Nonreporting of Savings Accounts
in Sample Savings:
Causes and Correlates

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Nonreporting of Savings Accounts in Sample Surveys:
Causes and Correlates

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How reliable are data collected from surveys of financial

data? Are there systematic causes for response errors in such data that

might be corrected in future surveys? The former question was addressed

in a validation study of a survey of financial data. Initial reports

based on the validation data suggested that response errors could be

substantial and that nonreporting was the major problem. Our paper

addresses the question, what are the causes and correlates of nonreport-

ing? Part I contains a brief history of the survey report and the

validation study along with the motivation for our paper and a statement

of objectives. Part II contains the methodological design of the analysis

including a classification of the explanatory predictors and a description

of the statistical technique employed. Part III contains a detailed

description of the results which are found in the tables at the end of

the paper. Finally, Part IV contains a brief summary of our results and

our conclusions.

I.

Background

In the early 1960s, survey data were collected on financial

asset holdings in order to obtain estimates of the population distribu-

tion of financial wealth. Because previous studies suggested that such

data might contain serious response errors [3, 6, 7], a validation study

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was also carried out. Two reports discussing the findings in the validation data have already been published. This third report was motivated by one of the major conclusions of those reports.

In 1963 the Bureau of Census conducted a study for the Federal Reserve Board in order to obtain detailed information about consumer wealth [8]. The study, Survey of Financial Characteristics (SFC) was designed to obtain the complete financial positions of a national probability sample of families with overrepresentation from high-income groups.

The validation study focused on two of the assets collected in the 1963 SFC: common stock and savings accounts. The approach was to compare household interview reports of the two assets with institutional records. Household interviews were carried out using the identical questionnaires, the identical interviewing procedures and the identical interviewing organization as used in SFC.[1] In addition to providing information on the accuracy of data that were collected, it was hoped that the results would help in developing models, or at least suggesting procedures, that would yield more accurate statistics in future financial surveys.

Two reports based on the validation study found that nonreporting significantly reduced the accuracy of the data [4, 5]. The first, focusing exclusively on response errors contained in the common stock data, indicated a substantial amount of nonreporting. Nonreporting, in turn, represented a major source of bias when population parameters were estimated from the sample data. The second report, focusing exclusively on response errors contained in the savings account data, also indicated

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[1] For a complete description of the methodology and procedures used see [4, pp. 418-421] and [5, pp. 437-439].

a substantial amount of nonreporting. And again, nonreporting was a major source of estimation error.

Since it was this conclusion that motivated our research into the causes for nonreporting, we reproduce the estimation results based on the savings account data. The table below presents the allocation of error in estimates of the mean size of balances in all validated savings accounts. Estimates were constructed for various classifications of response disposition and nonreporters were found to be responsible for a majority of the estimation error.

RESPONSE DISPOSITION OF FAMILIES BY ALLOCATION OF ERROR
IN ESTIMATES OF MEAN SIZE OF BALANCE IN ORIGINALLY
SAMPLED ACCOUNTS[a]

(1) Response Disposition	(2) Percent of Total Sample	(3) (4) Mean Size and Balance		(5) (6) Error in Estimated Mean	
		True	Estimated	Amount	Percent
Reporters					
Accounts Reported	37.3	$2,436	$2,491	$ -2,051.5	-1.7
Size NA[b]	1.0	4,731	2,491	2,240.0	1.9
Nonreporters	32.3	2,174	0	70,220.2	59.7
Nonrespondents					
Refusals	17.5	3,353	1,351	35,035.0	29.8
Other	11.9	2,366	1,351	12,078.5	10.3
Total	100.0	$2,526	$1,351	$117,522.2	100.0

[a]Weighted to correct for differences in sampling rates for originally sampled accounts.

[b]NA--not available.

The response disposition was classified into three major categories: those who responded and reported account (38.3 percent); those who responded but did not report account (32.3 percent); and those who did not respond (29.4 percent). Those who reported accounts were further subdivided into those who reported the size of account (37.3 percent) and those whose account size was not available (1.0 percent). Nonrespondents were subdivided into refusals (17.5 percent) and other (11.9 percent).

Estimates of the average balance in account for each classification and for the average balance in account for the total population of validated accounts is given in Column 4. The estimates for respondents who reported size of account was simply the average of the amounts reported. This estimate was then used for those who failed to report the size. "In the case of nonreporters, the assumption is that lacking validation information the reports would have been taken at face value and zero balances assigned to these people. The average balance of the nonrespondents was estimated as the weighted average of the holdings reported, thereby allowing for nonreporters (and presumed nonholders) among nonrespondents."[2] Although these estimates are naive and could be improved, they provide some indication of the relative importance of different errors. As we see in the table, the population mean is underestimated by roughly 46 percent and the primary reasons are the large errors in the estimates of nonreporters. As Column 6 indicates, roughly 60 percent of the error is caused by nonreporters.

With nonreporting being such a major part of the response errors, there was then an attempt to find out why people fail to report

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[2] [5, p. 442].

accounts. The data suggested three factors that might be significant determinants of reporting disposition: (1) the total number of the accounts owned in the savings institution, (2) the number of account owners, and (3) the size of the account. More specifically, the data implied that under-reporting of the number of accounts tends to increase with the number of accounts in the institution; that nonreporting is considerably more frequent for accounts with only one owner than accounts with two or more; and that nonreporting declines as the size of accounts increases.

Objectives

For a number of reasons, the evidence used to support these conclusions was deficient. First, only a few explanatory variables were considered. The validation data, however, contain a much richer supply of possible predictors. Second, the analysis was based on simple correlation coefficients, rather than on partial correlation coefficients. As we demonstrate below, this can distort the relative importance of the explanatory variables. Third, there were no statistical tests of significance. The question of whether or not the observed correlations were statistically different from zero was never addressed.

In this report we attempt a more thorough investigation of the causes and correlates of nonreporting of savings accounts. By considering an array of explanatory variables, by estimating partial correlation coefficients, and by calculating tests of significance, we hope to achieve a deeper understanding of the motivating forces behind nonreporting.

II.

Data from the validation study provide a host of possible
candidates that might explain nonreporting. In order to sort out various
general types of influences, we divide the explanatory variables or
predictors into four general classifications. A multivariate analysis
on each set of predictors is then carried out and is followed by a run-
off analysis of the "best predictors." The statistical technique we use
is the Multiple Classification Analysis [1], a multivariate analysis
that handles categorical predictors.

Variable Classification

Although the reasons for response errors are quite complicated,
three general requirements for accurate reporting have been identified:
(1) respondent must have access to required information, (2) the respondent
must be favorably motivated to provide the required information, and
(3) the interviewer (or questionnaire) must be able to accurately communi-
cate what information is required, and respondent must be able to communi-
cate accurately the information s/he is providing.[3/] These, in turn,
have motivated four classifications of explanatory variables. The
classifications and the variables assigned to each are given below.

1. Factors possibly affecting respondent's memory

    A. Date of last noninteresting crediting transaction
    B. Age of principal respondent
    C. Size of account
    D. Ability of principal respondent to respond accurately
    E. Place and mode of interview
    F. Length of recall
    G. Number of accounts in sample institution
    H. Number of savings accounts in all institutions

[3/]See [7, pp. 188-189].

      I.   Number of family members owning accounts in sample
            institution

      J.   Number of other adults (apart from immediate family)
            owning accounts in sample institution

2.   Factors related to respondent's willingness to cooperate

      A.   Education of principal respondent
      B.   Occupation
      C.   Interviewer's judgment of accuracy of report
      D.   Family income
      E.   Time lag between mailing and first interview
      F.   Family has active interest in business
      G.   Extent of rounding in report of family income
      H.   Time lag between first and second interview

3.   Factors affecting respondent's initial knowledge of
    account

      A.   Existence of owner(s) outside sample family
      B.   Relationship of principal respondent to an owner of
            sample account
      C.   Account owned by a minor
      D.   Number of owners of the sample account in interviewed
            family
      E.   Account has trustee
      F.   Head of household is principal respondent

4.   Factors associated with ambiguous classifications

      A.   Family has interest in estate in probate
      B.   Family involved in formal trust
      C.   Family has trust assets in savings account

Statistical Analysis

Multiple Classification Analysis (MCA) is a statistical technique that can be used to evaluate the interrelationships between several predictor variables and a dichotomous dependent variable. The predictors need only be of nominal measurement. The statistics show how each predictor relates to the dependent variable both before and after adjusting for the effects of other predictors.

The MCA, while effectively a multiple regression analysis (MRA) with dummy variables, offers certain conveniences over standard

regression programs. The coefficients obtained by the MCA program are analogous to those obtained by MRA using dummy variables. The conversion of any set of coefficients from one technique to those from the other is straightforward.[4/] The advantage of using MCA over MRA is strictly a matter of convenience. There is no need, for example, when using MCA to recode the predictor variables into sets of dummy variables prior to making the analyses. Also with MCA, coefficients for all categories are automatically obtained and they are expressed in a form that is easily understood.

III.

Results: General Description

There are a total of eight tables corresponding in various ways to the four general classifications of predictors presented above. For each table, statistics are presented for the total set of predictors, for each individual predictor and for each category of each predictor.

Tables 1 through 4 correspond directly to the four classifications specified above.

Table 1: The effect of factors related to the respondents memory on the probability of reporting the sample account.

Table 2: The effect of factors related to the respondents willingness to cooperate on the probability of reporting the sample account.

Table 3: The effect of factors related to the respondent's initial knowledge of account on the probability of reporting the sample account.

[4/]See [1, pp. 115-117].

Table 4: The effect of factors related to <u>ambiguous classifications</u>

on the probability of reporting the sample account.

Table 5 then contains the runoff results of the best predictors found in

the first four tables. Tables 1 through 5 utilize <u>all</u> the explanatory

variables in the basic data set including information which could only

be obtained from the files of the bank in which the account was held; we

thought it would be of interest, therefore, to redo these tables, but

restrict the variables to those which are available in <u>any</u> sample survey

of a financial character. Tables 101 through 105 contain these results

and correspond directly to Tables 1 through 5.

For each table (i.e., each set of predictors) MCA produces a

variety of statistics. For all predictors considered together, there is

a multiple correlation coefficient (adjusted for degrees of freedom).

When squared, this coefficient indicates the proportion of the variance

in the dependent variable explained by the entire set of independent

variables taken together. For each predictor there is a gross and net

coefficient. The gross indicates the proportion of the variance in the

dependent variable explained by the predictor, using the categories

given. The net indicates, approximately, the proportion of the variance

in the dependent variable explained by the predictor, using the categories

given, after adjusting for the effects of all other predictors. This is

a good approximation of the square of the partial correlation coefficient

if the independent variables are not to highly correlated. For each

category of each predictor there is also a gross and net coefficient.

The gross can be interpreted as the estimated probability of reporting

an account taking into consideration no other variables. The net can be

interpreted as the estimated probability of reporting an account taking

into consideration all other variables. Finally, the percent of the

sample population for each category of each predictor is reported.

Before going on to discuss the tables in detail, it might be

helpful to illustrate the interpretation of these statistics using

results in Table 1 (factors affecting memory). This set of independent

variables explains 27 percent of the total variance in the dependent

variable (though this should be viewed as a rough approximation since

the dependent variable is dichotomous). The most important predictor--

the respondents report of the number of savings accounts owned in all

institutions--accounts for 9.8 percent of the total variance. Jointly

with other variables, however, it accounts for 12.3 of the total variance.

For 21 percent of sample accounts, their owners report owning either

"zero" or "one" account in any savings institution. For this group the

estimated probability of reporting ownerships of the sample account is

0.24 taking account of no other variables (the "gross" effect) and 0.21

after taking account of all other variables (the "net" effect).

Table 1: Memory Factors

Ten variables were chosen from the set of explanatory variables

as factors related to respondent memory. As pointed out above, they

explain approximately 27 percent of the total variance. Moreover, nine

of the ten are statistically significant at the 95 percent level of

confidence. (Eight of the nine are significant at the 99 percent level

of confidence.)

The variables are listed in order of importance as measured

by the net percent of variance explained. For each variable, the results

we expected a priori and the results we found are discussed below.

1. Respondent's report of number of savings accounts owned in all institutions

> The more accounts reported by the respondent, the more likely we expected the sampled account to be reported.

> This turned out to be the most important predictor of this set, explaining, ceteris paribus, approximately 12.3 percent of the variance. As expected, the net probability coefficients increase with the number of accounts.

2. Number of family accounts in sample institutions only

> The more accounts reported by the institution, the more likely the respondent would forget a particular account.

> This is a classic example of an effect which is obscured in a single-variable analysis. The gross effect was small, while the net effect was relatively large. As expected the net probability coefficients decrease with the number of accounts although not quite monotonically.

3. Age of principal respondent

> Our expectations on this variable were not very strong. We thought old age might affect memory.

> Age definitely seems to matter, but it's the young that are different with a much higher probability of reporting.

4. Activity in account

> We expected a classic memory effect. The longer it's been since the respondent has checked the account, the less likely it will be reported.

> The results confirm the hypothesis with the probability of reporting ranging from .63 for the most active accounts to .40 for the least active.

5. Number of family members owning accounts in sample institutions

> The more individuals owning accounts the more likely, we expected, someone to remember the sampled account.

> Again, the results seem to confirm the hypothesis, but the relation between coefficients and the number of family owners is not strictly monotonic.

6. Time lapse: reference date to date of last or only interview

> We expected that the farther back you ask people to recall their financial records the less likely they would be to report an account.

> The results, if anything, are consistent with the opposite hypothesis. We have no explanation.

7. Impairments to ability to respond

> We naturally expected impairments to reduce probablity of reporting.

> The results are consistent with expectations, but the sample involves only a small fraction of the population.

8. Location and mode of interview

> Respondents whose family incomes were expected, ex ante, to be about $15,000 or more (in 1962) were given schedules designed for self-administration. Information from other respondents was obtained from the usual interviewer-administered questionnaire. We expected self-administered interviews to report more accurately, since it provides a better opportunity for checking results. We expected home to dominate office interviews since home is generally where the records are and where other family members are available to help.

> The results are consistent with these hypotheses. Home interviews and particularly self-admininstered have the highest coefficients.

9. Balance in sample accounts

> The larger the account the more likely, we expected, the account to be remembered.

> The results show very little difference between account size except that small accounts (under $100) tend to be forgotten.

10. Other Adults

> We had no prior expectations.

> This variable was not statistically significant.

Table 2: Factors Affecting the Respondent's Willingness to Cooperate

Eight variables were choosen from the total set of explanatory variables as factors affecting the respondent's motivation. They explain approximately 22 percent of the total variance and six are significant at the 95 percent level of confidence (five of these six are significant at the 99 percent level of confidence).

As in Table 1, the variables are listed in order of importance as measured by the net percent of variance explained. Again, for each variable we discuss expected and actual results.

1. Extent of rounding in report of interest on savings accounts

    People who round are presumably less apt to report.

    This is the most important predictor of this set explaining, _ceteris paribus_, 6.6 percent of the variance. Not only are rounders less likely to report, but those who failed to report any interest are the worst of all.

2. Education of principal respondent

    We have no clear prior expectations.

    For whatever reason, education counts in getting higher rates of reporting. The sawtooth effect for college is also found in a validation study on health and hospitalization reporting [2].

3. Interviewer's judgment of accuracy of reporting

    Presumably, experienced interviewers are good judges.

    The gross effect supports interviewer's judgment quite well. Taking account of other variables, however, weakens the results somewhat.

4. Family income

> Higher income families are expected to be more reluctant in providing financial data.

> The net coefficients roughly decrease with income class, but the size of the decrease is less than expected. Remember, however, these are respondents. In this survey the nonresponse rate reached 55 percent in the highest income groups, perhaps, eliminating some who would have been nonreporters if they had been respondents.

5. Time required to contact respondent

> The longer it took to contact the respondent the less likely, we expected, the account to be reported.

> Not so! The results, which we are unable to explain, indicate the opposite effect.

6. Occupation of head

> We had no prior expectations.

> It seems to be mostly a spurious effect, when you net out the influence of other variables only the self-employment and armed services effects remain.

7. Lag between first and second interview

> We had no prior expectations.

> There is not much here, since 88 percent of the sample was one interview only.

8. Family has business

> Previous studies seemed to suggest this was an important factor, i.e., if the family was in business, respondent would be less willing to report an account.

> The variable, however, is not statistically significant; moreover, the gross probability coefficients are in the expected direction, but the net probability coefficients are virtually equal.

Table 3: Factors related to respondents initial knowledge of account

Six variables were chosen from the total set of explanatory variables as factors related to respondents initial knowledge of account.

They explain approximately 10 percent of the total variance and four are significant at the 99 percent level of confidence.

As in the previous tables, the variables are listed in order of importance as measured by the net percent of variance explained.

1. The number of owners of sample account in interviewed family[5]

   > The more owners of the account, presumably, the higher the probability it will be reported.

   > The results indicate that two heads are better than one, but three heads are the worst. Possibly those accounts with three owners are accounts not "truly" owned by someone in the family.

2. Ownership status of principal respondent

   > From principal respondents who were owners or husbands or wives of owners, we expected higher reporting rates.

   > Roughly, the data supports this hypothesis, but fathers/mothers and sisters/brothers also do well. In-laws and sons/daughters do poorly.

3. Account has trustee

   > Trusteeship should make account salient and, therefore, more likely to be reported.

   > The data strongly supports this hypothesis, although the percentage of total accounts having trustees is small.

4. Account has owners outside sample family

   > These accounts may, in the minds of the listed owner, be owned outside the sample family.

   > The probability coefficients are consistent with our expectation. Accounts with outside owners, ceteris paribus, have a probability of .27 of being reported while other accounts have a probability of .53 of being reported.

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[5] The "zeros" may be chargeable to defect in study design. An owner of December 31, 1962, could have moved out or died before the date of interview, five to eight months later.

5.   Account owned by minor(s)

>   We expected that accounts jointly owned by parents
>   and children would be salient.
>
>   This variable was not statistically significant, but
>   the order of the probability coefficient are consis-
>   tent with our prior expectations.

6.   Principal respondent is head

>   Since all financial surveys have insisted on interviewing
>   the head of the household, we expected this to be an
>   important explanatory variable.
>
>   It clearly is not. The percent of variance explained
>   is not statistically significant while the net
>   probability coefficients are not very different.

Table 4: Ambiguous Classification

Three variables were left over after sorting the others into

the categories, memory, willingness to cooperate, and initial knowledge

of account. They explain roughly 10 percent of the total variance and

two are significant at the 99 percent level of confidence.

1.   Family has trust assets in savings accounts

>   We had no prior expectation.
>
>   It does seem to make a difference, although the
>   sample is small.

2.   Family involved in formal trust

>   Again, we had no prior expectation.
>
>   It also seems to make a difference, but we are not
>   sure why.

3.   Family has estate in probate

>   We expected some reluctance to report accounts when
>   estate was in probate.
>
>   The probability coefficients are in the expected
>   direction, but the variable is not signficant.

Table 5:   Summary or Runoff Table

A total of twenty-one predictors were found to be significant.
Table 5 contains those we considered to be most relevant.   The runoff
variables explain 37 percent of the total variance and all variables are
significant at the 99 percent level of confidence.

Since we have already discussed these variables in some
detail, we will just add a few comments about how they perform in this
analysis.

1.   The respondent's report of number of savings accounts in
all institutions, variable 3, does not do as well in the
runoff analysis.   In Table 1 it was the "best" predictor
explaining, ceteris paribus, 12.3 percent of the total
variances, in Table 5 it explains, ceteris paribus only
4.8 percent.

2.   The extent of rounding, variable 4, also loses some
significance as the net explained variance drops to 3.5
percent in Table 5.   It was 6.6 percent in Table 2.

3.   The institution report of number of accounts, variable 1,
however, is significantly better.   Also, note the differ-
ence between the gross and net effect.   A "nothing" gross
effect blossoms into a large net effect.

4.   For the size of account, variable 4, the piddling accounts
(less than $10) are broken out separately.   But in terms
of behavior, i.e., the probability of not being reported,
any account under $100 is piddling.

5.   Note the difference between the gross and net effect in
number of owners of sample account, variable 13.   Most of
the effect is spurious.

Table 101, Table 103, and Table 105

The final set of tables contain the results of redoing Tables 1-
5 but with only variables available in any survey study.[6/]   The idea

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[6/] Since Tables 2 and 4 contain institution variables, Tables 102
and 104 are identical to Tables 2 and 4, respectively.

here is that these tables should give us some idea of the maximum gain from using correction functions.

In Table 101 we can account for roughly 63 percent as much variance as in Table 1. In Table 105 we can account for roughly 75 percent as much variance as in Table 5. For individual predictors, the qualitative results in Tables 101, 103, and 105 do not substantively differ from Tables 1, 3, and 5.

IV

Summary

Our objective here was to identify systematic causes and correlates of nonreporting of saving accounts. We found that we could roughly explain 37 percent of the total variance and that factors affecting the respondent memory are the most significant. In particular, we found that the fewer accounts the family has in the sample insitution the younger and the more educated is the principal respondent and the more recently the respondent has some noninterest-crediting transaction with the account, the more likely the account will be reported.

Also, it turns out that it is not important that the principal respondent be the head of the household. Moreover, except for very small accounts the size of accounts is not a significant factor. On the other hand, the mode and location of the interview (i.e., at home and self-administered) seems to matter.

Conclusions

Our results suggest that there can be a significant return to improving the accuracy of survey data and that interview procedures aimed at improving the respondent's memory have the highest payoff.

This, in turn, suggests at least two possible ways of improving the accuracy of data collected in financial surveys: (1) second interviews, since they give the respondent a second chance at recall and a second chance to consult records; (2) home interviews, since they give more members of the family a chance to participate and since in most cases home is where the family financial records are stored.

TABLE 1

THE EFFECT OF FACTORS AFFECTING THE RESPONDENT'S MEMORY
ON THE PROBABILITY OF REPORTING THE SAMPLE ACCOUNT[a]

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[b]	Net[c]	Gross[a]	Net[a]	
ENTIRE SAMPLE	$\overline{R}^2 = 0.27$		0.50	0.50	100.0%
1. Respondent's Report of Number of Savings Accounts Owned in all Institutions	0.098	0.123[***]			
Zero or one			0.24	0.21	21%
Two			0.52	0.49	20
Three			0.58	0.60	18
Four			0.62	0.56	14
Five			0.55	0.65	9
Six to ten			0.64	0.69	15
Eleven or more			0.78	0.70	2 (n=39)[d]
Number not ascertained			0.17	0.08	1 (n=38)[d]
2. Institution Report: Number of Family's Accounts in Sample Institution Only	0.009	0.083[***]			
One			0.55	0.69	30%
Two			0.51	0.52	24
Three			0.42	0.30	23
Four			0.58	0.47	12
Five or more			0.48	0.44	11
3. Age of Principal Respondent	0.044	0.054[***]			
Under 35			0.71	0.73	17%
35-44			0.52	0.48	24
45-54			0.50	0.48	30
55-64			0.38	0.37	15
65-74			0.46	0.44	7
75 or more			0.37	0.48	2 (n=49)
Principal respondent not determined			0.28	0.84	2 (n=34)
Age not ascertained			0.29	0.47	3 (n=42)

TABLE 1 (Cont'd)

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[b]	Net[c]	Gross[a]	Net[a]	
4. Activity in Account (time lapse since last non-interest-crediting transaction)	0.041	0.031***			
Less than one month			0.65	0.63	31%
One to 5.9 months			0.48	0.48	40
Six months or more			0.39	0.40	29
5. Number of Family Members Owning Accounts in Sample Institution	0.020	0.026***			
One			0.41	0.42	30%
Two			0.53	0.51	44
Three			0.49	0.57	10
Four			0.68	0.68	12
Five or more			0.51	0.46	4 (n=36)
6. Time Lapse: Reference Date to Date of Last or Only Interview	0.011	0.021***			
190 to 209 days			0.53	0.45	10%
210 to 229 days			0.56	0.52	19
230 to 249 days			0.41	0.45	22
250 to 269 days			0.48	0.48	22
270 to 299 days			0.56	0.63	15
300 to 365 days			0.55	0.54	11
Time lapse not ascertained			----	----	1 (n=8)
7. Impairments to Ability to Respond	0.011	0.015***			
None			0.52	0.52	95%
Illness			0.43	0.41	1 (n=12)
Old age			0.19	0.38	1 (n=13)
Language or "other"			0.24	0.15	3 (n=50)

TABLE 1 (Cont'd)

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[b]	Net[c]	Gross[a]	Net[a]	
8. Location and Mode of Interview [e]	0.013	0.013[***]			
Respondent's Home:					
Interviewer administered			0.51	0.50	81%
Self-administered			0.63	0.68	7
Office (either mode)			0.35	0.43	10
Location not ascertained			0.63	0.69	2 (n=30)
9. Balance in Sample Account (Institution Report)	0.031	0.012[**]			
Under $100			0.38	0.43	34%
$100-999			0.59	0.54	32
$1,000-4,999			0.55	0.55	22
$5,000-9,999			0.52	0.52	8
$10,000 or more			0.58	0.57	4
10. Other Adults (check with Rolnick)	0.009	0.007			
0			0.54	0.53	61%
1			0.45	0.46	25
2			0.47	0.50	11
3			0.29	0.33	3 (n=41)
4			----	----	0 (n=2)

[***]Difference from zero statistically significant at the .01 level.

[**]Difference from zero statistically significant at the .05 level.

[a]This set of independent variables explained 27 percent of the variance in the dependent variable (though this should be viewed as a rough approximation since the dependent variable is dichotomous).

Using independent variable #1 as an example, we illustrate the interpretation of the data. Taken by itself, this variable -- the "respondent's report of the number of savings accounts owned by the family in all institutions" -- accounted for 0.098 of the entire variance. Jointly with other variables, it accounted for 0.123 of the total variance. For 21 percent of sample accounts, their owners reported owning either "zero" or "one" account in any savings institution. For this group the estimated probability of reporting ownership of the sample account was 0.24, taking account of no other variables (the "gross" effect) and 0.21 after taking account of all other variables (the "net" effect).

TABLE 1 (Cont'd)

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[b]The statistic is the correlation ratio, eta squared.

[c]The statistic is β^2. If the independent variables are not too highly correlated, β^2 is a good approximation of the square of the partial correlation coefficient. In essence, it is a measure of the marginal explanatory power of the variable.

[d]This is the sample size for this category. It is shown only where the category contains less than 100 observations.

[e]Respondents whose family incomes were expected, ex ante, to be about $15,000 or more (in 1962), were given schedules designed for self-administration. Information from other respondents was obtained from the usual interviewer-administered questionnaire.

TABLE 2

THE EFFECT OF FACTORS AFFECTING THE RESPONDENT'S WILLINGNESS TO COOPERATE
ON THE REPORTING OF OWNERSHIP OF SAVINGS ACCOUNTS[a]

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[a]	Net[a]	Gross[a]	Net[a]	
ENTIRE SAMPLE	$\bar{R}^2 = 0.22$		0.50	0.50	100.0%
1. Extent of Rounding in Report of Interest on Savings Accounts (number of consecutive zeros counting from right)	0.111	0.066***			
None			0.65	0.61	52%
One			0.56	0.58	12
Two			0.30	0.37	4 (n=92)
Three			----	----	1 (n=8)
Inapplicable: no interest reported			0.28	0.33	31
2. Education of Principal Respondent	0.088	0.064***			
None or elementary school			0.33	0.34	23%
High school			0.47	0.47	35
College, 1-3 years			0.69	0.68	13
College, 4 years			0.56	0.53	13
College, 5 years or more			0.85	0.75	8 (n=95)
Principal respondent cannot be determined			0.28	0.63	2 (n=34)
Education not ascertained			0.44	0.55	6 (n=67)
3. Interviewer's Judgment of Accuracy of Reporting	0.045	0.023***			
Most accurate (two highest of eight classes)			0.64	0.53	28%
Second most accurate			0.52	0.55	39
Third			0.40	0.49	22
Least accurate			0.30	0.37	8 (n=82)
Principal respondent cannot be determined or interviewer's judgment not ascertained			0.32	0.19	3 (n=63)

TABLE 2 (Cont'd)

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[a]	Net[a]	Gross[a]	Net[a]	
4. 1962 Family Income	0.030	0.022***			
Under $3,000			0.51	0.57	5% (n=69)
$3,000-4,999			0.31	0.37	8
$5,000-7,499			0.49	0.58	22
$7,500-9,999			0.49	0.48	20
$10,000-14,999			0.53	0.48	25
$15,000-24,999			0.47	0.42	10
5. Time Required to Contact Respondent	0.019	0.018***			
Less than 1 month			0.47	0.48	32%
30 to 59 days			0.44	0.46	32
60 to 99 days			0.57	0.52	20
100 days or more			0.74	0.75	5
Time not ascertained			0.57	0.59	11
6. Occupation of Head	0.045	0.014**			
Self-employed professional			0.38	0.41	16%
Salaried professional and technical, managers, officials & proprietors			0.67	0.55	21
Clerical and sales			0.52	0.49	15
Skilled, craftsmen, foremen			0.45	0.50	14
Unskilled and service			0.55	0.57	19
Laborers			0.38	0.47	3 (n=53)
Not in labor force (unemployed, retired)			0.41	0.52	10
Armed services			0.05	0.21	1 (n=16)
Occupation not ascertained			----	----	1 (n=7)
7. Lag Between First and Second Interview	0.004	0.003			
Less than 1 month			0.52	0.55	10%
30-59 days			0.84	0.73	1 (n=35)
60 days or more			----	----	0 (n=5)
Lag not ascertained			----	----	1 (n=7)
Inapplicable: only one interview			0.50	0.50	88

TABLE 2 (Cont'd)

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[a]	Net[a]	Gross[a]	Net[a]	
8. Family Has Interest in a Business?	0.015	0.001			
Yes			0.39	0.52	21%
No			0.54	0.50	79

***Difference from zero statistically significant at .01 level.

**Difference from zero statistically significant at .05 level.

[a]For explanation, see footnotes to Table 1.

TABLE 3

THE EFFECT OF FACTORS RELATING TO THE RESPONDENT'S INITIAL KNOWLEDGE OF ACCOUNT
ON THE PROBABILITY OF REPORTING THE SAMPLE ACCOUNT[a]

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[a]	Net[a]	Gross[a]	Net[a]	
ENTIRE SAMPLE	$\overline{R}^2$ = 0.100		0.50	0.50	100.0%
1. Number of Owners of Sample Account in Interviewed Family[b]	0.062	0.034***			
None			0.04	0.26	3% (n=39)
One			0.47	0.48	63
Two			0.64	0.60	33
Three			0.14	0.06	1 (n=15)
Number not ascertained			----	----	0 (n=1)
2. Ownership Status of Principal Respondent	0.038	0.022***			
Principal respondent is an owner			0.56	0.55	59%
PR is head/wife of owner			0.43	0.42	17
PR is son/daughter of owner			0.24	0.27	3 (n=33)
PR is brother/sister or father/mother			0.54	0.51	17
PR is in-law, other relationship, or not related to an owner			0.13	0.38	3 (n=40)
Relationship not accertained			0.26	0.30	1 (n=37)
3. Account Has Trustee?	0.007	0.021***			
Yes			0.71	0.84	5% (n=48)
No			0.50	0.49	95
4. Account Has Owner Outside Sample Family?	0.036	0.020***			
Yes			0.18	0.27	8
No			0.54	0.53	92

TABLE 3 (Cont'd)

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[a]	Net[a]	Gross[a]	Net[a]	
5. Account Owned by Minor(s)?	0.037	0.006			
Yes: all owners are minors			0.58	0.49	9% (n=75)
Yes: some owners are minors			0.68	0.71	3 (n=27)
No: all are 17 or over			0.52	0.50	80
Age of owner(s) not ascertained			0.18	0.56	8
6. Principal Respondent is Head?	0.010	0.002			
Principal respondent is head			0.53	0.52	72%
PR is not head			0.48	0.47	23
PR cannot be determined			0.22	0.48	2 (n=29)
Head is not ascertained			0.40	0.57	3 (n=57)

*** Difference from zero statistically significant at .01 level.

[a] For explanation of table, see footnotes to Table 1.

[b] An owner, as of December 31, 1962 could have moved out or died before the date of interview, 5 to 8 months later.

TABLE 4

THE EFFECT OF FACTORS RELATED TO AMBIGUOUS CLASSIFICATIONS ON
THE PROBABILITY OF REPORTING THE SAMPLE ACCOUNT[a]

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[a]	Net[a]	Gross[a]	Net[a]	
ENTIRE SAMPLE	$\bar{R}^2 = 0.010$		0.50	0.50	100.0%
1. Family Has Trust Assets in Savings Accounts?	0.008	0.025***			
Owns assets in trust:					
Some in savings accounts			0.29	0.06	3% (n=29)
None in savings accounts			0.54	0.31	2 (n=12)
No assets in trust			0.50	0.52	91
Not ascertained whether has trust assets			0.68	0.48	4 (n=39)
2. Family Involved in Formal Trust?	0.000	0.018***		.	
Yes			0.54	0.73	8% (n=79)
No			0.50	0.49	92
3. Family Has Estate in Probate?	0.001	0.002			
Yes			0.44	0.45	3 (n=27)
No			0.51	0.51	96
Not ascertained			0.28	0.29	1 (n=13)

***Difference from zero statistically significant at .01 level.

[a]For explanation of table, see footnotes to Table 1.

TABLE 5

RUNOFF   FACTORS RELATED TO THE PROBABILITY OF REPORTING THE SAMPLE ACCOUNT[a]

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[a]	Net[a]	Gross[a]	Net[a]	
ENTIRE SAMPLE	$\overline{R}^2 = 0.37$		0.50	0.50	100.0%
1. Institution Report: Number of Family's Accounts in Sample Institution Only	0.006	0.071***			
One			0.55	0.67	30%
Two			0.51	0.55	24
Three			0.43	0.31	23
Four or more			0.53	0.46	23
2. Education of Principal Respondent	0.088	0.065***			
None or elementary			0.33	0.39	23%
High school			0.47	0.44	35
College: 1-3 years			0.69	0.61	13
College: 4 years			0.56	0.55	13
College: 5 years or more			0.85	0.70	8 (n=95)
Principal respondent not ascertained			0.28	NA	2 (n=34)
Education not ascertained			0.44	0.62	6 (n=67)
3. Respondent Report of Number of Savings Accounts Owned in All Institutions	0.114	0.048***			
None			0.00	0.19	5% (n=46)
One			0.32	0.37	16
Two			0.52	0.53	20
Three to five			0.59	0.55	41
Six or more			0.67	0.60	17
Number not ascertained			0.02	0.19	1 (n=38)

TABLE 5 (Cont'd)

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[a]	Net[a]	Gross[a]	Net[a]	
4. Extent of Rounding in Report of Interest on Savings Accounts (number of consecutive zeros counting from right)	0.111	0.035***			
None			0.65	0.57	52%
One			0.56	0.59	12
Two			0.30	0.34	4 (n=92)
Three			----	----	1 (n=8)
No interest reported			0.28	0.39	31
5. Number of Family Members Owning Accounts in Sample Institution	0.023	0.026***			
One			0.41	0.45	30%
Two			0.53	0.47	44
Three			0.49	0.59	10
Four			0.68	0.69	12
Five or more			0.51	0.57	4 (n=36)
6. Age of Principal Respondent	0.034	0.023***			
Under 35			0.71	0.67	16%
35 or older			0.47	0.48	82
Age not ascertained			0.28	0.28	2 (n=34)
7. Ownership Status of Principal Respondent	0.038	0.019***			
Principal respondent is an owner			0.56	0.55	59%
PR is head/wife of an owner			0.43	0.44	17
PR is son/daughter			0.24	0.33	3 (n=33)
PR is brother/sister or father/mother			0.54	0.52	17
PR is son-in-law or daughter-in-law or not related			0.42	0.24	1 (n=10)
Relationship not ascertained, PR cannot be determined			0.15	0.31	4 (n=67)

TABLE 5 (Cont'd)

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[a]	Net[a]	Gross[a]	Net[a]	
8. Account Has Owner Outside Sample Family	0.036	0.018***			
Yes			0.18	0.53	92%
No			0.54	0.28	8
9. Balance in Sample Account (Institution Report)	0.028	0.017***			
Under $10			0.38	0.44	9% (n=62)
$10 to $99			0.39	0.41	25
$100 to $999			0.59	0.54	32
$1,000 to $4,999			0.55	0.57	22
$5,000 to $9,999			0.52	0.53	8
$10,000 or more			0.58	0.61	4
10. Activity in Account (time lapse since last non-interest-crediting transaction)	0.041	0.015***			
Less than one month			0.65	0.58	31%
One to 5.9 months			0.48	0.51	40
Six months or more			0.39	0.42	29
11. Interviewer's Judgment of Accuracy of Reporting	0.045	0.015***			
Most accurate (two highest of eight classes)			0.64	0.54	28%
Second most accurate			0.52	0.54	39
Third most accurate			0.40	0.48	22
Least accurate			0.30	0.41	8 (n=82)
Principal respondent cannot be determined or judgment not ascertained			0.32	0.24	3 (n=63)

TABLE 5 (Cont'd)

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[a]	Net[a]	Gross[a]	Net[a]	
12. Account has Trustee?	0.007	0.013***			
Yes			0.71	0.77	5% (n=48)
No			0.50	0.49	95
13. Number of Owners of Sample Account in Interviewed Family[b]	0.062	0.008***			
Zero			0.04	0.42	3% (n=39)
One			0.47	0.51	63
Two			0.64	0.52	33
Three or more			0.14	0.26	1 (n=15)
Number not ascertained			----	----	0 (n=1)
14. Family Involved in Formal Trust?	0.000	0.006***			
Yes			0.54	0.38	8% (n=79)
No			0.50	0.52	92

***Difference from zero statistically significant at .01 level.

[a]For explanation, see Footnotes to Table 1.

[b]An owner, as of December 31, 1962, could have moved out or died before the date of interview, 5 to 8 months later.

TABLE 101

THE EFFECT OF FACTORS AFFECTING THE RESPONDENT'S MEMORY
ON THE PROBABILITY OF REPORTING THE SAMPLE ACCOUNT[a]

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[a]	Net[a]	Gross[a]	Net[a]	
ENTIRE SAMPLE	$\bar{R}^2 = 0.17$		0.50	0.50	100.0%
1. Respondent's Report: Number of Savings Accounts Owned in Any Institution	0.099	0.116[***]			
Zero or one			0.24	0.21	21%
Two			0.52	0.51	20
Three to five			0.59	0.58	41
Six or more			0.67	0.71	17
Number not ascertained			0.02	0.12	1 (n=38)
2. Age of Principal Respondent	0.034	0.034[***]			
Under 35			0.71	0.71	16%
35 or more			0.47	0.46	82
Age not ascertained			0.28	0.65	2 (n=34)
3. Time Lapse: Reference Date to Date of Last or Only Interview	0.008	0.018[***]			
190 to 209 days			0.53	0.46	10%
210 to 229 days			0.56	0.55	20
230 to 269 days			0.45	0.45	44
270 to 299 days			0.56	0.62	14
300 to 365 days			0.55	0.56	11
Time lapse not ascertained			0.59	0.52	1 (n=12)
4. Impairments to Ability to Respond	0.011	0.010[***]			
None			0.52	0.52	95%
Illness			0.43	0.40	1 (n=12)
Old age			0.19	0.39	1 (n=13)
Language or "other"			0.24	0.22	3 (n=50)

TABLE 101 (Cont'd)

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[a]	Net[a]	Gross[a]	Net[a]	
5. Location and Mode of Interview	0.014	0.010***			
Respondent's Home:					
Interviewer administered			0.52	0.51	81%
Self-administered			0.63	0.64	7
Office (either mode)			0.34	0.39	10
Location not ascertained			0.63	0.60	2 (n=30)
6. Other Adults	0.008	0.009**			
1			0.54	0.53	61%
2			0.46	0.48	25
3			0.47	0.48	11
4			0.29	0.26	3 (n=43)

***Difference from zero statistically significant at the .01 level.

**Difference from zero statistically significant at the .05 level.

[a]For explanation of table, see footnotes to Table 1.

TABLE 103

THE EFFECT OF FACTORS AFFECTING THE RESPONDENT'S INITIAL KNOWLEDGE
ON THE PROBABILITY OF REPORTING THE SAMPLE ACCOUNT

Independent Variable	Proportion of Variance Explained by this Variable	Estimated Probability of Reporting Account	Percent of Sample
1. Principal Respondent is Head?	0.009***		
Principal respondent is head		0.53	71%
PR is not head		0.48	23
PR cannot be determined		0.22	2 (n=29)
Head is not ascertained		0.40	4 (n=57)

***Difference from zero is statistically significant at the .01 level.

TABLE 105

FACTORS RELATED TO THE PROBABILITY OF REPORTING THE SAMPLE ACCOUNT[a]

(Variables available in any survey)

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[a]	Net[a]	Gross[a]	Net[a]	
ENTIRE SAMPLE	$\bar{R}^2 = 0.28$		0.50	0.50	100.0%
1. Education of the Principal Respondent	0.088	0.054***			
None or elementary			0.33	0.38	23%
High school			0.47	0.47	35
College: 1-3 years			0.69	0.64	13
College: 4 years			0.56	0.50	13
College: 5 years or more			0.85	0.74	8 (n=95)
PR not ascertained			0.28	0.28	2 (n=34)
Education not ascertained			0.44	0.68	6 (n=67)
2. Respondent's Report of Number of Savings Accounts Owned in All Institutions	0.113	0.051***			
None			0.00	0.20	5% (n=46)
One			0.32	0.34	16
Two			0.52	0.55	20
Three to five			0.59	0.55	41
Six or more			0.67	0.62	17
Number not ascertained			0.02	0.31	1 (n=38)
3. Extent of Rounding in Report of Interest on Savings Accounts (number of consecutive zeros counting from right)	0.111	0.050***			
None			0.65	0.59	52%
One			0.56	0.61	12
Two			0.30	0.35	4 (n=92)
Three			----	----	1 (n=8)
No interest reported			0.28	0.35	31

TABLE 105 (Cont'd)

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[a]	Net[a]	Gross[a]	Net[a]	
4. Ownership Status of Principal Respondent	0.038	0.039***			
Principal respondent is an owner			0.56	0.55	59%
PR is head/wife of an owner			0.43	0.43	17
PR is son/daughter			0.24	0.27	3 (n=33)
PR is brother/sister or father/mother			0.54	0.58	17
PR is son-in-law/daughter-in-law, or not related			0.42	0.16	1 (n=10)
PR cannot be determined			0.15	0.17	4 (n=67)
5. Age of Principal Respondent	0.034	0.035***			
Under 35			0.71	0.63	16%
35 or more			0.47	0.47	82
Age not ascertained			0.28	NA	2 (n=34)
6. 1962 Family Income	0.030	0.013***			
Under $3,000			0.51	0.60	5% (n=69)
$3,000 to $4,999			0.31	0.43	8
$5,000 to $7,499			0.49	0.57	22
$7,500 to $14,999			0.51	0.48	45
$15,000 to $24,999			0.47	0.43	10
$25,000 or more			0.73	0.59	10
7. Interviewer's Judgment of Accuracy of Reporting	0.045	0.012**			
Most accurate (two highest of eight classes)			0.64	0.55	28%
Second most accurate			0.52	0.43	39
Third most accurate			0.40	0.49	22
Least accurate			0.30	0.39	8 (n=82)
Principal respondent cannot be determined or judgment not ascertained			0.32	0.31	3 (n=63)

TABLE 105 (Cont'd)

Independent Variables (in descending order of importance)	Percent of Variance Explained by this Variable		Estimated Probability of Reporting Account		Percent of Sample
	Gross[a]	Net[a]	Gross[a]	Net[a]	
8. Time Lapse: Reference Data to date of Last or Only Interview	0.008	0.009			
190 to 209 days			0.53	0.51	10%
210 to 229 days			0.56	0.54	20
230 to 269 days			0.45	0.46	44
270 to 299 days			0.56	0.55	14
300 to 365 days			0.55	0.58	11
Time lapse not ascertained			0.59	0.46	1 (n=12)
9. Family Involved in Formal Trust?	0.000	0.006***			
Yes			0.54	0.38	8% (n=79)
No			0.50	0.52	92

***Difference from zero statistically significant at the .01 level.

**Difference from zero statistically significant at the .05 level.

[a]For explanation of table, see footnotes to Table 1.

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