# Examining interviewer-respondent interactions in the Survey of Consumer Finances (SCF)

Jesse Bricker, Kevin Moore, Richard Windle*
*Federal Reserve Board, 20th and C St NW Washington DC 20551

## Abstract

In order to improve accuracy in the Survey of Consumer Finances (SCF), a feature was included in the survey software to allow the interviewer to make comments—both question-specific and general comments—about their interaction with the respondent. These comments are then used during the editing process to fix the data so that it properly reflects the respondent's situation. This paper focuses on how these comments drive edits, and improve data quality.

Examining the data, particularly the heavily edited pension and income sections, reveals that a high percentage of variables require editing, and a high percentage of these edits are in fact motivated at least partially by these comments. Respondent confusion due to complicated survey questions and complicated respondent situations can both be ameliorated by the use of these interviewer comments, making them a valuable part of the survey process

Key words: data editing, data quality, interviewer, paradata

## Introduction

Conducting a complicated survey, such as the Survey of Consumer Finances (SCF), allows for the collection of deep, useful, and complex data, but also runs the risk of confusing survey respondents, thus negatively affecting data quality. In the ideal world, survey questions are written so that all parties perfectly understand what is being asked, and no misclassification issues occur. In reality, however, there is a distribution of understanding of questions. Any question wording will cause confusion for some set of respondents. Mistakes can result due to a misunderstanding of terminology used in the SCF, or an incomplete understanding of the concepts or circumstances about which the respondent is asked. Data is most vulnerable and fixable during the interview itself, so it falls to the interviewer to properly facilitate the asking of questions, while still maintaining consistency.

Before interviewers used computer assisted personal interview (CAPI) to conduct the SCF, a pencil-and-paper method was employed. Although the computer-assisted method was almost wholly an improvement, one aspect that was lost was what had been called 'margin notes.' If an ambiguous answer was provided, confusion was evident, or the interviewer doubted the information provided by the respondent, the interviewer could make notes in the margins of the paper explaining the situation. To compensate for this loss, a feature was included with the software that allowed the interviewer to press a button to open a text box, so they could enter their notes or comments electronically; these comments are linked to the individual questions. A further addition was providing a space for the interviewers to make comments about the entire case at the end of the survey, called the debriefing. During

the debriefing, interviewers are also given the opportunity to make comments on their comments made earlier, further clarifying information recorded during the interview.

All these comments require time and effort from the interviewer, as well as resources from their field managers in the form of training. After the data has been sent to the Federal Reserve Board (FRB) for processing, still more time is required from data editors to evaluate these comments to determine if an edit to the data is appropriate. Given this great cost, an investigation examining the level of data improvement generated by comments is justified.

**Background**

The SCF is conducted every three years, and gathers detailed information on the finances of U.S. families, including household assets, debts, income, and demographic information. The current form of the survey has been used since 1989. The study is sponsored by the Federal Reserve Board and, since 1992, has been conducted by NORC at the University of Chicago.[1]

The SCF combines a geographically stratified and nationally-representative area probability (AP) sample and a list sample (LS) that oversamples households that are likely to be wealthy. The AP sample is drawn by NORC at the University of Chicago and provides a nationally-representative sample of families.[2] The LS is drawn by FRB staff.

The SCF questionnaire is very detailed and can be time-consuming for the respondent. The median length of an SCF interview is nearly 90 minutes, and families with complicated finances can be engaged with the survey for more than two hours. The SCF deals with issues that are technical and complex, thus the risk of error on the part of the respondent is not negligible.

Field interviewers record the details of their case work in the "record of calls" (ROC) database, individual question comments, and during a debriefing questionnaire after the interview portion of the case has been completed.[3]

All of this information is eventually sent to the Federal Reserve, where data editors examine the case data in conjunction with the comments to determine if any data editing is required. There can be multiple motivations for data editing. As already mentioned, comments left by the interviewer during or after the interview are often a motivating factor. In addition to this, if there are data inconsistencies—such as a long-held property that generates rental income, but that income is not mentioned in the income section—an edit might be required. Lastly, warning flags generated by software that analyzes the data for anything suspicious, such as a twenty-year-old respondent claiming to be the head of household but still living with a parent, can also motivate an edit.[4]

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[1] See Bricker, Dettling, Henriques, Hsu, Moore, Sabelhaus, Thompson, and Windle (2014) for more information on the 2013 SCF.

[2] See O'Muircheartaigh, et al (2003) and Tourangeau, et al (1993) for more information about the NORC national sample.

[3] See Kennickell (2006a, 2006b, 2008) for more details on interviewer data quality processes used in the SCF and the potential effects on data quality.

[4] A more complete treatment of the FRB-NORC communication channel and FRB review of the data is explored in Bricker and Kennickell (2013).

Because there are other reasons to edit data besides just comments from the field, an investigation of the usefulness of the comments is complicated. Edits to the data, always made in order to improve data quality, could have been motivated by interviewer comments, or by inconsistent data or warning flags. Fortunately, the SCF employs a set of shadow variables called J-variables that describe what has been done to every single piece of data in an SCF case, and why.

The J-variables can take on several different descriptive values, as described in table 1.

Table 1. J-Variable Values and Meanings

| Value | Meaning |
|---|---|
| 0 | Originally answered |
| 1 | Originally skipped |
| 5 | Repaired based on comment with minimal editor judgment |
| 13 | Repaired based on comment using some judgment or based on other data structure |
| 14 | Skipped based on previous edit |
| 2098 | No useful information and unable to repair, set to impute |

To further clarify how the editing process and J-variables work, consider the following set of hypothetical data.

Table 2. Original Data

| Case ID | X804: Amount originally borrowed ($) | J804 | X805: Amount currently owed ($) | J805 |
|---|---|---|---|---|
| 0001 | 750,000 | 0 | 600,000 | 0 |
| 0002 | 250,000 | 0 | 200,000 | 0 |
| 0003 | 400,000 | 0 | 50,000 | 0 |

In the original data in table 2, the respondent in case 0002 has borrowed $250,000 for the purchase of their home. An interviewer comment that would motivate an edit to this data might be something along the lines of, "Respondent was confused, actually borrowed $200,000." The data editor reviewing the case would then change the value from 250,000 to 200,000, and the associated J-code from 0 to 5, since the edit was based on a comment.

Using these J-variables, it is possible to evaluate what percentage of edits is made due to interviewer comments, and thus allowing an evaluation of their overall usefulness.

**Results**

Examining the data, and specifically the J-codes, it is easy to derive some basic statistics. First, 10 percent of data are actually repaired during the editing process, so the effects of editing are non-trivial. Second, from the J-codes, it can be determined that interviewer comments drive 1/3 to 3/4 of these repairs.

Looking at edit rates, it becomes apparent that certain sections of the survey often require more modification during the editing phase, and it could be instructional to examine these sections more closely. Two of these sections in particular stand out as potential sources of confusion for respondents: pensions and income.

For pensions, the comment and edit rates are significant. Fifteen percent of cases have comments in their pension sections, and 16 percent require edits of some kind. The number of comments and edits, by type, in the current-job pension section of the SCF are detailed below in chart 1.

Chart 1: Mean number of comments and edits per case in the current-job pension section
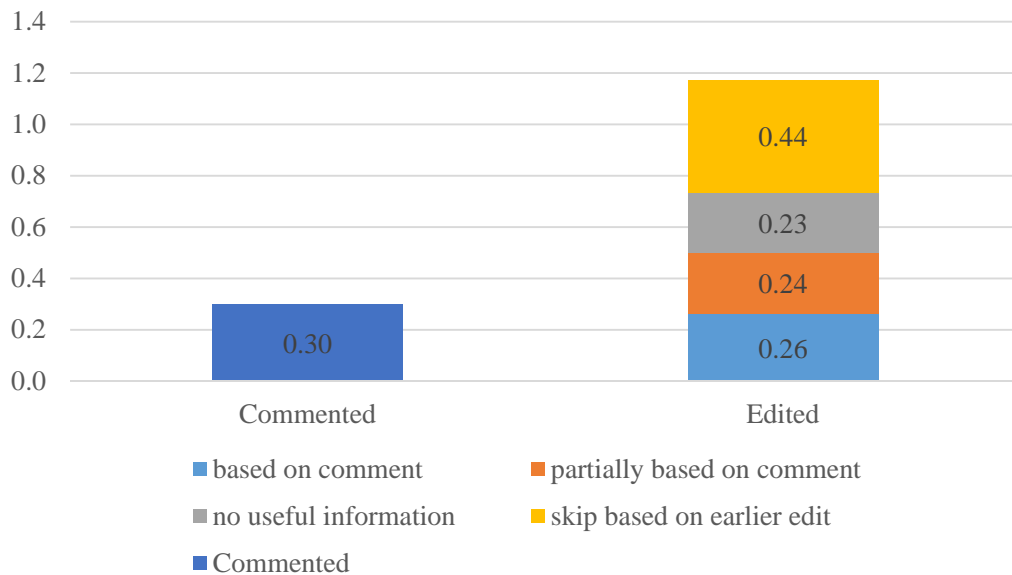


The 'based on comment' values indicate a j-code of 5, 'partially based on comment' indicates a code of 13, 'skip based on earlier edit' is derived from J-codes of 14, and 'no useful information' indicates a code of 2098. For the purposes of this examination, code 14s, or 'skip based on earlier edit' are not as useful. A code 14 might have been generated due to an earlier J-code of 5, 13, or 2098, so these values should not be considered. Removing them from the chart gives a clearer view of what is happening, as can be seen in chart 2.

Chart 2: Mean number of comments and edits per case in the current-job pension section
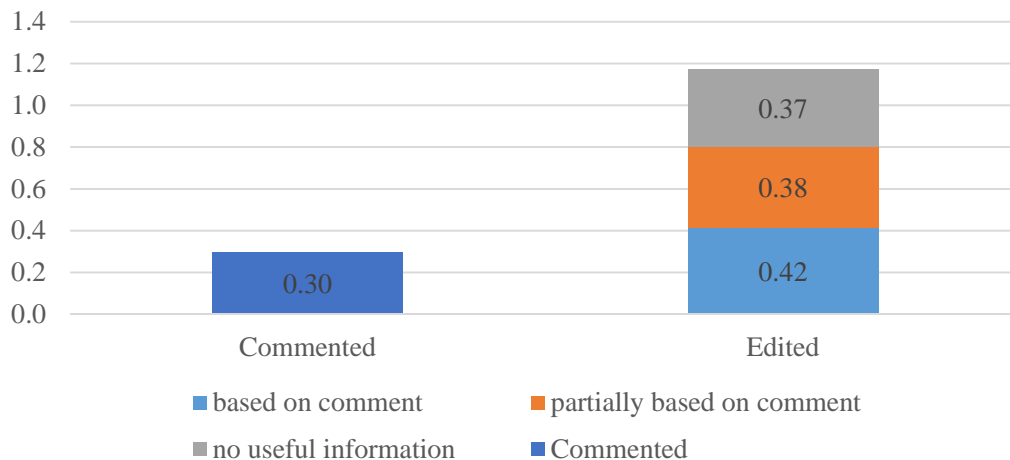


In the pensions section of the SCF, comments influence 3/4 of edits, and directly influence 1/3 of edits, as can be seen in chart 2 above.

Narrowing down even further on specific, often problematic questions from the current-job pension section, the significance of comments becomes still clearer. As shown in table 3 below, comments motivate the vast majority edits.

Table 3. Pensions - most common edits and reason for edits

|  | Account-type (Y/N) | Account balance ($) |
|---|---|---|
| Percent edited | 11 | 15 |
|  |  |  |
| Percent by edit reason |  |  |
| Comment | 5 | 5 |
| Partial comment | 5 | 4 |
| No useful information | 0 | 2 |
| Skip based on earlier | 0 | 5 |

*Note:* Reason edited columns do not sum to total percent edited due to rounding. Pensions refer to the respondents' current job pension.

Given these values, combined with the edit and comment rates mentioned earlier, it can be fairly said that comments have a particularly sizeable impact on current-job pension data.

The other area of interest noted when examining comment and edit rates is the income section of the SCF. Across all cases, 26 percent have comments in the income section, and a full 46 percent of cases have variables in the income sections edited.

As was done in chart 2 above, chart 3 below has had its 'skip based on earlier edits' portion of the data removed, since it cannot be determined what kind of edit caused the skip.

Chart 3: Mean number of comments and edits per case in the income section
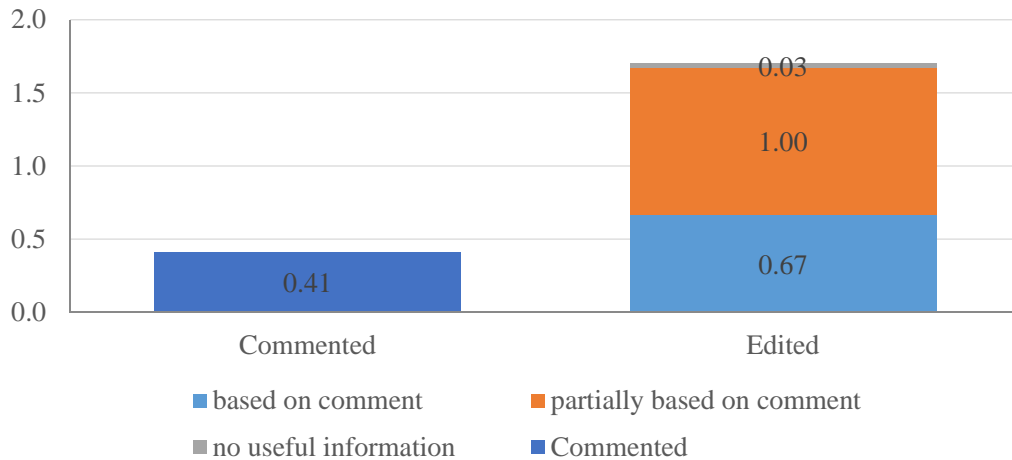


In the income section, comments influence almost all edits, and directly influence 1/3 of edits. So, in the income section, comments are even more important for data quality. Again, the importance of these comments becomes even clearer when examining specific questions within the income section.

Table 4. Income - most common edits and reason for edits

|  | Have wages (Y/N) | Amount of wages ($) |
|---|---|---|
| Percent edited | 6 | 22 |
|  |  |  |
| Percent by edit reason |  |  |
| Comment | 3 | 6 |
| Partial comment | 3 | 7 |
| No useful information | 0 | 0 |
| Skip based on earlier | 0 | 4 |
| Reconciliation screen | NA | 4 |

*Note:* Reason edited columns do not always sum to total percent edited due to rounding.

One difference between this table and table 3 above is the inclusion of 'reconciliation screen' as an option. In the 2013 SCF, a new income reconciliation screen was added, giving survey respondents the chance to change any portion of their income if the total did not add up to what they thought should be the proper amount. For example, if the respondent claimed to have wages and interest income, was then informed of the total, and then claimed that this number was too low, the interviewer could then use the reconciliation screen to add in, say, pension income that the respondent forgot to include the first time.

As for the current-job pension section, the majority of edits made to variables of particular interest in the income section were motivated by comments.

**Conclusions**

The results reveal that comments drive a substantial fraction of the edits to the data, showing that providing a space for respondents and interviewers to make comments can significantly improve data quality. The availability of this functionality is particularly beneficial for the collection of complex data. Both the comment rate and the editing rate were relatively high for the two sections of the survey highlighted, the current-job pension and income sections.

As a side note, these two sections are viewed somewhat differently by interviewers. In a recent survey of interviewers, 70 percent claimed that the pensions section was particularly difficult, while only 20 percent said the same of the income section. This divergent view likely reflects the complex concepts in the pension section versus the seemingly straightforward concepts in the income section. This difference also serves to highlight the diverse usefulness of allowing comments and taking them into consideration during the editing process. Comments can make up for both interviewer uncertainty, and respondent confusion. Given all these benefits, the collection of comments is well worth the cost of time and complexity.

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