

Can Survey Participation Alter Saving Behavior?

Jochem de Bresser (University of Groningen)

Joint work with T. Crossley (Essex and IFS), L. Delaney (Stirling)
and J. Winter (LMU Munich)

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Preview

- Study the effect of participating in surveys on subsequent behavior
- Analyze linked data from an **internet panel** and **administrative records** to distinguish changes in economic behavior from changes in reporting behavior
- Interesting implications for data collection strategies
- Broader implications for public policy towards saving

Motivation: Data from Panel Surveys

- Key advantage: understand and distinguish **heterogeneity** and (short and long run) **dynamics**
- Possible disadvantages:
 - Respondent burden
 - Cost
 - Confidentiality
 - Attrition
 - **Survey effects?**

A Motivating Example

- Many expenditure surveys collect data via two week diaries
- 2nd week records always significantly less than first week.
- 1996 Canadian Food Expenditure Survey: 10%
- Statistical agencies attribute these drop-offs to “diary fatigue” (**reporting** behavior)
- But is it?

Recording and Behavior

- Many self-help books argue that recording behavior helps to change it
 - If you want to lose weight: weigh yourself regularly
 - If you want to spend less: record your expenses
- Some evidence from the “behavioral change” literature that this works
- Do surveys merely measure, or do they also shape, perceptions, attitudes, and behaviors?
- **Can we measure behavior without affecting it?**
 - Particularly relevant for panel surveys

Research Question and Contribution

- Does participation in a survey change the saving behavior of households?
- Treatment: participation in a detailed survey module on “adequate standard of living in retirement” and retirement income needs
- We analyze effect of participation on the yearly flow of savings
- First analysis of survey effects on savings (high-stake outcome)
- Randomized assignment to treatment
- Measure outcomes **independently** of the survey
 - High-quality, linked administrative data on assets and income
 - Distinguish changes in economic behavior from changes in reporting behavior

Outline

- Related Literature
- Data and Research Design
- Results
- Discussion and Conclusion

Literature Review

(Economists often the last to know....)

- Survey methodology: “panel conditioning”
 - Participation in earlier waves of a panel affects responses in later waves
- Consumer psychology, marketing: “question-behavior effects”
 - Questions on intentions or predictions shape subsequent behavior
- Economics: “survey effects”
 - Participation in a survey affects behavior even if questions do not directly concern behavior

Economics: Survey Effects

- Zwane et al. (PNAS, 2011): 5 field experiments with random assignment to surveys
- Context: development economics
 - Water purification
 - Purchase of medical insurance
 - Take-up and renewal of micro-loans
- Key feature: subsequent outcome measures are not self-reports
- Findings
 - Being surveyed increases water treatment product usage
 - Being surveyed increases take-up of medical insurance
 - No effect on borrowing
 - Survey effect leads to biased estimates of the treatment effect of improved water source quality

The LISS PANEL

- Longitudinal Internet Studies for the Social Sciences
- Large **internet panel** in the Netherlands, started in 2007
- Administered by CentERdata, Tilburg University
- **Representative sample** from Dutch population (8,000 individuals in 5,000 households)
 - Probability sample from Statistics Netherlands address frame
 - Simple computer (designed for elderly) supplied to those without internet access
 - Considerable effort to maximize response rates
 - 75% participate in recruitment interview of which more than 80% agree to internet panel
 - Final membership rate over 50% (then attrition and refreshment)

The LISS PANEL (cont'd)

- Monthly online surveys
- Core longitudinal survey uses about half of available interview time
- Remaining time given over to content submitted by researchers
- **Randomized modules**
- Wide range of survey measurements:
 - Standard survey questions on income, savings, wealth etc.
 - Subjective measures, preferences, expectations
 - Survey experiments
- **Linked to administrative** records (assets, income etc.)

Institutional Context

- Dutch pension system consists of 4 “pillars”
 - Flat-rate public pension (universal, subsistence level)
 - Occupational pensions (90% of workers covered)
 - Saving accounts for retirement (taxed during payout)
 - Other assets
- Pillars 1 and 2 replace 70% of final income on average (80% replacement after tax)
- Survey fielded in January 2008: before a major public debate about sustainability

Treatment

- *What is an adequate standard of living during retirement?* (Binswanger and Schunk, 2012) – the treatment
- First randomized survey module in LISS (January 2008)
- Questions on
 - Minimum income needed in retirement
 - Housing costs
 - Preferences for current and retirement spending
 - Risk attitudes w.r.t. income in retirement
- No direct questions on (intended) savings (not a classic question-behaviour effect)
- **Basic Strategy: compare respondents randomly allocated to the module to eligibles who were not allocated to the module**

Our Sample

- Individual respondent is eligible for the treatment if
 - Age >25
 - Household head or partner
 - HH income >800 euro/month
- Household eligible for the treatment if at least one member is eligible ($N = 3,125$ HHs)
- Records matched to administrative assets data: $\sim 50\%$ match rate ($N = 1,430$ HHs)
- Removed households in which all eligible members are retired, some outliers
- Final analysis sample: $N = 999$ HHs

Outcome Measures

- Savings (level and rate) from **administrative records**
 - Administrative dataset on wealth (*integral vermogensbestand*; from Statistics Netherlands; 2007, 2008 and 2009)
 - Mostly based on tax records, plus bank records
 - 2008 flow of savings: difference between non-housing wealth stocks in January 2008 and January 2009
 - Net income data are also derived from tax records
 - **Accurate and independent of survey response behaviour**

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 - LISS assets module (sometime 2008)
- Self-reported satisfaction with the economic situation in NL
 - LISS income module (June 2008)

Threats to Validity

- Imperfect compliance with treatment
 - Solution: “intention to treat” and IV analyses
 - IV quantile analysis (Frlich and Melly, 2008; 2010)
- Randomization at the level of the individual respondent; savings measured at the household level
 - Households with multiple eligible members were more likely to be offered treatment
 - We control for presence of multiple eligible members
- Selection into outcome measurement
 - Admin data: no permission or no match about 50%; mostly panel attrition (permission sought in 2011)
 - Survey data: nonresponse
 - Test for mean independence of instrument from selection

IV Framework

- Outcome equation

$$y_i = \beta_0 + \beta_1 t_i + \mathbf{x}_i' \beta_2 + u_i$$

- y_i : savings (or some other, self-reported outcome)
- t_i : dummy variable indicating whether the respondent participated in the treatment survey
- \mathbf{x}_i : vector of socio-demographic control variables (dummy for multiple eligible HH members)

- First-stage equation

$$t_i = \delta_0 + \delta_1 z_i + \mathbf{x}_i' \delta_2 + v_i$$

- z_i : dummy variable indicating whether the respondent was randomly selected for the treatment
- \mathbf{x}_i : vector of socio-demographic control variables (dummy for multiple eligible HH members)

Savings

	Mean	Std. dev.	Percentiles				
			0.05	0.25	0.5	0.75	0.95
HH income ^a	38,165	17,649	16,289	27,056	35,699	46,107	67,474
Non-housing savings ^b							
Levels (2008 euros)	154	9,411	-13,632	-3,221	2	3,084	14,860
Savings rates	-0.01	0.19	-0.40	-0.09	0.00	0.09	0.33
N	999						

^a HH income net of taxes; administrative data.

^b Savings corrected for inflation and net of property value and mortgages.

Relevance of the Instrument

Dependent variable: HH treated	
HH offered	0.879*** (0.0127)
Multiple eligibles	-0.0376** (0.0159)
Constant	0.0231** (0.00988)
R squared	0.688
F(1, n-(k+1))	4,818.37***
N	999

Robust standard errors in parentheses.

*significant at 10%; **significant at 5%; ***significant at 1%

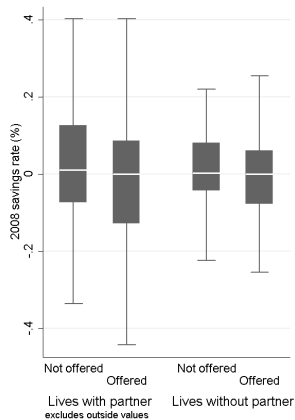
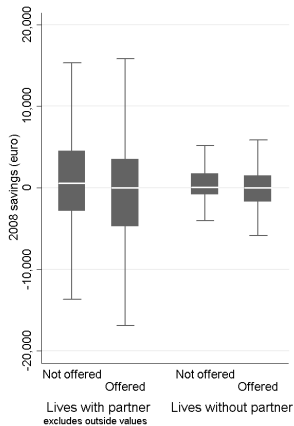
Validity of the Instrument

Dependent variable: indicator for estimation sample	
Offered	-0.0209 (0.0201)
Multiple eligibles	0.00700 (0.0215)
Constant	0.364*** (0.0207)
Number of selected HHs	999
N	2,816

Robust standard errors in parentheses.

*significant at 10%; **significant at 5%; ***significant at 1%

Intention to Treat Analysis



Main Result – IV Analysis

	Mean	Deciles ^a						
		0.20	0.30	0.40	0.50	0.60	0.70	0.80
Dependent variable: 2008 non-housing savings (thousands of euros)								
Treated	-1.683** (0.764)	-1.792 (1.119)	-1.193** (0.552)	-0.644 (0.458)	-0.474 (0.438)	-0.955** (0.461)	-1.085** (0.530)	-0.784 (0.709)
Sample Compliers N	0.154	-4.935	-2.061	-0.583 0.875 999	0.002	1.060	2.245	4.393
Dependent variable: 2008 non-housing savings rate (1 = 100%)								
Treated	-0.0351** (0.0144)	-0.0519* (0.0286)	-0.0337** (0.0166)	-0.0224* (0.0135)	-0.00922 (0.0130)	-0.0352** (0.0141)	-0.0247 (0.0153)	-0.0317 (0.0208)
Sample Compliers N	-0.01	-0.14	-0.07	-0.02 0.875 999	0.00	0.03	0.07	0.13

^a For decile models we report unconditional treatment effects; we control for the presence of multiple eligibles. Standard errors in parentheses; *significant at 10%; **significant at 5%; ***significant at 1%

Falsification Tests: 2007 Savings

	Mean	Deciles ^a						
		0.20	0.30	0.40	0.50	0.60	0.70	0.80
Dependent variable: 2007 non-housing savings (thousands of euros)								
Treated	-0.406 (0.749)	-0.582 (0.889)	0.130 (0.460)	0.158 (0.414)	-0.090 (0.417)	-0.393 (0.478)	-0.684 (0.832)	-1.792 (1.251)
Compliers N				0.866 1,014				
Dependent variable: 2007 non-housing savings rate (1 = 100%)								
Treated	-0.0136 (0.0147)	-0.00961 (0.0249)	-0.00279 (0.0133)	0.00197 (0.0121)	-0.00198 (0.0122)	-0.00296 (0.0136)	-0.0211 (0.0218)	-0.0257 (0.0298)
Compliers N				0.866 1,014				

^a For decile models we report unconditional treatment effects.

We control for the presence of multiple eligibles.

Standard errors in parentheses.

*significant at 10%; **significant at 5%; ***significant at 1%

Heterogeneous Effects: Non-housing Savings (levels)

	Income below median			Income above median		
	Education			Education		
	Low	Middle	High	Low	Middle	High
Dependent variable: 2008 savings (thousands of euros)						
Age < 40	2.910** (1.321)	1.883* (1.056)	-2.405** (1.157)	3.070** (1.535)	2.043 (1.339)	-2.245 (1.601)
Age 40-54	1.667 (1.388)	0.640 (1.252)	-3.648*** (1.346)	1.827 (1.397)	0.800 (1.288)	-3.488** (1.565)
Age 55+	-1.714 (1.149)	-2.741* (1.538)	-7.029*** (1.813)	-1.554 (1.755)	-2.581 (2.047)	-6.869*** (2.379)
R-squared				0.0749		
N				999		

Standard errors in parentheses.

*significant at 10%; **significant at 5%; ***significant at 1%

Heterogeneous Effects: Non-housing Savings (rates)

	Income below median			Income above median		
	Education			Education		
	Low	Middle	High	Low	Middle	High
	Dependent variable: 2008 savings rates (1 = 100%)					
Age < 40	0.0213 (0.0300)	0.00626 (0.0260)	-0.0789*** (0.0290)	0.0695* (0.0377)	0.0545* (0.0304)	-0.0307 (0.0298)
Age 40-54	0.00129 (0.0300)	-0.0138 (0.0308)	-0.0989*** (0.0330)	0.0495 (0.0319)	0.0344 (0.0280)	-0.0507* (0.0270)
Age 55+	-0.0493* (0.0280)	-0.0643* (0.0348)	-0.150*** (0.0342)	-0.00111 (0.0349)	-0.0162 (0.0371)	-0.101*** (0.0336)
R-squared				0.0574		
N				999		

Standard errors in parentheses.

*significant at 10%; **significant at 5%; ***significant at 1%

Additional Evidence from Survey Data

- Households do not re-allocate savings to life annuities
 - No effect on ownership by December 2009
 - No effect on change in ownership status 2007-2009
 - No effect on amount invested conditional on ownership
- The survey made individuals slightly more satisfied with the economic situation
 - Consistent with negative effect on saving

Summary

- Investigate effects of survey participation on households' financial behavior
- Treatment: participating survey on adequacy of income in retirement
- Key features
 - Randomized assignment to treatment
 - Outcome (savings) measured using administrative data
- Key findings
 - Survey caused households to save less (3.5 ppt; on a mean of 1% with sd 19%)
 - Survey did not cause households to reallocate saving to private pensions
 - Survey improved satisfaction with economic situation

Discussion – Results

- Plausibility
 - In January 2008, first 2 pillars were still generous and universal
 - We find the largest effects (relative to current income) for poor households which had the highest replacement rates
 - We also find large effects for highly educated and older respondents, who are entitled to generous occupational pensions
- Some Limitations
 - The survey was distributed only once; we cannot investigate effect of repeated participation
 - Admin data on assets only available for 2007–2009; we cannot investigate long run effects
- Replication seems desirable....

Discussion – Data

- Results suggest more thought be given to the effects of repeated measurement
 - How and what can we measure without effecting behavior?
- LISS: internet panel survey with core and modules offers very responsive platform
 - Questions, ideas, hypothesis from researchers
 - Emerging policy questions
 - Rapid deployment
- Research could not have been done without **linked survey and administrative data**

Discussion – Information and Saving Behavior

- “Limited attention” (Della Vigna, 2009) is a plausible mechanism for this effect
- Unintended consequences of survey support the idea that “salience shocks” may be an effective tool for influencing household financial behavior
- Karlan et al. (2012) show that reminders can increase saving among individuals enrolled in a goal-specific savings program.
- Stango and Zinman (2011) show that salience shocks can reduce the probability that individuals incur overdraft fees.
- Here, the survey **reduced** saving
 - Highlights possible context specificity
 - Also raises a number of concerns including asymmetric effects

Conclusions

- Being surveyed can affect economic attitudes and financial behavior
- Possible Mechanism: surveys make salient variables that should affect choices
- Important for thinking about data collection;
 - Possibly also important for policy towards household finance
- Linked survey-admin data very valuable
- Internet surveys also offer exciting possibilities
 - Some kinds of social science experiments can be conducted within surveys