the largest national household survey, with nearly 50,000 households responding to the Basic CPS each month, and roughly 78,000 households responding to the ADS.<sup>5</sup>

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<sup>3</sup> Other recent supplements include ones on Contingent Workers and Alternative Employment, Displaced Workers, Job Tenure and Occupational Mobility, Race and Ethnicity, Voting and Registration, School Enrollment, Work Experience, Food Security, Work Schedules, Computer Ownership, Fertility and Marital History, and Fertility and Birth Expectations (see <<http://www.bls.census.gov/cps/suppmain.htm>> for details on the supplements).

<sup>4</sup> See Welniak (1990) for a history of the income questions on the supplement.

<sup>5</sup> The American Community Survey, planned to begin in 2003 with 250,000 households per month, would far exceed the CPS in size, but has no longitudinal component.

The ADS is designed to produce a time series of cross-section estimates, but this strength is also a weakness when trying to use the CPS as a longitudinal survey. There is no attempt to follow households who move. Since renters move more often than owners, and since the characteristics of renters differ systematically from those of owners, focusing on the 16-month dynamics of household behavior using only those households remaining in the CPS sample, especially using only those without person-level movement out of the housing units, would inevitably lead to incorrect (biased) findings.<sup>6</sup>

Thus, to examine household, family, and individual dynamics over time, one must turn to surveys designed as longitudinal surveys. Four major U.S. longitudinal household surveys are the AHS, the PSID, the NLS, and the SIPP.<sup>7</sup>

### *American Housing Survey*

The AHS is a longitudinal survey of housing units. It is sponsored by the Department of Housing and Urban Development (HUD) and carried out by the Census Bureau. The initial nationally representative sample of units was interviewed annually from 1973 through 1981, and then once again in 1983. A new sample of housing units was drawn based on the 1980 decennial census, and this sample has been followed biennially from 1983 through 2001, with

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<sup>6</sup> Nevertheless, some labor economists have used matched data from the CPS supplements one year apart to examine labor force dynamics. For more information on the CPS, see <http://www.bls.census.gov/cps/cpsmain.htm>.

<sup>7</sup> I exclude from consideration short-term longitudinal surveys designed to collect information for a one-year period, such as the Consumer Expenditure Survey and the National Crime Victimization Survey, and the one-time SPD, which ended in 2002. Also excluded are several education-focused longitudinal surveys.



interviews planned through at least 2013.

The AHS sample size is roughly 50,000 housing units, with demolitions and conversions to non-residential use being replaced each survey year with additional sample drawn from building permits and new mobile home placements. Refusals from any one survey year do *not* remove the housing unit from the sample, so the sample each year is representative of the entire housing unit universe. Since the microdata from each survey can be linked, the AHS can be used for either cross-sectional or longitudinal analysis of the housing stock. Since field representatives interview only the current residents, it is not a survey that can be used to study household behavior over time. Relatively little research that has used the AHS has taken advantage of its longitudinal nature.

#### *Panel Study of Income Dynamics*

The PSID, begun in 1968, was the first longitudinal survey of households begun in the United States. Intended at first as a 5-year annual follow-up to the 1967 Survey of Economic Opportunity (SEO), it has continued to follow most of the initial cohort ever since. Its size is best indicated by the initial reports on the PSID's results: *Five Thousand American Families* (see, e.g., Duncan and Morgan, 1976). A special sample of low-income people was selected from the SEO<sup>8</sup> and supplemented with a nationally

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<sup>8</sup> The SEO sample was about 2,000 low-income families with heads under the age of sixty confined to Standard Metropolitan Statistical Areas (SMSA's) in the North and non-SMSA's in the Southern region. Since this sample was selected from low-income *respondents* to the SEO, these households had an extra opportunity for non-random attrition (non-response to the SEO).

representative sample,<sup>9</sup> as best meeting the needs of its initial sponsor, the Office of Economic Opportunity.

Concerns over the sample's representativeness led to supplementing the sample with an additional sample of Hispanic households (in 1990, replaced with a different supplementary sample in 1997). The PSID was designed as a true longitudinal survey, with the University of Michigan's Survey Research Center attempting to contact and interview all members of the original sample families each year through 1997, and every second year thereafter (a sample reduction was also undertaken in 1997 to cut costs). The actual sample size was 6,434 families in 1999.<sup>10</sup>

The great bane of longitudinal surveys is attrition. Table 1 shows the cumulative response rate for the PSID, taking account of the initial sample nonresponse. After 26 waves (1993), only about 35-40 percent of the original sample was still in the survey. Yet this does not mean that the sample is unrepresentative. Sample weighting can adjust for differential undercoverage, attrition may be random from the point of view of certain characteristics, and long-run effects may be unaffected, even by non-random attrition. Fitzgerald et al. (1998), in an extensive analysis of attrition in the PSID, conclude that "despite the large amount of attrition, we find no strong evidence that attrition has seriously distorted the representativeness of the PSID through 1989" [p. 2].

In spite of attrition, the PSID can serve as the database for a host of research studies.

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<sup>9</sup> This was an equal probability sample of households from the 48 contiguous states and was designated to yield about 3,000 completed interviews.

<sup>10</sup> More information on the PSID can be found at <<http://www.isr.umich.edu/src/psid/>>.

The great strength of the PSID is for intergenerational research, as illustrated by Duncan et al. (1988). The PSID has been used for many important studies of household behavior, such as Greg Duncan's Years of Poverty, Years of Plenty (1984), and Mary Jo Bane and David Ellwood's seminal work on poverty and welfare dynamics (Bane and Ellwood, 1983, 1986; Ellwood, 1986). Its annual and now biennial recall periods and single household respondent limit its value for studying short-term dynamics.<sup>11</sup>

### *National Longitudinal Surveys of Labor Market Behavior*

The BLS has sponsored several National Longitudinal Surveys of Labor Market Behavior. The four groups of men and women in the NLS "Original Cohorts" were first interviewed in the mid- to-late 1960s. These cohorts were selected because each faced important labor market decisions which were of special concern to policy makers. Respondents in the mature women's and young women's cohorts continue to be interviewed on a biennial basis, and have been interviewed for over three decades. Both the young and older men's cohorts have been retired.

The 1979 National Longitudinal Survey of Youth (NLSY79) is a nationally representative sample of 12,686 young men and women who were 14 to 22 years old when they were first surveyed in 1979. These individuals were interviewed annually through 1994 and

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<sup>11</sup>One criticism of the above-cited Bane and Ellwood methodology was that a household with a welfare spell ending in January of year T and beginning another in December of year (T+1), a gap of non-receipt of 22 months, would look no different to the researcher using annual data than a household with continuous welfare receipt.

are currently being interviewed on a biennial basis. Since the NLSY79 is no longer relevant for the study of youth labor market issues, such as the school-to-work transition, a new youth survey – NLSY97 – was begun in 1997. The NLSY97 consists of a nationally representative sample of approximately 9,000 youths who were 12 to 16 years old as of December 31, 1996. In 1997, both the eligible youth and one of the parents received hour-long personal interviews. Youths continue to be interviewed on an annual basis.

The first four were, and in the case of the combined women's surveys, are still being conducted by the Census Bureau; the NLSY79 and NLSY97 are being conducted by the National Opinion Research Corporation. The whole program is managed for the BLS by Ohio State University's Center for Human Resource Research.<sup>12</sup>

As is implied by their names, these surveys are representative only of their cohorts, and not of the general population. The NLSY79, in particular, has been an invaluable research tool for those studying the school-to-work transition and also of welfare program participation of young mothers. A key feature of this survey is that it gathers information in an event history format, in which dates are collected for the beginning and ending of important life events.

The NLS has some of the same advantages and disadvantages of the PSID. However, its attrition has been substantially less (see Table 1 for the attrition rates in the NLSY79), in part because it does not need to follow all parts of any split original household, only the original sample people, and it has used incentives since its inception. Since its survey is person-based, it

is less affected by household dynamics. Its structure has also allowed some innovative supplements -- for example, about the spouses of the older women, and about the children of the women in the youth survey.

### III. THE SURVEY OF INCOME AND PROGRAM PARTICIPATION -- BACKGROUND AND ISSUES

The plans for the SIPP grew out of strong practice established by the PSID and the NLS, coupled with a desire to overcome the shortcomings of the CPS ADS for in-depth income source and amount and program eligibility and participation data collection. To supplement rather than replace the PSID or the NLS, the SIPP was designed as a recurring *short-term* longitudinal survey.<sup>13</sup>

After several years of experimentation and development, SIPP began in late 1983 as a survey using 4-month recall of monthly measures for *all* household members 15 and over (with proxy interviews allowed). SIPP was intended to correct the deficiencies of the CPS ADS in collecting income data, and to expand the data collected on transfer programs (less well dealt with by the ADS beginning in 1980). The original design tried to compromise between the twin goals of collecting accurate cross-section and longitudinal data on income and program participation by having a multiple-panel overlapping design. This design proved difficult for the Census Bureau to implement effectively, leading to unacceptable delays in data dissemination

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<sup>12</sup> More information on the NLS can be found at <<http://www.bls.gov/nls/home.htm>>.

<sup>13</sup> More information on the SIPP can be found at <<http://www.sipp.census.gov/sipp/>>.

and unsatisfactory data for most users, which included difficulty in combining multiple panels for cross-section users, insufficient sample sizes, and too-short panels for longitudinal data users.<sup>14</sup>

After a large-scale user survey, discussions with many potential users, and discussions with a NAS panel on SIPP (see Citro and Kalton, 1993, for their final report), the Census Bureau decided in 1992 to redesign the survey. The new design, which began in April 1996, focused primarily on providing accurate and useful longitudinal data by using abutting four-year panels (that is, a panel starting in February 1996 and ending in January 2000 with another starting in February 2000 and ending in January 2004, etc.).<sup>15</sup> Table 2 shows the various SIPP panels, their length, and the number of households responding to the initial interviews.

SIPP covers a wide variety of topics, both in its core – the questions repeated every wave of a panel – and in its topical modules – some of which are repeated up to three times during a panel, some of which are asked only one time during a panel. The core includes four major sections, plus a probe for previous wave data for people who missed the preceding interview:

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<sup>14</sup> Redesign of the processing system for the 2001 panel makes it much more likely that overlapping panels, should they be reinstated, could be handled in a timely manner.

<sup>15</sup> The NAS panel also recommended four-year panels, but beginning every two years. The Census Bureau chose the abutting panel design mainly to double the sample size for any one panel given the existing budget. The 1996 panel started in April 1996 rather than February because of the 2-month government shutdown in early 1996.

- 1) *Labor force and reciprocity*. Information on labor force activity, whether the person participates in various programs, and the various types of income and assets the respondent receives or owns;
- 2) *Earnings and employment*. Collects data on employment and earnings from specific wage or salary jobs, or self-employment.
- 3) *Amounts of income received*. Collects amounts of income from the sources identified in section 1 or from assets.
- 4) *Program questions*. A short series of household-level questions asked only of the householder.

These sections are described further below.<sup>16</sup>

Section 1 of the core questionnaire asks more than 30 questions of each respondent to determine his or her labor force status during the 4-month reference period. For people who worked any time during the reference period, questions are asked on the number of weeks worked, and weeks without a job. For people who were not working for all or part of the reference period, SIPP asks about the conditions necessary to determine if he or she was considered part of the labor force but unemployed or out of the labor force. With these data one can examine full- or part-time labor force participation and how it changed during the 4-month period.<sup>17</sup> In computer processing many of the responses are recoded to make the data

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<sup>16</sup> This discussion is drawn from <<http://www.sipp.census.gov/sipp/chap3-3.htm>>.

<sup>17</sup> Two characteristics -- whether the respondent was working or was looking for work -- are recorded on a week-by-week basis.

more manageable. For example, an employment status recode for each month of the reference period specifies whether the respondent had a job, worked at it full time, missed any work weeks, was laid off or looking for work, or did not have a job and was or was not looking for one. With other recodes, one can examine the number of weeks worked, the number of weeks unemployed, and the number of weeks looking for a job in each reference month. Following the items on labor force, information on income from a wide variety of sources is collected. This section also gathers information on ownership of assets.

Section 2 of the core asks the respondent about his or her specific type of employment and earnings. Slightly different questions are asked depending upon whether the person is a wage and salary employee and/or is self-employed. For wage and salary employees, data are collected on occupation, industry, and class of worker for up to two jobs. For each job, the employed respondent is asked to state the kind of business or industry in which he or she works, the kind of work done, and his or her main activities or duties on the job.

Section 3 of the questionnaire is used to collect information on amounts of income received from each of the program and asset sources identified in section 1. Asset income is collected for the 4-month reference period as a whole, while most other sources of income are reported month by month.

The last section of the SIPP core asks about whether the household participates in energy assistance and/or subsidized school lunch or breakfast programs. In Wave 1 of each panel, this section also measures benefits from subsidized housing programs.

These questions form the basis for much of the analysis of the dynamics of economic



well-being. The Census Bureau publishes a set of five such reports for each panel, covering income, poverty, program participation, labor force issues, and health insurance coverage. The most recent examples are Masumura (1998), Naifeh (1998), Tin and Castro (2001), Ryscavage (1996), and Bennefield (1998), respectively.

In addition to the core data collected every 4 months, most interviews for each panel include additional sets of questions called topical modules.<sup>18</sup> The topics covered in these modules do not require repeated measurement during the year and may use a longer reference period than the 4-month period used for the core questions. Their purpose is to address significant program and policy questions that do not require updating each wave. Topical modules also give SIPP the flexibility to accommodate topics on emerging issues on relatively short notice, though long-standing topics would have to be displaced to keep the interview length more or less the same. Topical module as well as core data can be linked for individuals, making possible the compilation of a number of topical variables that may bear on a particular research question. Such an array of information can be applied, for example, to eligibility criteria for transfer programs.

The list of topical modules administered to each panel and the waves in which they are administered varies from one panel to the next. As an illustration of the types of information collected, the module topics for the 2001 panel are shown in Table 3. These modules are assigned to particular waves and are repeated in later waves if more than one observation is necessary. For example, a “wealth” module (assets, liabilities, and eligibility) will be

administered three times, in Waves 3, 6, and 9 of the 2001 panel, during the same months one year apart. In contrast, the module on school enrollment and financing is asked only once per panel. The SIPP processing system was developed to expedite the release of core data. Topical module information is reviewed and edited in separate operations, and reports and microdata files including topical data generally appear later than those with core data collected in the same interview.

Independent of the redesign activities underway at the Census Bureau in the early 1990s, a separate NAS panel (Citro and Michael, 1995) recommended in 1995 that the SIPP become the source of official income and poverty statistics. The Clinton administration endorsed this goal, and funds to do research and expand the SIPP were included in the Fiscal Year 1999 and 2001 budget requests. These requests were not approved by the Congress; they may be included in forthcoming budget requests. Meeting this goal, however, would require at a minimum that the Census Bureau provide a good time series of cross-section estimates from the SIPP, a designed-in strength of the CPS but a standard by which the 1996 SIPP design fails, focused as it was on strengthening SIPP's longitudinal estimates.

Cross-section estimates from the SIPP are potentially biased by differentially high attrition of low-income households, poverty estimates more than any other. Without refreshment of a panel by new households, as was provided by SIPP's original (1983) overlapping panel design, poverty estimates would naturally decline over the life of any one panel, jumping up even in the absence of any change in environmental economic conditions when another panel began.

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<sup>18</sup> Information on topical modules is from <<http://www.sipp.census.gov/sipp/chap3-4.htm>>.

Unfortunately, attrition from the 1996 panel substantially exceeded predictions and topped 25 percent (the original NAS projection for four years) by the end of the second year; attrition for the 2001 panel has exceeded that level after only a bit more than 1 year (see Table 4).<sup>19</sup>

The first kind of attrition is non-response to the initial interview. All sample surveys use weighting adjustments to allow those interviewed to represent the entire population being studied (in the case of the SIPP, the civilian noninstitutionalized population).<sup>20</sup> Nothing is typically known about those refusing to cooperate, so population controls are used as the benchmark. The sample weights (initially the inverse of the probability of being chosen) are first adjusted for differential nonresponse based on demographic factors such as income and household size, and, second, iteratively raked to independent national estimates by race, age, sex, and Hispanic origin. A follow-up mail survey of the 1996 panel wave 1 nonrespondents was analyzed by Rottach (2001). He found no substantive effect on wave 1 poverty estimates when the wave 1 nonrespondents who responded to the mail survey and provided income information were included in the calculation along with the SIPP respondents.

Through the years the Census Bureau has tested different measures to improve response rates, such as giving a small gift (e.g., a calculator) to sample households. Both monetary and nonmonetary gifts appear to increase response. Because of the increase in

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<sup>19</sup> Response rates for some longitudinal surveys as reported in the literature may appear higher (and attrition rates lower) than those reported for the SIPP in Table 3 because those surveys typically report their cumulative response rates on the basis of the number of households actually interviewed in wave 1 equalling 100 percent rather than on the basis of the number of housing units selected for initial interview (which SIPP does). Table 1 adjusts the reported rates for the PSID and NLSY79 for initial sample selection.

attrition, a number of experiments were undertaken during the 1996 SIPP panel to reduce nonresponse, and in the SPD, to return previously non-responding households to the survey. Creighton et al. (2001) summarized the results: “incentives resulted in beneficial but modest improvements in response” and “larger effects were seen for incentives targeted to nonrespondents in the prior wave than for initial incentives given to everyone” [p. 305].<sup>21</sup> They do note the need for additional research, including determining the effects of nonresponse due to no contact, of frequency and amount, on data quality, of prepaid versus discretionary incentives, of the form of the incentive, and of implementation and improvements in tracking use.

Because the field staff were convinced that discretion in deciding when to use an incentive could have a substantial effect, a different incentive scheme incorporating discretion is being tested in the 2001 panel, which was reduced to nine waves (3 years) because of the growing attrition problem. The 2001 panel sample was divided roughly in quarters, with one-quarter acting as the control, and the other three-quarters eligible for an incentive. For two-thirds of the experimental sample, each of the Census Bureau’s 12 regional offices were given enough \$40 debit cards to be used for one-tenth of this sample, to be supplied to the field representatives for their discretionary use to reduce nonresponse in any wave during each one-year cycle.<sup>22</sup> Starting in wave 4, the other one-third of the experimental group received an

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<sup>20</sup> The 1996 and later SIPP panels oversample housing units likely to contain low-income households.

<sup>21</sup> The use of a \$40 incentive for nonrespondents and the decision to attempt reinterviews of previous nonrespondents using a \$100 incentive in the SPD raised the response rate from 50.2 percent in 1999 to 65.8 percent in 2001 (Weinberg and Shipp, 2002).

<sup>22</sup> One-tenth was chosen as the relevant fraction because roughly one-tenth of households are non-respondents during any one wave.

advance mailout of a \$40 debit card, but only if they were a nonrespondent in the previous wave. Results of that experiment will be available in 2003.

Administrative records offer a unique opportunity to measure the effects of attrition in SIPP after wave 1. Vaughan and Scheuren (2002) examined the effects of attrition on the later earnings of 1993 SIPP wave 1 respondents using the Social Security Administration summary earnings records. They found that even though those who left the survey had substantially lower earnings initially (1993) when compared to stayers, by 1999 their earnings were not statistically different. More analysis needs to be done, but these results are encouraging and echo the “regression to the mean” phenomenon reported by Fitzgerald et al. (1998) for the PSID.

The Census Bureau has done extensive research to estimate response error and investigate seam bias in SIPP data using administrative records. Response errors are due to misreporting, such as reporting program participation when the respondent was a non-participant. Seam bias is the tendency of interviewed households to report events as occurring in month 1 of a 4-month recall period.

Comparison of SIPP data with administrative records showed that response errors were rare (Marquis and Moore, 1990). Unfortunately, the researchers identified no basic causes (such as telescoping or memory decay) for response errors. This frustrates improvements because there are no clear fixes.

The research also found that although seam bias exists, over a longitudinal period, the underreporting within a wave and the overreporting between waves, together with the SIPP staggered interviewing pattern, essentially offset the seam bias errors on a calendar year basis.

Conducting interviews in a computer-assisted environment, collecting information on current status (the ‘fifth’ month), and using dependent interviewing in the 1996 panel unfortunately did not appreciably reduce seam bias errors. It is now hoped that the large-scale improvements included in a questionnaire being tested for 2004 implementation will reduce seam bias (see Doyle et al., 2000). This problem is proving difficult to solve, though, and for the moment researchers should use care, such as providing results (e.g., spell lengths) in 4-month intervals or statistically smoothing the transitions in continuous models.

The Census Bureau has completed a follow-up study to benchmark SIPP and CPS ADS income data for calendar year 1996 against independent estimates from the National Income and Product Accounts and elsewhere (see Roemer, 2000).<sup>23</sup> Unfortunately, Roemer concludes that “redesigning the SIPP for the 1996 panel did not seem to improve its income estimates” [p. 40]. Roemer recommended, and the Census Bureau concurred, that it is worthwhile to try to develop procedures to use administrative records to improve income reporting. In particular, the Census Bureau is investigating the use of administrative records to examine transfer program reciprocity and amounts. Studies are underway that involve matching SIPP records to housing program records and Social Security and Supplemental Security Income records. Eventually, the Census Bureau anticipates using the results to develop experimental adjustments for underreporting. Also, tests of the new 2004 questionnaire suggest that those changes reduce item nonresponse to income questions, and this may improve

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<sup>23</sup> Similar studies were done for calendar years 1984 by Vaughan (1993), and for 1990 by Coder and Scoon-Rogers (1996).

aggregate reporting.

Other studies of SIPP data reliability suggest that users should exercise caution with some of the more complex measures, such as disability. To investigate the reliability of disability measurement in the SIPP, identical questions were asked of respondents one year apart. Analysis of the results by McNeil (2000) showed that while summary measures showed reasonable consistency, there was unexpectedly high inconsistency in reporting of particular conditions (such as vision impairment). Of course, some change in temporarily disabling conditions was expected, as was measurement error due to self-versus-proxy reporting, but even so the changes were assessed by the author as too high. The reader should note that disability has always been difficult to measure (see, for example, results from the content reinterview survey for the 1990 census in U.S. Census Bureau, 1993, and the results from a NAS workshop and panel on disability, Mathiowetz and Wunderlich, 2000, and Wunderlich et al., 2002, respectively.) The author is not aware of comparable methodological studies of longitudinal disability measures with other datasets, so this may not be an uncommon phenomenon. For further information on the quality of SIPP data, the reader is urged to consult the SIPP *Quality Profile* (U.S. Census Bureau, 1998) and *Users' Guide* (U.S. Census Bureau, 2001).

#### IV. CONCLUSION

SIPP is a unique member of the federal government's portfolio of household surveys. It is invaluable to policy makers and academic researchers and provides insights not available from

any other household survey. Many policy analysts have used the data to inform important policy issues, and if it becomes the source of official income and poverty statistics, it will become even more important. The Census Bureau is confident about its ability to make the value of SIPP clear to its constituents and is committed to making SIPP the key source of economic and policy-*relevant* statistics about households. Nevertheless, the Census Bureau faces some challenges in current SIPP operations that it needs to address.

*Encourage better respondent cooperation to reduce nonresponse.* Interviewers, at least, perceive declining cooperation as related to questionnaire length. Questionnaire length, in turn, is a function of the many topics about which SIPP is being asked to collect information. When asked specifically about the apparent trade-off between questionnaire length and response in the mid-1990s, members of the OMB SIPP Interagency Advisory Committee said clearly that the information was so valuable that they would rather accept the lower response rate than reduce the content. Nevertheless, the Census Bureau must continue to search for ways to improve response, such as the increased use of financial incentives. The additional incentive tests incorporated in the 2001 panel will help direct future efforts to reduce attrition. The Census Bureau will also consider the recommendations of the Interagency Household Survey Nonresponse Group (see, for example, Atrostic et al., 2001, and Bates et al., 2001). It has already adopted the “Refusal Aversion Training” approach recommended by Groves et al. (2002).

*Continue to have a strong methodological research program.* The Census Bureau has resolved many of the research issues worrying SIPP analysts in the early years of the



survey. On the other hand, there is no easy answer for attrition bias, one of the main problems that SIPP (and other longitudinal surveys) must deal with, nor for seam bias. If the SIPP is redesigned to become the source of official income and poverty statistics, that will give the Census Bureau a clear research focus for the near future. Other areas of focus include eligibility modeling and creating a tax simulation system for SIPP. Users would also be helped by development of additional methods to account for SIPP's complex design and longitudinal nature; see Causey (2002) and Mera and Bailey (2002) for some efforts in that direction.

*Improve the timeliness of SIPP data products by developing a new longitudinal processing system.* Serious delays SIPP processing resulted from the switch from a paper questionnaire to computer-assisted personal interviewing for the 1996 panel. In order to improve timeliness, the Census Bureau has adopted an alternative strategy. Instead of producing cross-section wave files for the core data as soon as possible, and then editing all the panel's waves for consistency at the end, cross-section wave files will be eliminated (except for a preliminary version of wave 1) and only a longitudinal core file would be produced. This file would be supplemented by cross-section topical module files, produced as they are now. To maintain this schedule, few and only minor changes can be made to the 2004 questionnaire once it is fielded.

The preliminary cross-section file for wave 1 will be produced as soon as possible (a target date of 8 months after data collection ends). The preliminary 2001 panel wave 1 file was released in June 2002, the delay resulting from additional confidentiality protections added for all Census Bureau microdata products in early 2002. The current plans are to release a

longitudinally edited file containing waves 1-4 approximately 8 months after data collection ends for wave 4 (that is, February 2003). This process allows some longitudinal editing of demographic information. Finally, as each subsequent wave is completed, it will be edited to be consistent with the already released waves, and released 8 months after the end of data collection for that wave. Topical module data will receive a lower priority, and thus will typically take 12-18 months to be released, depending in part on whether the questionnaire for that module had been used before.

While this new longitudinal processing plan will undoubtedly improve timeliness, the tradeoff is slightly less accuracy. This small reduction in accuracy has three aspects:

- less missing wave imputation, since the subsequent wave will not be available for longitudinal editing, the Census Bureau cannot impute the missing data accurately;<sup>24</sup>
- changes to demographic information provided after wave 4 will not be used; they will be edited to be consistent with earlier information -- respondents do occasionally correct previous responses, though less so after wave 4 than earlier in the panel; and
- a zero weight will be assigned to nonrespondents returning to the sample after wave 4; the 2001 panel and subsequent panels include all post-wave 1 nonrespondents in the interview sample for all subsequent waves.<sup>25</sup>

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<sup>24</sup> The Census Bureau is examining methods for the imputing missing wave information for waves 2 and 3 of the 2004 panel before the first longitudinal data release of that file.

<sup>25</sup> Prior to the 2001 panel, nonrespondents were dropped if they refused two interview waves or if the interviewer could not find a mover after trying for three waves.

SIPP is no longer a toddler, it is now a teenager (19 years old, having first been fielded in October 1983). As many teenagers do, it is showing signs of maturity, but clearly SIPP still has a way to go. Having a high profile goal -- providing official income and poverty statistics -- would help it grow quickly into a responsible adult member of the federal government's survey community. Even without that goal, its contribution to understanding the effects of the 1996 welfare reform legislation and any subsequent changes should help it mature and be recognized as a vital national survey.

**Table 1. Response Rates for PSID and NLSY79**

(percent)	<b>PSID: SRC sample</b>	<b>PSID: SEO sample</b>	<b>PSID: Total</b>	<b>NLSY79: Always</b>	<b>NLSY79: Currently</b>
<b>Sample Selection to Interview 1</b>	77.0	50.8	66.5	89.0	89.2
<b>Interview 1 to Most Recent Interview (see note below):</b>					
All Deceased Included in Base	45.2	45.2	45.2	69.6	86.7
Known Deceased Removed from Base	53.0	53.0	53.0	71.5	NA
<b>Sample Selection to Most Recent Interview (see note below):</b>					
All Deceased Included in Base	34.8	23.0	30.1	62.1	77.3
Known Deceased Removed from Base	40.8	26.9	35.2	63.8	NA

**Note:** Data collection year and wave (interview) number for most recent survey at the time the source paper was prepared:  
 PSID= 1993 (Wave 26); SRC=Survey Research Center, SEO=Survey of Economic Opportunity.  
 NLSY79= 1996 (Wave 17); the label “always” mean that a respondent never missed an interview; the label “currently” means that a respondent may have missed one or more interviews but is currently in the survey.  
 NA = not available.

The information in this table is from Hernandez (1999). See Weinberg and Shipp (2002), Appendix 1 for a more accessible version of the documentation.

Table 2. Description of Actual and Proposed SIPP Panels

Panel	Start/End Dates	Waves	Households Interviewed in Wave 1
1984	Oct 1983 - Jul 1986	9	19,878 <sup>a</sup>
1985	Feb 1985 - Aug 1987	8	13,349
1986	Feb 1986 - Apr 1988	7	11,513
1987	Feb 1987 - May 1989	7	11,689
1988	Feb 1988 - Jan 1990	6	11,774
1989	Feb 1989 - Jan 1990	3 <sup>b</sup>	11,892
1990	Feb 1990 - Sep 1992	8	21,907
1991	Feb 1991 - Sep 1993	8	14,316
1992	Feb 1992 - May 1995	10	19,582
1993	Feb 1993 - Jan 1996	9	19,864
1995	Feb 1995 - Sep 1995	2 <sup>c</sup>	6,846
1996	Apr 1996 - Mar 2000	12	36,805
2000	Feb 2000 - Sep 2000	2 <sup>d</sup>	11,641
2001	Feb 2001 - Jan 2004	9	35,097 <sup>a</sup>
2004	Feb 2004 - Jan 2007	9	36,700 <sup>e</sup>

Notes: Each wave is an interview with 4-month recall.

- a. The panel began at this level and was reduced later due to budget reductions.
- b. 1989 panel discontinued in order to increase the size of the 1990 panel (low-income households from the 1989 panel were included in the 1990 panel).
- c. 1995 panel designed as a two-wave “dress rehearsal” for the redesigned 1996 panel.
- d. 2000 panel was discontinued because of budget cuts.
- e. Samples size for 2004 panel is proposed.

Table 3. Survey of Income and Program Participation: 2001 Panel Schedule for Topical Modules

WAVE	TIME PERIOD	TOPICAL MODULES
1	Feb - May 2001	Reciency History Employment History
2	Jun - Sept 2001	Work Disability History Education and Training History Marital History Migration History Fertility History Household Relationships
3	Oct 2001 - Jan 2002	Assets, Liabilities, and Eligibility Medical Expenses and Utilization of Health Care - Adults and Children Work-Related Expenses Child Support Paid Out-of-Pocket Child Care Costs
4	Feb - May 2002	Income from Second Businesses Participation in Tax-Favored Retirement Accounts Taxes Work Schedule Child Care
5	Jun - Sept 2002	School Enrollment and Financing Child Support Agreements Support for Non-Household Members Functional Limitations and Disability – Adults and Children Employment-Based Health Insurance
6	Oct 2002 - Jan 2003	Assets, Liabilities, and Eligibility Medical Expenses and Utilization of Health Care - Adults and Children Work-Related Expenses Child Support Paid Out-of-Pocket Child Care Costs
7	Feb - May 2003	Income from Second Businesses Participation in Tax-Favored Retirement Accounts Taxes Retirement and Pension Plan Coverage Informal Caregiving Children's Well-Being
8	Jun - Sept 2003	Adult Well-Being Child Support Agreements Support for Non-Household Members Functional Limitations and Disability – Adults and Children
9	Oct 2003 - Jan 2004	Assets, Liabilities, and Eligibility Medical Expenses and Utilization of Health Care - Adults and Children Work-Related Expenses Child Support Paid Out-of-Pocket Child Care Costs

Table 4. SIPP Attrition Rates: 1992, 1993, 1996, 2000, and 2001 panels

Panel:	1992	1993	1996	2000	2001
Wave					
1	9.3%	8.9%	8.4%	11.3%	13.3%
2	14.6	14.2	14.5	18.2	21.9
3	16.4	16.2	17.8		24.7
4	18.0	18.2	20.9		25.9
5	20.3	20.2	24.6		27.5
6	21.6	22.2	27.4		survey in progress
7	23.0	24.3	29.9		
8	24.7	25.5	31.3		
9	26.2	26.9	32.8		
10	26.6		34.0		
11			35.1		
12			35.5		

Notes:

Attrition based on eligible housing units selected for interview in wave 1 *adjusted for expected sample growth*.

Estimates for 2001 are not strictly comparable to earlier panels as all 2001 panel wave 1 respondents remain in sample for *all* subsequent waves; in previous panels, households were dropped after two noninterviews (refusals) or three noninterviews (movers who could not be located).

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