Should we head to a longer panel in EU-SILC ?

Insights from the 9-year panel in France





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Insee
Mesurer pour comprendre

Roadmap

Analytical worth

What do we learn with a 6-year panel that we wouldn't with a 4-year panel ?

- Poverty spells duration

-> Beck, Missègue, Ponceau (2014) INSEE

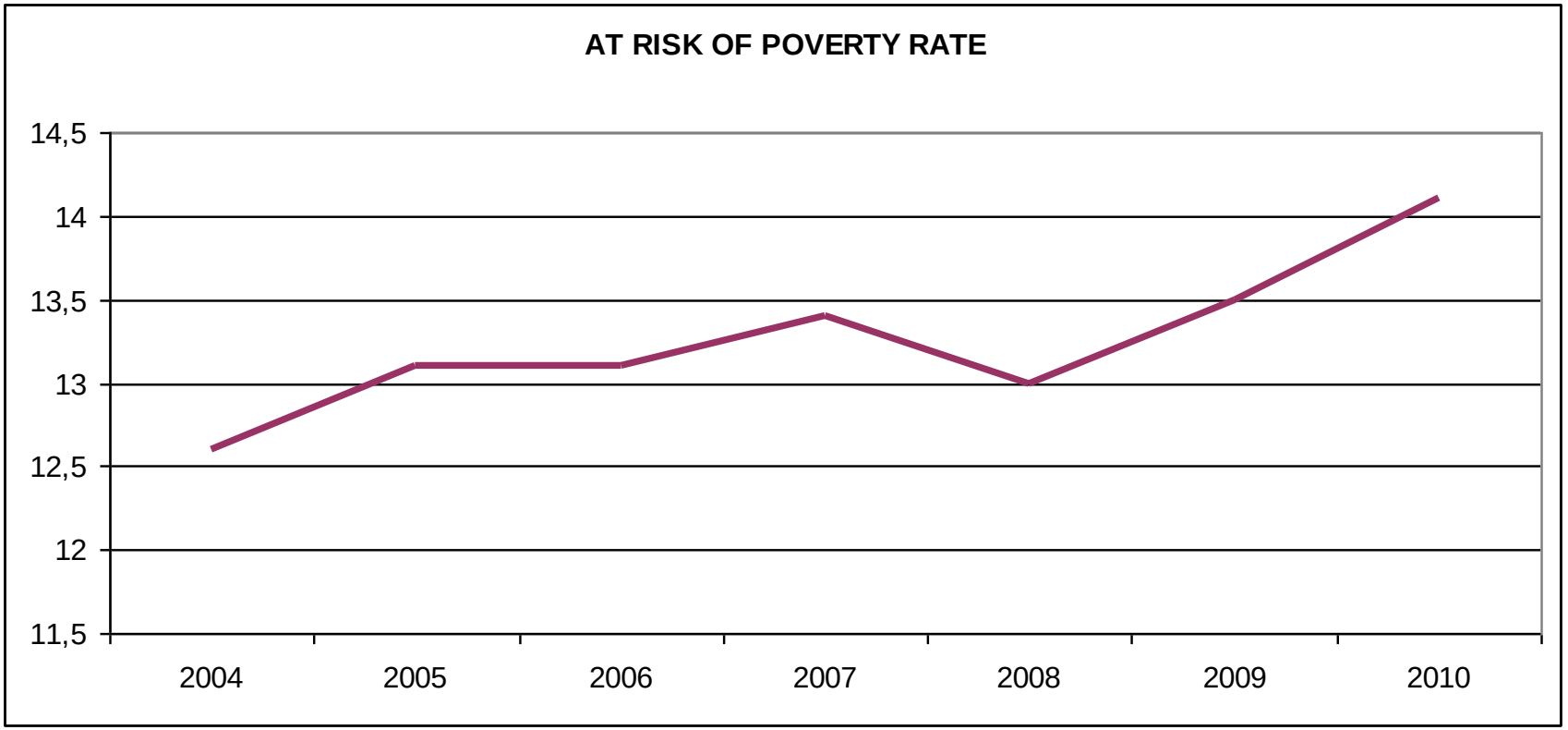
Technical issues

How to deal with attrition ?

- Volume
- Selectivity
- Remedy

-> Burricand & Lorgnet (2014) INSEE

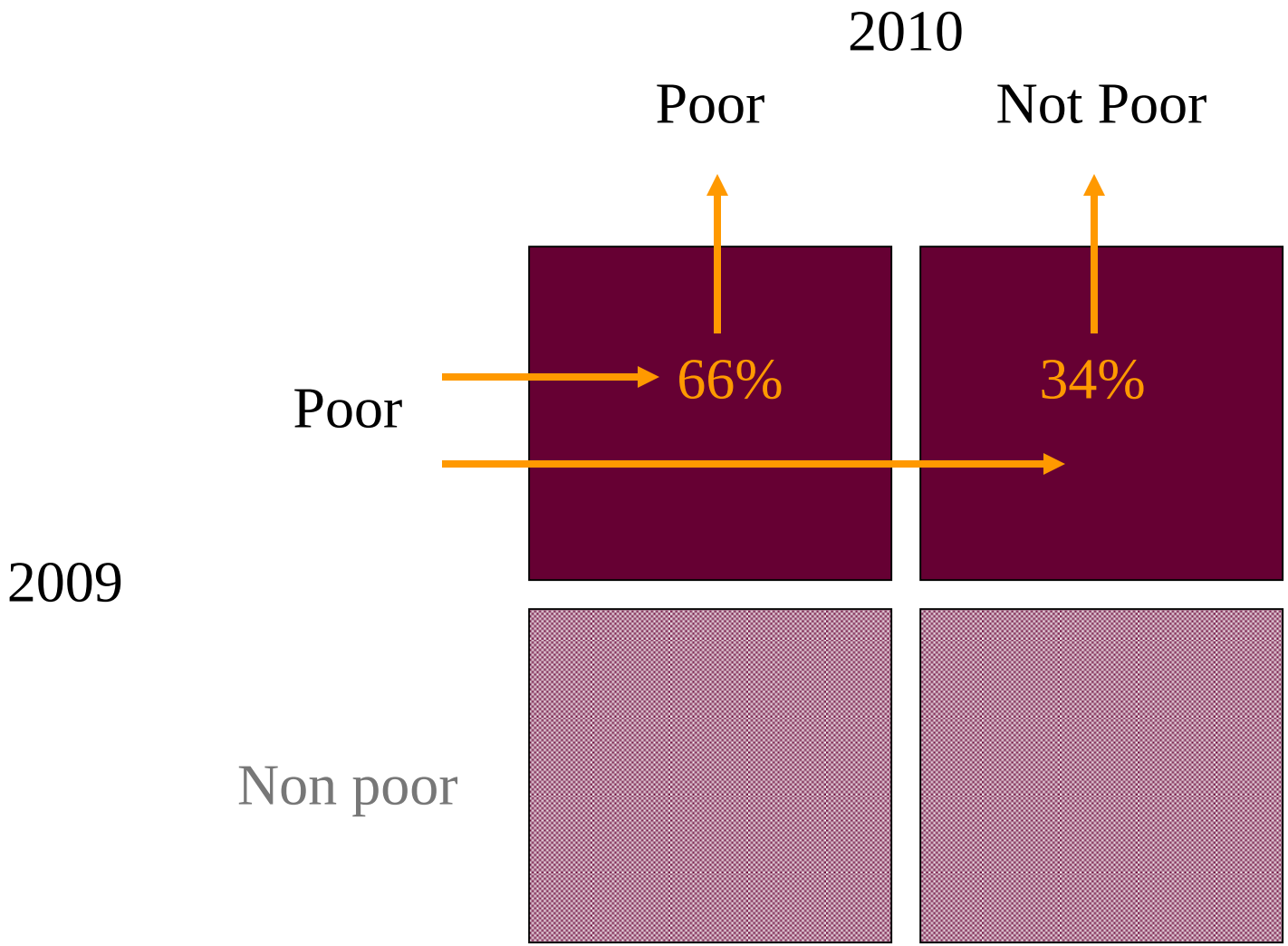
Some recent results on poverty trends in France



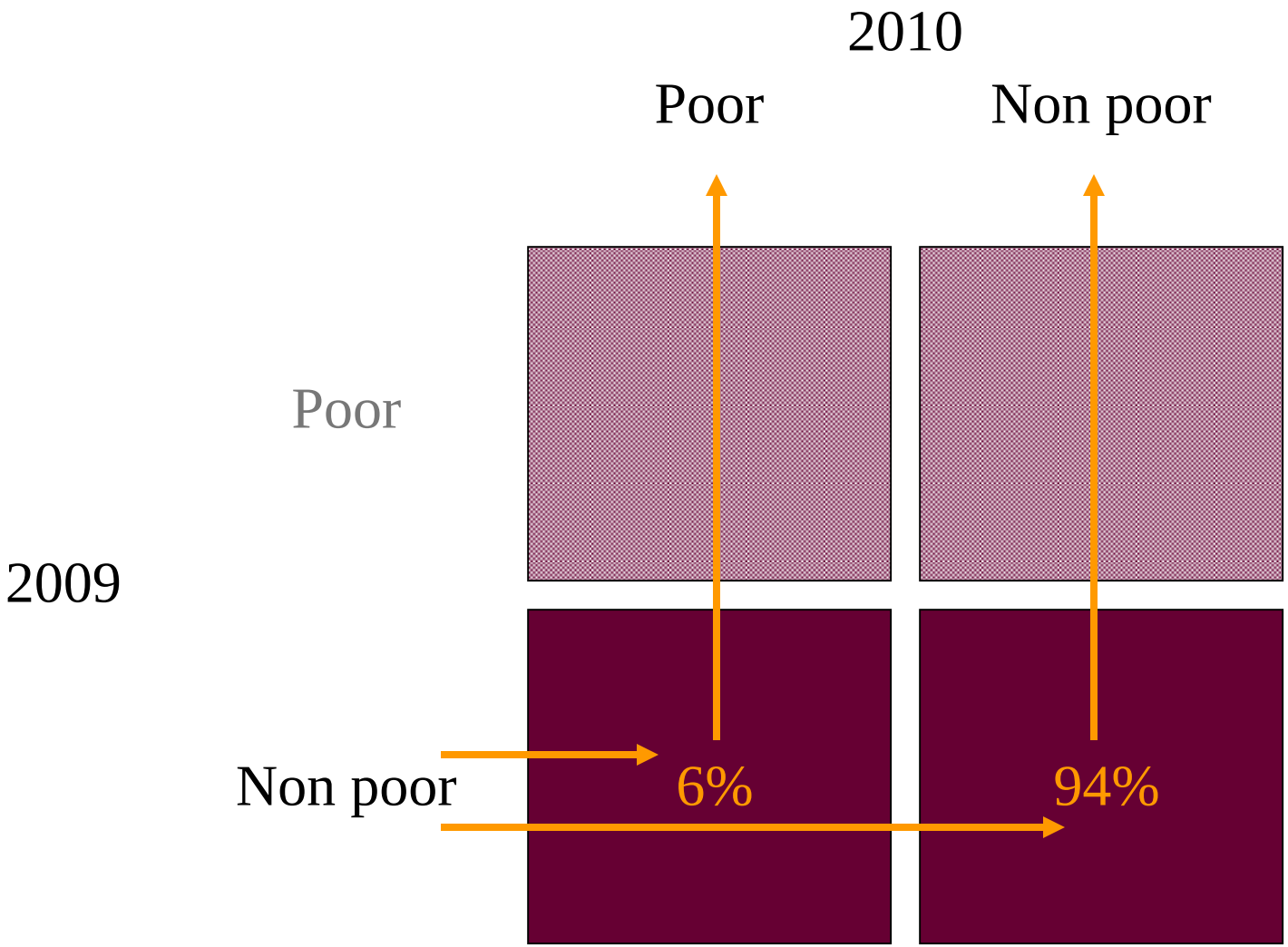
Poverty is not a permanent state

Observed ATP is the result of flows in and out

34% of person at risk of poverty in 2009 stepped out of poverty following year



6% of non ARP in 2009 fell in poverty in 2010



Year-to-year transition rates

	Entry rate	Exit rate
2004-2005	6,4	42,2
2005-2006	5,5	46,2
2006-2007	6,8	51,1
2007-2008	5,4	41,2
2008-2009	4,6	36,9
2009-2010	6,1	34,5
Mean	5,8	42,0

Poverty spell duration
different panel length deliver different tales

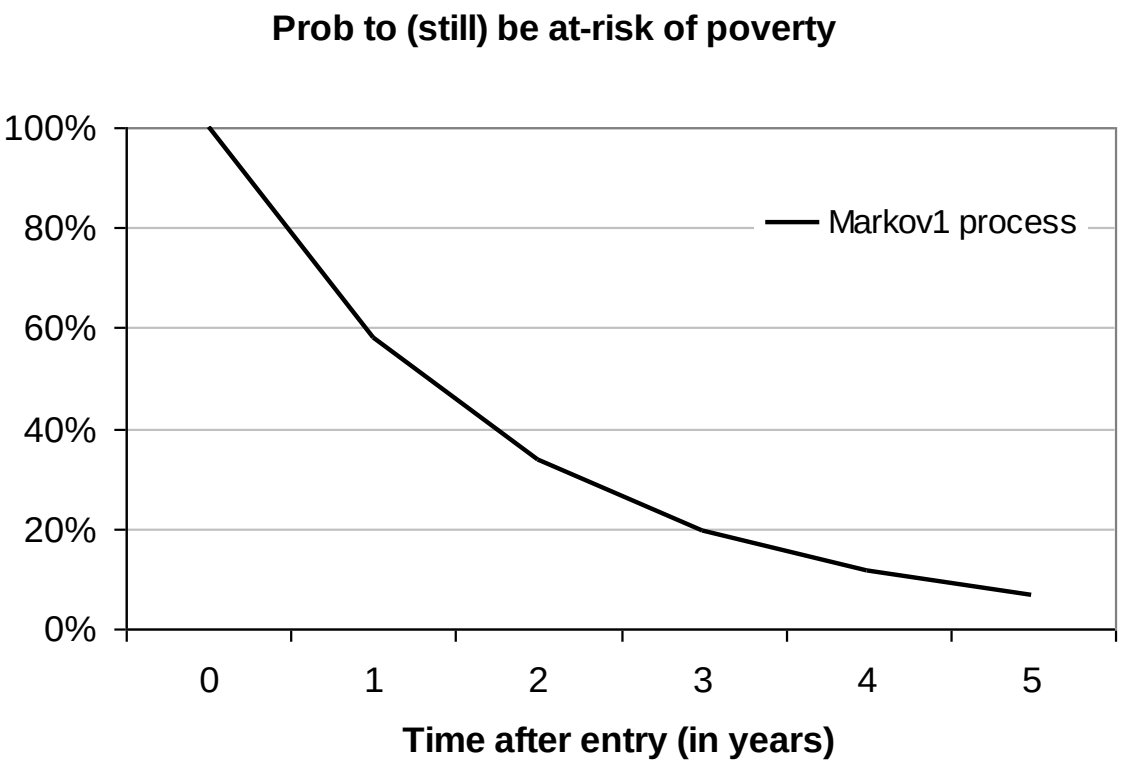
Markov 1 process

Transition rate = mean probability to step out on total population (42% on average over 2004-2010)

Data requirements= 2-year panel

Sample population= total population over 2 years

No duration dependence



Duration dependence over a 4-year window

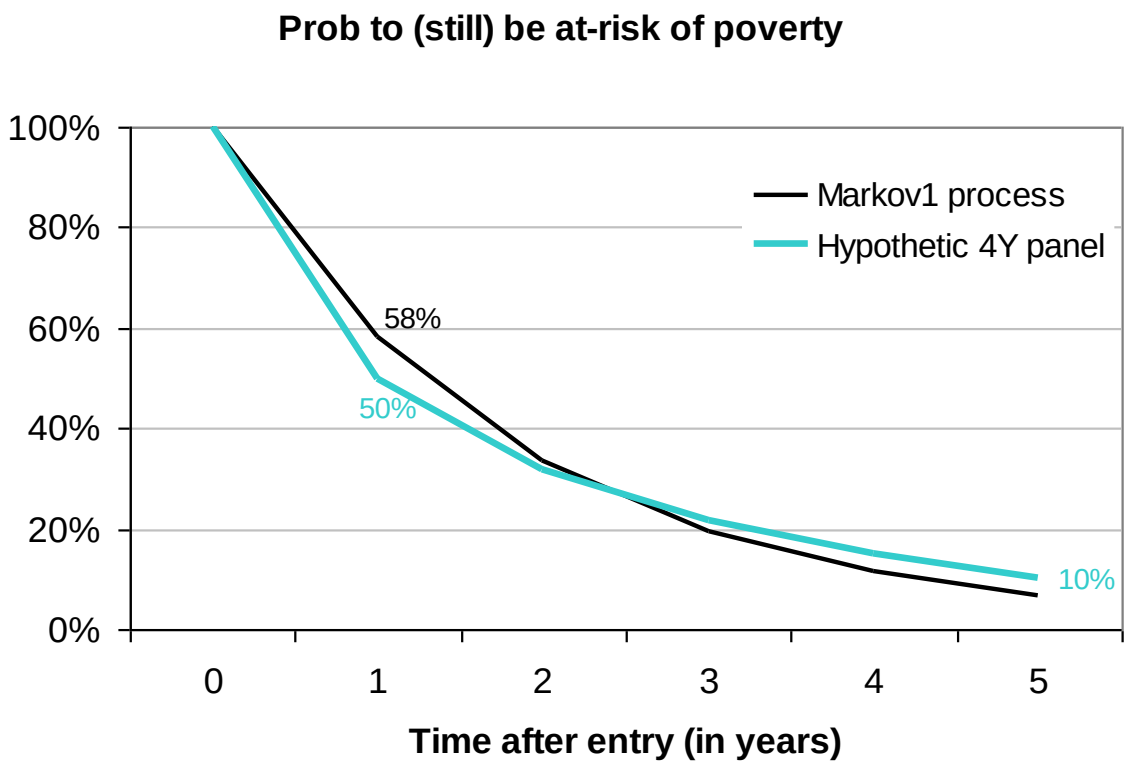
Accounting for duration dependence=exit probality might depend not only on status in t-1, but on total poverty spell length before t

Survival function = Kaplan-Meier estimates using an hypothetically 4-year SILC for France

Data requirements=4-year panel

Sample population=population falling into poverty over the 4-year observation period

Duration dependence over a 4-year window



Duration dependence over a 7-year window

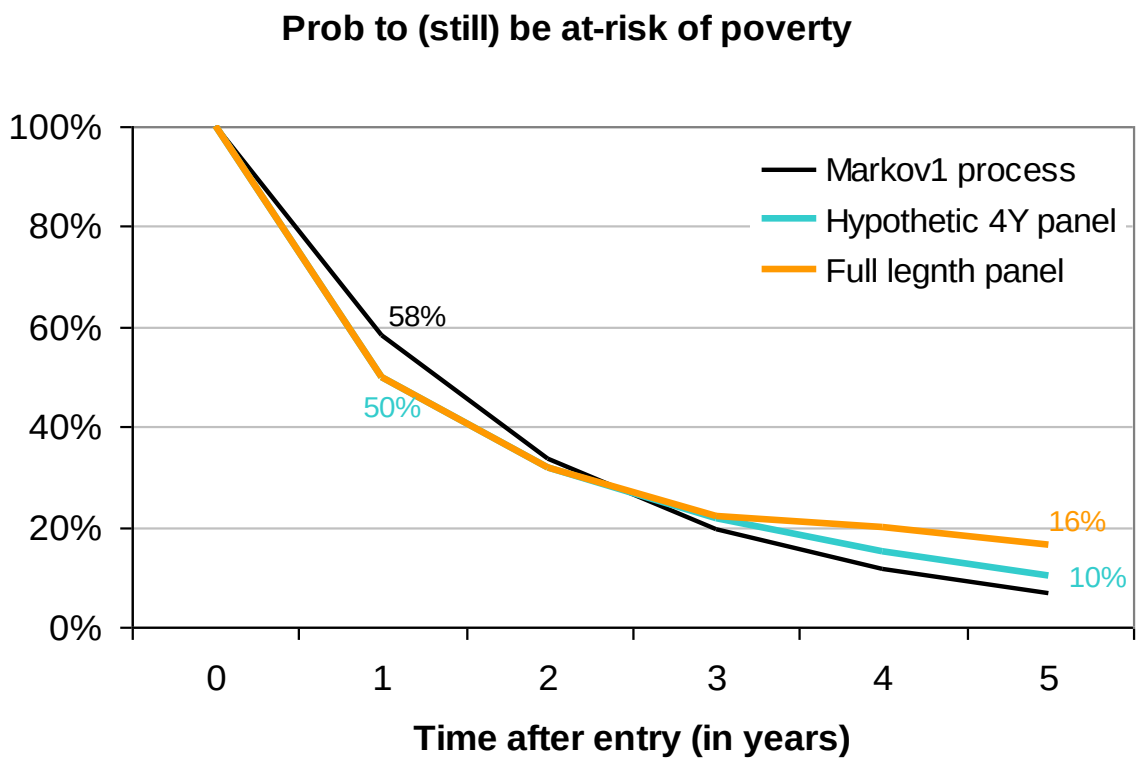
Duration dependence friendly estimate

Survival function = Kaplan-Meier estimates using a full panel length

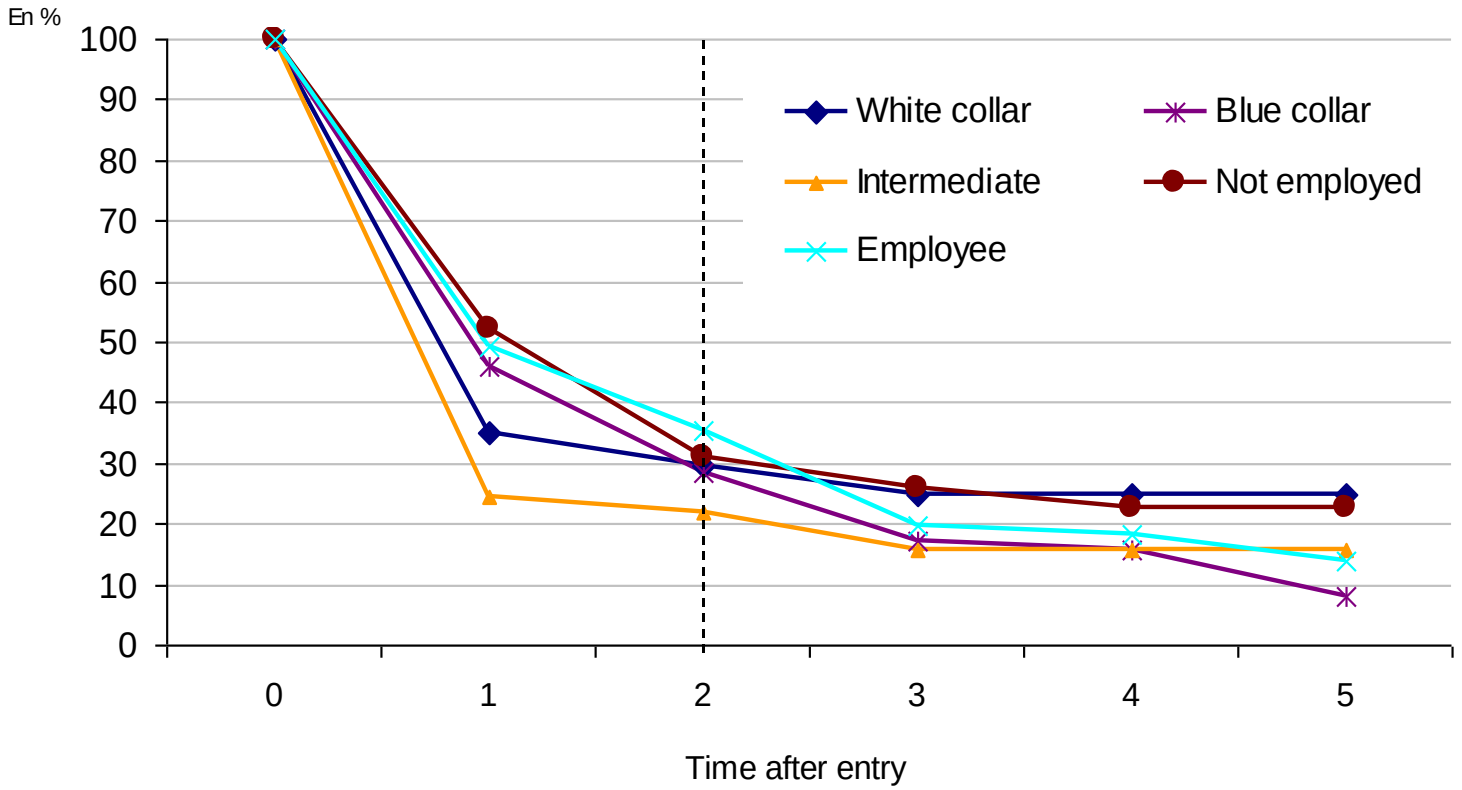
Data requirements=7-year panel

Sample population= person falling into poverty over the period

Duration dependence over a 7-year window



Spell duration / social categories



Can we trust these results ?

- Technical issues
  - How to deal with attrition ?
    - Volume
    - Selectivity
    - Remedy

How is attrition measured ?

Start from a sample of respondents in wave 1

Nature of non response in subsequent waves :

(OS) Out of scope :
Death, move in a hh living in a community, move abroad

(NL) Not located
Geographical move

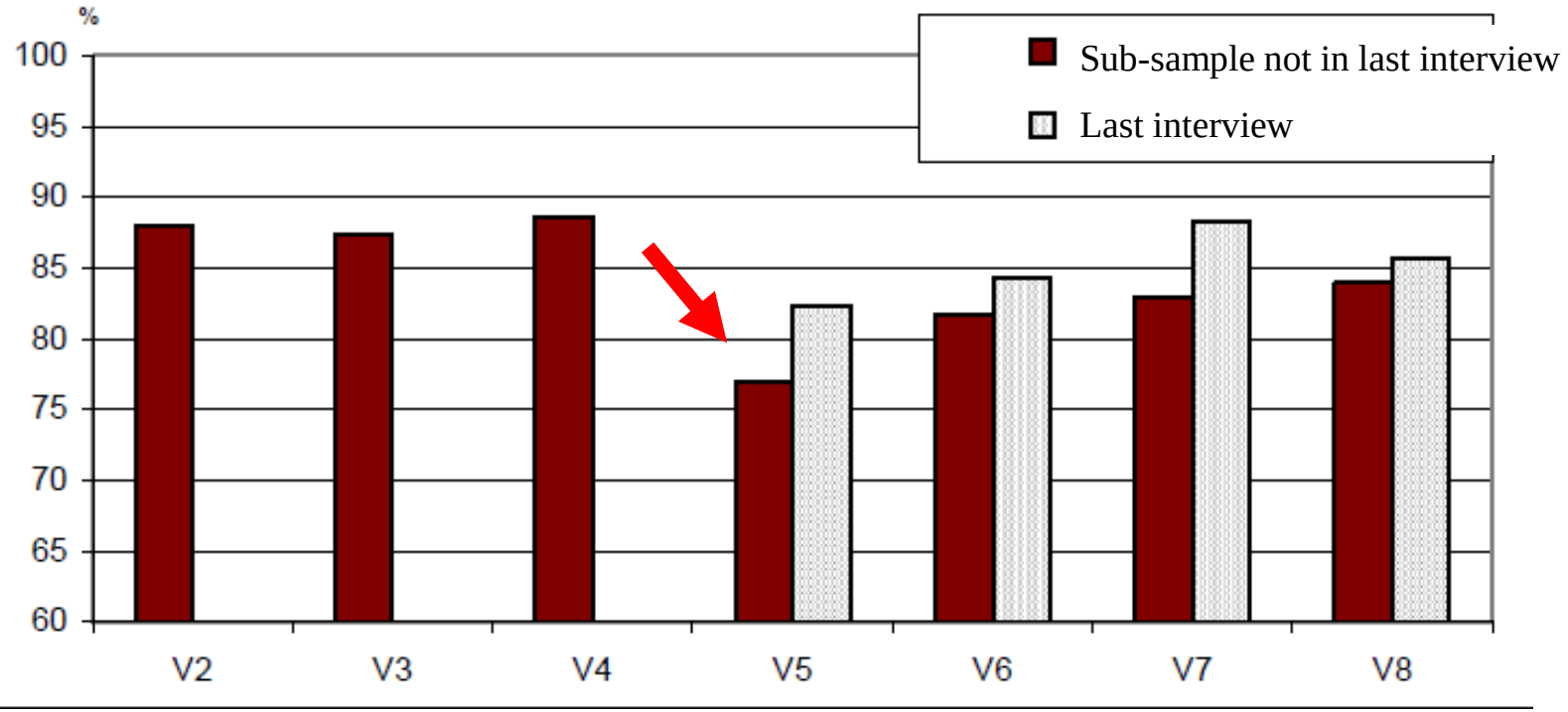
(NI) No Initial contact
Contact unavailable, long-term absence

(NC) Not contacted during fieldwork period

(R) Refusal

Patterns of non response across waves

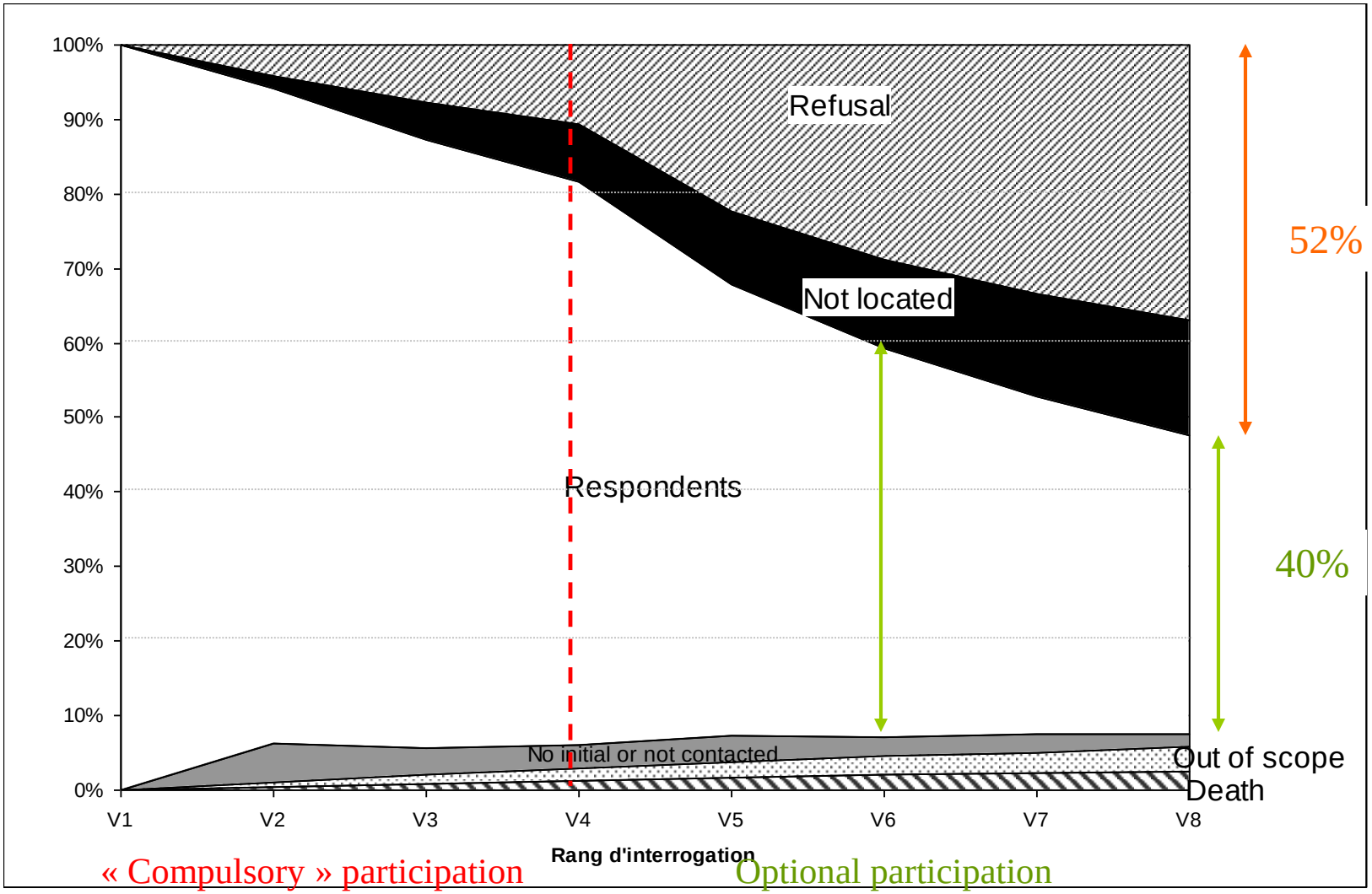
Gross response rate in each wave



« Compulsory » participation

Optional participation

Cumulative attrition over 8 years



How selective ?

Factors affecting the probability of non response

Residential mobility	hh mover + itwr change	0,04
	hh mover no itwr change	-0,03
	indiv mover out of hh	0,18
itwr / itwee relationship	same address, interviewer change	0,05
Compulsory vs optional itw	1st optional itw	0,11
	other optional itw	0,04
Poverty status in year N-1	income poverty & materially deprived	0,04
	income poverty or materially deprived	0,03
	bad health	0,02

Remedy to selective attrition:
reweighting process

Step1 : Models for non response

Models for initial non response

Models for non response in each subsequent wave

- stock-up all samples in similar wave

Ex: model for 2nd wave is estimated on

Entrants in 2004 - still respondent in 2005

Entrants in 2005 – still respondent in 2006

…

- estimate of Logit model for non response

- select main significant covariables to create Homogenous Response Group (HRG)

- impute the mean non response rate in each HRG

Remedy to selective attrition:
reweighting process

Step1 : Models for non response

Covariates for models in wave 2+

covariates from wave t-1
- change of dwelling (residential mobility) since previous wave (t-1)
- Move of family members since previous wave

covariates from wave 1
- Type of dwelling
- Family composition
- Location area
- Quartile of equivalized income
- Employment contract type
- Nationality

Remedy to selective attrition:
reweighting process

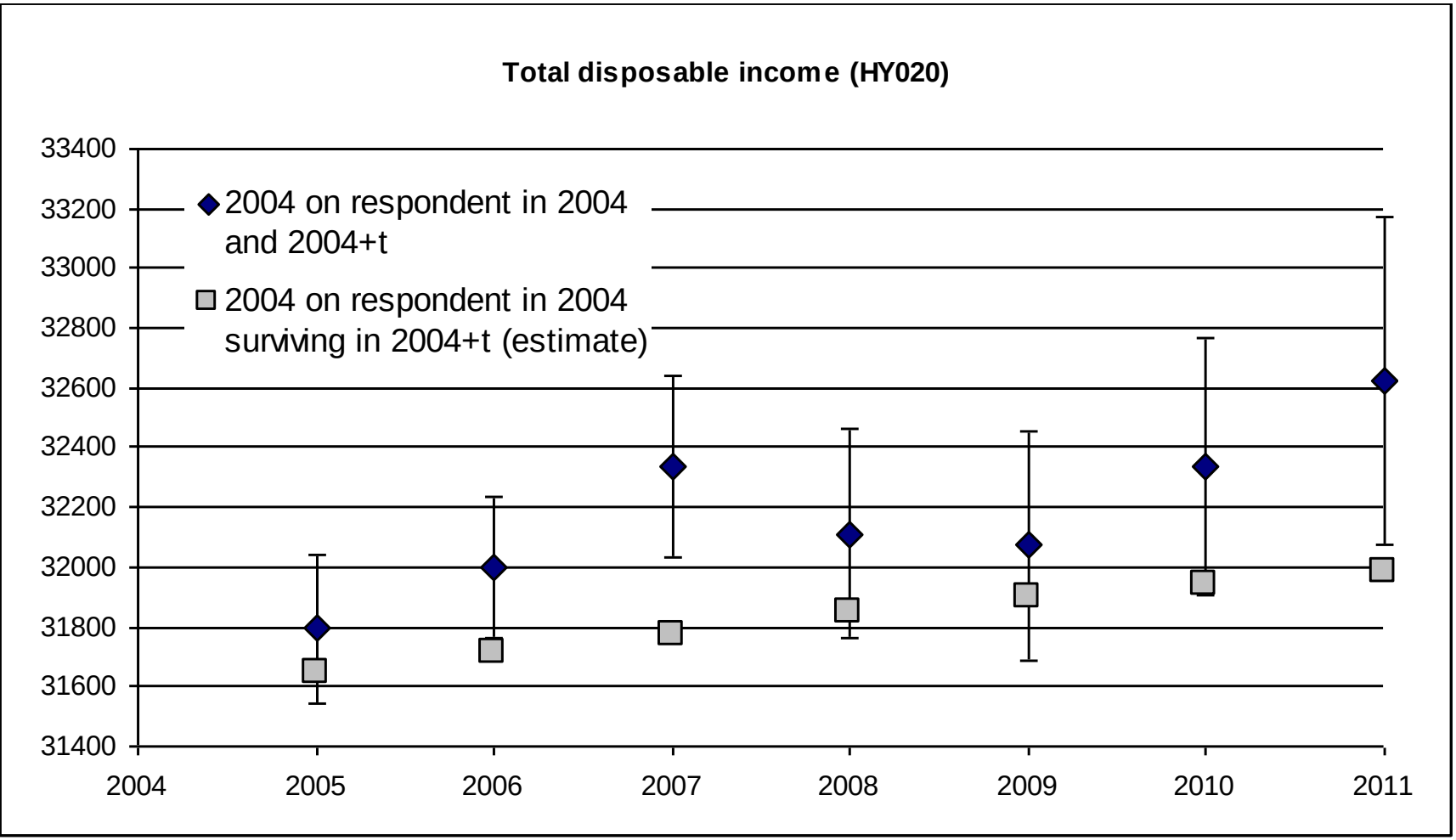
Step 2: Calibration on external margins

Margins

- HH population size by age of RP (in 5 class)
- HH population size by territory pop density
- HH population size by family composition
- Individual population size by gender x age
- HH population size by social categories

Conditional on these observables (step1/2),
attrition is supposed to happen at random

Is attrition random
(conditional on observables) ?



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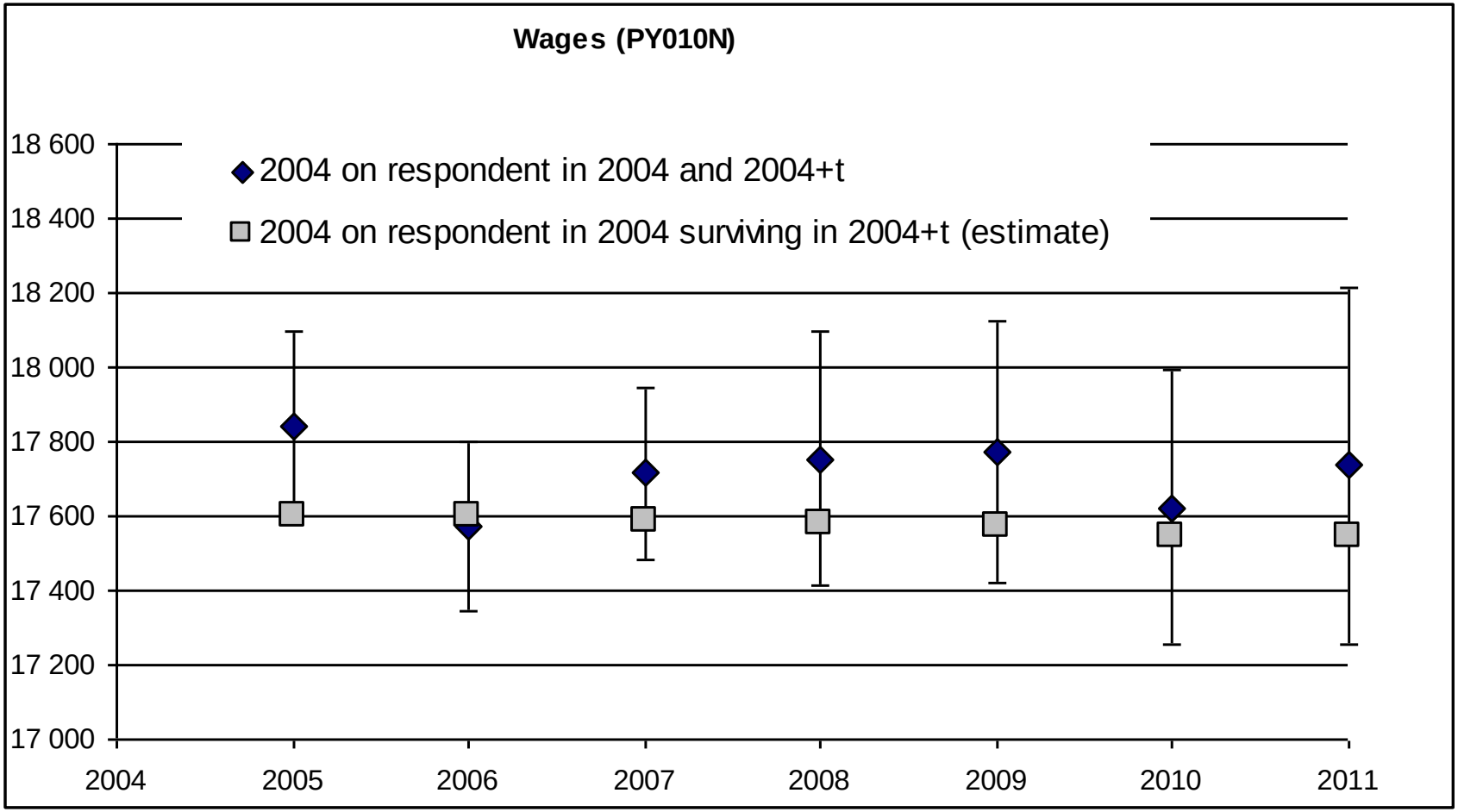

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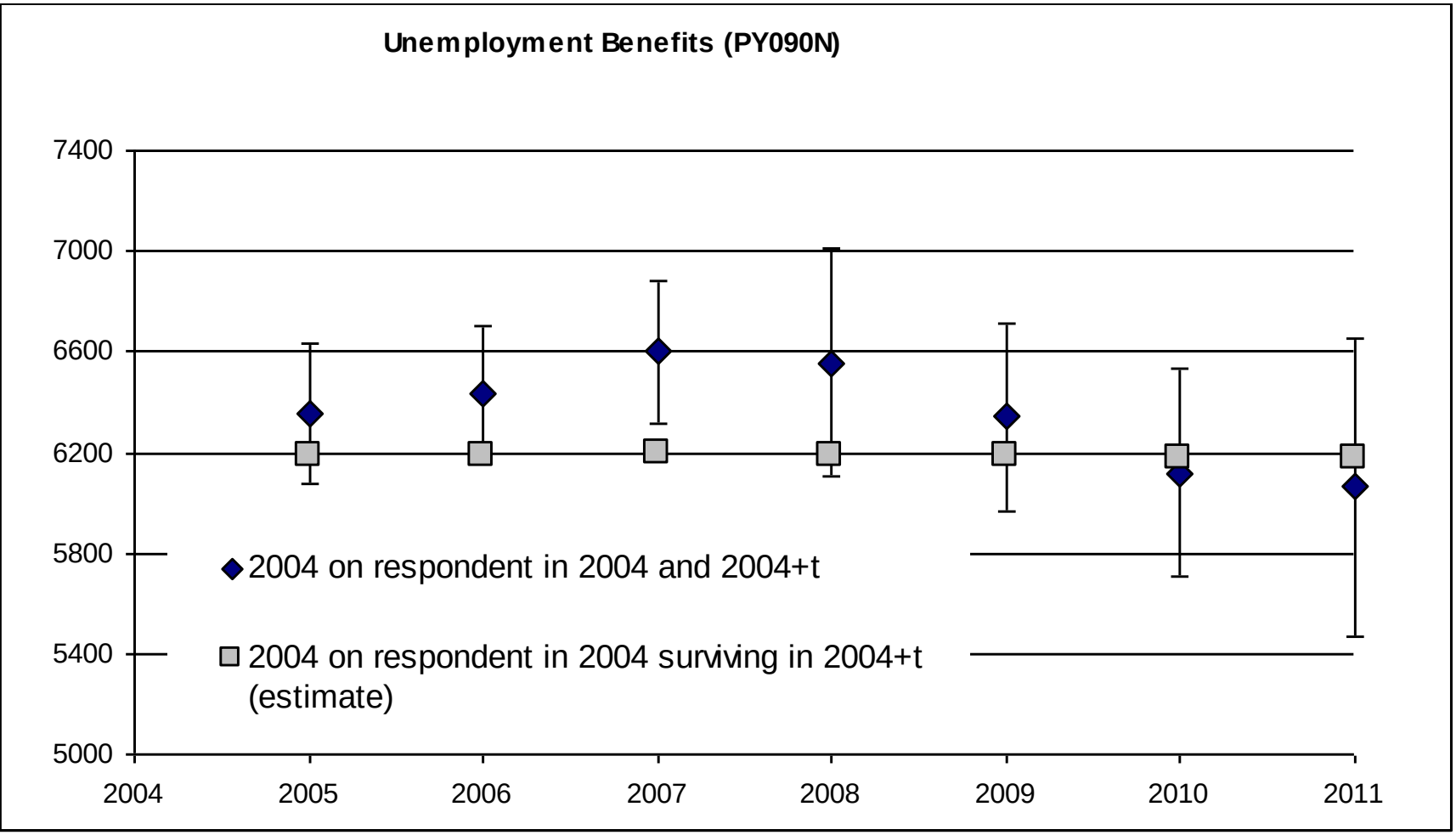

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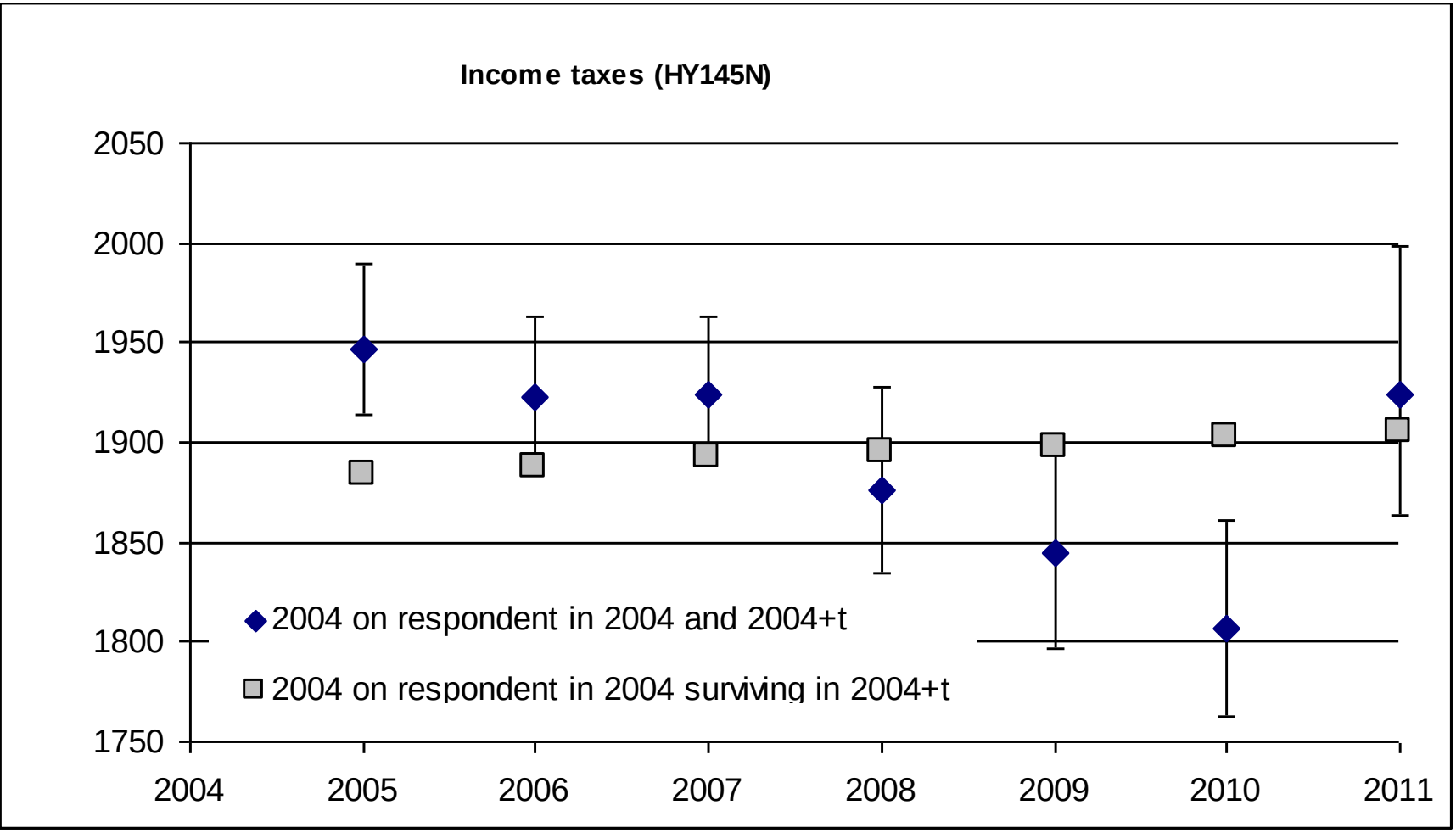

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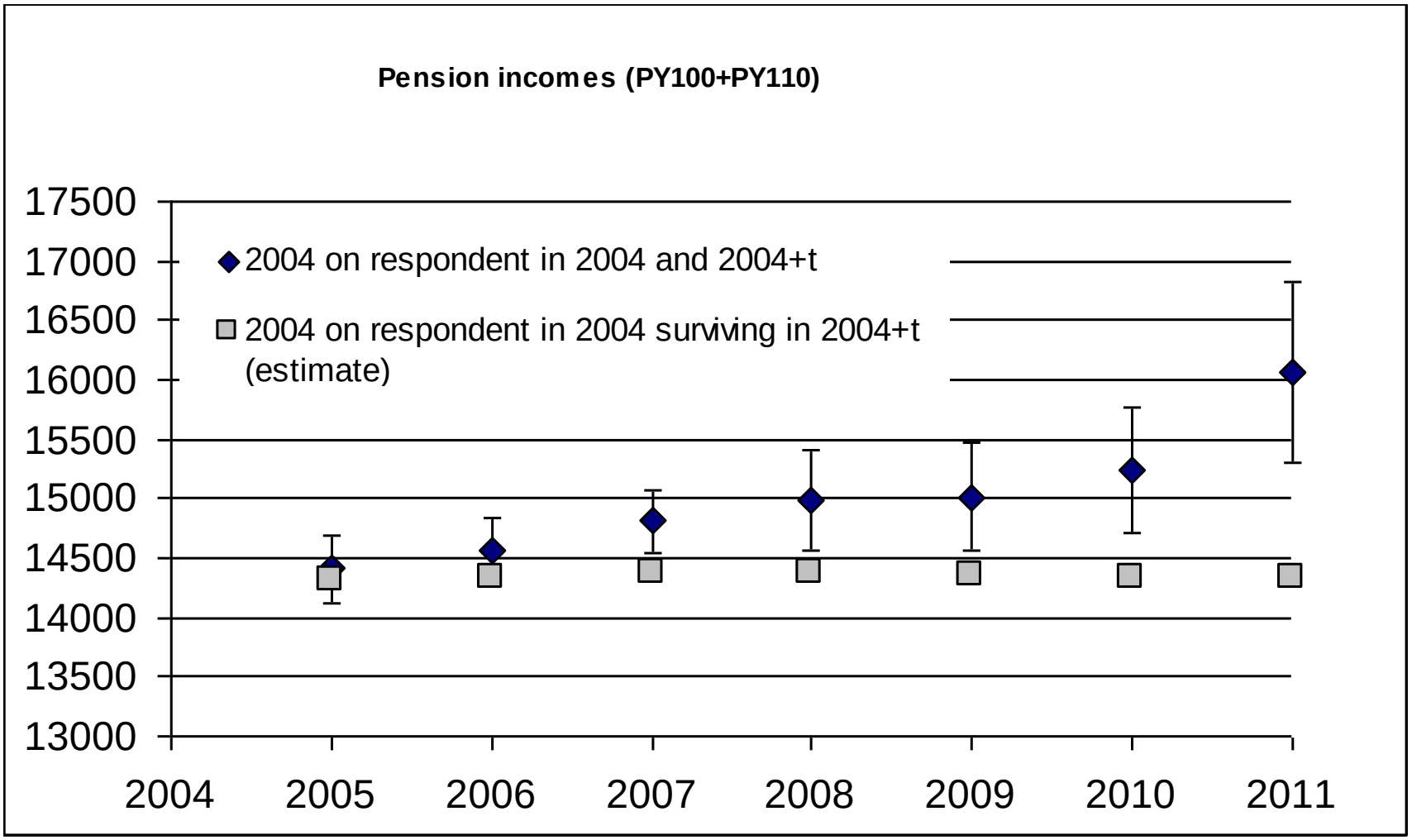

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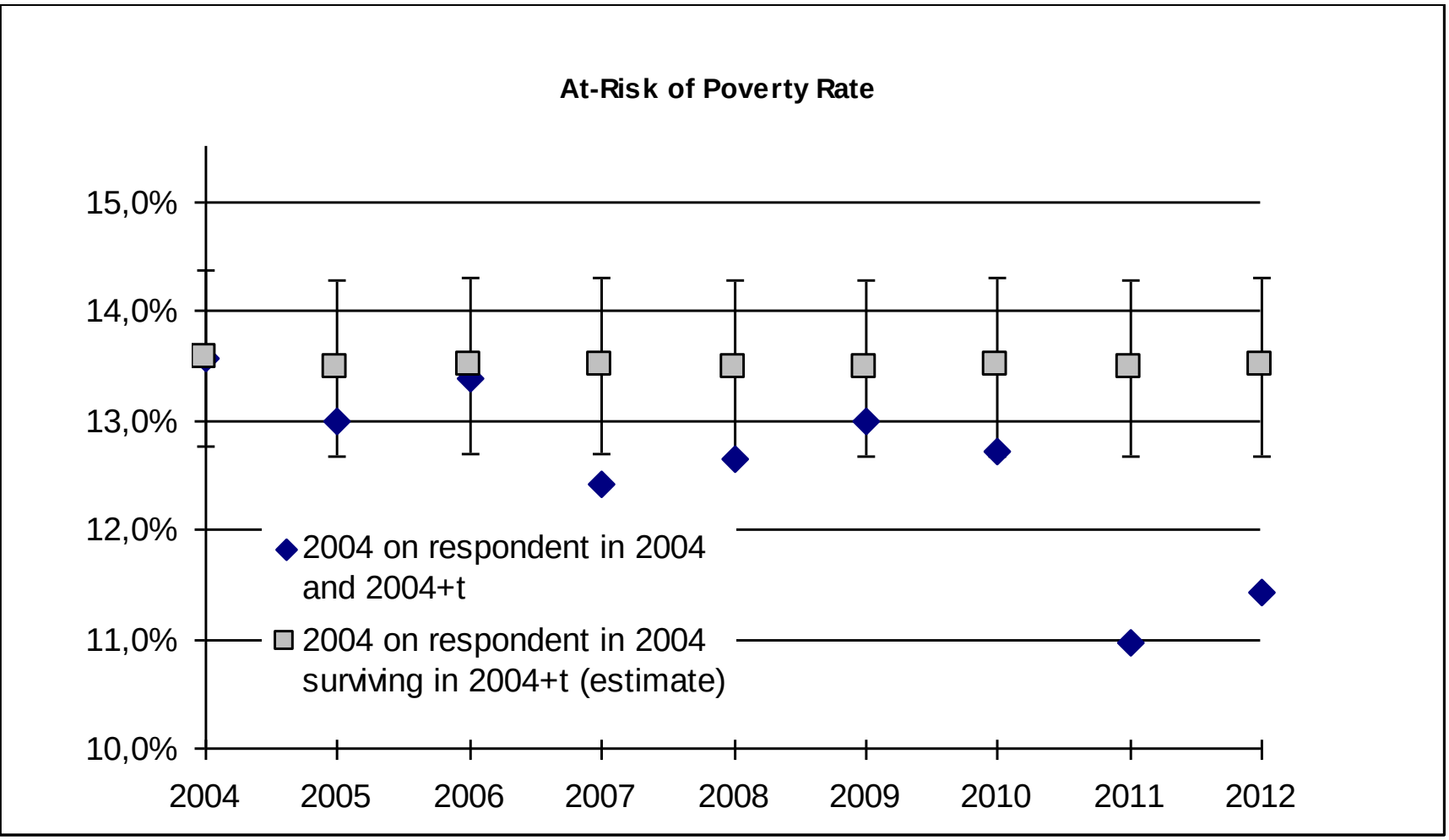

Roadmap for improvements

Step 1: Models for non response

Covariates for models in wave 2+

covariates from wave t-1

- change of dwelling (residential mobility) since previous wave (t-1)
- Move of family members since previous wave

covariates from wave 1

- Type of dwelling
- Family composition
- …

+ new covariates

- Poverty status in t-1 (ARP+AROPE)
- Quartile of equivalized income in t-1
- Health status in t-1

Roadmap for improvements

Step 2: Calibration on external margins

Margins

HH population size by age of RP (in 5 class)

…

New margins

Distributional features estimated on external sources

- Quintile of equivalized income
- Headcount ratios (through linearization)
- Gini (through linearization)

Building on other sources on income distribution:

- Enquête Revenus Fiscaux et Sociaux (same technology as SILC for income data collection, sample = 60k HH)

- FILOSOFI: exhaustive database (26mio HH)on hh income from tax report & social benefits institutions

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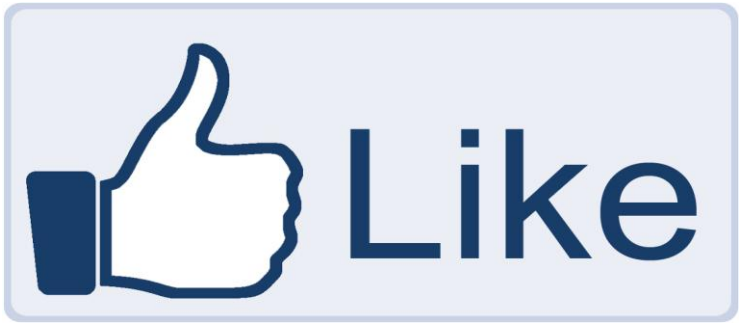

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