BANCA D'ITALIA
EUROSISTEMA

Mind the mode: lessons from a web survey on household finances

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Joint project

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Foreword

- Banca d'Italia runs a survey on households' income and wealth (SHIW) since 1960s
- All the main surveys on income and wealth use interviewers: *Survey of Consumer Finances* (SCF), *Household Finance and Consumption Survey* (HFCS), *The European Union Statistics on Income and Living Conditions* (EU-SILC)
- The only example of large scale web survey on income and wealth is the DNB household Survey (CentERpanel)

Research questions

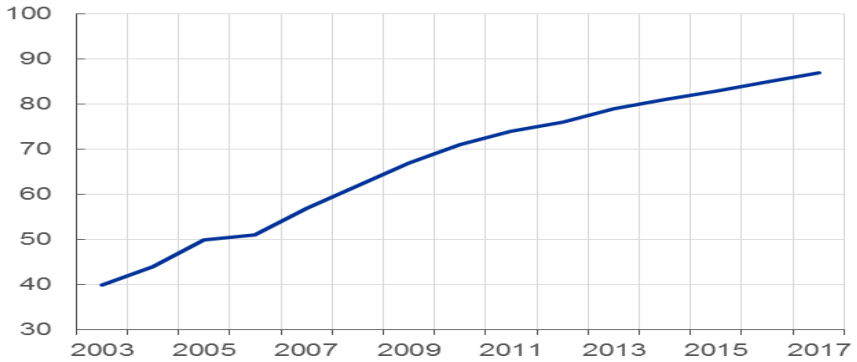
- Do we really need face-to-face interviews?

- Does the web represent a viable alternative to collect information on household income and wealth?

The use of web surveys

- Increasing use of Internet

Internet access of households
(percentage of all households, euro area)



- Appealing features:
  - cost reduction;
  - timeliness;
  - better quality answers to sensitive questions (Tourageau and Yan 2007).

The Web Survey on Italian Households (WEBIT)

- Probabilistic sample of about 10,000 hhs selected from population registers
- An invitation letter with a password was sent
- To access the website a valid email was required
- An incentive to respond was given to about 80% of the sample, to test the effect on survey participation
- Recalls by telephone and email by Istat
- Final sample of about 1,000 hhs

The Web Survey on Italian Households (WEBIT)

- Survey data are linked with tax records on income.
- The web survey was carried out in parallel to a CAPI survey in the same municipalities and using the same questionnaire.
- Randomized experiments.

How to assess data accuracy

- Coverage problems
- Self-selection bias
- Response behaviour
- We focus on Bias

Selection Bias in web surveys, Bethlehem 2010

The Science of Web Surveys, Tourangeau, Conrad, Couper 2013

Coverage

- Target population is usually different from Internet population
- Bias has two components:

$$Bias(\bar{y}_I) = E(\bar{y}_I) - \bar{Y} = \frac{N_{NI}}{N}(\bar{Y}_I - \bar{Y}_{NI})$$

$\frac{N_{NI}}{N}$	Share of population without access to Internet
$(\bar{Y}_I - \bar{Y}_{NI})$	Average difference between the 2 groups

Coverage: results

- 30% without Internet. Coverage increases with education, income, the presence of a young person in the household.

- Difference in the variable of interest (income from labour and transfers) between the two sub-groups:
  $\bar{Y}_I = €31.800 \;\; \bar{Y}_{NI} = € 18.300$

- $Bias(\bar{y}_I)$: positive bias $\approx 15\%$ of $\bar{Y}$

Self-selection

- Web surveys are known to have low unit response rates and are also affected by break-offs (Tourangeau, Conrad, Couper 2013).

  - Bias has 2 components (Bethlehem 1998):

$$Bias(\bar{y}_{I,r}) \approx \frac{Cov(p, Y)}{\bar{p}}$$

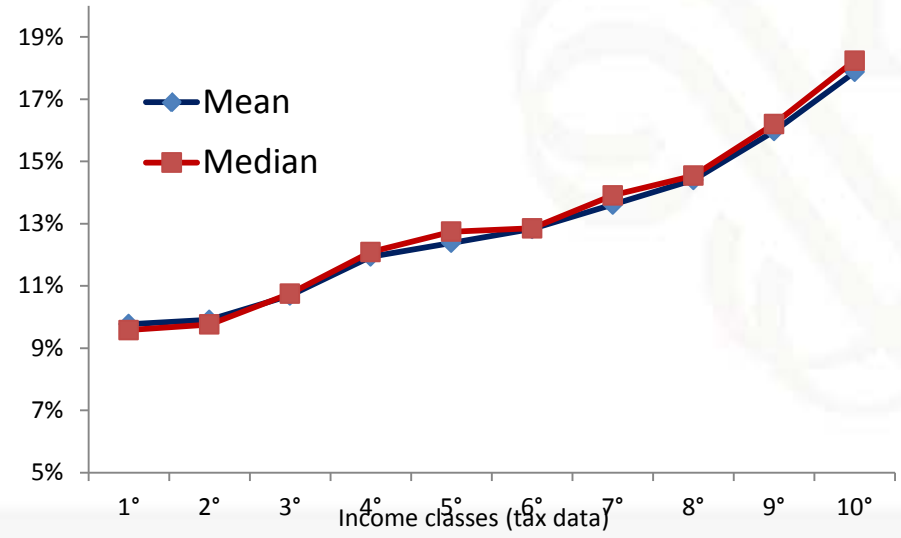
$Cov(p, Y)$ Association between response probability and Y.

$\bar{p}$ Average response rate.

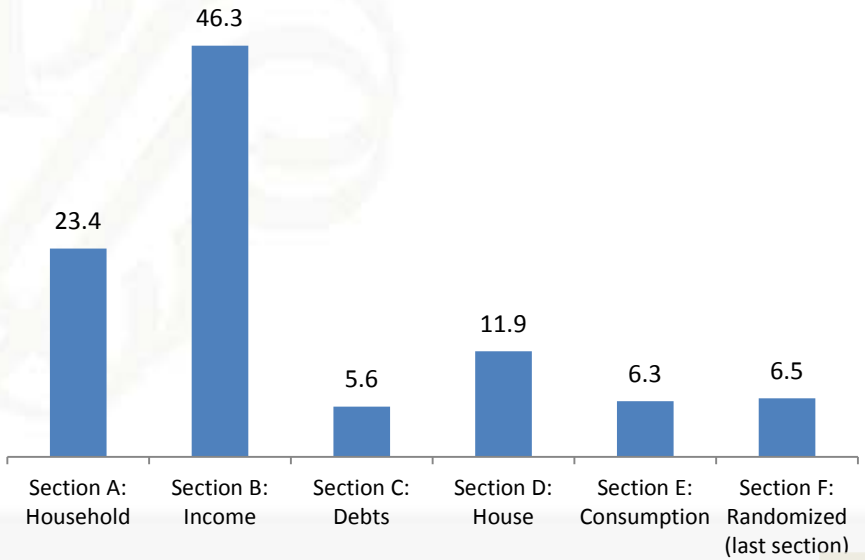
Selection bias: results

- Average response rate ($\bar{p}$): 13 %
- Positive and significant covariance between response probabilities and income

Response probabilities by household income classes



Break-offs by section



Selection bias: results

- *Y* = household income from labour and transfers (tax data)
- Association between *Y* and $\hat{p}$: rho=0.43

$$Bias\left(\bar{y}_{I,r}\right) \approx \frac{Cov(p,Y)}{\bar{p}} \approx € 4.500 = 17\%$$

Measurement error

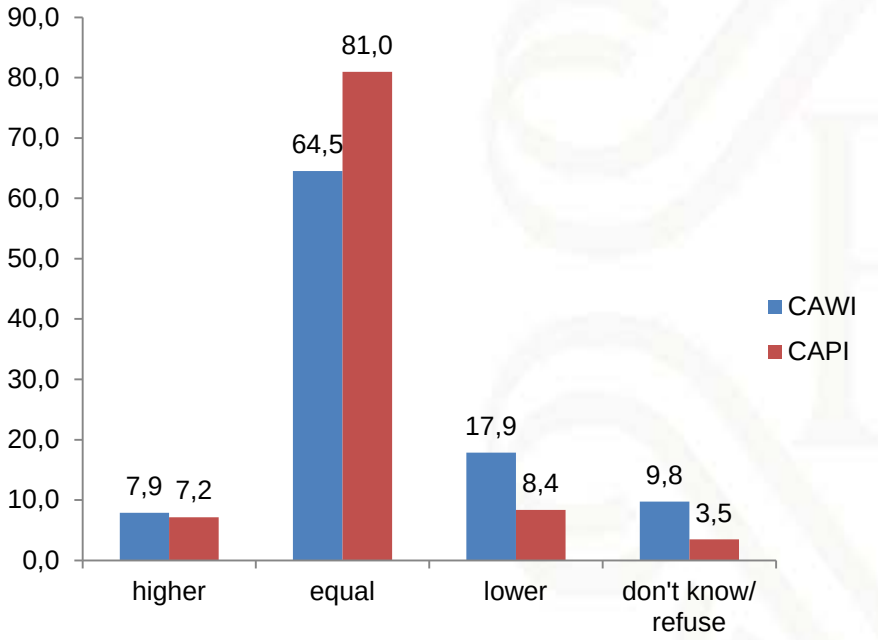
- Ways to assess the response behaviour in the WEB survey:

  1) a comparison with the CAPI survey :
     - selecting the CAPI respondents more similar to those of the WEB survey;
     - aligning the weights of the two samples.

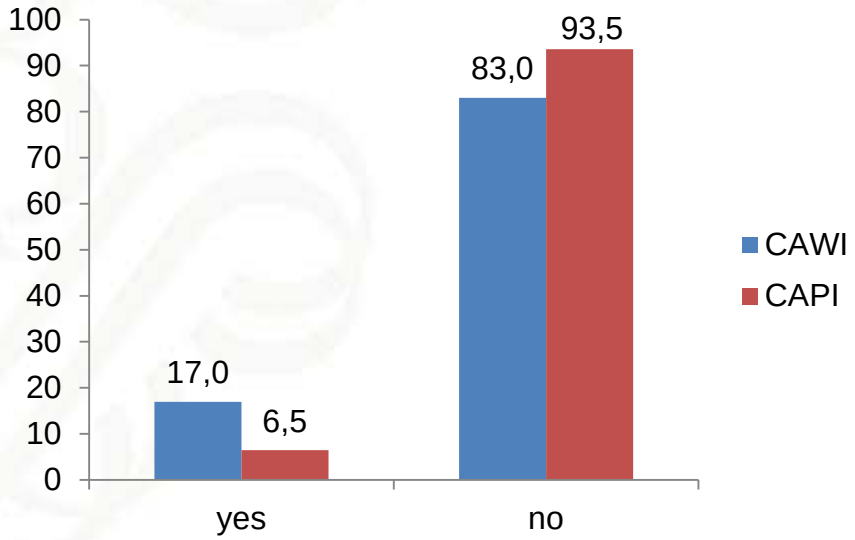
  2) a comparison with the tax registers.

Response behaviour: results

Do you expect that your hh's total income in 2016 will be higher, equal or lower than the one you had in 2015?



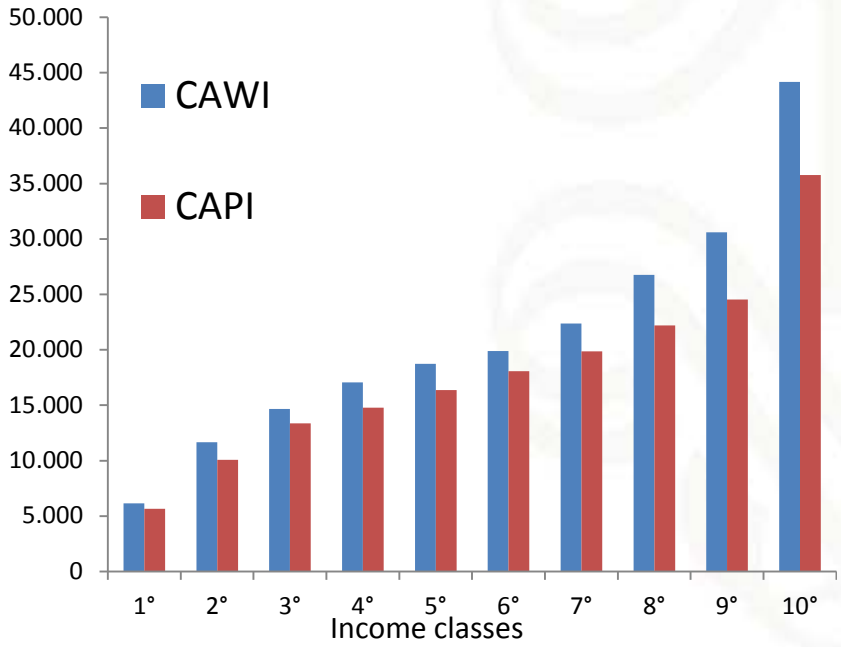
In the last 3 years has your hh received any assistance or non-economic aid from relatives or friends ?



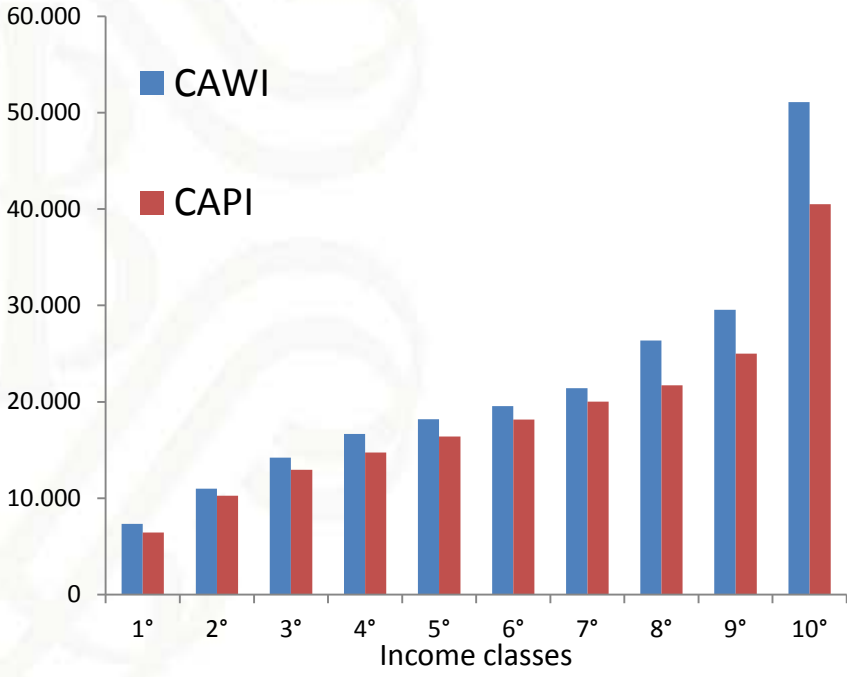
Response behaviour: results

Percapita income by income class (euro)

Income from employment

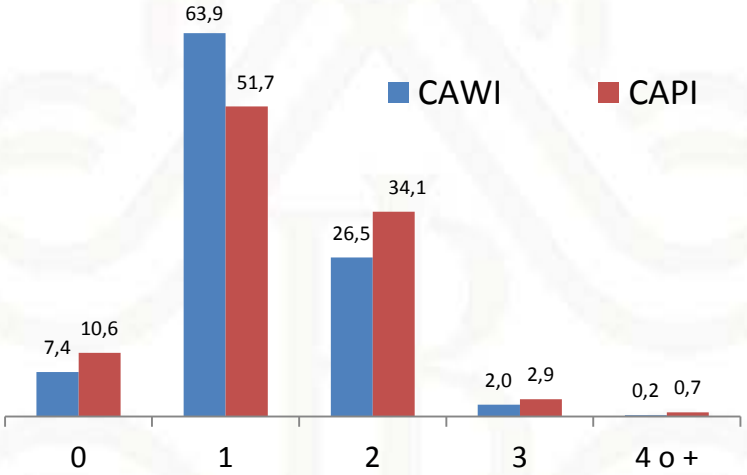


Income from pensions

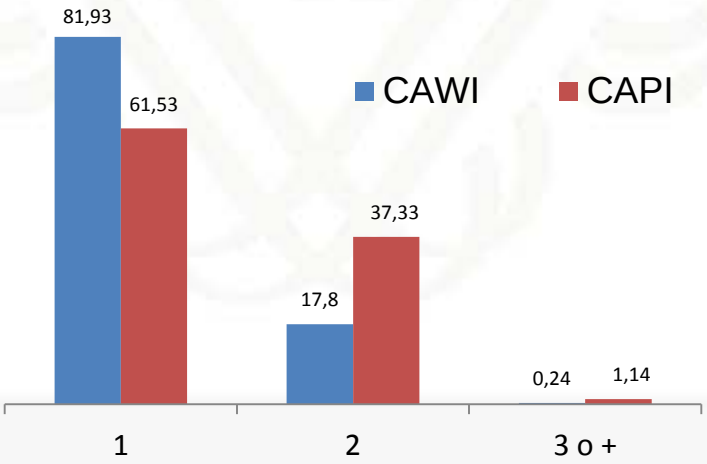


Response behaviour: results

Distribution of recipients of income from employment



Distribution of recipients of income from pensions



Conclusions

- Does the web represent a viable alternative to collect information on household income and wealth?

Probably not yet,
unless powerful auxiliary information is available.

Conclusions

- Self-selection is most challenging issue to overcome.
- The role of interviewers in enrolling households is difficult to replace.
- Good results for qualitative questions (economic conditions, expectations, saving decisions).
- As to income the evidence is mixed: interviewers are needed to prone respondents.