

# **Try, Try Again: Response and Nonresponse in the 2009 SCF Panel**

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## *Abstract*

The 2007 SCF was designed as a continuation of a series of cross-sectional surveys on the financial condition of U.S. households. In light of the serious economic downturn that followed that survey, the Federal Reserve Board decided to pursue a second interview with the survey participants to understand how the aggregate changes played out across households. Great care was taken to prepare interviewers to deal with respondents, who would not have expected an additional contact and some of whom had earlier expressed a strong desire never to be bothered again. Ultimately, the survey achieved a re-interview rate of almost 89 percent and a relatively low item nonresponse rates for such a complex survey. This paper uses the formal and informal paradata to examine key factors in survey response. If the nonrespondents to the re-interview are representative of marginal respondents in both years, there is an advantage in studying the group, because so much is known about them from their earlier interview and the process of obtaining that interview.

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In 2007, the Federal Reserve Board (FRB) conducted its regular triennial Survey of Consumer Finances (SCF), a cross-sectional survey designed to obtain information on the assets, liabilities and income of U.S. households and their use of financial services. Subsequently, the economy descended into a financial crisis and a severe recession with high levels of unemployment, large declines in asset prices—notably, those for real estate and corporate equities—and elevated rates of home foreclosures. Although good information was available about the overall state of the economy, and even on some important regional economic indicators, representative information on the changes for individual households was far more limited. To gain insights into how economic events played out across households, in April 2009 the FRB approved a re-interview with all of the participants in the 2007 survey. This panel survey was designed with unusual speed, and by coordinating closely with NORC at the University of Chicago (which had collected the 2007 data) field work was able to begin on July 28<sup>th</sup>.

In addition to the obvious time constraints, there were serious obstacles to reaching the participants again. When the 2007 SCF respondents had been last contacted, there was no suggestion at all that they might be asked to be part of panel. Because there had, in fact, been no intention of reinterviewing them, there was no attempt to obtain information that would be useful for later contact, and in some cases even the respondent's name was not available.<sup>1</sup> Sometimes the name retained for the respondent pertained to someone other than the actual respondent (generally because the originally selected respondent's spouse or partner served as a valid alternate when the originally selected respondent became unavailable) and sometimes the address or telephone number was not the final one associated with a respondent's location at the time of the interview. In addition, it was known from interviewers that some respondents had stated strongly that they did not want to be re-contacted, but no systematic record was made of such situations.

This paper deals primarily with the nature of the follow-up procedures and the resulting patterns of nonresponse. To the extent that the panel nonrespondents are representative of marginally cooperative respondents in both years, the combination of the 2007 interview data and the process data from both years makes it more likely that we can identify systematic

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<sup>1</sup> A sample of respondents is always re-contacted for a brief set of questions designed to confirm that the SCF interview had been conducted and that the interviewer behaved in a professional manner.

differences in the behavior of the group and participants and difference in their data that might to nonresponse biases. The paper also reports briefly on problems related to longitudinal editing and imputation. The remainder of this paper is divided into five sections. The first section provides general background on the survey content and sample design. The second section describes the attempts to re-contact the original respondents and summarizes information in the case-level contact records. The third section provides an analysis of systematic patterns in unit nonresponse. A final section concludes and points to future research.

### **I. Survey content and sample design for the 2009 re-interview**

The questionnaire for the triennial cross-sectional SCF is designed to provide very detailed information on all aspects of household finances and to collect sufficient contextual information to support analysis of these data. Most of the questioning is at the level of individual items. For example, the survey covers up to three mortgages (aside from home-equity lines of credit) on a primary residence, with questions on all aspects of the mortgage terms; the sequence on checking accounts includes detailed questions on up to five accounts and summary information on any remaining accounts. For each asset or liability where there is a natural association with a financial institution, data are also collected on the institutions providing the service. The typical interview time is between 75 and 90 minutes, but the distribution of interview length is skewed, with interviews for some participants with complicated finances requiring up to four hours and sometimes multiple sessions.

Although it would have been useful to have a second observation at this level of detail, experience in collecting such information multiple times was limited and it was not known how agreeable respondents might be to being confronted with another such large burden.<sup>2</sup> Thus, it was deemed prudent to focus on a smaller set of variables most useful for understanding the nature of the changes experienced by households during the financial crisis. In an attempt to maximize comparability of data between the original and follow-up interviews, a concerted attempt was made to craft a questionnaire that would maintain as much as possible of the ordering and systematic framing of concepts in the 2007 questionnaire. For the re-interview, most of the highest-level questions that determine the logical flow of questioning were retained;

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<sup>2</sup> There was a series of re-interviews with participants in the 1983 SCF in 1986 and 1989. That experience was highly useful in avoiding some of the serious problems encountered in those surveys. But there were few other positive elements that could be carried over in the design of the 2009 re-interview questionnaire.

changes were most evident in the level of detail collected on concepts below that level. In a few very important instances (most notably in the cases of mortgages on primary residences and components of income), the full level of detail was retained. A small number of new questions were introduced, most notably a sequence targeting owners of small businesses and one dealing with mortgage refinancing. Ultimately, it was possible to construct parallel estimates for all of the most important aspects of wealth with both the cross-sectional and re-interview data.

In 2007, the eligible respondent in a given household was the economically dominant single individual or the financially most knowledgeable member of the economically dominant couple.<sup>3</sup> Most of the questions in that cross section were focused on the “primary economic unit” (PEU) a concept that includes the core individual or couple and any other people in the household (or away at school) who were financially interdependent with that person or couple. Detailed information on employment and pensions was collected on only the respondent and, as relevant, that person’s spouse or partner. A highly summarized set of questions at the end of the interview was used to get rough information about the economic status of any remaining people in the household. This panel questionnaire followed a similar approach, but did not include any financial information on anyone in the household outside the PEU.

As was the case for the 2007 survey, the panel questionnaire was implemented as a CAPI instrument, which incorporated a number of real-time edit checks and other tools to promote data quality. Because of the perceived sensitivity of the information in the survey, it was decided to limit the amount of dependent interviewing (that is, the carrying over of information from the 2007 interview to frame the changes) to two narrow sets of information: housing tenure and date the household moved into their residence, and ownership or partial ownership of a privately held business. The typical panel interview appears to have required about 45 to 60 minutes, but some may have taken half again as long.<sup>4</sup>

The uses of the cross-sectional SCF require representative data on items that are broadly held across the population, as well as items that are very disproportionately held by the wealthiest households. For example, according to the survey, over 90 percent of households

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<sup>3</sup> Where no one was knowledgeable or where the respondent was too busy or disabled to be able to participate, it was possible to use a proxy for the respondent if the person would be able to answer the questions on behalf of the respondent. Usually, the proxy would be an accountant, a business manager, a legal guardian, or an adult child.

<sup>4</sup> A programming error rendered the date-time stamp in the actual interview unreliable as an indicator of the interview length. Interview length was estimated using section-specific time stamps that were believed to be reliable along with reports from the project interviewers.

have at least one deposit account (a checking or savings account), but about two-thirds of the total net worth of all households is held by the wealthiest 10 percent, and half of that is held by the wealthiest 1 percent. To cope with the analytical demands, the survey employs a dual-frame sample design, including a multi-stage area-probability sample and a list sample. The area-probability sample provides broad national coverage and a sample of households selected with equal probability. The area-probability sample for 2007 was selected by NORC at the University of Chicago (see Tourangeau et al. [1993]).

The 2007 list sample was selected by staff at the FRB using statistical records derived from individual income tax returns by the Statistics of Income (SOI) Division of the Internal Revenue Service, under an agreement that provides protections for the privacy of taxpayers and restricts the use of the data to statistical purposes. A model of wealth defined in terms of variables available in the SOI data is used estimate the wealth rank of taxpayers—a “wealth index.” Multiple years of data are used to minimize distortions due to short-term income fluctuations. Taxpayers are classified into seven strata defined in terms of percentiles of the distribution of the wealth index (see Kennickell [2001]). Strata with high levels of the index are oversampled. Although the list sample uses taxpayers as the sample elements, the practical distinction from a household concept is very slight at the higher levels of the index (see Kennickell and McManus [1999]).

A concerted effort was made to track every 2007 household and to conduct an interview with the original respondent or an eligible alternate, as defined below. Even over the approximately two years between the 2007 and 2009 interviews, there were large changes in the structure of some households. Thus, it is important to be clear about what part or parts of the original households were followed in the 2009 survey. For both the area-probability and list samples, the target household at the time of the 2009 survey was defined as follows:

1. If the 2007 respondent was alive and not living permanently outside the U.S, the target household in 2009 was the one that contained that respondent.
2. If the 2007 respondent was either deceased or living permanently outside the U.S. and if the 2007 respondent had a spouse or partner who was a part of the PEU as defined in the 2007 survey, the target household in 2009 was the one that contained the 2007 spouse or partner of the 2007 respondent.

3. Where (a) the 2007 respondent was either deceased or living permanently outside the U.S. in 2009 and (b) either (i) there was no spouse or partner who was a part of the 2007 primary economic unit or (ii) there was such a spouse or partner but that person was either deceased or living permanently outside the U.S., then the case was considered to be out of scope for the 2009 survey.

Note that each household interviewed in 2007 corresponds to at most one household in the panel. To maximize the comparability of answers in the two interviews, a concerted effort was made to re-interview the same individual who was interviewed in 2007. Where that person was not available and there was a financially knowledgeable spouse or partner of that person in the 2009 household of the respondent, that person was allowed to serve as the respondent.<sup>5</sup>

## II. Re-contacting the 2007 SCF participants

About a month before the field period began, NORC staff initiated intensive efforts to obtain current contact information for all 4,422 of the 2007 SCF participants; for 10.3 percent of them, only a partial name or no name was initially available.<sup>6</sup> The field period began in July

<b>Table 1: Response rates for eligible respondents, by sample stratum, 2007 and 2009; percent.</b>		
<i>Sample group</i>	<i>2007</i>	<i>2009</i>
AP sample	67.8	88.8
List sample	34.7	87.5
Stratum 1	43.0	96.0
Stratum 2	49.3	90.1
Stratum 3	43.7	89.7
Stratum 4	41.7	86.4
Stratum 5	36.9	87.4
Stratum 6	28.4	87.7
Stratum 7	11.6	87.8
All cases	51.1	88.7

2009 and all except 34 of the completed interviews had been obtained by the end of the year; data collection stopped completely in January 2010.

When the field work ended, almost 89 percent of the eligible 2007 SCF participants had been re-interviewed (table 1). The panel response rate based on the eligible cases was at least 87 percent in every sample group. However, the response rate based on the full 2007 sample was substantially lower—about 60 percent for the AP sample. Because earlier work has addressed the response properties of the 2007 SCF, this paper focuses on the increment from 2007 to 2009.<sup>7</sup> One potential advantage of studying the panel nonrespondents is that a great deal is known about them from the 2007 survey.

<sup>5</sup> As in the 2007 cross section, a knowledgeable proxy was allowed to complete the interview on behalf of the respondent, if the respondent was disabled, too busy, or not knowledgeable about the finances of the household.

<sup>6</sup> Only 5.5 percent of the cases with incomplete name information could not ultimately be located.

<sup>7</sup> See Kennickell [2009] and references cited therein.

**Table 2: Unweighted distribution of 2007 SCF participants by 2009 status, by sample type; percent.**

<i>2009 status</i>	<i>All 2007</i>	<i>AP sample</i>	<i>List sample</i>
Completed interview	87.4	87.2	87.7
Nonresponse	11.0	10.9	11.3
Unlocatable	2.7	3.9	0.5
Too ill/disabled	0.7	0.6	0.7
Other nonresponse	7.7	6.4	10.1
Out of scope	1.6	1.7	0.9
Deceased	1.3	1.6	0.8
Out of the country	0.2	0.2	0.2
Misc. sample error	0.1	0.0	0.1
<i>Memo: Response rate</i>	88.7	88.9	88.5
<i>Memo: Observations</i>	4,422	2,915	1,507

If this group can be taken to be at the margin of response in both years, then its description may provide a clearer picture of the nonresponse process and the presence of important nonresponse biases than was possible earlier.

As might be expected given the short interval between the two surveys, only a small fraction of the 2007 participants were out of scope for the re-interview—largely because of death (table 2).<sup>8</sup> The final outcome codes provide some insight into the eligible

nonrespondent population. The overwhelming majority of the 2007 participants were located again in 2009 and virtually all the eligible sample was worked to an unambiguous resolution. A small fraction of cases were physically unable to complete an interview and unwilling or unable to designate a proxy. Although there are additional detailed outcome codes, experience has shown that they often do not clearly reflect the range of actual reasons for nonresponse. Attempt-level call records provide a rich picture of the efforts involved in pursuing each case. While these records are created largely for administrative purposes without the prospect of systematic coding in mind, examination of large sequences of such records does reveal some clear patterns among the nonrespondents.

The cases that could not be located initially were subjected to an intense and persistent effort to obtain new leads over the course of the field period. Not surprisingly, the notes in the case-level records indicate that most of the people who could not be located at all during the field period had little persistence in their social network in the area of their 2007 residence or workplace. There were signs of emotional instability or substance abuse in some such cases. In a small number of cases there was suspicion that a respondent who was a foreign national might have returned home.

<sup>8</sup> It is possible that some of the cases that could not be located in 2009 were in fact out of scope. However, close reading of the call records for such cases suggests that at most only a few of them had a chance of being either deceased or permanently out of the country.

Some respondents were unable to participate because either they or another close family member were physically incapacitated or gravely ill. The information in the call notes suggests that had the field period begun later, many of these respondents would already have passed away.

Among the other nonrespondent sample members who had at least a greater choice about participating, there were some common themes. Some remembered the 2007 interview—often recalling that it had taken a long time—and felt that they had been pushed too hard then to participate. Others did not remember the 2007 interview at all and were consequently quite suspicious when the interviewer approached them by name and emphasized the importance of seeing the changes in their financial circumstances. Anger with the government, particularly either President Obama or the Federal Reserve, disinclined some people even to listen to the interviewer. Fear of identity theft or less specific suspicion appeared to have made some people afraid to reveal any financial information. Some people, particularly owners of businesses, were struggling with difficult economic circumstances and could not take the time to do anything else. Others felt changes for them were simply too depressing to discuss, while some felt there was not enough change in their lives for them to need to participate again. As usual in the SCF, some respondents were extremely busy with the regular activities of their family life or work—often involving extensive travel—and could never find a time to be interviewed, despite the expressed willingness of the interviewers to work at any time and to do the interview in many small segments. In some cases, a family member or trusted advisor convinced the respondent not to participate and the interviewer was not given an opportunity to address the underlying concerns. For some wealthy respondents, the interviewer had to work through their personal assistant in order to get any information to the respondent, and despite great persistence the interviewer was never able to proceed any further. For a substantial minority of cases, the respondent would never state a specific reason for declining to participate and sometimes such respondents were hostile.

Not surprisingly, a review of the call records for cases that were completed show a much more favorable reaction to the survey in the early stages of work overall. But in later phases, there were many participants who apparently voiced concerns very similar to those of the nonrespondents; indeed, most of these issues also appeared in the 2007 call records. For a given objection, sometimes there was an reaction by the field staff that is a misstep in retrospect, but

much more commonly there was nothing obvious in the information recorded to explain why the interviewers' efforts failed for some cases and succeeded for others with seemingly very similar objections. The next section of the paper uses data from the 2007 interview and related paradata to look more formally at differences between the panel participants and the nonrespondents.

### III. Systematic elements of panel nonresponse

As a part of their preparatory review of the cases, the field managers assigned each case a likelihood of completion, given the information available from the call records and sometimes more particular recollections of individual cases. Although there is some relationship between

Probability	All	AP sample	LS sample	<i>Memo:</i> Percent in group
1-25	79.0	78.7	81.8	5.4
26-50	85.2	85.4	84.4	18.8
51-75	88.9	89.6	87.7	30.1
76-99	91.6	92.0	91.0	39.9
100	89.1	90.5	88.4	5.9

the variations in the subjective probability of response and actual response rates, it is clear that the managers were overly pessimistic for all groups except the one with a subjective response probability of 76 to 99 percent (table 3). The relatively small set of cases in the group for which every case was expected to be completed had a somewhat lower actual

response rate than this group. Assigning the mid-point of the probability range to all cases in each group implies an expected overall response rate of about 64 percent. Incorporating the measure of expected response into a multivariate model later in this section will test whether call record data from 2007 interpreted by experts had any independent ability to distinguish whether respondents turned out to be participants or nonrespondents.

The mission of the SCF panel was primarily to provide a basis for the scientific study of changes in households' finances. For the data to be useful for this purpose, either nonresponse must be uncorrelated with the initial conditions and the relevant aspects of change, or the realized set of panel participants must be capable of being reweighted to represent the original population (analogously to the concept of "missing at random" applied to item nonresponse).<sup>9</sup> Only the 2009 call record data are available for characterizing changes for nonrespondents, and that information, while rich in compelling details, is too fragmentary and otherwise equivocal to be of use in supporting a systematic understanding. We can, however, examine variations in

<sup>9</sup> Of course, any response errors in the panel data must also be uncorrelated with change.

response rates for a range of *initial* characteristics, including some conditions that might plausibly lead a given household to move or to be otherwise more difficult to interview once contacted. First, a selection of key univariate response rates are considered for important domains here and then these and other factors are jointly controlled with other variables in a multivariate model of nonresponse. Overall, the univariate statistics suggest that nonresponse was not heavily concentrated in any observable groups.

The 2007 participants with the net worth in the highest or lowest 25 percent of the distribution or with income in the highest or lowest 20 percent of the distribution were somewhat

<b>Table 4: Response rates by wealth, income and age; percent</b>			
Category	<i>In-scope 2007 participants</i>		
	<i>All</i>	<i>All located</i>	<i>All located, not too ill</i>
<i>Percentile of 2007 net worth</i>			
0-25	85.0	93.9	95.4
25-50	91.5	94.3	94.8
50-75	91.3	92.8	93.5
75-90	87.4	88.0	90.1
90-100	88.6	88.9	89.7
<i>Memo: NW&lt;0</i>	89.8	95.4	96.5
<i>Percentile of 2006 income</i>			
0-20	83.8	92.4	94.2
20-40	89.6	93.9	95.3
40-60	91.6	93.7	94.6
60-80	90.0	91.7	92.8
80-90	89.0	90.4	91.3
90-100	88.5	88.7	89.2
<i>Age in 2007</i>			
<35	85.4	92.8	93.1
35-44	88.7	93.0	94.0
45-54	89.3	90.7	91.3
55-64	90.8	91.4	91.6
65-74	88.9	89.7	90.9
>=75	88.3	88.3	93.5

less likely to participate in 2009 than were the groups in between (table 4). The lower response rates for the lowest net worth and income groups appear to be largely a consequence of the higher level of difficulty in locating such household and, to a lesser extent, physical incapacitation. The 2007 participants that had negative net worth were *more* likely to participate in 2009 than were others with low wealth, perhaps because records are more likely to be kept on the location of people who owe money to someone else. Nonresponse among households with higher levels of net worth or income in 2007 appears to be less affected by locating and health problems.

Across age groups, response is lowest among the youngest households, in large part because such households were less likely to be located. As people age, it is more likely that records are generated that allow for tracking them. Consistently with this, locating problems were negligible among the oldest age group; physical incapacitation is a much more

**Table 5: Response rates by selected 2007 characteristics; percent.**

Category	All in-scope participants		
	All	All located	All located, not too ill
Incomplete name	85.3	90.3	92.1
Residence in large MSA	87.7	89.9	90.8
Poor health	89.3	93.2	94.1
Suspicious before IW	85.5	88.5	89.4
Low interest in IW	78.9	85.9	87.6
Homeowner	89.8	90.7	91.6
Ratio debt payments to income > 30%	90.3	92.0	93.4
Debt payment late 60 days or more	89.5	96.5	96.9
All	88.7	91.3	92.3

important factor for this group.

As noted earlier, although there were a number of cases for which the respondent's name was not available in the case records, or the name recorded was only a first name or a place holder, nearly all of them were located. One might expect greater reluctance to be interviewed to be associated with failure to provide a name. But of the cases for which only partial or no name information was available, the response rate at 85.3 percent was only a few percentage points below average, and for those who were located and

were not too ill, the group and overall response rates were almost identical (table 5). Response rates for respondents who lived in a large urban area, typically associated with greater difficulty in securing an interview, showed a similarly small difference from the overall response rates.

Respondents who had poor health in 2007 were actually somewhat more likely than average to be re-interviewed, perhaps because more of them might have been more likely to be at home as a consequence of health problems. Respondents who were initially particularly suspicious of the survey in 2007 were only slightly less likely than all 2007 respondents to be re-interviewed. However, those with a low level of interest in the survey had a response rate substantially lower than average; about a third of the nonresponse in 2009 was attributable to inability to re-locate the respondents (not shown).

Because the survey was particularly designed to help understand changes in housing and mortgage markets, it is important to look for response differences that might induce bias in estimates of these areas. Response differed relatively little from average by 2007 homeownership status. Households with high levels of debt payments relative to their income (greater than 30 percent) and those who were recently late on loan or bill payments by 60 days or more in 2007 were *more* likely than average to participate in 2009.

There are many more characteristics that are potentially important in understanding nonresponse. To this end, a multivariate probit model of nonresponse was estimated using a

range of operational, attitudinal, demographic and economic variables (table 6). Only a small number of these variables have significant independent explanatory power. Among all eligible respondents, lower nonresponse was associated with the self-assessed likelihood of staying in the 2007 home; response was negatively associated with suspicion, lack of interest in the survey, higher percentages of missing dollar values in 2007, larger numbers of contacts to secure the 2007 interview, and the respondent's having moved since 2007. The subjective probabilities of completion appear to have some predictive power for the half of cases that were judged least likely to be completed.

**Table 6: Probit models of response in the 2009 panel interview. (See appendix for variable definitions.)**

Variable	All in-scope cases			In scope, located, not too ill			Variable	All in-scope cases			In scope, located, not too ill		
	Coeff.		SE	Coeff.		SE		Coeff.		SE	Coeff.		SE
Intercept	1.587	#	0.309	2.308	#	0.368	SPANISH_IW_07	-0.267		0.179	-0.298		0.216
AGE_LT35_07	-0.029		0.096	-0.010		0.114	N_CONTACTS_07	-0.026	#	0.007	-0.034	#	0.007
AGE_35_44_07	-0.021		0.086	0.103		0.099	PROB_1_25	-0.310	#	0.117	-0.126		0.141
AGE_55_64_07	0.080		0.085	0.054		0.089	PROB_26_50	-0.175	*	0.082	-0.098		0.093
AGE_65_74_07	-0.077		0.103	-0.032		0.112	PROB_51_75	-0.084		0.069	-0.046		0.077
AGE_GE75_07	-0.107		0.124	0.133		0.147	NO_NAME	-0.092		0.088	-0.020		0.105
D_MARR_PART_07	-0.019		0.066	-0.088		0.078	IN_LOCATING	-0.769	#	0.068	-0.383	#	0.083
WORKING_07	0.036		0.120	0.063		0.134	NE_MA	0.091		0.132	0.136		0.141
HRS_WK_07	0.001		0.002	-0.001		0.003	S_A	-0.016		0.130	0.036		0.140
HOMEOWNER_07	-0.060		0.091	-0.131		0.111	S_EC	0.303		0.196	0.145		0.207
L_NETWORTH_07	0.007		0.015	-0.041	*	0.021	S_WC	0.094		0.146	0.160		0.162
NEG_NETWORTH_07	0.205		0.188	-0.208		0.271	MW_EN	0.149		0.135	0.211		0.148
L_INCOME_07	-0.006		0.022	-0.007		0.023	MW_WN	0.190		0.174	0.080		0.182
PMT_INC_RATIO_07	0.000		0.002	0.000		0.001	W_M	-0.005		0.153	-0.042		0.165
LATE_60_DAYS_07	0.092		0.124	0.286		0.179	W_P	0.009		0.132	0.061		0.142
BAD_HEALTH_07	0.084		0.068	0.096		0.079	LARGE_MSA	-0.041		0.070	-0.078		0.080
PROB_STAY_07	0.174	*	0.087	0.194	+	0.102	OTHER_MSA	0.039		0.093	0.087		0.110
YRS_AREA_07	-0.001		0.002	0.000		0.002	DSTR1	0.507	*	0.258	0.460		0.316
UNDERSTAND_07	-0.182		0.133	-0.115		0.157	DSTR2	0.018		0.157	0.064		0.170
EXPRESS_07	0.091		0.140	-0.052		0.171	DSTR3	-0.161		0.135	-0.003		0.147
SUSPECT_BEFORE_07	-0.179	#	0.060	-0.196	#	0.068	DSTR4	-0.329	#	0.123	-0.160		0.132
SUSPECT_AFTER_07	-0.009		0.080	-0.124		0.087	DSTR5	-0.241	*	0.125	-0.007		0.138
INTEREST_HI_07	0.059		0.060	0.084		0.068	DSTR6	-0.236		0.144	-0.011		0.160
INTEREST_LO_07	-0.238	*	0.113	-0.163		0.133	DSTR7	-0.275		0.284	0.041		0.299
USED_RECORDS_07	0.067		0.066	0.071		0.074							
IW_LENGTH_07	0.001		0.001	0.002	+	0.001	N			4353			4187
PCT_MISS_DOLL_07	-0.006	#	0.002	-0.004	*	0.002	Log(Likelihood)			-1367			-1042

Conditional on the 2007 respondent's being located and not being too ill to complete an interview (again, a group that is more likely to be active in considering whether to respond), most of these effects remain significant. The fact that having moved since 2007 is also significant for this group suggests that there is some characteristic of movers (perhaps in addition

to locating difficulties) that may explain the lower response of this group. The subjective probabilities of completion lose their significant explanatory power in this model, suggesting that they may reflect factors more closely related to the difficulty of locating the 2007 respondents than factors in an active decision process. Unlike the case for overall response, for this group higher levels of net worth are associated with lower levels of response. The interview length in 2007 is positively associated with response; this result seems likely to reflect a sort of selection on patience or altruism, rather than the distant charm of the actual interview.

## **V. Conclusions and future research**

The 2009 SCF re-interview with participants in the 2007 SCF was undertaken to obtain information on the effects of the financial crisis on households. Changes for many people were dramatic over the period between the two surveys. That very fact is a principal point of interest for the survey, but it also raises the possibility that some changes may be correlated with participation in the second interview. For example, repossession of a respondent's home might cause that person to be both more difficult to locate and more disaffected. In the event, the participation rate was almost 89 percent and there was remarkably little variation in that rate across sub-groups.

Examination of notes in event-level records for the sample cases suggests that the patterns of comments and actions for 2009 nonrespondents very much resemble those recorded for respondents relatively late in the 2007 field period, a point underscored by the significance of the number of contacts with the case in 2007 as an explanatory variable in a probit model of nonresponse in 2009. Thus, examination of the 2009 nonrespondents may be taken to shed light on the efficacy of efforts late in the field period in the baseline survey in terms of mitigating nonresponse biases. This paper turns up only few signs of systematic differences among participants and nonrespondents in 2009. More could be done to follow up on the differences identified, but additional understanding of the operational processes that determine so much of a survey's outcome could be gained from examining the sequences of call record outcome in the context of a more formal model. One problem with such data is that they are not generated at random, but rather as an agent in the field (an interviewer or supervisor) determines that action is justified. For this reason, some accounting for the expectations of field staff is important in deriving a causal interpretation of those data. Where every case is not worked to an unambiguous

conclusion, this can also complicate interpretation; fortunately, virtually all of the cases in the 2007 and 2009 surveys were worked until no further effort was possible.

### Appendix: Variable Definitions for Table 6

AGE\_LT35\_07: Household head aged less than 35 in 2007.  
AGE\_35\_44\_07: Household head aged 35 to 44 in 2007.  
AGE\_55\_64\_07: Household head aged 55 to 64 in 2007.  
AGE\_65\_74\_07: Household head aged 65 to 74 in 2007.  
AGE\_GE75\_07: Household head aged 75 or older in 2007.  
D\_MARR\_PART\_07: Household head married or living with a partner in 2007.  
WORKING\_07: Household head was working in 2007.  
HRS\_WK\_07: Typical weekly hours worked by household head in 2007.  
HOMEOWNER\_07: Household owned its residence in 2007.  
L\_NETWORTH\_07: Log of max(1, net worth in 2007).  
NEG\_NETWORTH\_07: =1 if 2007 net worth was negative, =0 otherwise.  
L\_INCOME\_07: Log of max(1, household annual income in 2007).  
PMT\_INC\_RATIO\_07: Ratio in 2007 of total annualized debt payments to total household income.  
BAD\_HEALTH\_07: =1 if household head or spouse/partner in fair or poor health, =0 otherwise.  
PROB\_STAY\_07: Reported probability of remaining in 2007 residence for at least 2 years.  
YRS\_AREA\_07: Years living within 25 miles of 2007 residence.  
UNDERSTAND\_07: =1 if interviewer rated respondent's understanding of the questions in 2007 as good or better, =0 otherwise.  
EXPRESS\_07: =1 if interviewer rated respondent's ability to express answers to the questions in 2007 as good or better, =0 otherwise.  
SUSPECT\_BEFORE\_07: =1 if interviewer rated respondent as being suspicious before the 2007 interview, =0 otherwise.  
SUSPECT\_AFTER\_07: =1 if interviewer rated respondent as being suspicious after the 2007 interview, =0 otherwise.  
INTEREST\_HI\_07: =1 if interviewer rated respondent's interest in the 2007 interview as being above average, =0 otherwise.  
INTEREST\_LO\_07: =1 if interviewer rated respondent's interest in the 2007 interview as being below average, =0 otherwise.  
USED\_RECORDS\_07: =1 if the respondent used records during the 2007 interview, =0 otherwise.  
IW\_LENGTH\_07: Length of the 2007 interview in minutes.  
PCT\_MISS\_DOLL\_07: Percent of dollar values completely missing in the 2007 interview.  
SPANISH\_IW\_07: =1 if 2007 interview was conducted in Spanish, =0 otherwise.  
N\_CONTACTS\_07: Number of contacts before case was completed in 2007.  
PROB\_1\_25: =1 if field supervisors rated likelihood of case completion in 2009 as 25% or less, =0 otherwise.  
PROB\_26\_50: =1 if field supervisors rated likelihood of case completion in 2009 as 26-50%, =0 otherwise.  
PROB\_51\_75: =1 if field supervisors rated likelihood of case completion in 2009 as 51-75%, =0 otherwise.  
NO\_NAME: =1 if no name or only a partial name was available for the 2007 respondent, =0 otherwise.  
IN\_LOCATING: =1 if the respondent had moved since 2007, =0 otherwise.  
NE\_MA: =1 if case located in the mid-Atlantic division in 2007, =0 otherwise.  
S\_A: =1 if case located in the south-Atlantic division in 2007, =0 otherwise.  
S\_EC: =1 if case located in the south east-central division in 2007, =0 otherwise.  
S\_WC: =1 if case located in the south west-central division in 2007, =0 otherwise.  
MW\_EN: =1 if case located in the east-central division in 2007, =0 otherwise.  
MW\_WN: =1 if case located in the west-central division in 2007, =0 otherwise.  
W\_M: =1 if case located in the west-mountain division in 2007, =0 otherwise.  
W\_P: =1 if case located in the west-Pacific division in 2007, =0 otherwise.  
LARGE\_MSA: =1 if case located in one of the 24 largest metropolitan areas, =0 otherwise.  
OTHER\_MSA: =1 if case located in a metropolitan area other than the 24 largest, =0 otherwise.  
DSTR1: =1 if case was a member of stratum 1 of the list sample, =0 otherwise.  
DSTR2: =1 if case was a member of stratum 2 of the list sample, =0 otherwise.  
DSTR3: =1 if case was a member of stratum 3 of the list sample, =0 otherwise.  
DSTR4: =1 if case was a member of stratum 4 of the list sample, =0 otherwise.  
DSTR5: =1 if case was a member of stratum 5 of the list sample, =0 otherwise.  
DSTR6: =1 if case was a member of stratum 6 of the list sample, =0 otherwise.  
DSTR7: =1 if case was a member of stratum 7 of the list sample, =0 otherwise.

Model-based significance levels: #:  $\leq 0.01$ . \*:  $\leq 0.05$ . +:  $\leq 0.1$ .

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