

DISCUSSION

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This discussion deals with three of the papers presented, all of which have important implications for the design of SIPP and other longitudinal surveys. Two of the papers deal with the potential for bias or effects due to the same respondents remaining in the sample and being asked the same core of data items over time. The third paper deals with longitudinal weighting issues.

The first paper discussed is the *Longitudinal Weighting Issues and Associated Research for the SIPP* by Rita Petroni, Daniel Kasprzyk, and Rajendra Singh. This paper reviews the state of longitudinal weighting in SIPP, including current SIPP longitudinal weighting procedures and the genesis of this approach. It also covers the current and pending plans for continued research in this area. In doing this review, the authors have covered much of the current state of the art in longitudinal weighting for surveys other than SIPP.

I have only a few minor concerns about issues raised in the paper, but I would also like to suggest a different direction. Let me begin with some minor points. First, Coder and Ruggles (1990) found that 40 percent of the cases and entries of interest for AFDC were not usable because of zero weights. Since over 70 percent of the file reported for all 8 waves of the 84 panel, this seems more extreme than I would have expected and seems to violate one of the basic assumptions (that the loss due to attrition would be generally minor) driving the original approach. These types of findings are important for developing more rationale approaches to the problem.

Another concern deals with the proposed solution to using current weights for different types of longitudinal analysis. The suggested method is for the user to choose a cohort and adjust for nonresponse. However, many analysts are ill-equipped to do the nonresponse adjustment. Furthermore, due to confidentiality requirements, some of the data that might be useful in doing these nonresponse adjustments is not available to those outside the Census Bureau.

Now I'd like to return to the main issue. Analysts are suggesting that more data is needed for longitudinal analysis, but the current and proposed research agenda is heavily laden with topics that primarily address the bias and mean square error without incorporating more sample cases for analysis. There is an important difference, especially if the cases being dropped are introducing bias. Analysts may be saying that more cases are needed because of the rarity of the circumstances. While reducing the mean square error of the estimates in general is important, the discarding of rare cases because they do not fit within the prescribed requirements for weighting may be the major problem.

From my view, imputation is the only realistic approach to satisfy these analysis needs. Most statisticians have not favored the use of imputation, primarily because of the concern that imputation will result in greater biases. However, weighting approaches will probably never succeed for the diverse needs of the users, leaving imputation as the only real alternative. Imputation of missing data for one missing wave (which accounts for about 80 percent of the cases with missing data) certainly deserves a prominent role in the research agenda.

Now, we turn to the two papers on the effect due to interviewing the same respondents repeatedly over time. These papers take slightly different approaches to the same problem, yet both converge on the same answer: panel conditioning does not appear to be a significant problem in the current SIPP design.

The paper by Stephen Pennell and James Lepkowski, *Panel Conditioning Effects in the SIPP*, begins with an excellent account of the nonresponse problems in SIPP. Based on these results, they look at estimates of bias in calendar year estimates. No major panel biases are found. Linear models in the logits are then investigated to see if the panel is a major factor. Here again, the answer is that panel differences are nearly absent. Because

of concerns about attrition and nonresponse bias, they form simple models involving unweighted data from those who responded to all 7 waves and again fail to find evidence of panel bias.

The paper by Maryann McCormick, Derrick Butler, and Rajendra Singh called *Investigating Time in Sample Effect for the SIPP* looks at the same issues and finds much of the same result. The authors point out that they are more interested in 'effects' than bias, and they are probably correct that the 'effect' is more relevant. They look at quarterly SIPP estimates and find no effect due to the panel. They also look at administrative data to examine the panel effect. Differences are found, but the panel effect is not. The administrative and SIPP data have similar patterns.

In the graphs presented of the SIPP quarterly estimates, the wave 1 estimates seem to be very different from the other waves of data. While this is not a panel effect, it is suggestive of a potential problem. The authors indicate that it may be due to the unbounded nature of the first interview. Regardless of the source, the wave 1 phenomenon may have implications for the analysis of the panel effect. Does this have implications for adding together panels to

form calendar year estimates? Suppose Pennell and Lepkowski added a factor for wave 1 in their models. Would they then find significant panel differences?

The implications of the lack of panel effects discussed by Pennell and Lepkowski are very significant. In particular, they note that if no panel effects are present, then there is no persuasive statistical argument for the overlapping panel design for SIPP. Furthermore, more waves of data could be accommodated in SIPP if no panel effects are present, since the nonresponse does not grow rapidly with additional waves.

These are key design issues. Overlapping panels consume valuable resources, reduce the sample size in any particular sample, and limit the number of waves. Without this design feature, the SIPP could adopt a larger sample and keep it in place for a longer time period, enabling analysts to look at longer spells of activity. In fact, if the original designers of SIPP believed that little or no panel conditioning effects were present, it is very unlikely that the overlapping design would have ever been incorporated originally. Now that the design of SIPP is more established, it will be difficult to move to a design that is more consistent with these findings.