METHODS PANEL TO IMPROVE INCOME MEASUREMENT IN THE SURVEY OF INCOME AND PROGRAM PARTICIPATION

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I. Introduction[1]

The U.S. Census Bureau established the Survey of Income and Program Participation (SIPP) 2000 Methods Panel project to evaluate and redesign the core instrument for SIPP. The primary objectives of the Methods Panel (MP) project are to improve response rates in SIPP, to reduce income under reporting, and to improve data quality. The MP project includes both analysis of extant data as well as experimental research.

II. Background

SIPP is a longitudinal survey conducted by the Census Bureau to provide data on the distribution of income, wealth and poverty in the United States, and on the effects of federal and state programs on families and individuals. Results from the survey have far-reaching implications for national policy.

In 1996 the Census Bureau established a multi-divisional group to review and improve the SIPP core instrument, including shortening it, if possible. The review process generated an extensive set of recommendations ranging from minor wording changes to considerable instrument restructuring. The need for thorough testing of the proposed changes before implementation in the production survey led to the creation of the MP project, which is structured in parallel to the production SIPP. It is designed to support rigorous experimental testing of alternative procedures, quantitative analyses of existing data, literature reviews, and qualitative research on both current and new collection methodologies. Refer to Doyle, Martin, and Moore (2000) for more details on the objectives, design, and methods used in the MP project.

III. Research Findings to Date

MP research projects completed thus far include a review of dependent interviewing techniques, analyses of 1996 SIPP core and topical module data, and cognitive interviewing.

Coverage. One MP goal is to improve coverage, particularly for marginal household members who tend to be omitted from household rosters. Prior research (Sweet, 1994; Martin 1996, 1999) has demonstrated the effectiveness of special probes for identifying such people. The probes to be tested in the methods panel are designed to elicit mention of commonly undercounted types, including commuter workers and live-in employees, the often absent, and the highly mobile.

Dependent interviewing. Dependent interviewing is used in surveys with repeat visits to the same households to reduce burden and improve data quality. In SIPP, dependent interviewing is viewed as critical for the resolution of the so-called "seam bias" problem. Based on a review of the literature, Mathiowetz and McGonagle (1999) recommend that SIPP continue to use dependent interviewing to develop and maintain information on household rosters. They also recommend continuing the use of dependent interviewing in the determination of income recipiency, but experimenting with two alternative approaches, one that reveals the prior information before asking the question and the other reveals the prior information after asking the question, if there is an inconsistency.

Carry-over of demographic data. We analyzed data change patterns for tenure and participation in public/subsidized housing among households who remain at the same address over multiple waves of SIPP, to assess the feasibility of skipping these questions in Wave 2+ for such households. Results showed that we could eliminate repeated administration of the tenure question, but not the public/subsidized housing questions, because change was non-trivial, particularly among low income households. We also confirmed that we can safely skip asking race of children whose biological parents share the same race.

Asset ownership. 1996 SIPP panel data offer support for a revised approach to asset ownership that reduces burden without affecting data quality. The data show that respondents who say "no" to each member of a set of common assets are highly unlikely to own any of the less-common types, and, furthermore, that the amount of

[1]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.

income from assets held by this particular group of people is very small. Thus, we will test a new two-part series of asset ownership questions (described in section IV) to ensure that reducing burden does not reduce the quality of asset ownership data.

We also learned that about two-thirds of the nonresponse to asset income questions consists of "don't know's" rather than refusals. We examined the nonresponse follow-up questions currently included in SIPP for some asset types and found them to be successful in capturing an amount about two-thirds of the time. Thus, we will expand the use of nonresponse follow-up questions to all asset types.

Seam bias. We examined the success of the 1996 panel in reducing the seam bias, and found little evidence of improvement (see Figure 1). However, the 1996 panel's improvement attempts were focused on questions whose biggest impact is in post-collection processing. Since the Figure 1 results are based on raw data, we explored how much the estimates might be improved by editing. We learned that if we assumed that reports of recipiency for the interview month of the prior wave were correct (instead of the "no" reports for the same month from the next wave), then we could shift about half of the transitions away from the seam. While this simple procedure does not eliminate the seam bias, it does flatten the seam "spikes" substantially (see Figure 2).

We are currently examining other questions in the 1996 panel (the so-called "previous wave" questions) that condition the question on recipiency in wave n+1 on recipiency in wave n. The expectation was that these "previous wave" questions would yield transition dates distributed more evenly across the between-wave and within-wave transition points. Unfortunately, we are finding that most of the information gathered in wave n+1 either 1) indicated no transition occurred, 2) negated the recipiency reported in the prior wave, 3) left the transition at the seam, or 4) was not useful (such as reporting the last date of receipt to be years before the survey started). Clearly we need to improve the methods for using dependent interviewing in this context.

Incorporating Wave 8 results. Assisted by an Office of Management and Budget (OMB) interagency committee, SIPP developed a topical module for Wave 8 of the 1996 panel that tested (1) an income screener limiting questions to persons in low-income households, (2) a series of questions to capture participation in a variety of new, welfare-reform-era assistance programs not currently captured in SIPP, (3) measures to permit valuation of benefits received under the new programs, and (4) new questions on electronic benefits (e.g., debit cards). Results of the Wave 8 test are summarized in Griffiths et al., 1999, Nelson and Doyle, 1999, and Ollerich and Hauan, 1999. Of particular note for this paper are the Griffiths et al findings, which revealed that:

- the income screener was successful in targeting questions on to the appropriate population;
- nonresponse to the new program questions was rare;
- the frequency of reported receipt of the new programs was sizeable, and follow-up analyses found most of the reports to be valid; and
- for the most part, the programs identified were primarily public assistance, as intended.

Demographic characteristics. We cognitively tested a set of new roster questions to assess how well they communicate SIPP's sometimes complicated household membership rules (for example, college students for whom a room is maintained at the sample address should be included on the roster), and to improve the identification of people who are likely to be undercounted. We also tested revised questions to identify who owns or rents the home, new questions that establish citizenship status, and a new approach to educational attainment. Finally, we tested questions on school enrollment and financial assistance for education.

Overall, the results were positive. The roster probes helped respondents think about tenuously attached household members. Respondents did not seem to have problems identifying owners/renters. The citizenship screening question (whether all household members were born in the U.S.) worked well. The two-part approach to educational attainment also worked well, although respondents displayed some problems on financial assistance - they did not seem to have a clear understanding of the response categories used for types of financial assistance and did not seem to know the differences among them.

Labor force participation. We tested a new approach to determining types of employment: business ownership, other types of self employment, wage and salaried jobs, and other less regular forms of employment. We first asked a household level question about family-owned businesses, then moved to the person level to identify other forms of self employment, and finally to questions about wage and salaried employment for each adult and "odd job" work. The approach worked well in cognitive testing and we are proceeding to test it in the field to determine its impact on the reporting of labor force activity.

Earnings. We tested an attempt to increase flexibility in reporting earnings amounts, allowing respondents to pick the easiest "accounting period" for their circumstances. However, the version of the question we used did not entirely succeed; instead of answering a question on how they could provide the amounts, respondents tended to simply provide the amounts. Clearly, we need to do more work to refine and improve this approach.

We tested a question designed to elicit business income other than the monthly earnings already reported. This question posed comprehension problems for many respondents, which may suggest that the concept is not meaningful. One respondent said she thought this was asking about "under the table" income, another said "other than what [income]?" another said it meant income not yet reported to the interviewer, and other respondents were simply confused by the question.

On a positive note, we did observe that respondents use reasonable estimation strategies for computing monthly business income. Once respondents understood the question on amounts (which asked for amounts received thus far this month, followed by each month in the reference period, working backwards), providing the amounts did not seem to be a problem. Most respondents' reports were based on payments for discrete one-time contracted jobs. However, one respondent's report of amounts was simply the profit from his business.

Assets. We tested new methods for determining asset ownership. First, we tested whether asking about IRAs and other retirement accounts in advance of questions on other assets would alleviate confusion as to how those assets should be counted. We observed no real problems with this approach, but were not 100% successful in keeping the retirement accounts out of the subsequent recipiency categories. The field test will tell us more definitively whether confusion is reduced with the new approach. We also tested a new two-part approach to determining asset ownership (described in section IV) and some revisions to the joint/sole ownership questions. These worked well with some minor exceptions. Hence, we will proceed to field test the approach to see if it improves the ease with which the interview is conducted while not impacting the overall reporting of asset recipiency. Among the minor issues we found was some confusion over our choice of words (e.g., one respondent misinterpreted the word "alone", hearing it as "a loan"), and we realized that we needed to ask savings bonds as part of the first set of assets (even though they do not produce income according to SIPP's definitions, and thus are not of great concern to the survey) in order to reduce the confusion between savings bonds and other types of bonds which are in-scope for SIPP's purposes.

Other Income. We tested a series of questions from Wave 9 of the 1996 SIPP panel on need-tested assistance programs. However, we changed those questions subsequent to the cognitive interviewing. Hence, we focus here on other cognitive research work on general income. One focus of testing was to see if we could administer a question on receipt of disability income to all adult respondents rather than just those indicating some form of work limitation in an earlier section of the instrument. We suspected that the disability recipiency item over-relies on the "work limits" question to identify potential recipients of disability income, and thus may contribute to the underreporting of income such as workers' compensation. We found no problems with this expanded universe and thus plan to test it further.

We tested modifications to SIPP's approach to determining the point(s) in time when income or benefits were received, both in the current reference period and in the past. We asked if the respondent received anything yet this month (i.e., the interview month) and if so how much. Then we asked if they received it in any of the other months of the reference period. In this case we listed the months in forward chronological order (as that made more sense in the context of the questions) rather than asking about the most recent month first. With some minor exceptions these worked well and we will field test that approach. Issues remain about questions on child support pass-through payments, requiring further study.

Health Insurance. We cognitively tested respondents' ability to identify coverage under Medicaid or government sponsored medical assistance programs, to provide the name of the program (so that we can use it in subsequent questions probing for details on the program benefits), and to report the period during which they were covered within the reference period of the survey.

Generally, respondents seemed to have no trouble identifying themselves or their children as being enrolled in Medicaid in response to the two basic Medicaid/ government assistance program questions. In follow-up questions that determined the program name, results were mixed. In some cases respondents recognized one or more program names from the list provided; in other cases respondents offered their own program name which was not on the list. In three cases respondents offered multiple names for the program they or their children were enrolled in. Almost all respondents, however, identified the program as "Medicaid" or the generic

"Medical Assistance." This seems to indicate that for the most part, respondents refer to these programs as Medicaid and that providing a list may or may not aid in reporting.

Most respondents had no trouble answering the coverage question with certainty so we will retain the question. However we will conduct additional research to assess whether this question is interpreted as measuring coverage *at any time* during the month or *continuous* coverage throughout the month; if, as suspected, respondents frequently misinterpret the question, then we will need to consider modifying the wording to make its meaning more clear.

IV. Experimental Instrument Design

Figure 3 summarizes the resulting changes to the Wave 1 instrument that we are implementing for fielding in August and September 2000. These changes are listed by instrument section, which themselves are listed in the order in which they are administered in the field. With some exceptions, these changes represent no new content. Further, with some additional exceptions, these changes do not yield substantial changes to the instrument output which is the input to the post-collection processing. The exceptions are noted in Figure 3.

V. Conclusions

The methods panel project is well underway and providing interesting results about the quality of the SIPP program. We are finding ways to streamline the instrument to help reduce respondent burden and we are identifying areas where improvements can be made in the methods with which the information is collected. To date we learned the following:

- the seam bias problem has not yet been solved and thus needs further research
- use of nonresponse followup improves reporting of income amounts
- nonreponse to asset income questions are primarily the result of lack of knowledge of the amount rather than refusal to reveal the amount, suggesting we will see significant improvement in the overall results with increased use of nonresponse follow-up questions
- there exits a common set of asset types that can be used to reduce the burden of the determination of asset ownership by type,
- an income screener can be successfully used to reduce the number of respondents subjected to questions about need-tested programs.

The project is on target to field an experimental and control instrument side-by-side in August and September 2000. The results will provide an excellent opportunity to examine the success or failure of our new methods of data collection reflecting alternative wording and approaches to items in virtually all sections of the SIPP instrument.

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Figure 1

1996 and 1993 Panel Recipiency Transitions

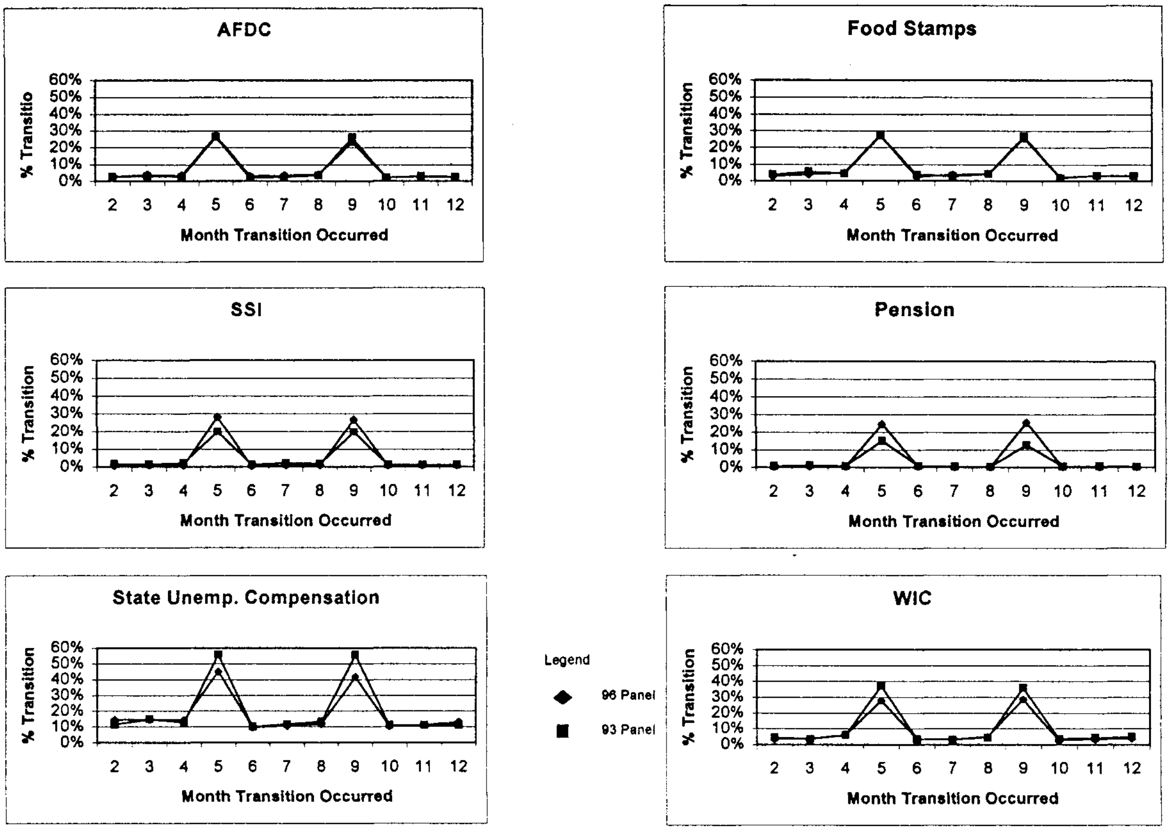

Figure 2
1996 SIPP Transitions in WIC Recipiency, Original and Edited

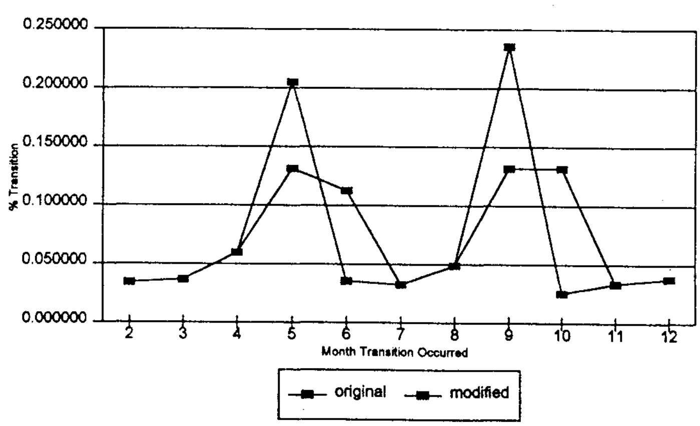

Figure 3

Summary of SIPP Wave 1 Instrument Changes to be Tested

Demographics	Use a topic-based format, e.g., "What is NAME1's date of birth?" "How about NAME2?".. Capture volunteered information about relationships to eliminate the need for some questions Identify all eligible owner/renters, select a reference person based on the owner/renter status Use new approach to capture often missed or improperly enumerated people Improved methods for capturing educational attainment reducing screen clutter and confusion. Add new questions to determine citizenship status
Labor Force	Establish family-owned businesses at the household level rather than the person level Eliminate duplicate questions concerning the characteristics of a family-owned business Add questions to capture often-missed irregular/odd job type work Modify and add questions in order to clarify the kinds of work
General Income Receipt	Use screening procedures target means-tested program questions to likely eligible households Capture new forms of means-tested program participation resulting from welfare reform Merge program section into the general income section and clarify school meals question Eliminate the required tedious repetition of the reference period
Asset Ownership	Initiate ownership questions with IRA and related accounts Ask receipt individually of 5 common asset types (plus savings bonds) If no to common assets ask screener recipiency for all other types If yes to common assets or yes to screener, ask detailed recipiency questions
Earnings	Increase flexibility in the reporting of earnings amounts Add questions to capture income from irregular/odd job labor
General Income Amounts	Consolidate and avoid repetition of screens which verify reports of unusually large amounts Update program labels, including state or local program names Add questions to collect amounts from new, welfare-reform-related programs (if possible)
Asset Amounts	Increase flexibility in the reporting of asset income amounts Capture more detailed information about joint asset ownership arrangements Expand and clarify the collection of asset amounts for different combinations of asset owners Explore new procedures for more efficient capture of jointly held asset income Expand the use of amount range reporting options for nonresponse follow-up
Health Insurance	Add and/or modify items to more accurately measure participation in government health insurance plans, especially the new Children's Health Insurance Plan (CHIP)
Miscellaneous	To assist in controlling the "seam bias," capture month 5 (interview month) educational attainment, labor force and program participation, asset ownership, and income amounts