Heterogeneity in Item Non-Response
on Income and Wealth Questions

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Abstract

This study investigates the amount of heterogeneity in item non-response across various income and wealth questions. Wide variety in item non-response rates may be seen in simple descriptive statistics. This is confirmed in empirical models of item non-response behavior: question-specific fixed effects are statistically significant and the association of covariates with item non-response outcomes differs significantly across outcomes.

JEL Classification: C 81, J 3, I 32

1. Introduction

Survey data form the basis of most empirical research in the social sciences. Accordingly, its quality, the various determinants thereof, and the implications of data deficiencies have attracted the attention of researchers for many decades. Within the range of potential data problems, some have garnered more scientific attention than others: the disciplines of sociology and psychology are mainly concerned with whether the desired information might be adulterated by interviewer influences.[1] Among the issues typically raised in the economics literature are unit non-response, i.e. respondents' refusal to participate in a survey (cf. Hill / Willis 2001 or Horowitz / Manski 1998), measurement error and recall bias. In contrast, item non-response, i.e. the refusal to respond to certain questions, is largely neglected. This is astounding, as the loss of information due to item non-response may end up being just as problematic as total respondent dropout from a survey.

Given the typically high rates of item non-response on income and wealth in surveys, it is important to learn about the determinants of this behavior. This

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[1] For careful discussions of these problems see Esser (1984) or Reinecke (1991).

research extends the previous literature which looked at income measures only. We study heterogeneity in response propensities for different types of financial questions.

2. Theoretical Framework

Our model of response behavior follows a rational choice approach, but adds further factors to describe item non-response behavior. We assume that individuals respond to a question when the expected benefits of answering exceed the perceived costs.[2]

The response decision is taken by individual i for every question j posed by interviewer m. This choice can be modeled by assuming a latent index, y_{ij}^* indicating the individual propensity to answer a question which is determined by the utility difference between the options of responding or not. The individual propensity to answer, y_{ij}^*, may be described as follows:

$$(1) \qquad y_{ij}^* = c_{ij}\alpha_1 + b_{ij}\alpha_2 + X_i\beta_1 + W_m\beta_2 + (X_i * W_m)\beta_3 + \mu_{ij}$$

where c_{ij} represents the costs involved for individual i when answering question j, b_{ij} are the associated benefits, X_i and W_m are characteristics of respondent and interviewer, α and β are coefficients, and μ_{ij} represents random noise.

The costs of answering a question are high when it requires detailed information or when the respondent feels it represents a breach of privacy. Hill / Willis (2001) point to difficulties in answering behavior if a question is potentially embarrassing, painful, or cognitively difficult. Another cost consideration may be the information's potential for abuse, e.g. by tax authorities.

The benefits when providing an answer consist of the experience of being asked for information or opinions. Individuals may derive utility from participating in a survey e.g. by feeling consulted and appreciated. If it can be conveyed to respondents that the cause is important, this may generate feelings of contributing to something worthwhile. Finally, the benefit of responding to a question may consist of simply obeying social norms, of being courteous and avoiding negative sanctions or avoiding disappointing the interviewer. Besides these issues, respondent characteristics X, interviewer characteristics W, and their interactions $X * W$, may affect the response decision. Within this general framework, we describe whether and how far item non-response rates differ

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[2] We consider the event of the interview, the selection of the respondent, and the fact that the individual is in principle willing to respond to the survey as being exogenously given.

across outcome measures, and study whether differences in answering behavior are associated with observable determinants of item non-response.

3. Data Description and Empirical Strategy

Data: Our data are taken from the 1988 wave of the German Socio-economic Panel (GSOEP). The GSOEP gathers information on the characteristics of respondents and their households, and periodically adds special topical modules to the survey. Since we are interested in studying a range of financial questions we evaluate item non-response for 1988, when the topical module covered wealth. The data are taken from three questionnaires: the person questionnaire was administered to every individual aged 16 or older, whereas the household survey and the wealth module were answered by the heads of households. We also use a separate dataset describing the GSOEP interviewers and their demographic characteristics (for details see Schräpler / Wagner 2001). These data are available for GSOEP users and may be matched to the records of respondents.

Sample: Our sample is selected based on three criteria. First, to circumvent language problems, we use German respondents from the nationally representative subsample A. Second, we disregard observations where the information was gathered other than by meeting the interviewer in person (e.g. when the survey was administered over the phone or by mail). Finally, we drop observations where information on interviewer characteristics is missing. In the end we maintain 4,744 observations from the individual questionnaire, 2,769 from the household questionnaire, and 2,427 from the wealth module.

Dependent Variables: Table 1 first describes a selection of financial measures from the individual level survey. Since not every question is asked of every respondent in the questionnaire, the sample sizes vary between questions. The relevant subsample selected for any given question is determined by filter questions in the survey.[3] Item non-response rates for the income measures (last column of Table 1) vary between 15 percent for self-employment income and 3 percent for "vacation benefits".

Based on a simple cognitive ease argument, one might assume that indicating last month's earnings should require less effort than providing average monthly payments for the previous calendar year. However, the item non-response rates on last month's gross and net earnings are high (cf. questions 44 vs. 53). It appears that strongly regulated payments, such as vacation benefits

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[3] An individual may be asked whether he or she receives income from source *x*. If the answer is yes, the person is part of the sample, which should indicate an amount. The sample size thus varies with the number of individuals indicating receipt of any given type of income.

Item Non-response Rates for Individual and Household Income Questions

No. of Question[1]	Type of Income	No. of cases[2]	Non-responses N	Share
Individual Questionnaire				
53.02	Income from self employment[3]	274	42	15.3%
44.01	Gross earnings last month	2,546	211	8.3%
44.02	Net earnings last month	2,546	135	5.3%
53.01	Gross wage[3]	2,454	91	3.7%
54.07	Vacation benefits[3]	1,501	47	3.1%
Household Questionnaire				
39c	Interest payments (amount last year)	342	126	36.8%
39b	Annuity and interest payments (amount last year)	342	110	32.2%
41	Interest and dividend income (last year)	2,149	312	14.5%
42	Monthly household net income (amount)	2,769	84	3.0%

Notes:

1) Question number in questionnaire.

2) Number of cases indicating receipt of income, based on filter-questions in survey.

3) Average gross monthly amount in the last calendar year. If the respondent was unable to provide exact figure the questionnaire prompted for an approximation.

involve lower reporting costs – possibly because they are considered less private – than those that may entail information on individual labor market success (e.g. earnings).

The lower part of Table 1 describes household indicators. Non-response rates reach over thirty percent for interest and annuity payments. Non-response rates on measures relevant for larger subsamples, such as income from interest and dividends, or total net income vary between 14.5 and 3 percent. Table 2 provides information on household wealth. The questionnaire asked the respondent whether the household holds a given asset at all, and if so at which value. If the respondent indicated possession of a given item but could not provide the exact amount, the person was asked to guess the amount and if that failed answer categories or a "don't know" reply were offered. The samples sizes are described in column three, while the other columns describe the frequency of item non-response and don't know outcomes.

The rates of non-response and "don't know" answers vary strongly across items. The highest refusal rates are observed for questions on stock, bond, and equity ownership. The shares of "don't know" responses are differently distributed across outcomes. Here the highest rates appear for the value of equity

Table 2

Item Non-response Rates for Household Wealth Questions

No. of Ques-tion[1]	Type of Asset[2]	No. of cases	Non-re-sponse		"Don't know"		Total missing	
			N	Share	N	Share	N	Share
4	Equity in a business	164	43	26.2%	25	15.2%	68	41.5%
5c	Stocks and bonds	636	217	34.1%	27	4.2%	244	38.4%
5b	Home loan savings certificates (*Bausparvertrag*)	1,001	150	15.0%	82	8.2%	232	23.2%
2	Property other than occupied flat or home	306	6	2.0%	20	6.5%	26	8.5%
5a	Savings account	2,064	70	3.4%	97	4.7%	167	8.1%
1	Ownership of occupied flat or home: Market value	1,065	8	0.8%	74	6.9%	82	7.7%
10	Total household wealth	2,427	32	1.3%	124	5.1%	156	6.4%

Notes:

1) Question number in wealth questionnaire

2) The survey first posed yes / no questions as to whether the household owns a given asset. Then the respondent was prompted for the exact amount held in this type of asset, or for an estimate. If that was not provided, response categories including the "don't know" option were provided. Non-response is coded if the asset type is available, but the amount was not provided. "Don't know" is coded if the first yes / no answer was positive and the respondent replied that the exact amount is unknown.

(15 percent), where it seems plausible that determining the asset value is difficult. Thus "don't know" may be a reflection of actual lack of knowledge.

While the non-response rates in Table 2 do not differ markedly from those in Table 1 the total share of uninformative responses, combining non-responses and don't know answers exceeds that for income measures. This might be due to offering an answer option of "don't know", which may induce individuals to indicate ignorance. Also, wealth issues might be either more sensitive compared to income indicators or it might be particularly difficult to provide the correct answer.

Explanatory Variables: In our item non-response model we consider a baseline specification which controls for the labor market status of both the interviewer and respondent and their level of schooling. The indicators also describe whether the interview participants have equal characteristics in these dimensions.

The literature strongly suggests that the sex of the interviewer affects response behavior (cf. Sousa-Poza / Henneberger 2000). We control for the possible gender combinations between interviewer and respondent. Age effects are considered using a linear age variable for respondents and an indicator of the age difference between interviewer and respondent.

In addition we consider indicators influential in other non-response studies: e.g. public sector employees tend to have low non-response rates (Biewen 2001). We control for household size, because the larger the household, the more difficult it should be to gather financial information. We take the size of an individual's town of residence as a potential indicator of an attitude of openness and trust, and control for whether the interviewer has changed since the last survey and whether a respondent answered the questionnaire at least partly by him- or herself as opposed to responding to oral prompts from the interviewer: it seems easier to refuse an answer if this does not have to be communicated. Table 3 presents descriptive statistics.

Table 3

Descriptive Statistics: Explanatory Variables

Variable	Individual Questionnaire		Wealth Module	
	Mean	Std. Dev.	Mean	Std. Dev.
Demographic Indicators				
respondent female interviewer male	0.294	0.456	0.239	0.427
respondent male interviewer female	0.205	0.403	0.232	0.422
respondent female interviewer female	0.232	0.422	0.211	0.408
respondent male interview. male (reference)	0.269	0.443	0.318	0.466
respondent part time employed	0.089	0.285	0.074	0.261
respondent not employed	0.464	0.499	0.451	0.498
interviewer part time employed	0.132	0.338	0.136	0.343
interviewer not (otherwise) employed	0.464	0.499	0.492	0.500
same employment status	0.419	0.493	0.428	0.495
respondent medium level schooling	0.201	0.400	0.187	0.390
respondent high schooling	0.127	0.333	0.149	0.356
interviewer medium level schooling	0.469	0.499	0.464	0.499
interviewer high schooling	0.207	0.405	0.204	0.403
same schooling	0.347	0.476	0.349	0.477
respondent age	46.461	18.579	50.903	17.13
age difference: interviewer – respondent	-3.873	21.484	0.685	20.053
Other indicators				
change of interviewer	0.102	0.303	0.115	0.319
public sector employee	0.134	0.340	0.156	0.363
self administered survey (interviewer present)	0.150	0.357	0.073	0.261
lives in small town	0.577	0.494	0.539	0.499
household size	2.828	1.310	2.431	1.264
Number of observations	4744		2427	

Empirical Strategy: We investigate whether the differences in non-response rates described above can be explained by the variables in our model, or whether they largely go back to unobservable factors. We estimate and compare the correlates of non-response behavior for a variety of outcome measures. For an intuitive indication of outcome-specific heterogeneity we pool item non-response outcomes across questions and test for the statistical significance of question specific fixed effects as well as of outcome specific differences in covariate effects.

4. Results and Discussion

Covariates of item non-response

We estimate bivariate logit models for the individual and household level measures and calculate the marginal effects of the covariates (see Table 4a). In the case of the wealth measures the dependent variables contain the additional outcome category "don't know". To impose the least restrictive model we estimate multinomial logits for these outcomes and calculate the marginal effects of the covariates on the probability of non-response (see Table 4b).

The estimations yield a small number of significant coefficients. The first group of variables describes the gender combination of respondent and interviewer. Notably, all significant effects indicate positive associations between a female interviewer and item non-response. If we assume that it is easier to avoid an answer in front of a female, the pattern fits the rational choice model's predictions. Also, non-response is higher when respondents are female.

With respect to the employment status of respondent and interviewer and comparing results across outcomes there seems to be a weak non-response tendency for respondents who are not full time employed. The finding can be explained within the rational choice model: if earnings of part-time workers are low, these respondents are faced with a "social desirability" problem if they prefer to indicate their personal labor market success to an interviewer. As a consequence, those with low earnings (or wealth) may choose item non-response. The evidence on the role of the interviewers' employment status is weak and somewhat mixed.

Also, the evidence on schooling effects is mixed and lacks clear patterns. Having respondents and interviewers with similar schooling does not affect results. The marginal effects of higher respondent schooling for income variables are generally positive but rarely significant, confirming Biewen (2001). Higher interviewer education does not improve response outcomes.

Across most outcomes older respondents seem to be particularly prone to item non-response. We find some evidence that having interviewers who are

Table 4: **(a) Logit Estimates of Item Non-response Across Financial Measures at the Individual and Household level**

Variable	Self-employment		Gross earnings		Net earnings		Vacation Benefits		Hh. Interest and Dividend Inc.		Hh. Net Income	
	ME	t	ME	t	ME	t	ME	t	ME	t	ME	t
respondent female interviewer male	0.033	0.51	-0.001	-0.08	-0.014	-0.98	-0.010	-0.68	0.033	1.46	-0.001	-0.10
respondent male interviewer female	0.130	2.18	0.024	1.44	0.002	0.15	-0.007	-0.54	0.062	2.57	0.018	1.80
respondent female interviewer female	0.066	0.89	0.038	2.06	-0.011	-0.70	-0.003	-0.20	0.079	3.34	0.015	1.41
respondent part time employed	-0.029	-0.43	0.063	3.99	0.034	2.50	-0.016	-0.73	0.043	1.43	0.017	1.39
respondent currently not employed	0.296	3.93	x	x	x	x	-0.062	-1.49	0.089	4.18	-0.004	-0.43
interviewer part time employed	-0.042	-0.51	-0.076	-3.08	-0.031	-1.68	0.046	1.52	0.020	0.84	0.023	2.23
interviewer not (otherwise) employed	-0.045	-0.62	-0.020	-0.98	-0.013	-0.77	0.057	1.76	-0.042	-1.90	0.008	0.81
same employment status	0.013	0.22	-0.007	-0.35	-0.001	-0.09	0.039	1.33	-0.003	-0.18	0.011	1.46
respondent medium level schooling	0.124	2.35	0.019	1.38	0.024	2.16	0.006	0.55	-0.108	-4.53	0.008	0.91
respondent high schooling	0.001	0.02	0.007	0.42	0.029	2.31	0.009	0.66	-0.022	-0.98	0.016	1.82
interviewer medium level schooling	-0.123	-2.37	-0.030	-2.28	-0.003	-0.27	-0.032	-2.51	0.023	1.08	-0.017	-2.02
interviewer high schooling	-0.041	-0.67	-0.003	-0.18	0.010	0.74	0.005	0.44	-0.006	-0.24	-0.002	-0.17
same schooling	-0.019	-0.41	-0.006	-0.48	0.011	1.12	0.008	0.80	0.038	1.87	0.010	1.32
respondent age	0.004	1.13	0.002	3.07	0.002	2.42	0.000	-0.60	0.000	-0.17	0.000	-0.39
age difference: interviewer – respond.	-0.001	-0.40	-0.001	-1.20	0.000	-0.48	0.001	1.03	-0.002	-1.95	0.000	1.01
change of interviewer	0.064	1.07	0.022	1.41	0.027	2.23	0.018	1.36	-0.020	-0.82	0.007	0.71
public sector employee	x	x	-0.061	-3.96	-0.045	-3.46	-0.030	-2.42	-0.032	-1.21	-0.031	-2.36
self administered survey (interv. present)	0.010	0.18	0.028	2.12	0.010	0.93	0.004	0.33	0.034	1.11	-0.014	-0.80
lives in small town	-0.034	-0.69	0.021	1.79	0.012	1.22	0.007	0.72	-0.073	-4.74	-0.002	-0.35
household size	0.018	1.02	0.003	0.76	0.002	0.47	-0.009	-2.06	-0.031	-4.36	-0.001	-0.31
respondent schooling missing	0.246	2.12	0.051	1.09	0.060	1.91	x	x	-0.093	-1.04	0.01	0.42
Number of observations	267		2545		2545		1487		2149		2769	

(b) Multinomial Logit Estimates of Item Non-response Across Wealth Measures at the Household Level

Variable	Stocks / Bonds		Owned home		Home loan		Savings		Total wealth	
	ME	t	ME	t	ME	t	ME	t	ME	t
respondent female interviewer male	0.074	0.50	-0.009	-0.93	0.004	0.01	-0.014	-0.99	0.002	0.19
respondent male interviewer female	-0.050	-0.41	-0.008	-0.68	0.034	0.62	0.017	1.21	0.010	1.21
respondent female interviewer female	0.264	1.64	-0.008	-0.72	0.123	2.09	0.002	0.10	0.017	2.12
respondent part time employed	0.213	1.24	0.021	1.45	-0.097	-1.10	0.044	2.47	-0.003	-0.21
respondent not employed	0.123	0.97	0.177	4.96	0.007	0.13	0.014	0.98	0.005	0.66
interviewer part time employed	-0.638	-3.36	-0.007	-0.75	-0.051	-0.90	-0.012	-0.72	-0.019	-1.31
interviewer not (otherwise) employed	-0.192	-1.49	0.000	-0.09	0.026	0.33	0.007	0.50	-0.003	-0.65
same employment status	-0.033	-0.30	0.000	0.04	0.025	0.55	0.002	0.24	-0.009	-1.49
respondent medium level schooling	-0.296	-2.63	-0.004	-0.42	0.003	-0.04	-0.004	-0.38	0.000	0.04
respondent high schooling	-0.703	-5.27	-0.275	0.00	-0.146	-2.50	-0.034	-1.87	-0.022	-1.53
interviewer medium level schooling	-0.092	-0.88	0.002	0.17	-0.006	-0.15	-0.022	-2.01	-0.003	-0.41
interviewer high schooling	0.127	0.76	0.003	0.28	0.031	0.51	-0.025	-1.72	-0.012	-1.16
same schooling	0.094	1.08	0.002	0.20	-0.071	-1.54	0.003	0.23	0.002	0.38
respondent age	0.007	1.27	-0.001	-1.62	0.004	1.57	-0.001	-0.88	0.001	1.52
age difference: interviewer – respondent	-0.015	-2.82	0.000	0.95	0.000	-0.29	0.001	0.95	0.000	-1.60
change of interviewer	-0.213	-1.42	0.000	0.03	-0.167	-2.40	0.016	1.26	0.006	0.86
public sector employee	0.004	0.11	0.172	5.29	-0.005	-0.06	0.009	0.67	-0.011	-1.01
self administered survey (interviewer present)	-0.318	-1.73	-0.267	0.00	-0.109	-1.37	0.009	0.52	0.017	2.26
lives in small town	0.063	0.52	-0.020	-2.87	-0.066	-1.96	0.015	1.37	0.008	1.37
household size	-0.083	-1.93	-0.002	-0.47	-0.080	-4.69	-0.013	-2.82	-0.003	-1.21
respondent schooling missing	-16.166	0.00	-0.272	0.00	-5.828	0.00	-1.112	0.00	-0.010	1.04
Number of observations	636		1065		1001		2064		2427	

Notes:

1) The columns labeled ME present marginal effects of variables on item non-response, which were calculated on the basis of logit (4a) and multinomial logit (4b) estimates for item non-response. The multinomial logit estimates also consider the valid answer and the don't know answers. The columns labeled t present the asymptotic t statistics for the coefficient estimates on the relevant variables. All models controlled for regression constants.

2) The marginal effects in cells containing an x cannot be presented, because the variables was dropped from the model due to collinearity.

older than the respondents is beneficial for the provision of informative answers. Since most marginal effects of the age difference are negative, a matching of interview partners based on age might be advisable. There are only few consistent patterns in the remaining control variables. Despite the strong evidence in the literature for the relevance of long term relations between interviewer and respondent, we find a significant increase in non-response after an interviewer change only in one of our outcome measures. Possibly the change of an interviewer causes unit non-response such that item non-response cannot be observed (cf. Rendtel 1995). The result that public sector employees seem to be less likely to refuse an answer confirms prior studies. However, closer inspection shows that this cooperation seems to be restricted to the income measures.

Evidence as to whether administering the survey in the presence of an interviewer affects the non-response outcomes is mixed. The same holds for the association of rural residence and item non-response. Our hypothesis on the effect of household size is not confirmed.

Heterogeneity in item non-response across outcomes

The question regarding the role of outcome-specific heterogeneity is addressed in two steps. First, we pool the data on the outcomes described above and add fixed outcome specific effects to the model. The estimation results for the pooled sample are presented in column (1) of Table 5.[4] The fixed effect controls are highly significant, reflecting the heterogeneity across outcomes even after controlling for covariates.

Since overall non-response rates are higher for wealth than for income outcomes, we investigate whether this is simply a level effect or whether the covariate effects differ across outcome groups as well. We reestimate the fixed effects model adding a full set of interaction terms of a "wealth indicator" to the model. The results yield a number of statistically significant interaction effects (see columns (2) and (3) of Table 5). Here the increase in non-response for female interviewers appears to be higher for wealth outcomes in particular when female interviewers are matched with female respondents (the interaction term yields a coefficient of 0.291). However, neither the coefficients on sex interaction variables nor on employment indicators are statistically significant as a group.

A surprisingly clear pattern appears in the correlation of schooling and item non-response: Whereas item non-response on income measures increases with

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[4] In order to render the bivariate non-response outcome of the income variables comparable to the multivariate outcome measure of the wealth indicators we dropped the wealth observations with "don't know" answers from the sample.

Table 5

Logit Estimates on Pooled Outcomes[1]

| Variable | Fixed Effects (1) | | Fixed Effects with Wealth Interactions | | | |
| | | | (2) Main Effect | | (3) Wealth Interaction | |
	Coeff.	t	Coeff.	t	Coeff.	t
respondent female interviewer male	-0.007	-0.08	-0.010	-0.08	0.000	0.00
respondent male interviewer female	0.140	1.72	0.149	1.30	0.004	0.02
respondent female interviewer female	0.357	4.16	0.196	1.51	0.291	1.67
respondent part time employed	0.422	4.59	0.520	4.34	-0.230	-1.19
respondent not employed	0.353	4.19	0.405	2.54	0.020	0.10
interviewer part time employed	-0.215	-2.20	-0.242	-1.68	0.036	0.18
interviewer not (otherw.) employed	-0.071	-0.92	-0.001	-0.01	-0.137	-0.85
same employment status	-0.054	-0.91	-0.035	-0.36	-0.035	-0.28
respondent medium level schooling	-0.126	-1.79	0.261	2.68	-0.754	-5.29
respondent high schooling	-0.192	-2.33	0.259	2.25	-0.880	-5.32
interviewer medium level schooling	-0.235	-3.45	-0.411	-4.34	0.331	2.42
interviewer high schooling	-0.041	-0.50	-0.056	-0.49	0.018	0.11
same schooling	0.094	1.47	0.086	0.98	0.045	0.35
respondent age	0.009	2.30	0.016	3.00	-0.013	-1.77
age difference: interviewer – respond.	-0.004	-1.30	0.000	-0.05	-0.008	-1.33
change of interviewer	0.068	0.82	0.302	2.68	-0.457	-2.75
public sector employee	-0.341	-4.20	-0.632	-5.47	0.582	3.53
self administered survey (interv. present)	0.109	1.32	0.137	1.33	-0.037	-0.21
lives in small town	-0.081	-1.45	0.099	1.20	-0.365	-3.22
household size	-0.126	-5.16	-0.016	-0.46	-0.240	-4.87
respondent schooling missing	-0.036	-0.13	0.659	2.10	-1.958	-2.85
Test on significance of fixed effects[2]	90.75	0.00	53.54	0.00		
Log Likelihood		-5,444.8		-5,376.8		
Number of observations		28,531		28,531		

Notes:

1) The estimations combine all income categories listed in Table 3, the outcome measures No. 41 and 42 from Table 4, and all measures from Table 5 except for farm value. Since income from interest and dividends (reported at the household level) is an indicator of wealth we considered this outcome as a wealth outcome. – Fixed effect coefficients are not presented to save space.

2) The figures in the row on fixed effect significance tests provide first the test statistic of a chi^2-Test with 26 degrees of freedom, then the p-value is given (in t-column).

respondent schooling (see column 2), the interaction terms in column (3) yield that non-response probabilities for wealth outcomes are lowest among respondents with high educational attainment. The interaction terms are precisely estimated.

The age effects also differ between income and wealth outcomes. The non-response probability on income increases with respondent age. This effect is significantly weaker for wealth measures (estimate of –.013 on the interaction term). Significant differences in covariate associations with non-response probabilities are observable also for the remaining control variables: While the change of an interviewer increased non-response outcomes for income measures, it is actually negatively correlated with non-response for wealth measures. The beneficial effect of public sector employment on the propensity to provide financial information seems to be limited to income outcomes. This may be due to the fact that incomes of public sector workers follow publicly available pay scales and may be considered as public knowledge. In contrast, public sector employees seem to protect the privacy of their wealth just as anyone else.

5. Conclusions

The empirical literature on item non-response behavior generally focuses income measures. We compare item non-response behavior across financial outcomes and find significant heterogeneity in non-response intensities. While many correlations of respondent and interviewer characteristics with item non-response confirm prior evidence from the literature, the association of explanatory variables with income versus wealth non-response yield significant differences. A regression with a fully interacted model shows clearly that a number of the established correlates of item non-response depend on the outcome measure under consideration.

Item non-response rates tend to be much higher if the interviewer is female, and in particular if the respondent is female as well. With respect to the age difference between interviewer and respondent, there is some indication that matching an older interviewer to a younger respondent may increase response propensities particularly with respect to wealth outcomes. Interestingly, the personal acquaintance of the respondent with the interviewer is beneficial for wealth but not for income outcomes.

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