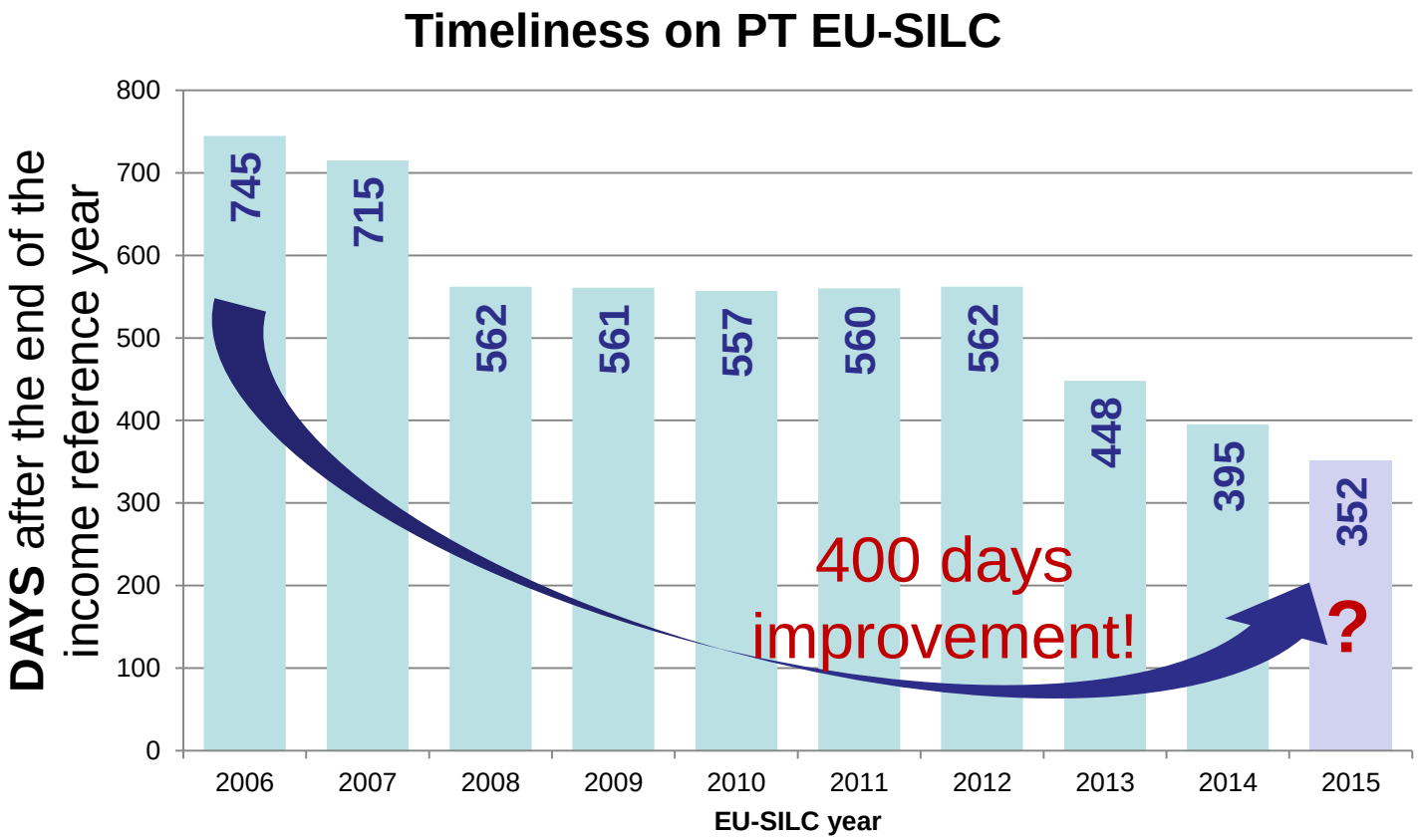
INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

Using micro-simulation in EU-SILC for early estimates of income: strengths and limitations

Lisbon, 101st DGINS Conference

24th September 2015

Timeliness

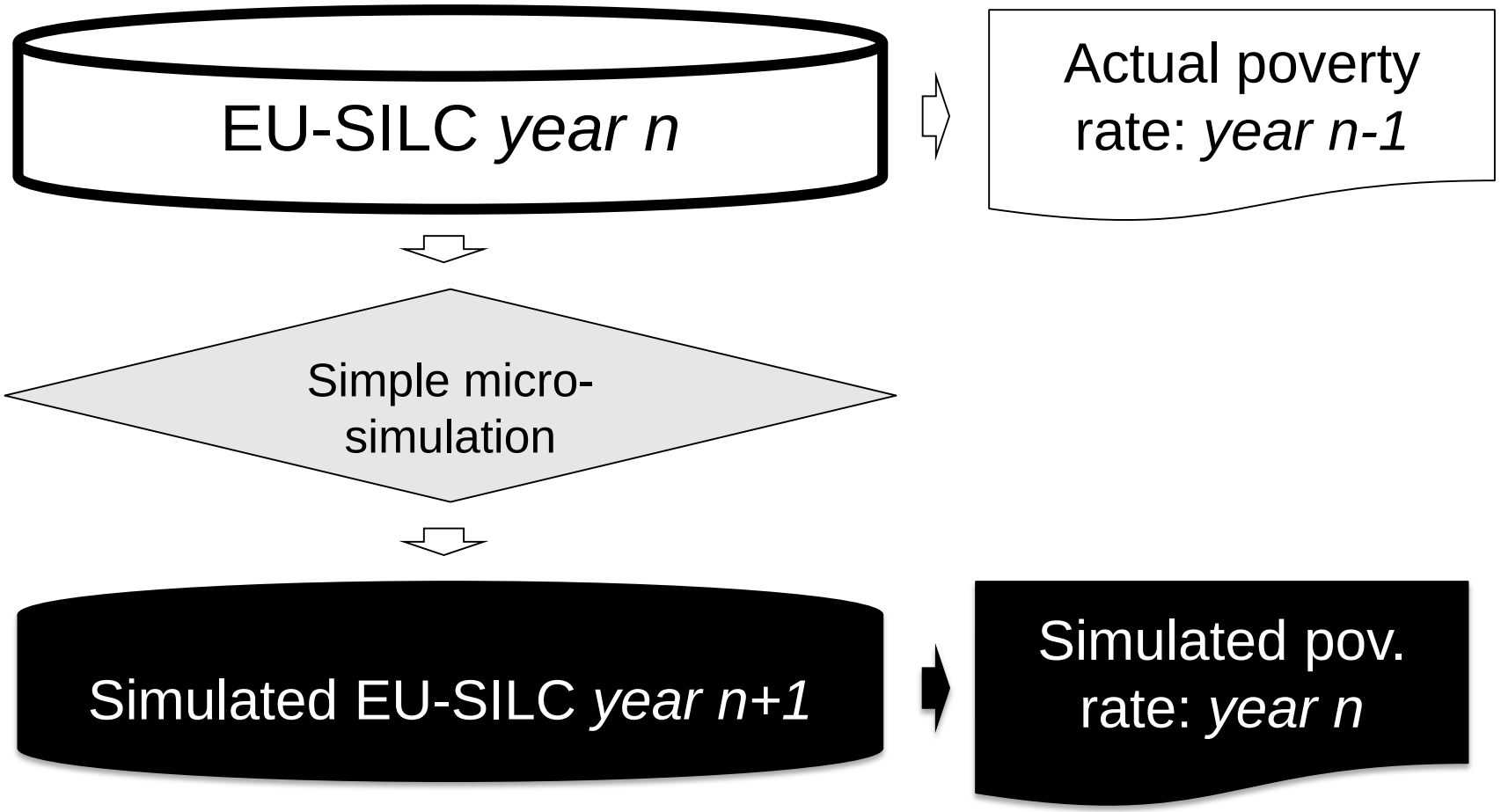

Timeliness on PT EU-SILC
DAYS after the end of the income reference year
800
700
600
500
400
300
200
100
0
745
715
562
561
557
560
562
448
395
352
?
400 days improvement!
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
EU-SILC year

Timeliness

- Is it possible to anticipate even further?
  - It might be, but not by too much
- What are the alternatives?
  - Advanced external indicators
  - Registers

  or…
  - **Nowcasting**

The model in brief



The model in brief

- Micro-simulation on three stages:

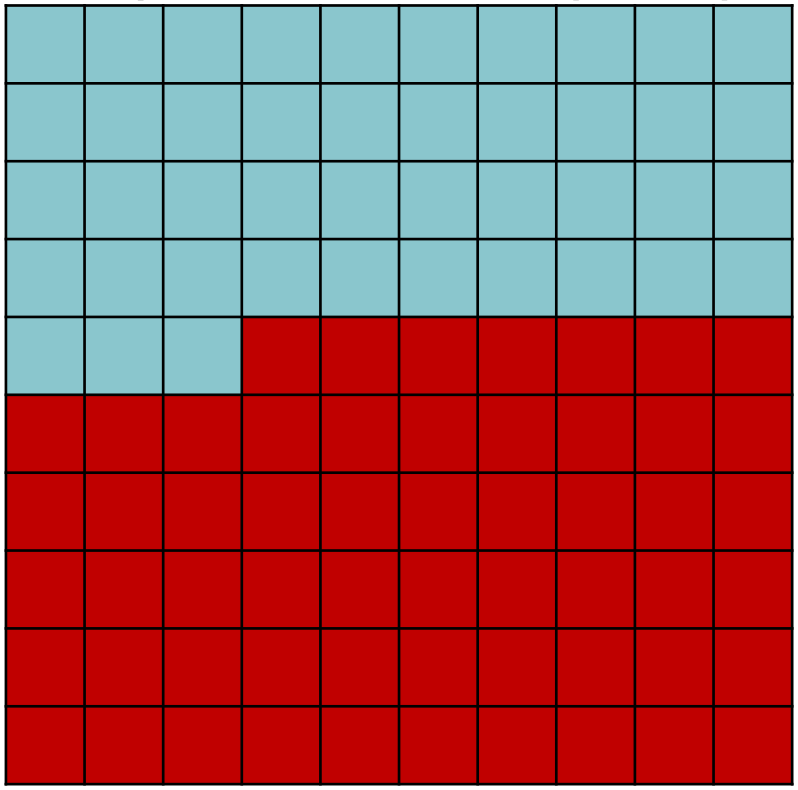
  #1: ***EMPLOYMENT TRANSITIONS***

  #2: ***POLICIES CHANGES***

  #3: ***INCOME UPDATES***

Stage 1: employment transitions (examples)

Population 16-64 (2012)



PY010G (employee inc.) > 0

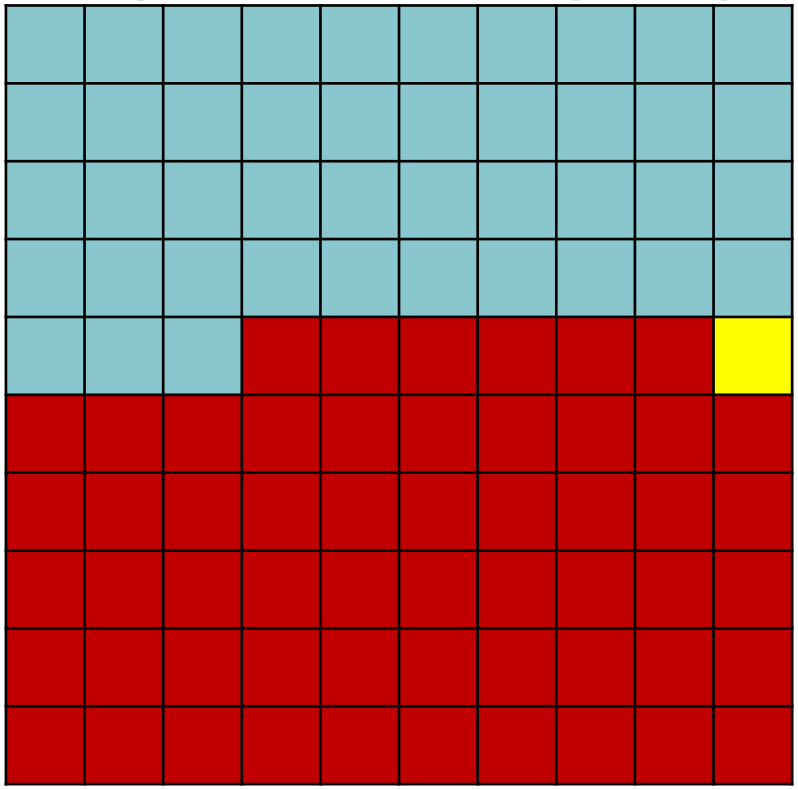
People who were employed (43%)

PY010G=0

People who weren't employed (57%)

Stage 1: employment transitions (examples)

Population 16-64 (2012)



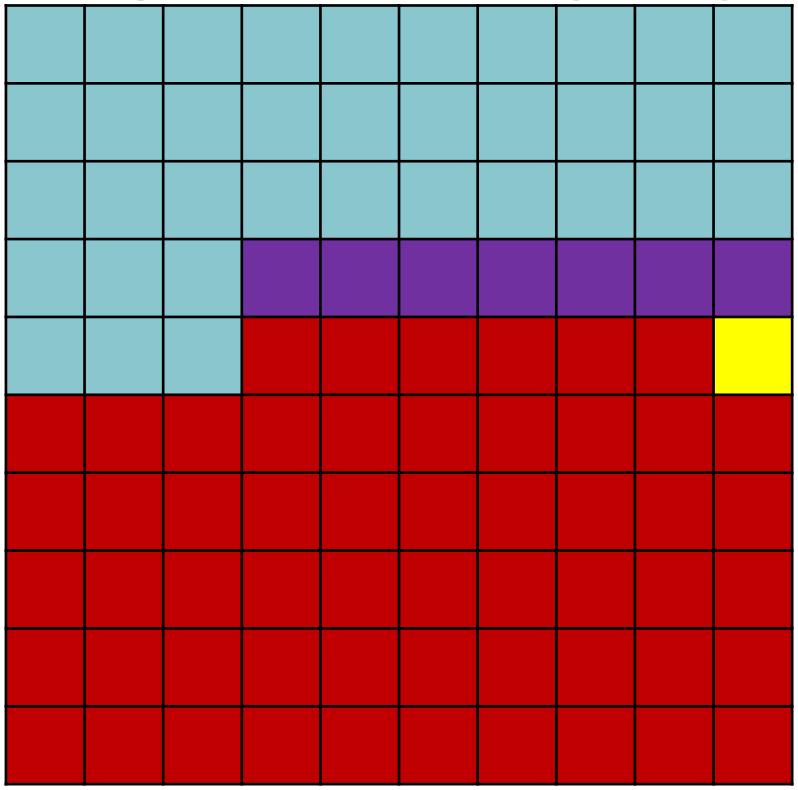
CURRENT gross monthly earnings for employees (at the time of the survey)

1 p.p. of those who had PY010G=0 show PY200G>0

"They get a job in 2013"

Stage 1: employment transitions (examples)

Population 16-64 (2012)



7.3 p.p. of those who had PY010G>0 show PY200G=0

"They lose their jobs in 2013"

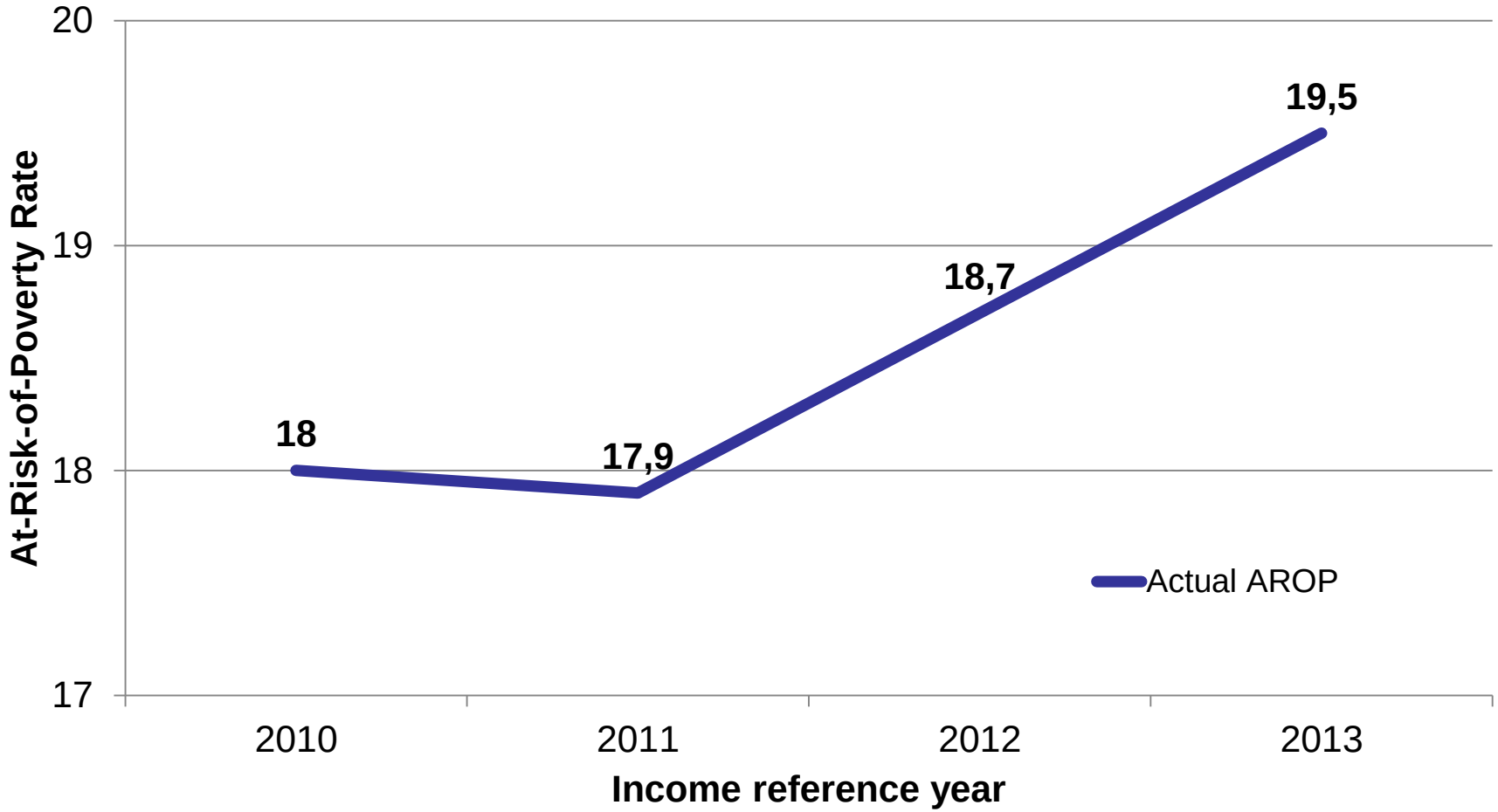
Stage 2: policies changes (examples)

- Austerity measures upgrades
  - In 2012, higher earning civil servants and pensioners had the holidays and christmas extra instalments suspended; In 2013, they were paid again → simulation calculates this increase over 2012 data.
- Minimum pensions upgrade
- Changes in unemployment benefit length in time
- Changes in withholding taxes (wages, self-employed earnings and pensions)

Stage 3: Updating incomes

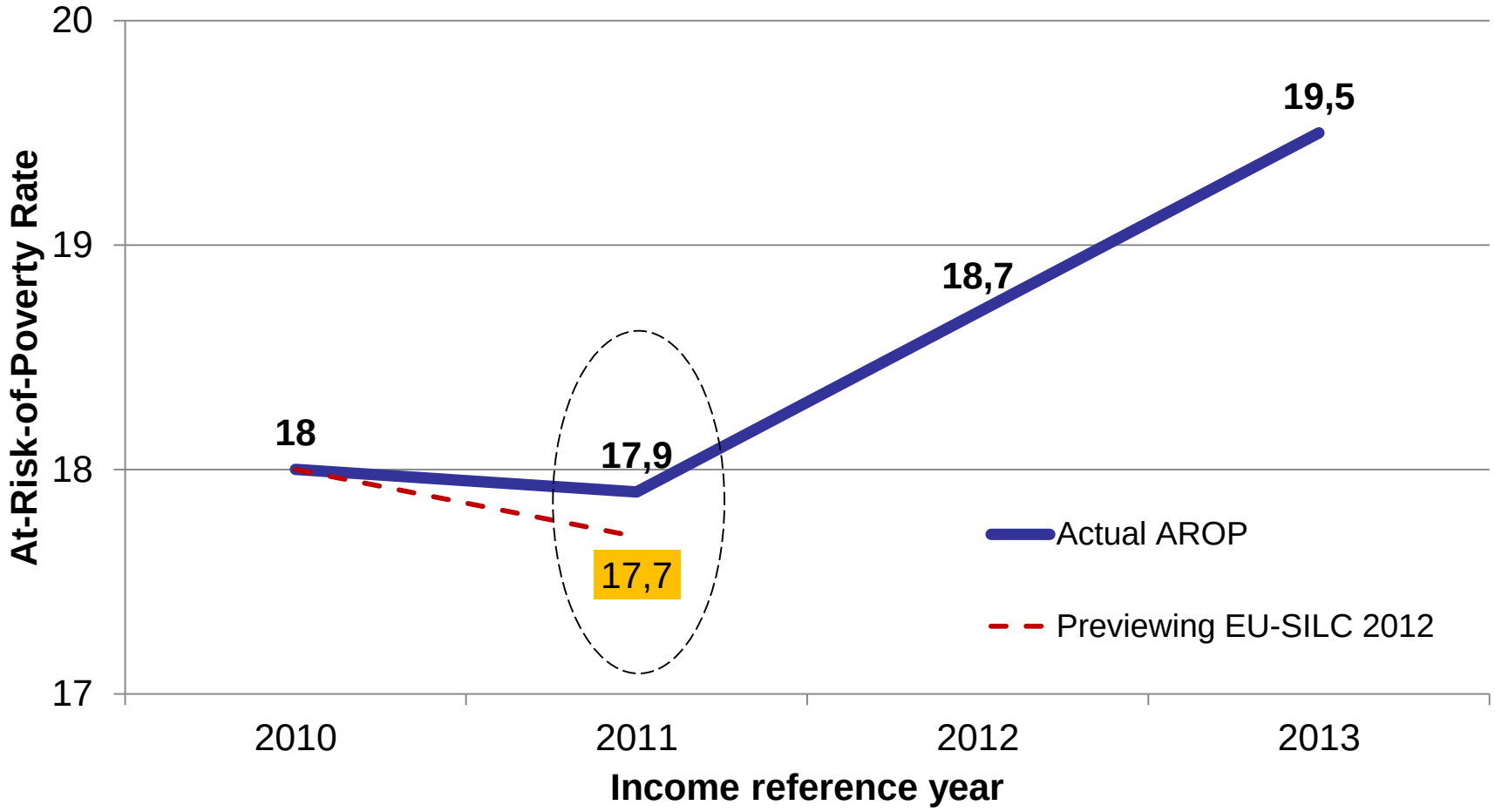
- Wages
  - Civil servants: 0%
  - Private sector: 1.43% (evolution on declared employee earnings to social security)
- Pensions (other than minimum): 0%
- Other income variables: 0.25% (CPI) or 0%

Results: poverty rate



Note: preliminary results!

Results: poverty rate



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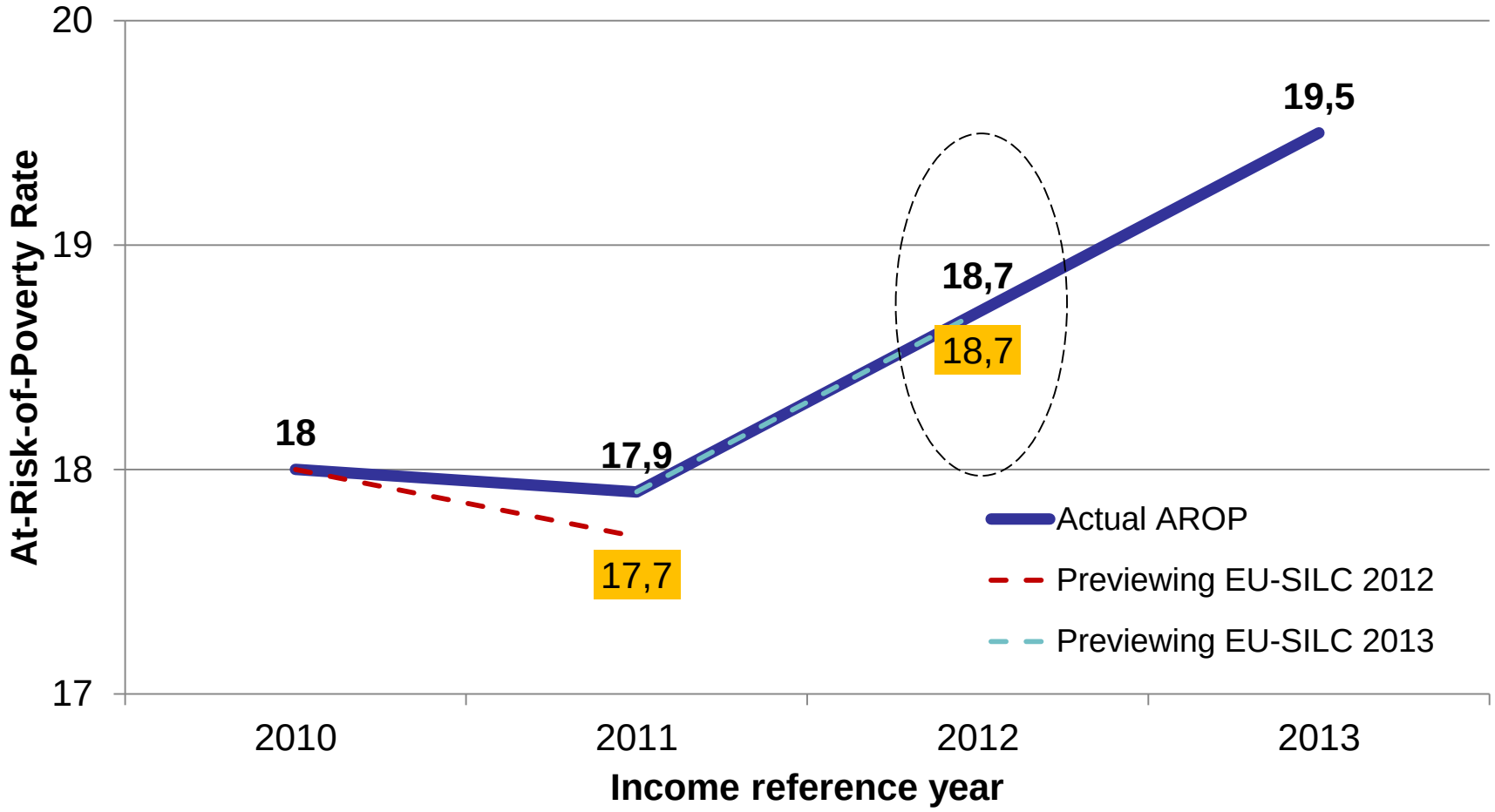
Results: poverty rate



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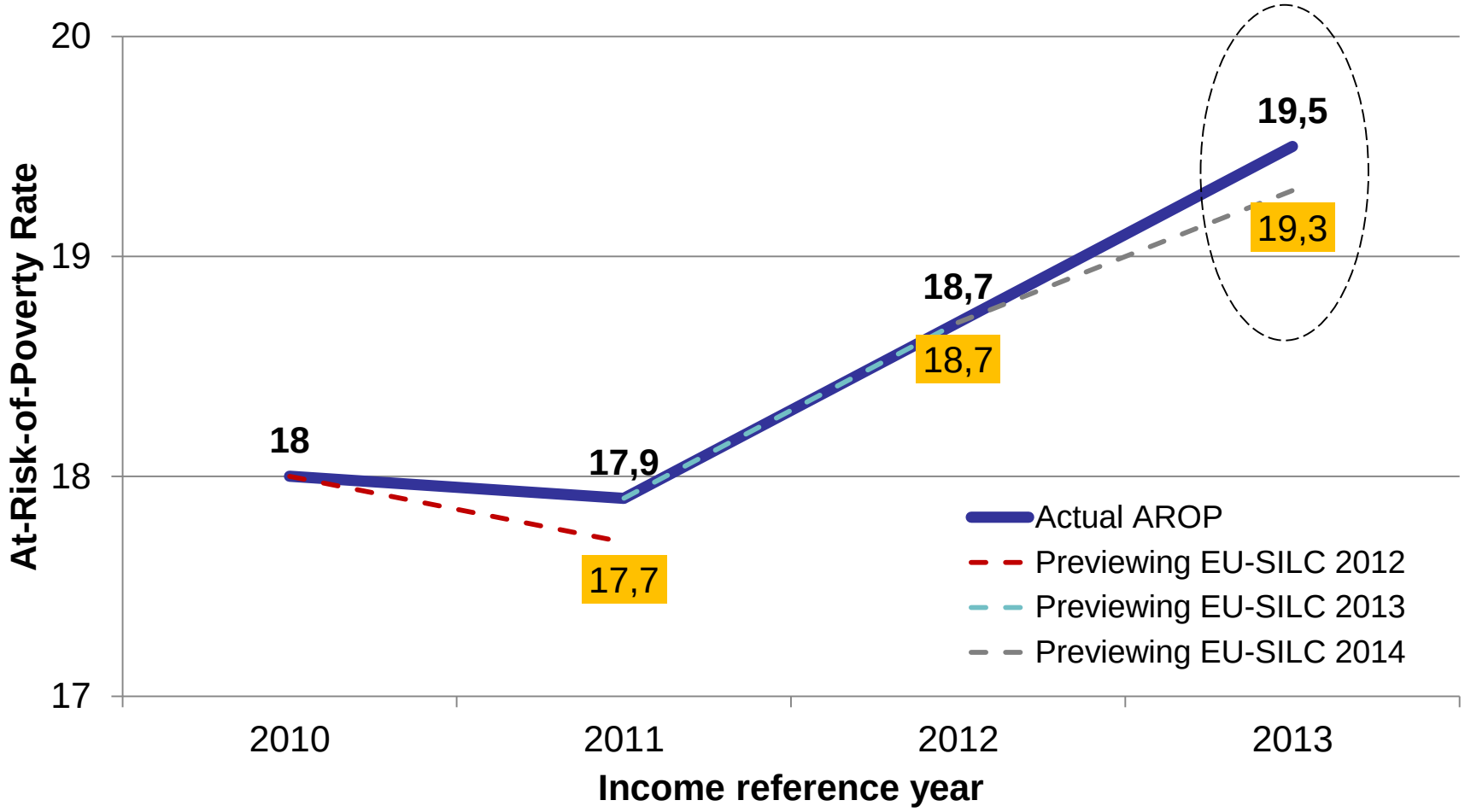
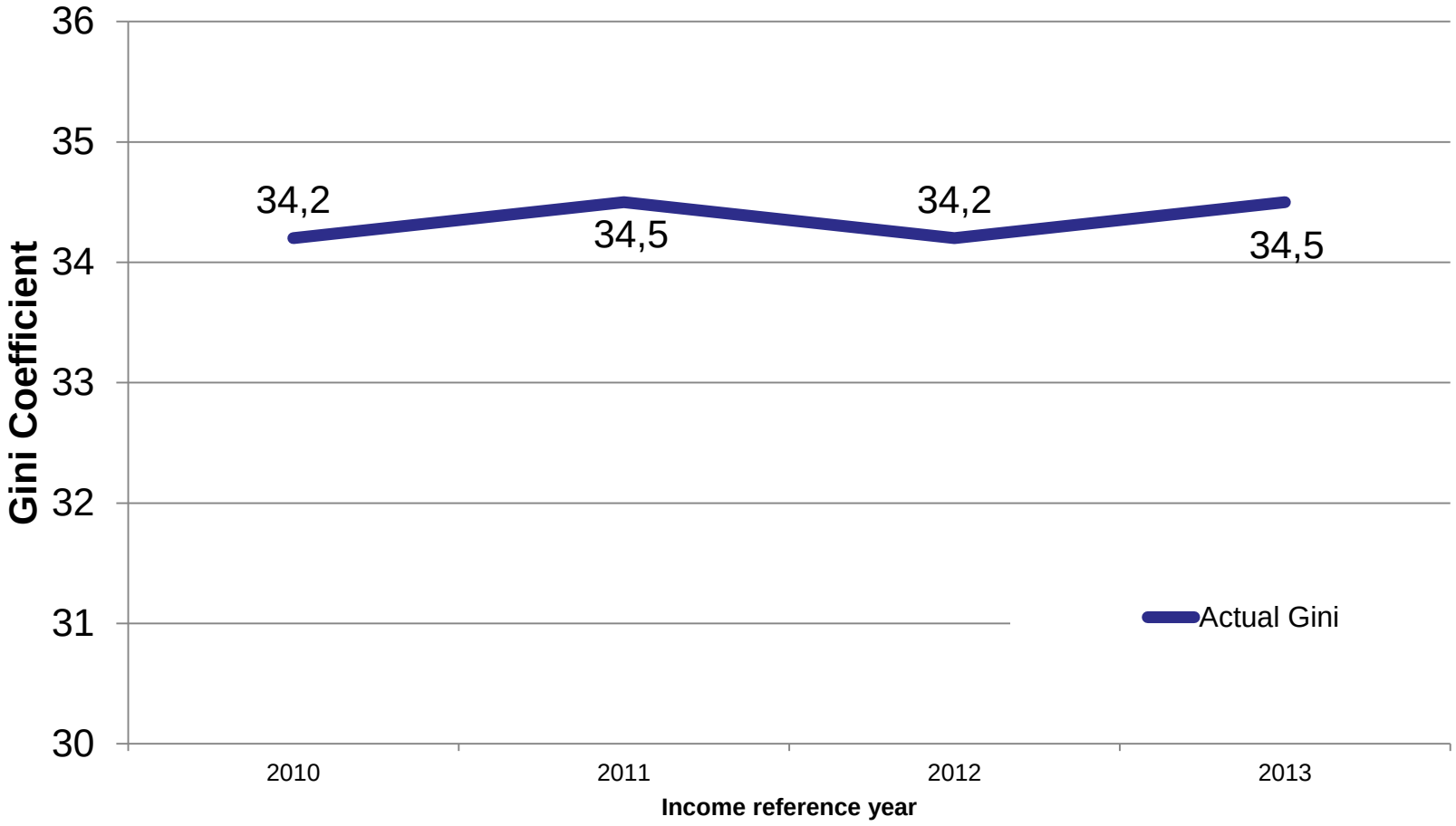
Results: poverty rate



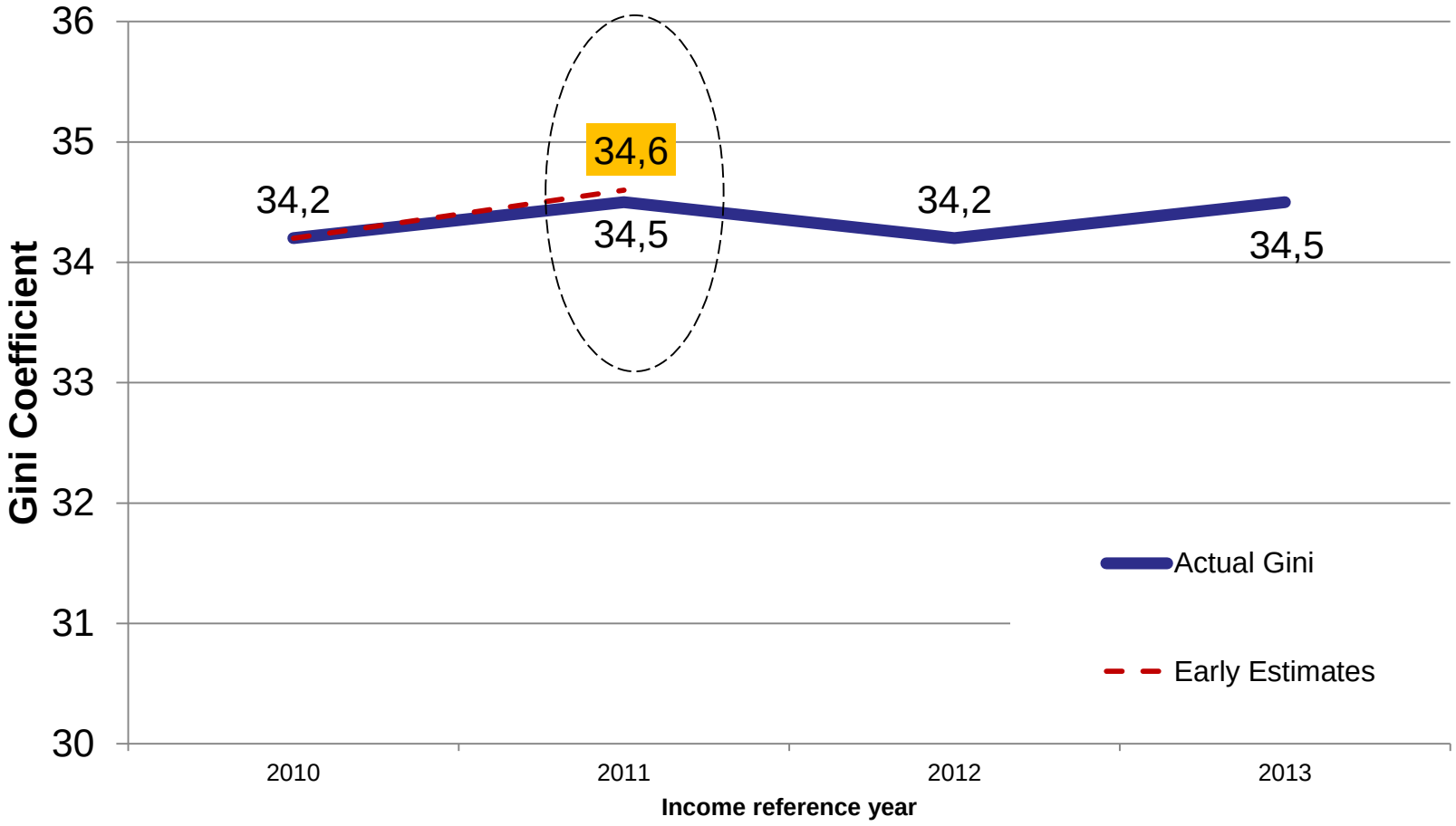
Note: preliminary results!

Results: Gini coefficient



Note: preliminary results!

Results: Gini coefficient



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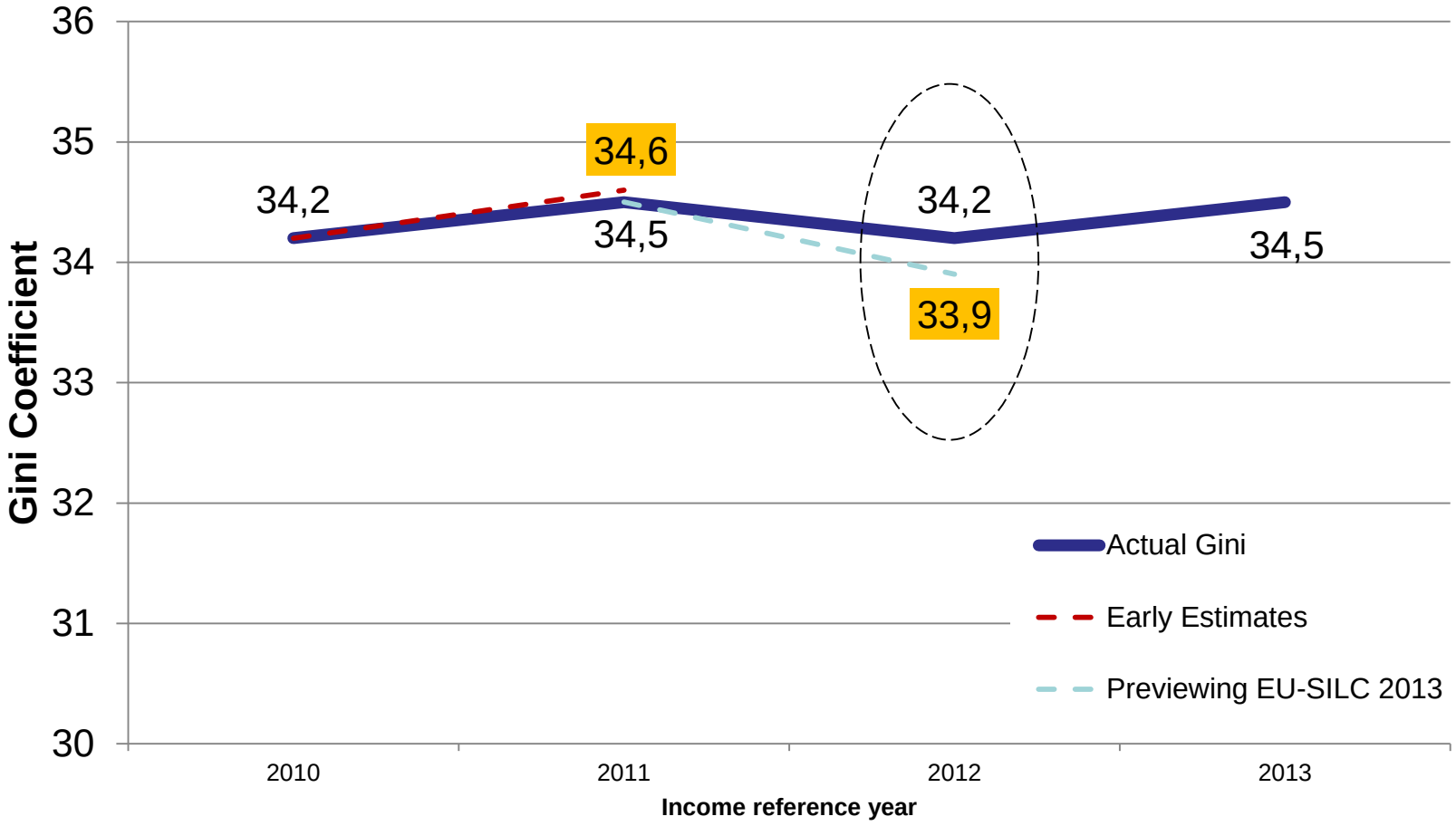
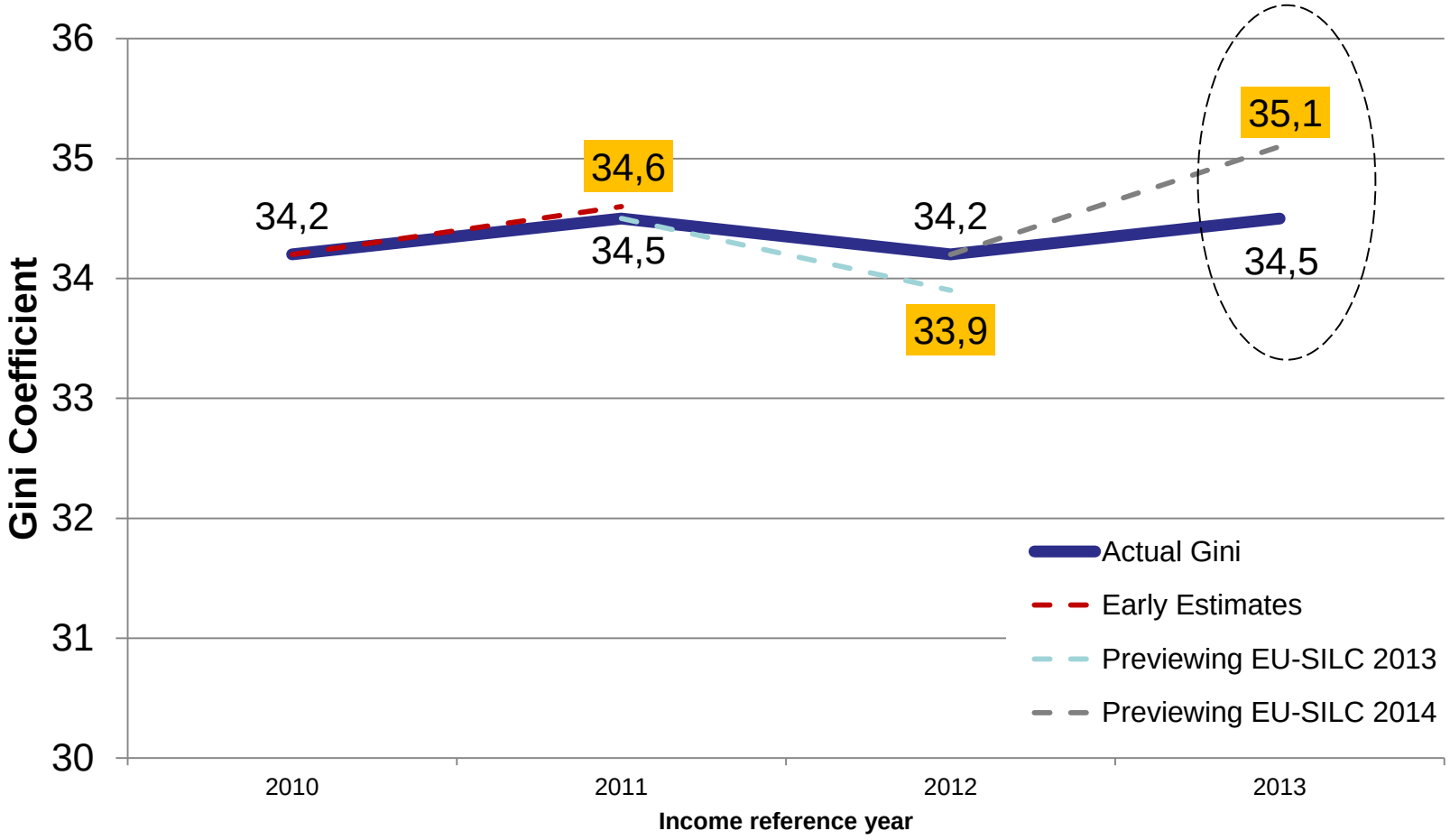
Results: Gini coefficient



Note: preliminary results!

Results: Gini coefficient



Note: preliminary results!

Replicating methodology

Stage	Replication across the years	Replication across countries
Transitions	EASY (just modelled once and then repeated)	EASY (just modelled once and then repeated)
Policies changes	HARD (should be different every year)	HARD (should be different for every country)
Income update	EASY (but needs to be changed)	EASY (but needs to be changed)

Conclusions and some questions

- Micro-simulation can be used by the NSIs and Eurostat to increase timeliness, helping to produce early/flash estimates;
- This may help to better understand "methodological traps" concerning the poverty rate in times of instability;
- The model is easily replicated by other NSIs;

Conclusions and some questions

- More and better survey questions regarding current income and current status in employment?
- Caution: trade-off between timeliness and accuracy;
- Increasingly used early estimates and nowcasting raise important issues: should these be addressed in the Framework Regulation?

THANK YOU!