

Transitioning the European Working Conditions Survey to telephone in response to the pandemic

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Background

01

What is the European Working Conditions Survey?

History of the survey

Flagship survey of the European Foundation for the Improvement of Living and Working Conditions (Eurofound), every five years since 1990

Comparative data on the working conditions and job quality of European workers

Probability samples with CAPI (in-person, interviewer administered) interviews of c.45 minutes duration, expansion from 12 (1st edition) to 37 countries (7th edition)

Previous editions contracted to INRA Europe (1st, 2nd and 3rd), Gallup Europe (4th and 5th), Ipsos (6th and 7th)

What is the European Working Conditions Survey?

7th edition (2020)

37 European countries & 55 languages, probability sampling, CAPI interviews

Development and piloting throughout 2019

Fieldwork started February 2020, stopped in March due to COVID-19

Options considered:

- Re-start as CAPI at a later stage
- New CAPI survey (abandon completed interviews)
- New CATI (telephone) or CAWI (online) survey

Agreed to re-develop as a CATI survey to measure the post-COVID working situation with fieldwork in 2021

Features of the 2021 CATI survey



CATI survey (executed)

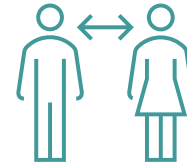
Probability sampling using mobile
Random Digit Dialling (RDD)

20 minute interviews (English average)

N = 71,800, 36 countries

54 languages

Up to 5 phone calls



CAPI survey (planned)

Probability sampling from registers or
enumeration

45 minute interviews (English average)

N = 42,700, 37 countries (inc. Turkey)

55 languages

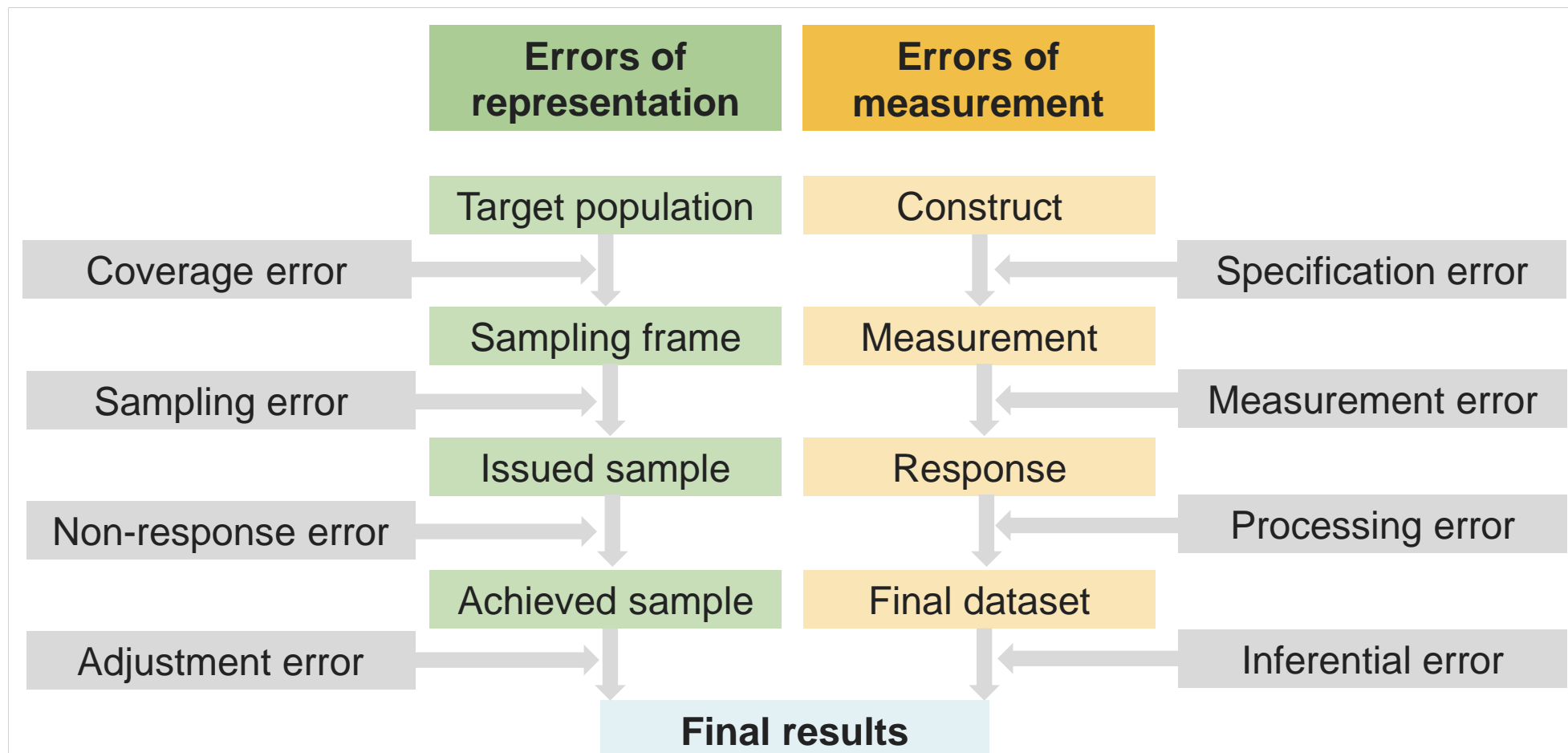
Up to 4 visits (or 10+ calls in a few
Nordic countries with CATI recruitment)

Risks to time series

02

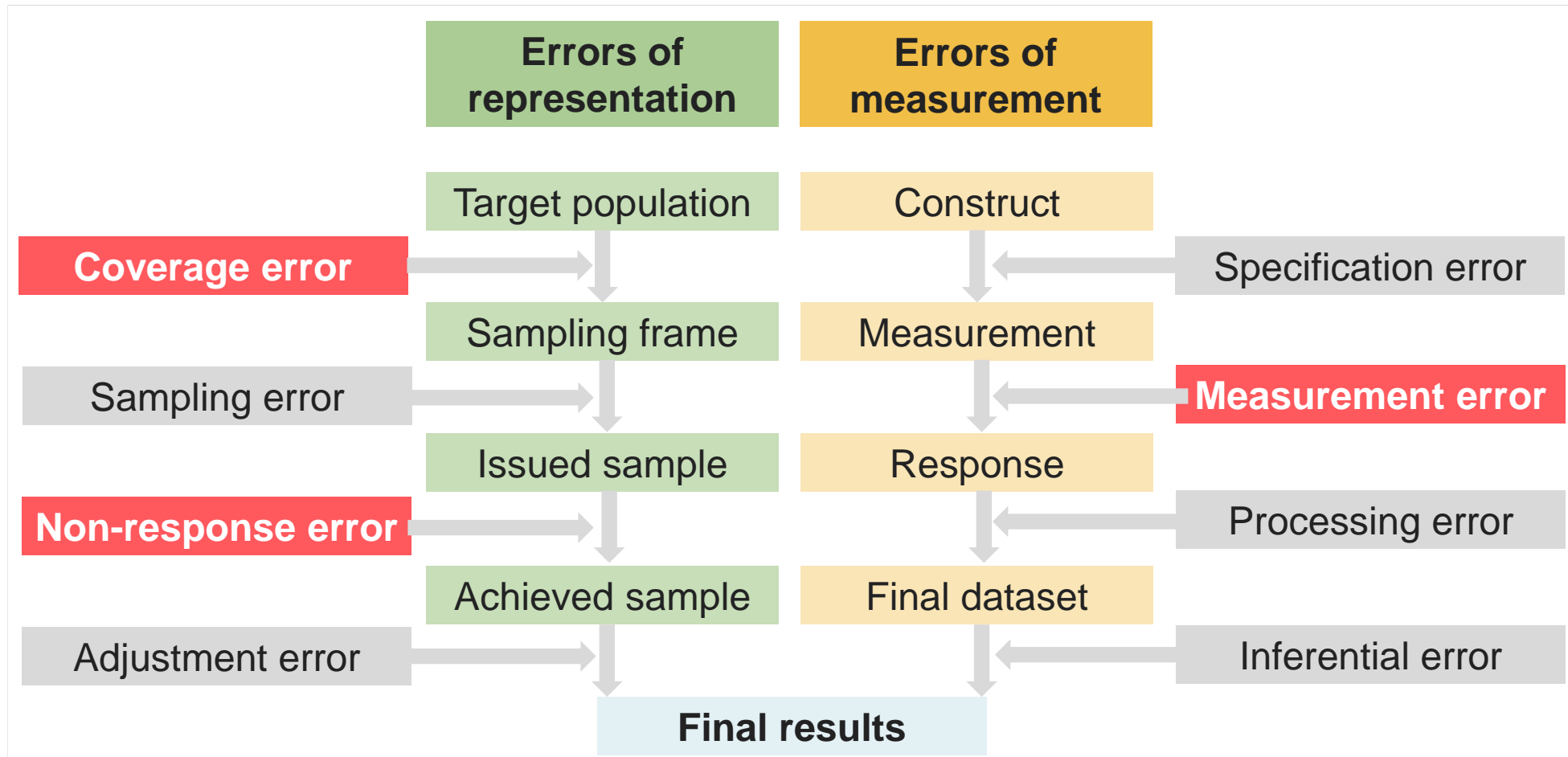
Main risks to time series

Total survey error framework



Main risks to time series

Total survey error framework



Coverage and sampling

03

Coverage and sampling error comparisons



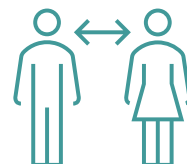
CATI survey (executed)

RDD sampling mobile phones* – simplified process

Mobile phone coverage minimum 95% plus up to 5% losses due to sampling procedure (**coverage min. 90%**)

Unclustered samples, SRS – greater efficiency

N = 71,800 (most countries +80%, allocation optimised)



CAPI survey (planned)

Individual/address frames/enumeration – best option at country level

Minimum 95% coverage

Clustered samples

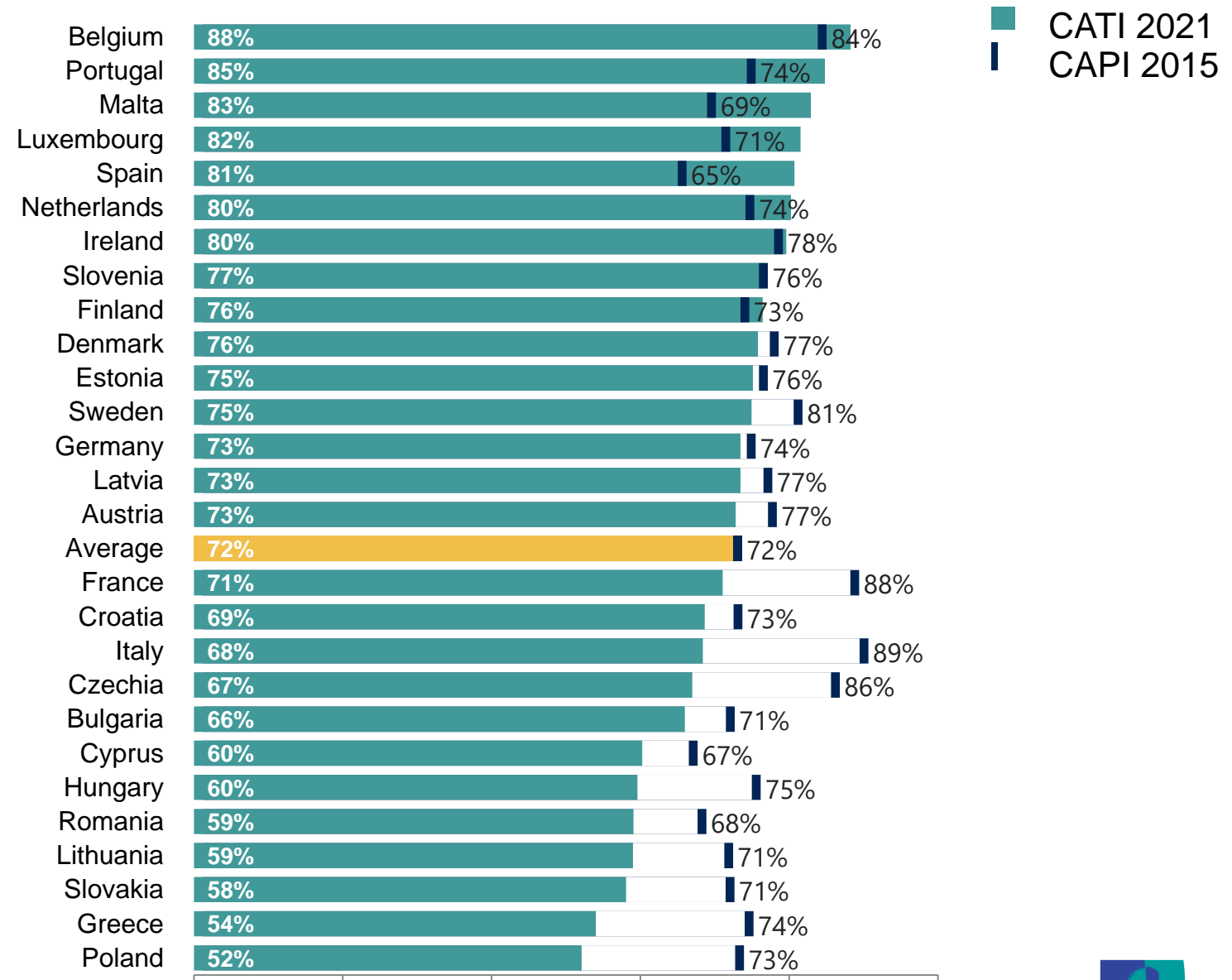
N = 42,700 (1,000 – 2,500 at country level)

* Sweden the only exception to RDD – sufficient phone coverage using national register

Overall weighting efficiency similar

- CATI has less variance in design weights; counters losses from less efficient calibration weights
- Additional impact of clustering on CAPI efficiency (variable specific, not shown)

Weighting efficiency (EU-27)



Based on Kish, 1965. Efficiency = 1/Design effect

Questionnaire

04

Questionnaire comparisons

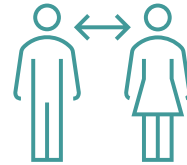


CATI survey

Maximum 25 minutes to maintain data quality. In practice **20 minutes** in English

Questions simplified, **shortened scales**

Covers mostly factual items, few attitudinal, both modes interviewer administered – less prone to mode effects



CAPI survey

45 minute interviews – more data possible

Extensive use of **showcards**, some **long scales**

Modularised questionnaire – planned missingness design

- Total questionnaire coverage 26 minutes – substantial cuts still required (from 45 mins)
- Some variable combinations not possible, others based on smaller sample size
- Necessary sacrifice, reduced response burden

<i>Module:</i>	No. Modules	% sample	Module duration
Core questions	n/a	100%	12 mins
Job quality modules	Answer 2 out of 3	67% each module	4 mins
Thematic modules	Answer 1 out of 2	50% each module	4 mins

Sample profile comparisons

05

Coverage and non-response bias

How do the CATI (2021) and CAPI (2015) samples compare?

Extent of bias due to non-response and/or coverage

Same weighting approach each wave; inverse probability weights calibrated to reference statistics:

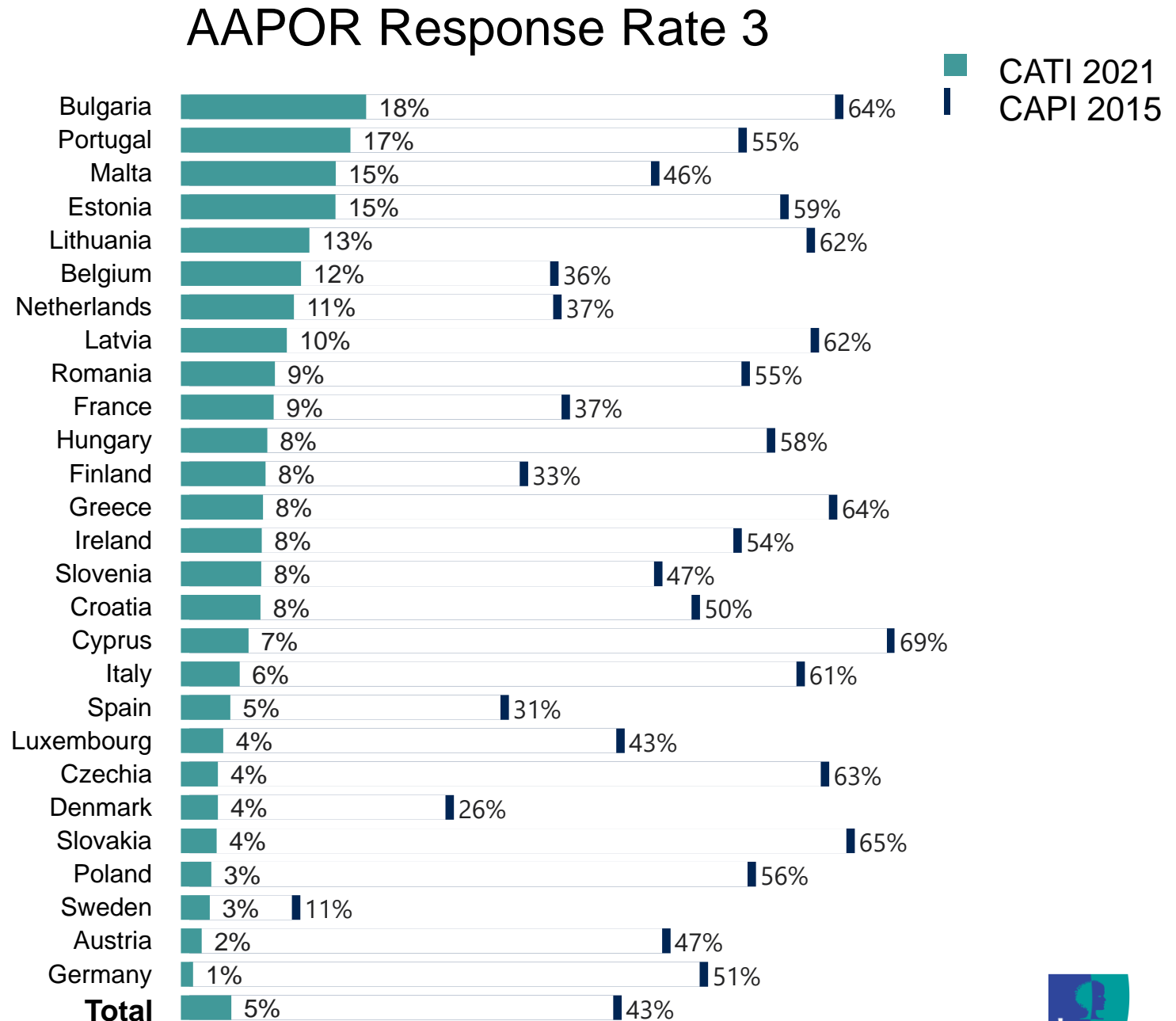
- Age by sex
- Region
- Occupation
- Sector of employer

Weighting efficiency & comparisons on the weighting variables (unweighted data)

Comparisons on monitoring variables (weighted data)

CATI response rates substantially lower - greater risk of non-response bias

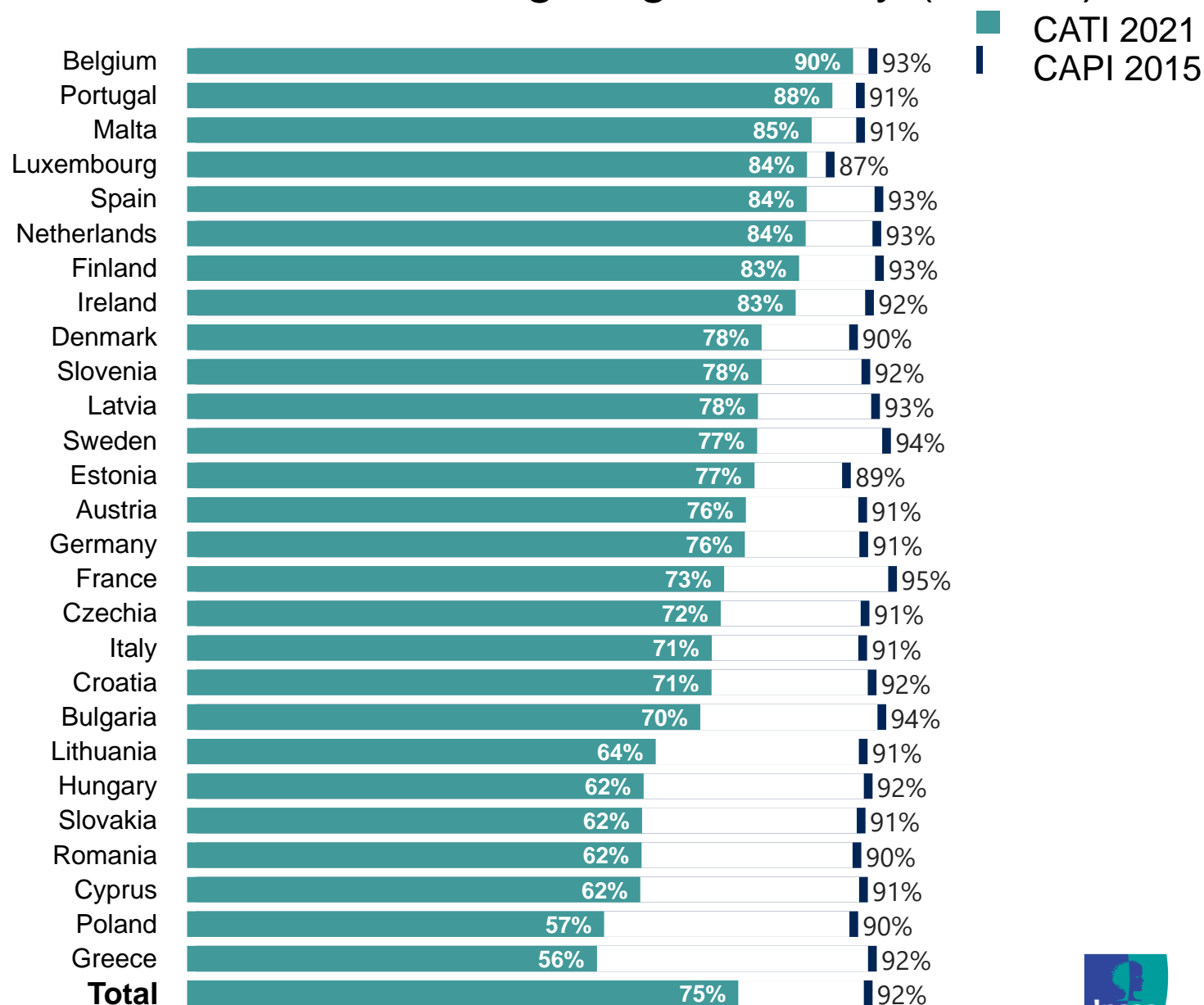
- CATI average 5%, from 18% Bulgaria to 1% Germany
- CAPI average 43%, from 69% Cyprus to 11% Sweden



CATI calibration weights less efficient: greater bias on weighting variables

- Southern & Eastern European countries least efficient, Portugal and Spain exceptions
- CAPI samples calibration weighting efficiency similar, most >90%

Calibration weighting efficiency (EU-27)



Based on Kish, 1965. Efficiency = 1/Design effect

Non-response bias on weighting variables

CATI sample trends

Corrections on age by sex required in most countries, considerable variation by country

- North-Western countries typically under-represented younger
- Southern & Eastern countries typically under-represented older

Substantial corrections on occupation in all countries

- Higher skilled ‘white collar’ over-represented in nearly all countries, ‘blue collar’ under-represented

Similar trends on sector with sectors associated with ‘white collar’ occupations over-represented

Capital region over-represented in nearly all countries

Non-response bias on monitoring variables

Comparisons of weighted CATI and CAPI samples

Five main variables with same question wording as EU Labour Force Survey

- Self-employed
- Working part-time
- Tenure (current employer) 5+ years
- Household structure
- Highest level of education

Comparisons with 2015 and 2021 EU LFS data (survey year), absolute differences

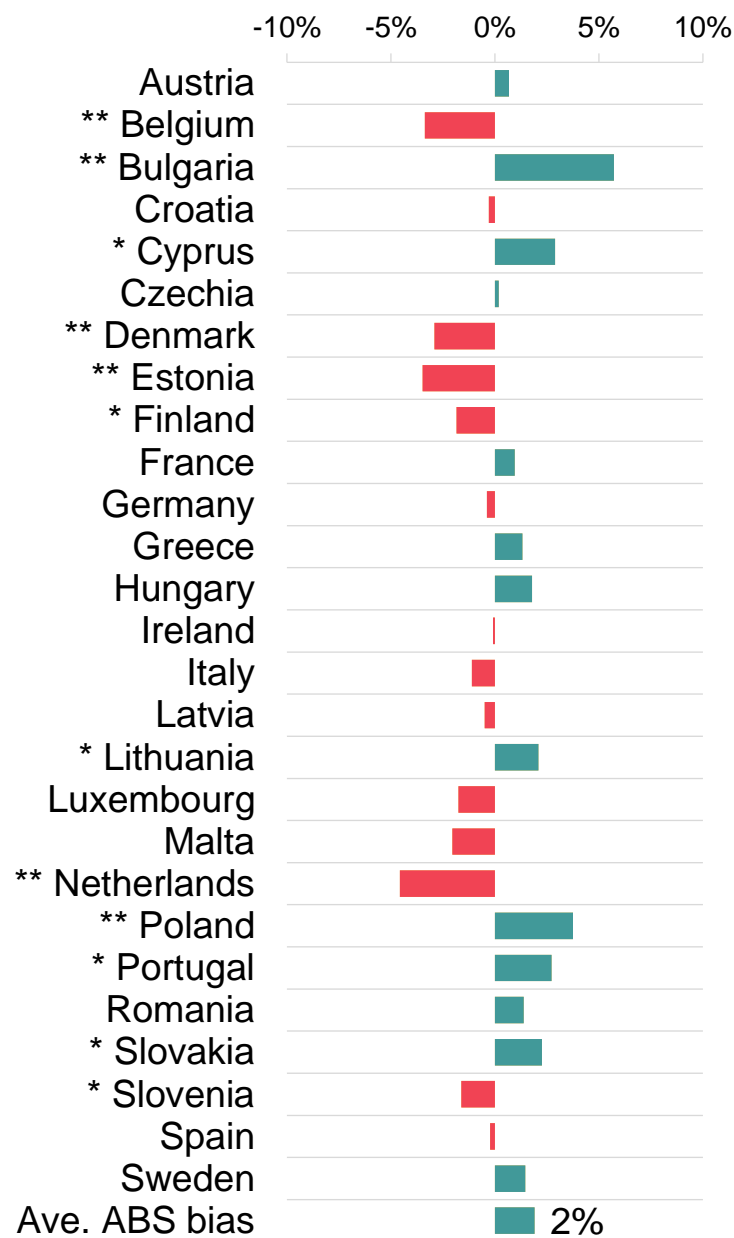
Both samples weighted using standard approach

Significance tests for differences between survey and LFS estimates

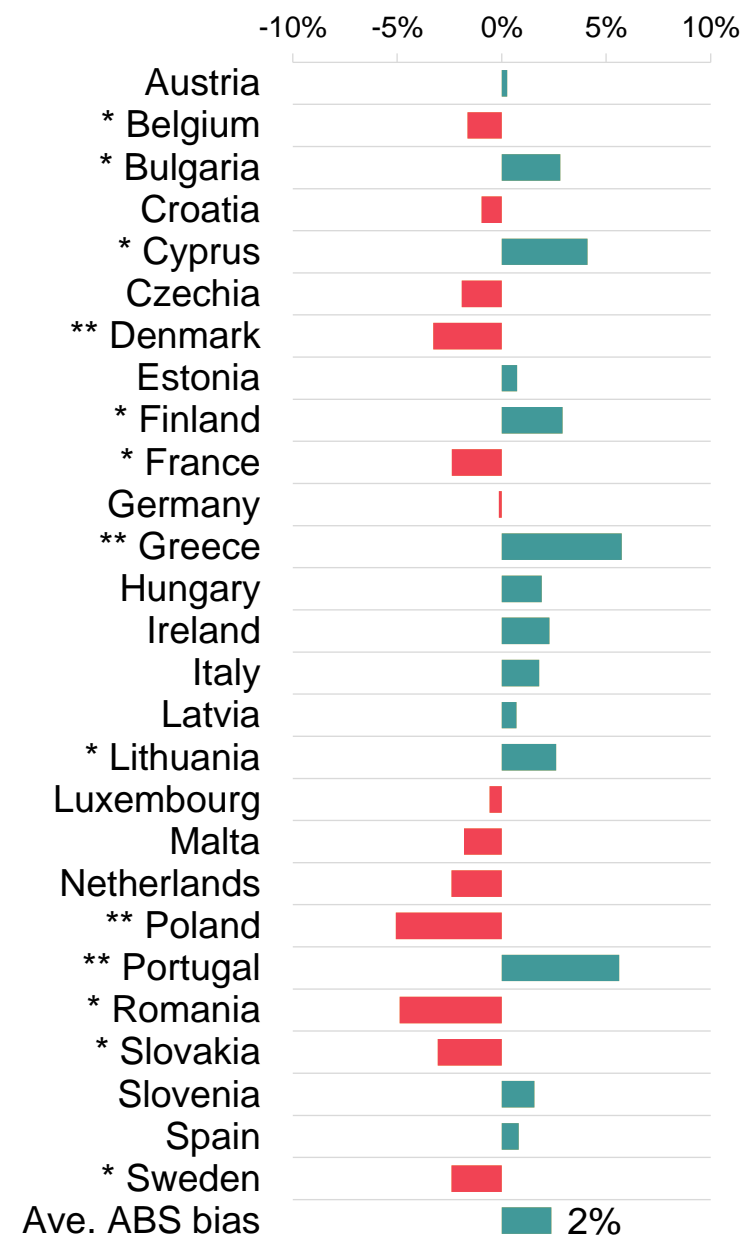
Self-employed

Weighted survey comparisons

- Similar direction for many countries and extent of bias similar
- South/East countries more likely over-represented



CATI 2021



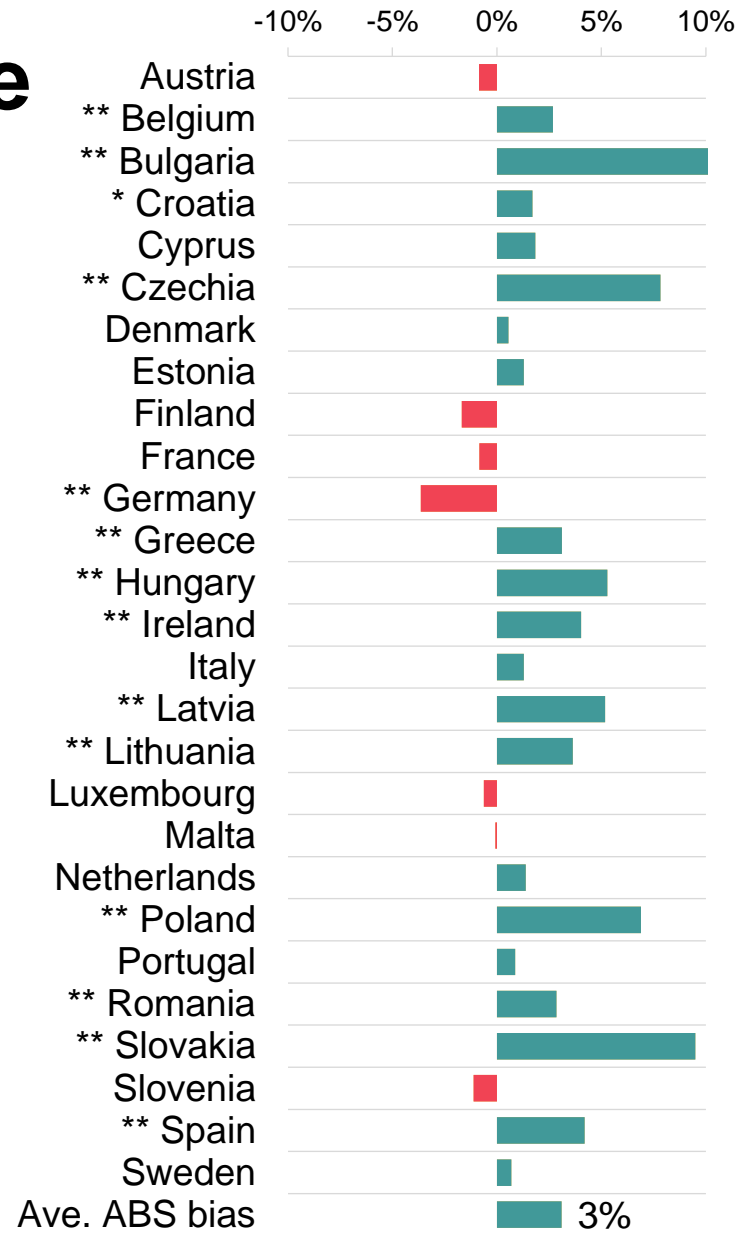
CAPI 2015

Survey estimate minus EU-LFS estimate | * p-value <0.05 ** p-value <0.001

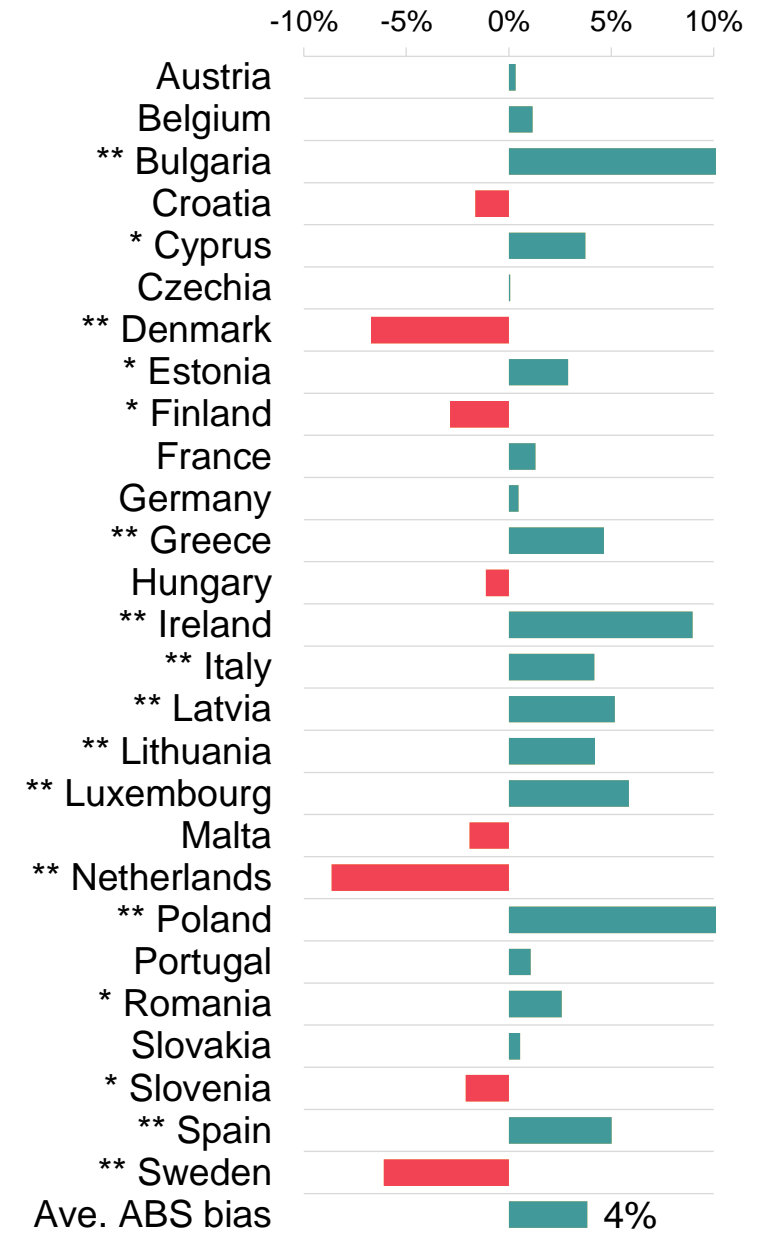
Working part-time

Weighted survey comparisons

- Both surveys tend to over-represent part-time workers
- Extent of bias about the same



CATI 2021



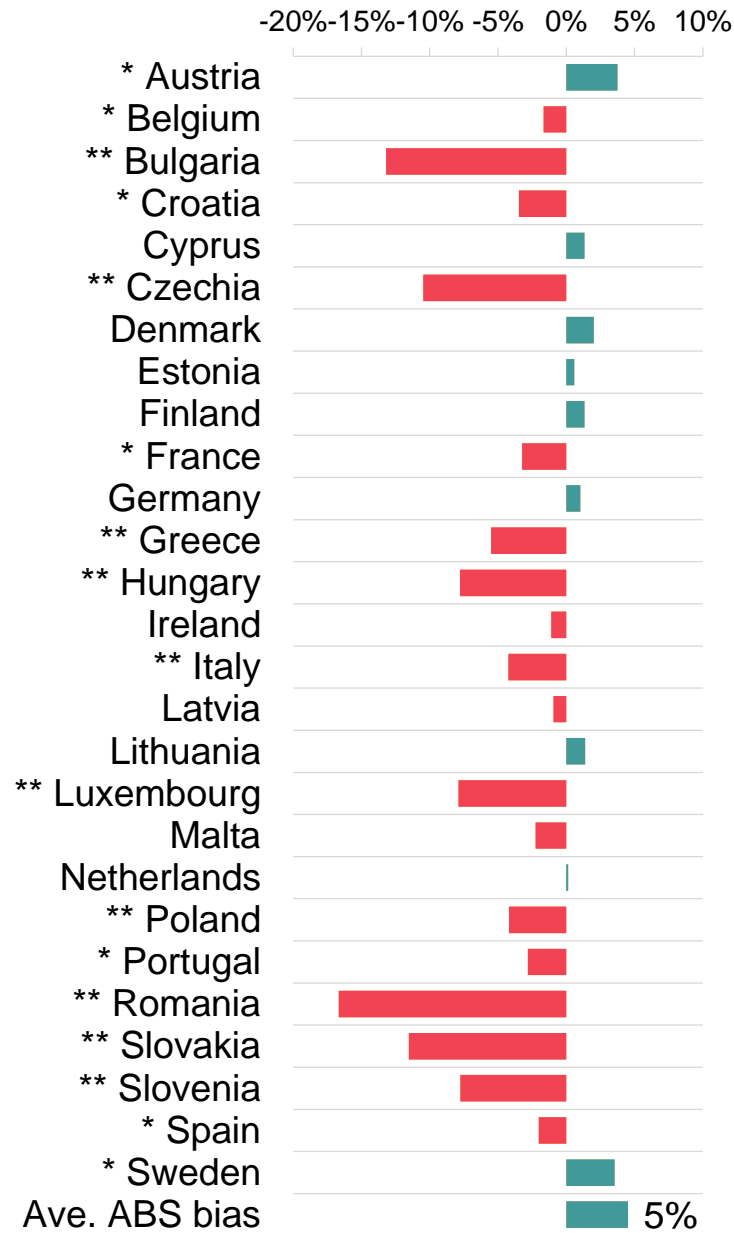
CAPI 2015

Survey estimate minus EU-LFS estimate | * p-value <0.05 ** p-value <0.001

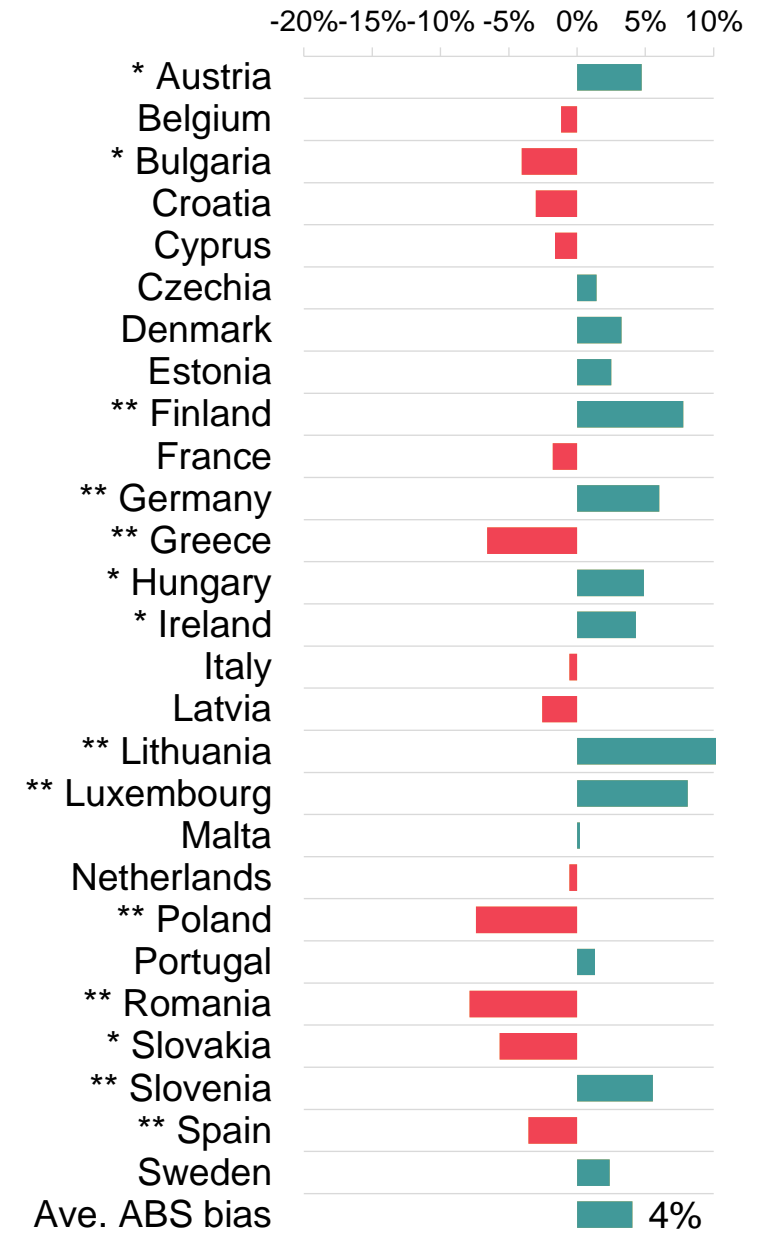
Tenure 5+ years

Weighted survey comparisons

- CATI survey mostly under-represents senior workers, CAPI survey mixed
- Extent of bias the same on average – but some stronger bias in Eastern Europe for CATI



CATI 2021



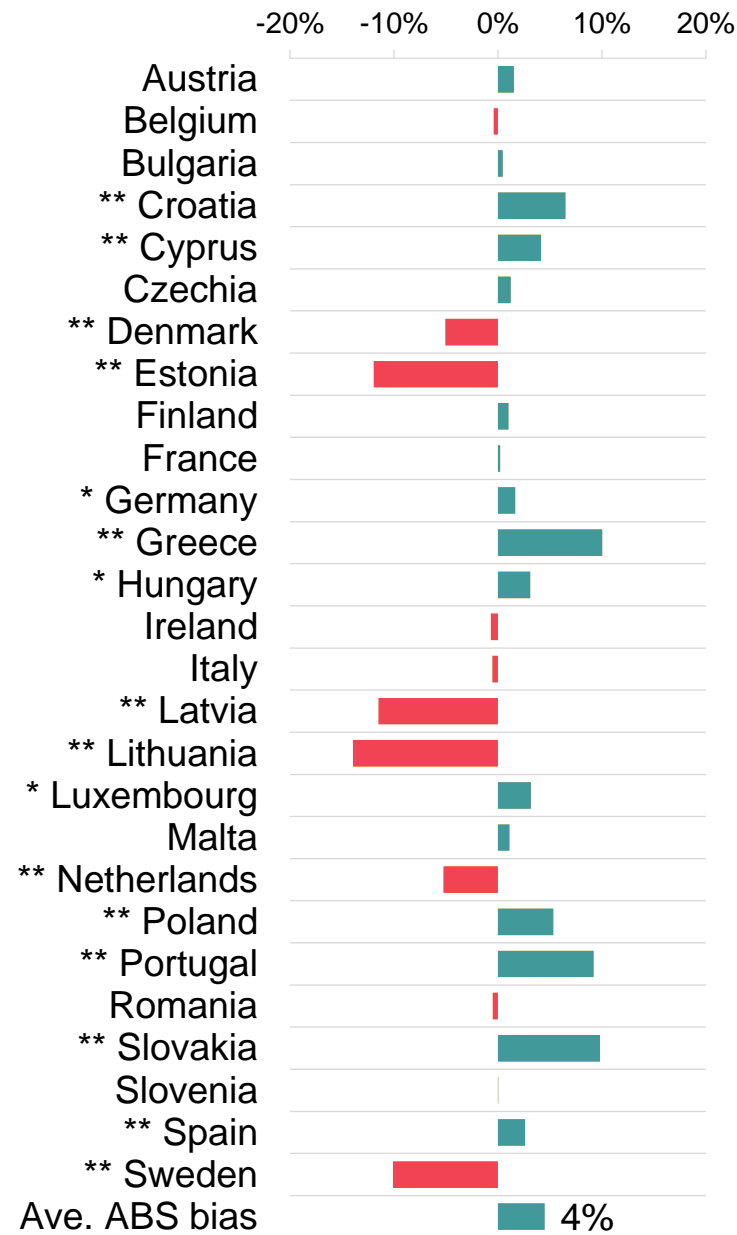
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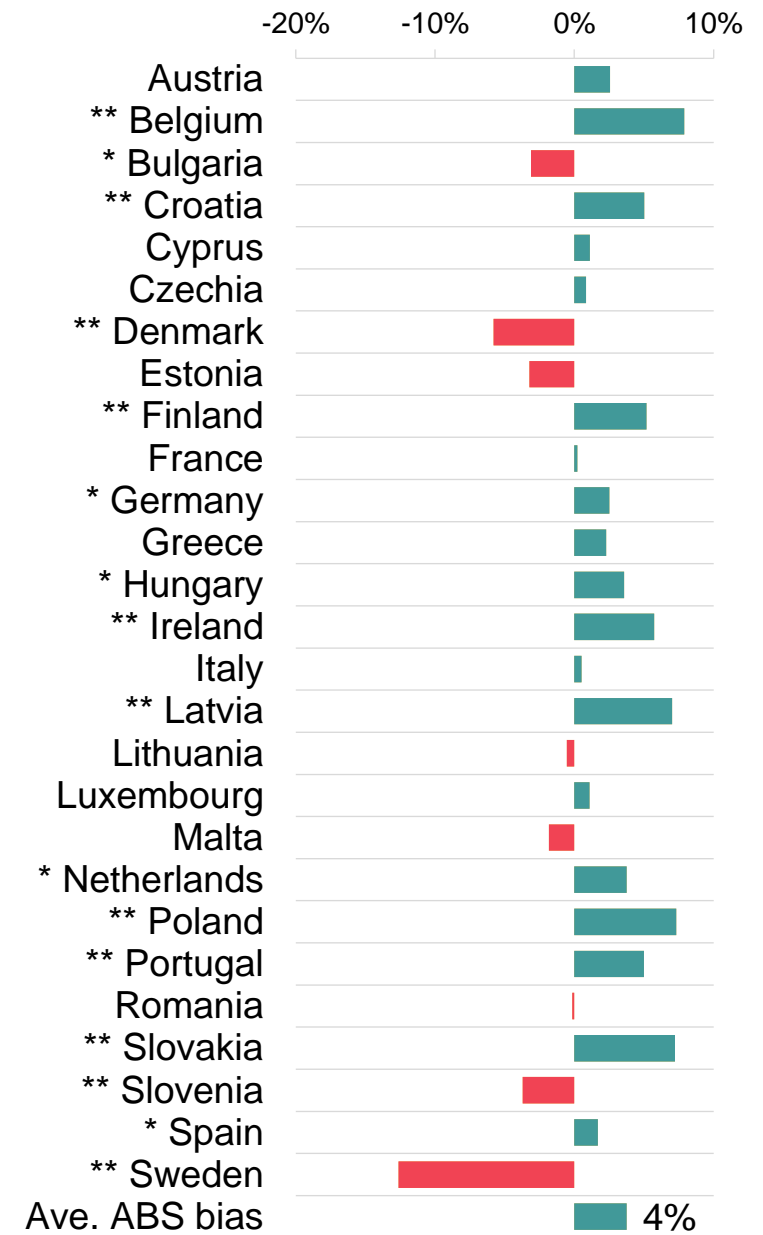
Single adult households

Weighted survey comparisons

- Stronger biases towards over-representation, both surveys, with a few exceptions
- Extent of bias about the same



CATI 2021



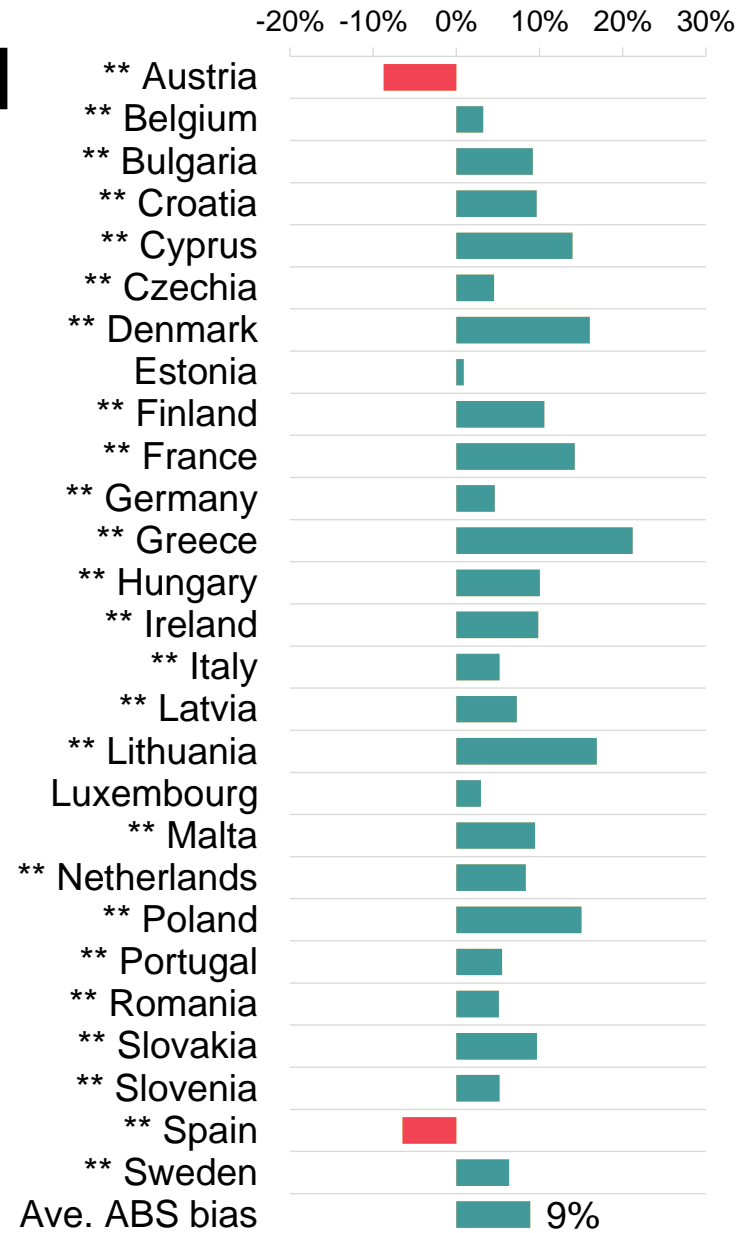
CAPI 2015

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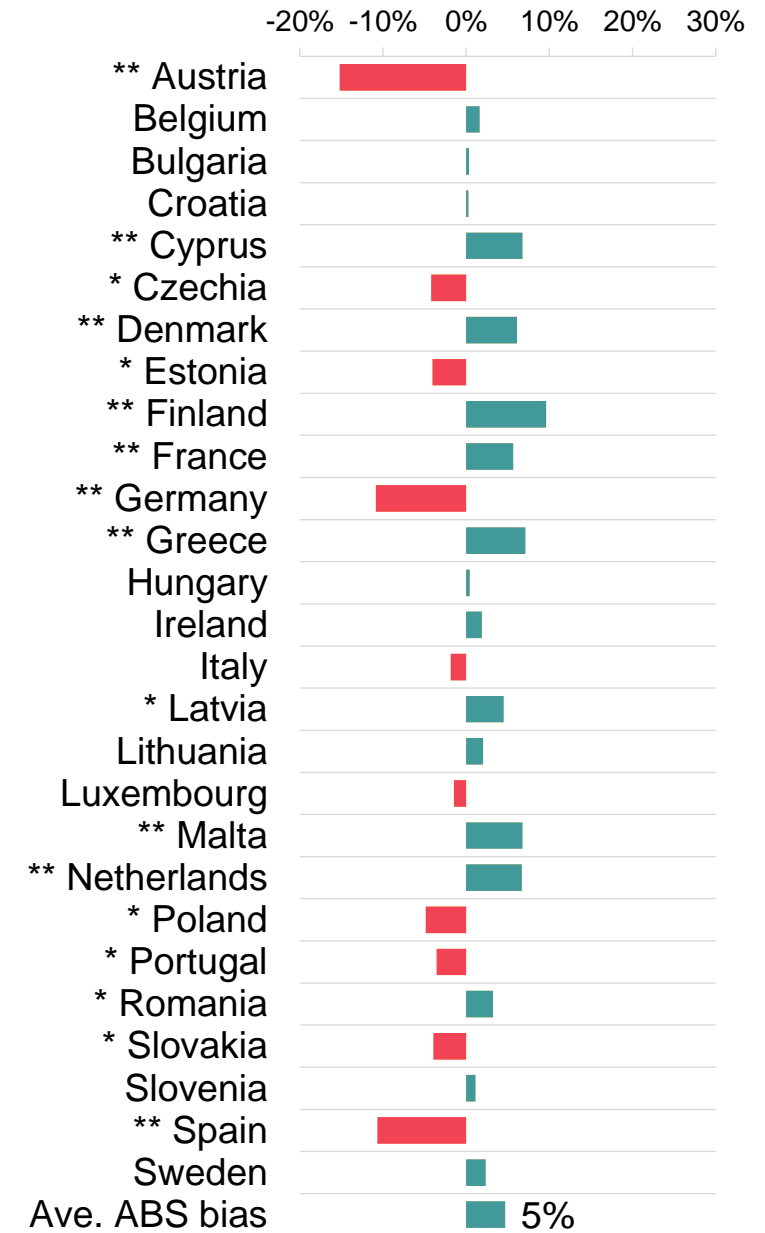
Highest educated ISCED 5-8

Weighted survey comparisons

- Clear trend towards CATI over-representation with few exceptions
- Extent of bias stronger for CATI & much worse before weighting



CATI 2021



CAPI 2015

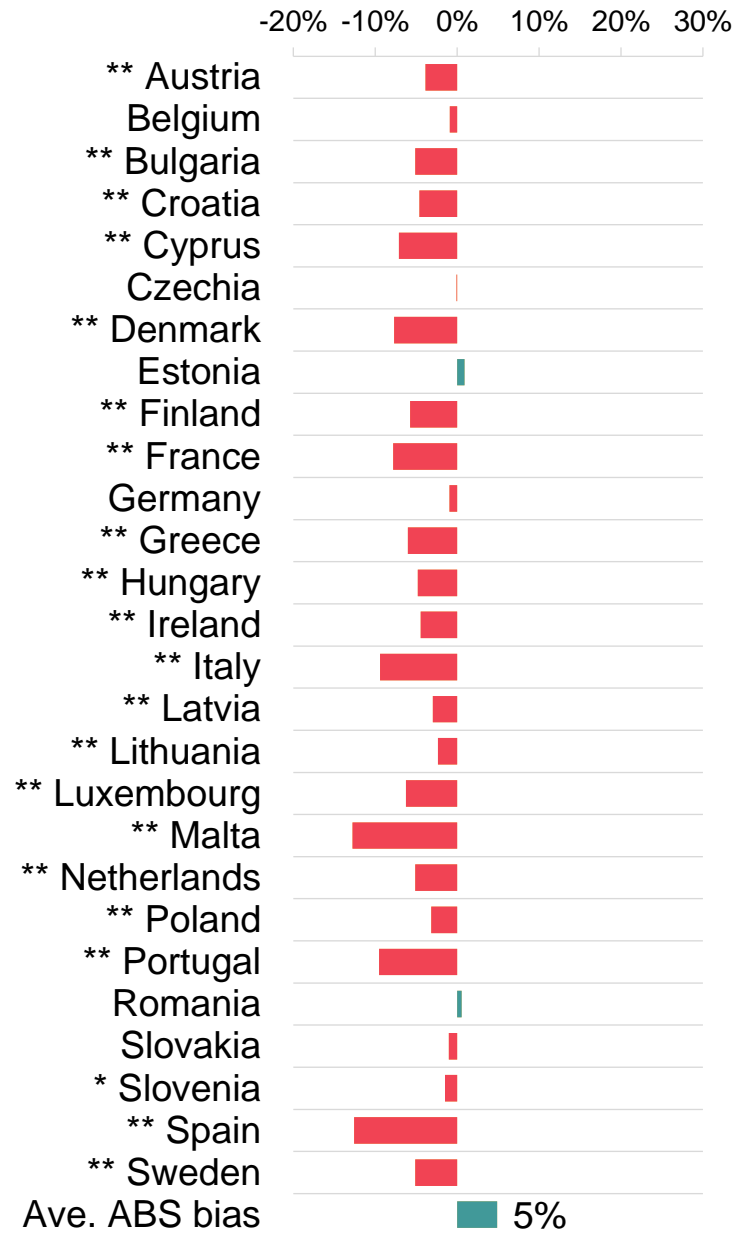
Survey estimate minus EU-LFS estimate | * p-value <0.05 ** p-value <0.001

Lowest educated ISCED 0-2

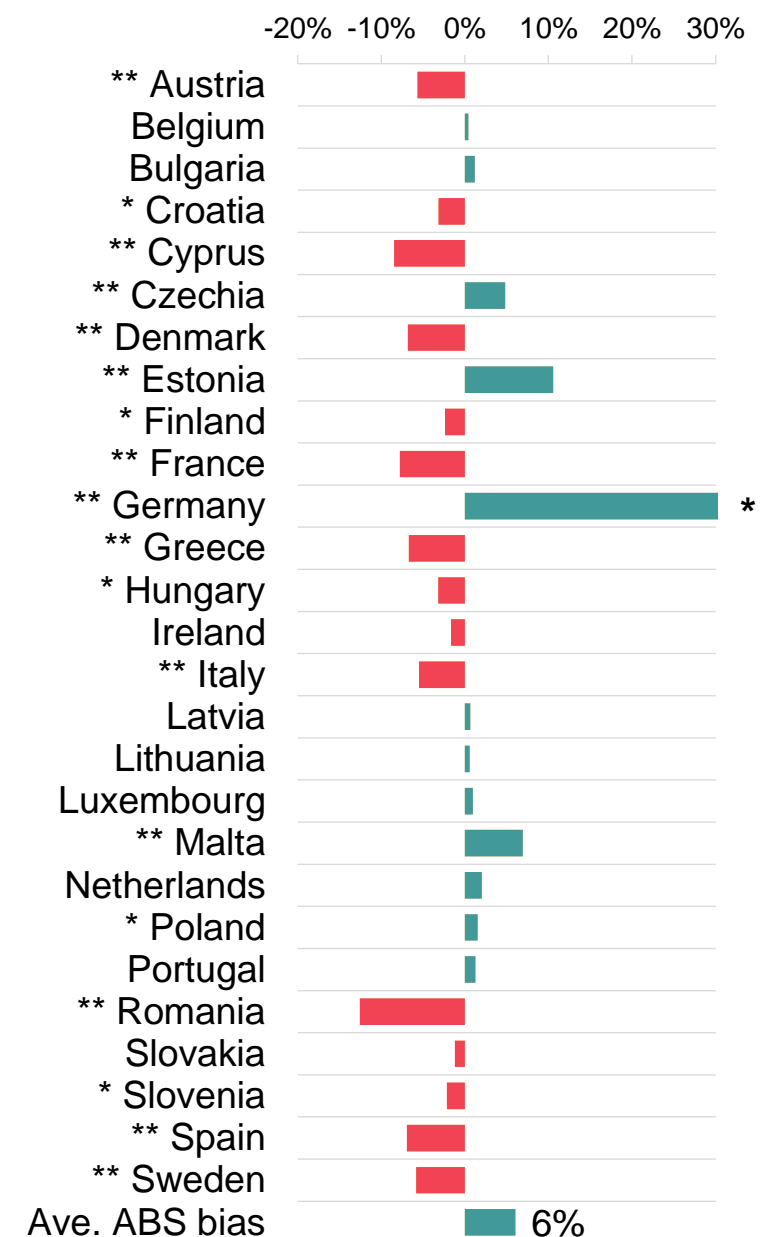
Weighted survey comparisons

- Clear trend towards CATI under-representation, similar for CAPI but more mixed
- Extent of bias similar

* Strong Germany CAPI bias attributed to EWCS/LFS measurement differences



CATI 2021



CAPI 2015

Survey estimate minus EU-LFS estimate | * p-value <0.05 ** p-value <0.001

Conclusions

06

How well did an 'old method' perform?

Conclusions

Less question coverage with CATI even with modularisation – about 40% cut – significant challenge

More precise samples for all variables, at lower cost

- N increased: Core +80%, Job quality +50%, Thematic +40%
- Due to modularisation some variable combinations not possible, or small sample sizes
- CATI samples more efficient given unclustered, efficiency gains counter losses due to poorer sample performance on weighting variables

Much lower responses rates & more bias on weighting variables, but good performance on most comparator variables

- More highly educated the clear exception, will correlate with (lower) physical risk and skill-related measures

THANK YOU.

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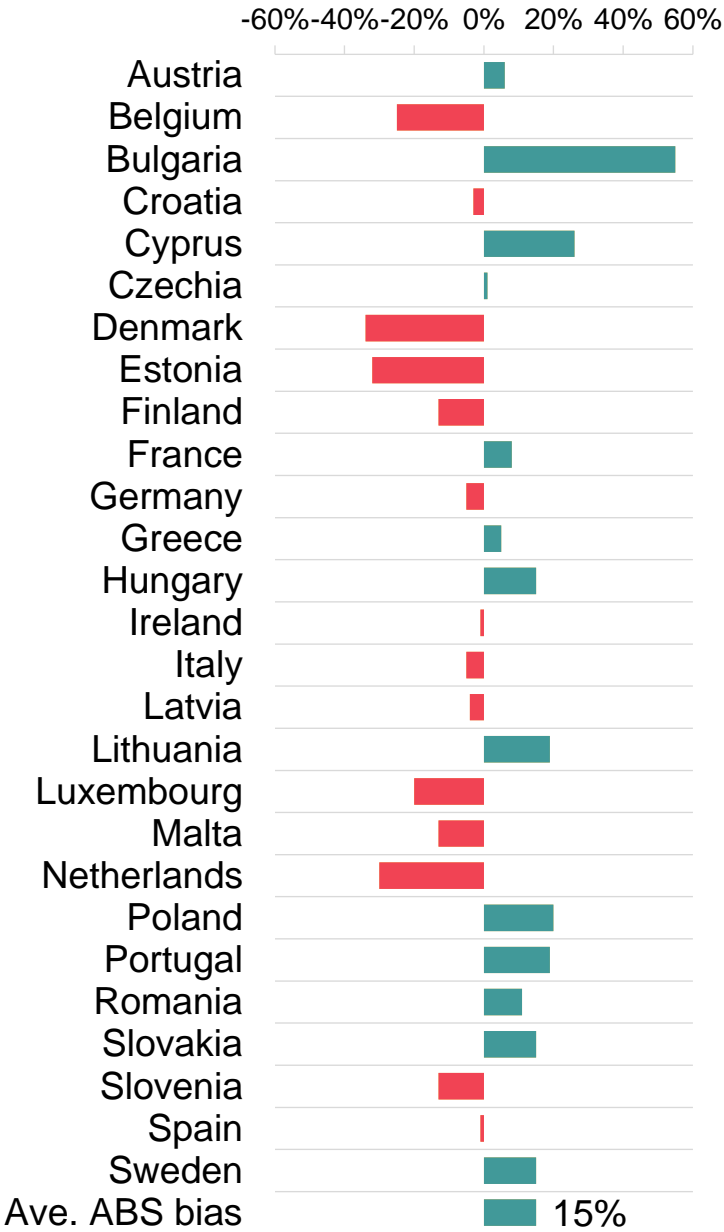
christopher.white@eurofound.europa.eu

Appendix

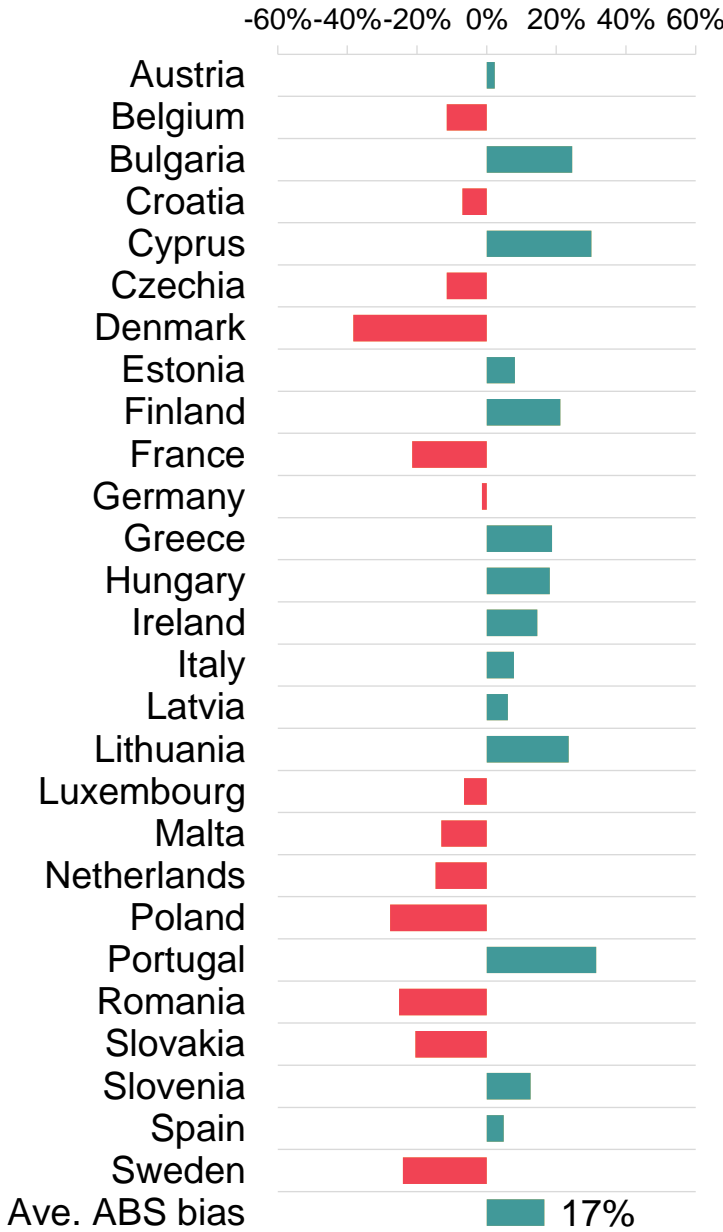
Charts showing relative bias

Self-employed

Weighted survey comparisons



CATI 2021

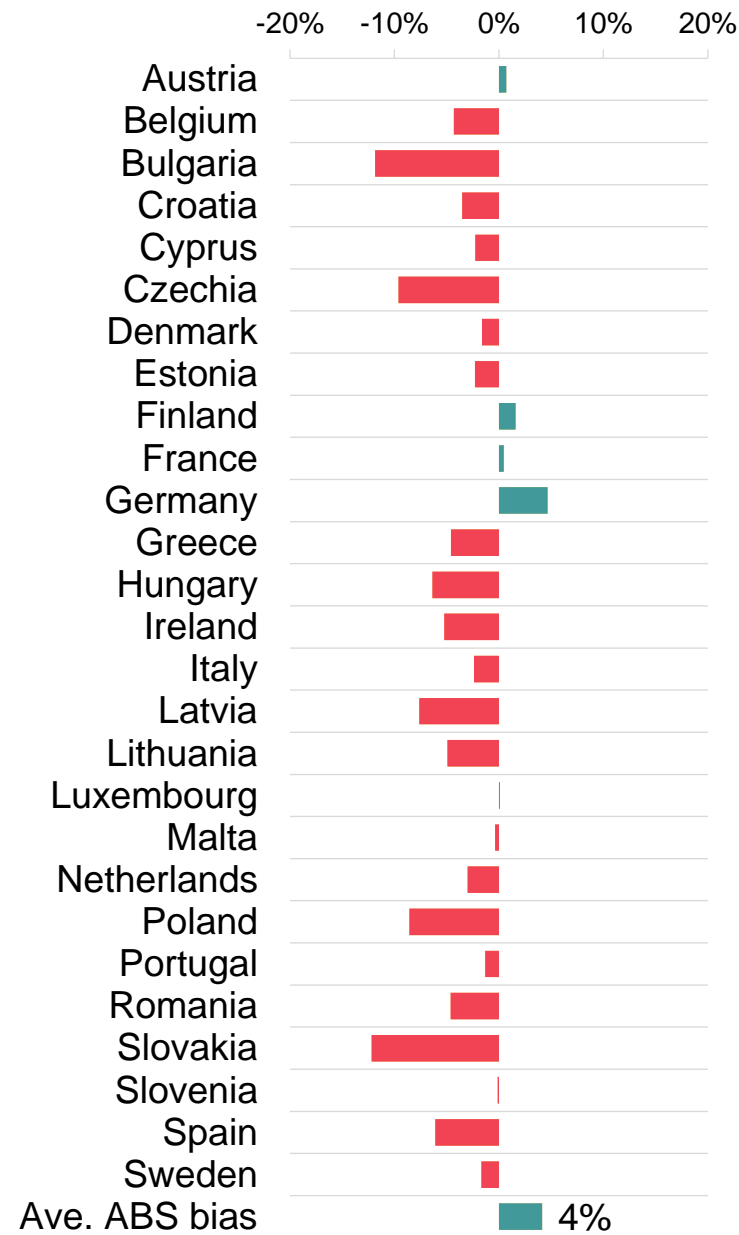


CAPI 2015

(Survey estimate – EU-LFS estimate) / EU-LFS estimate

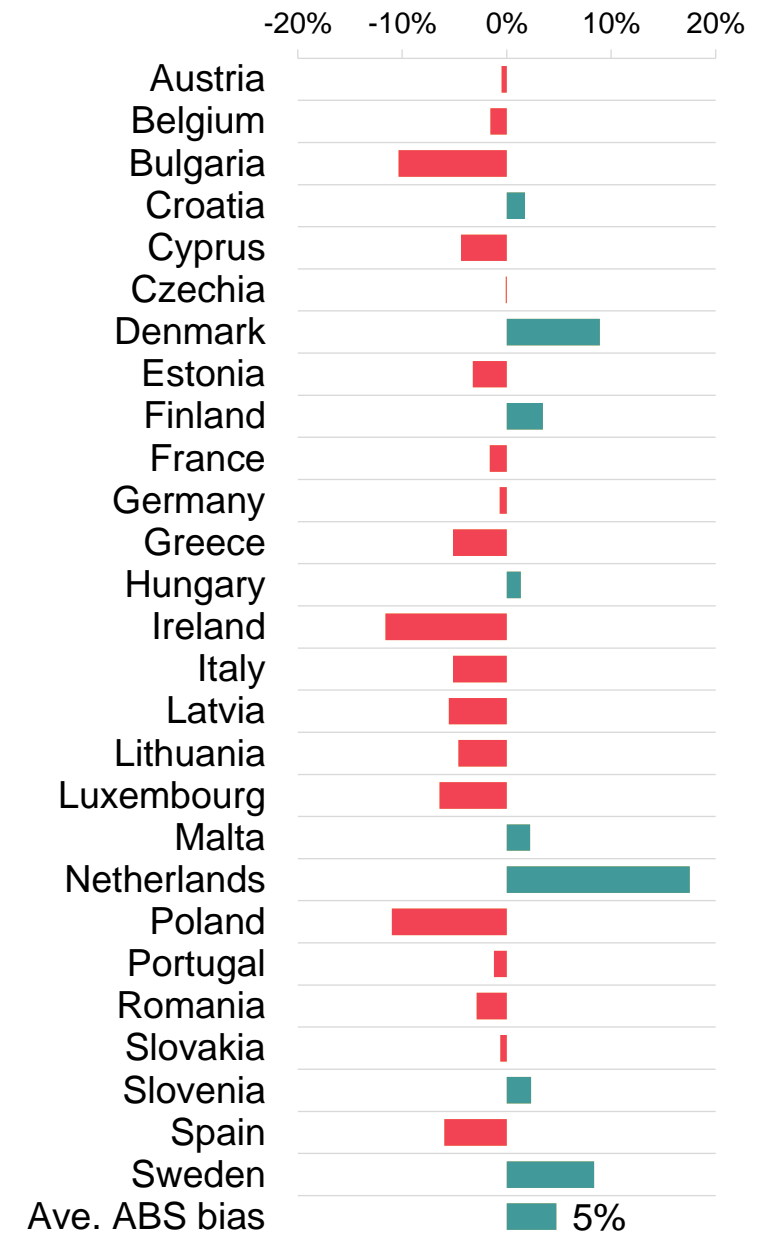
Working full-time

Weighted survey comparisons



CATI 2021

(Survey estimate – EU-LFS estimate) / EU-LFS estimate



CAPI 2015

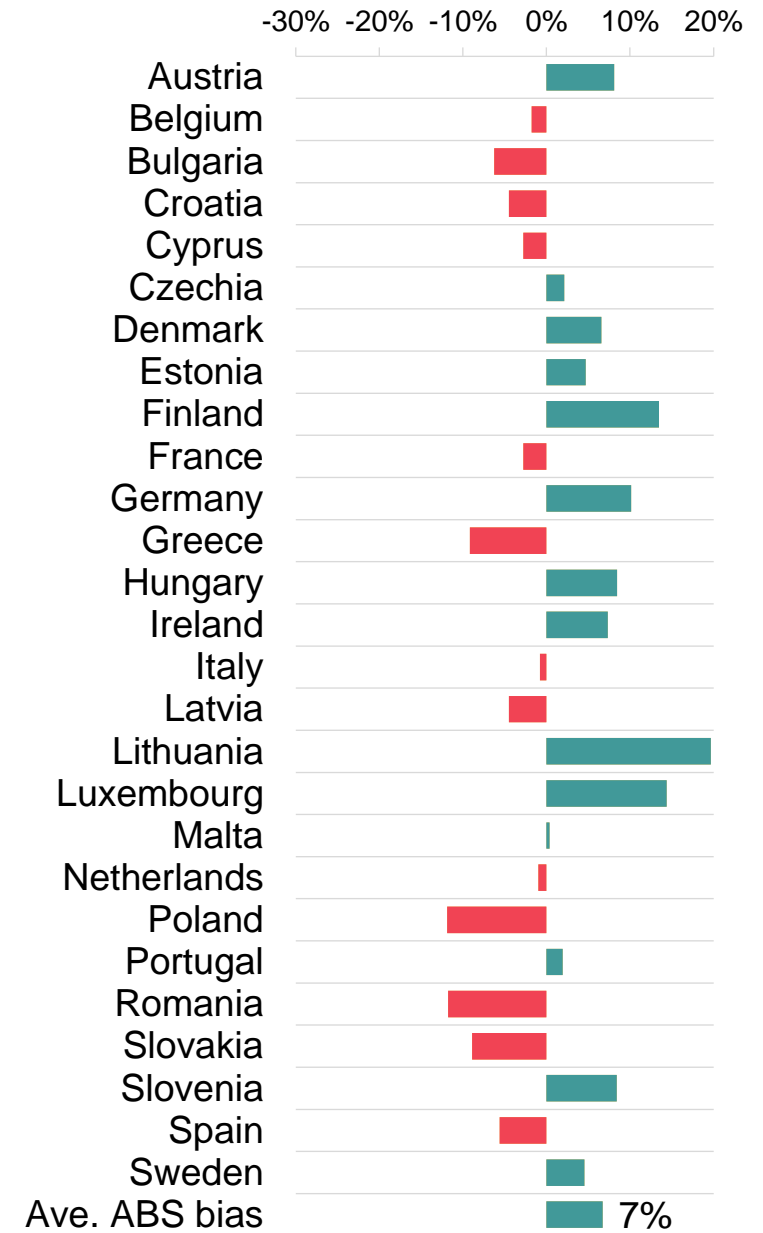
Tenure 5+ years

Weighted survey comparisons



CATI 2021

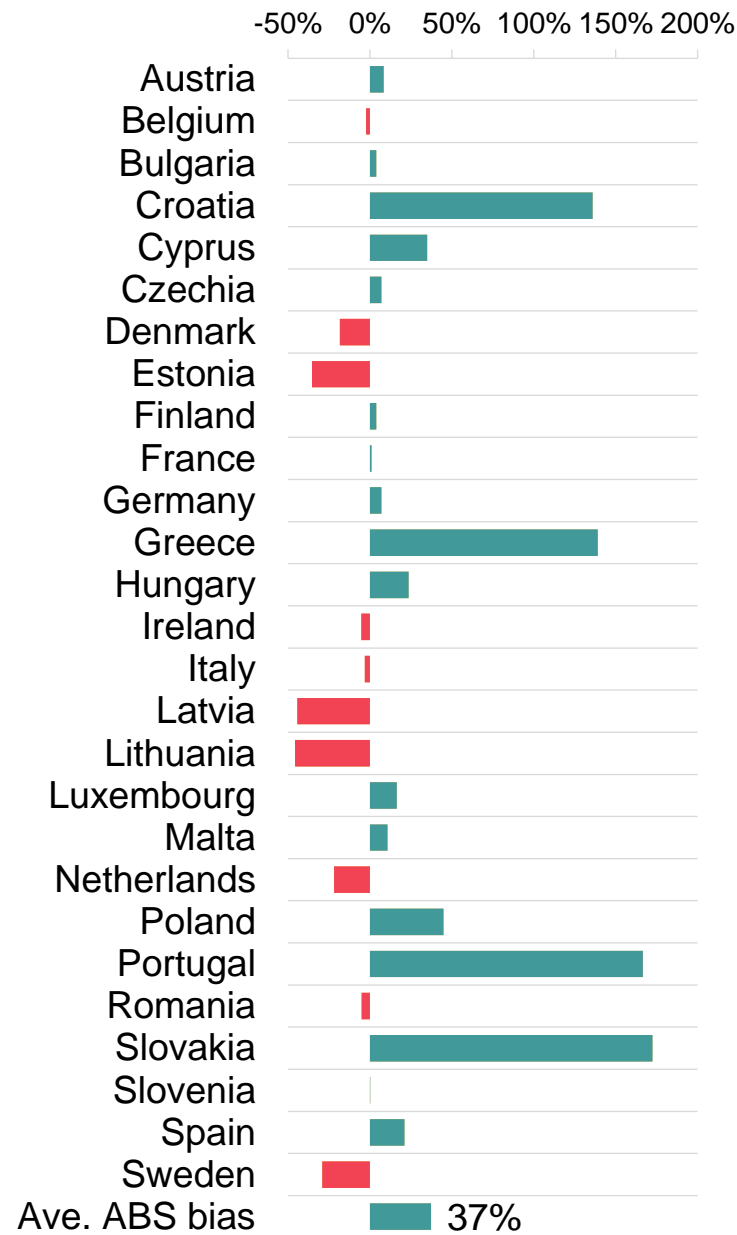
(Survey estimate – EU-LFS estimate) / EU-LFS estimate



CAPI 2015

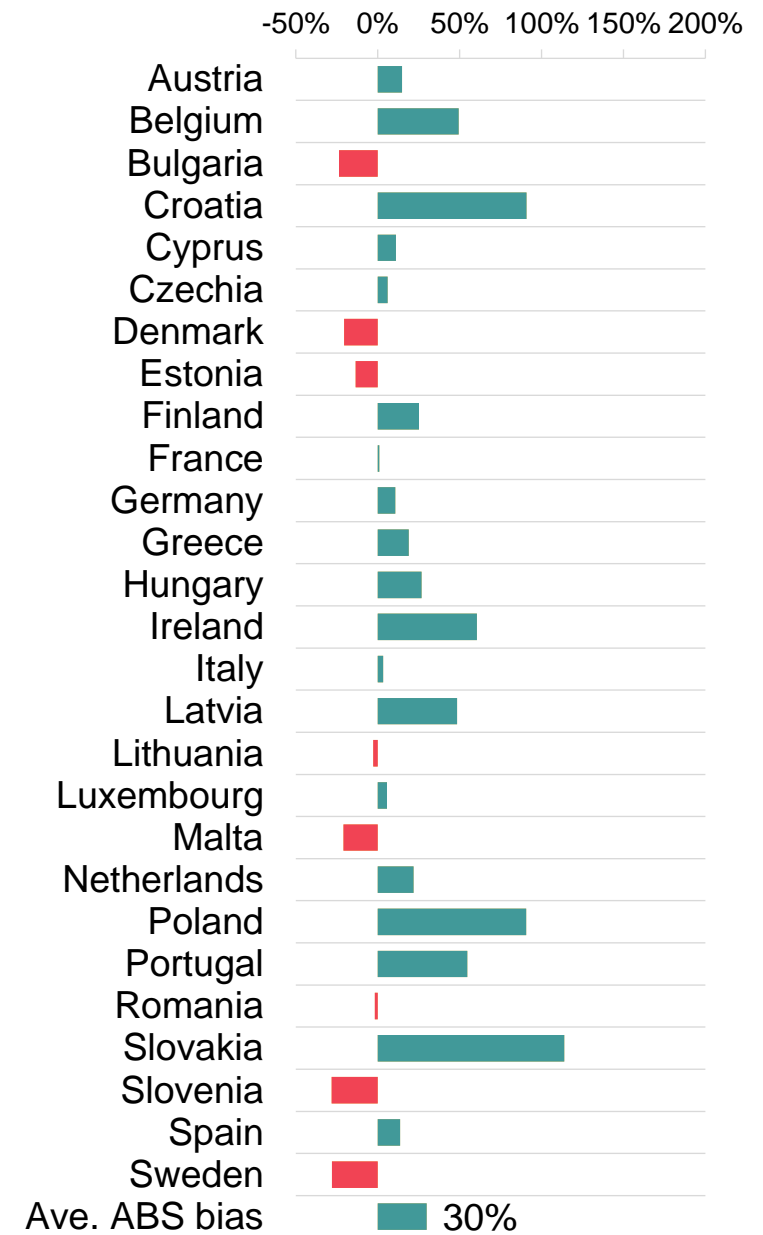
Single adult households

Weighted survey comparisons



CATI 2021

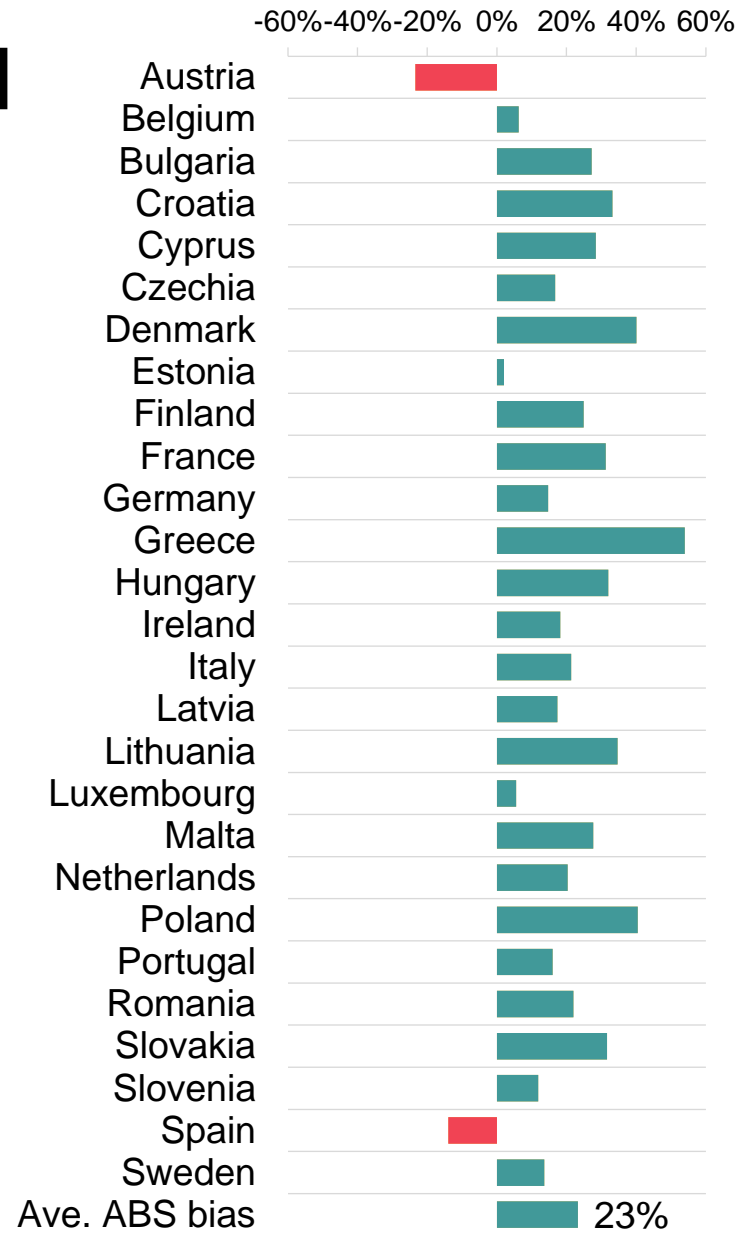
(Survey estimate – EU-LFS estimate) / EU-LFS estimate



CAPI 2015

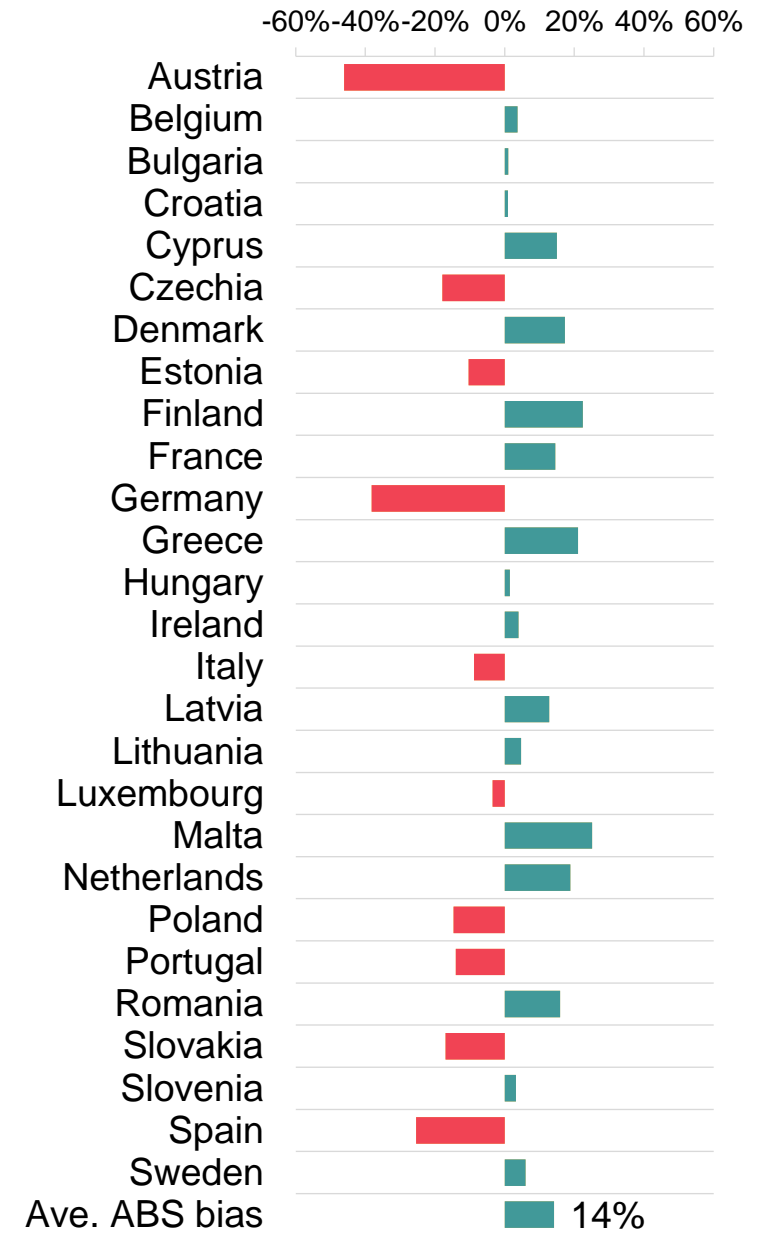
Highest educated ISCED 5-8

Weighted survey comparisons



CATI 2021

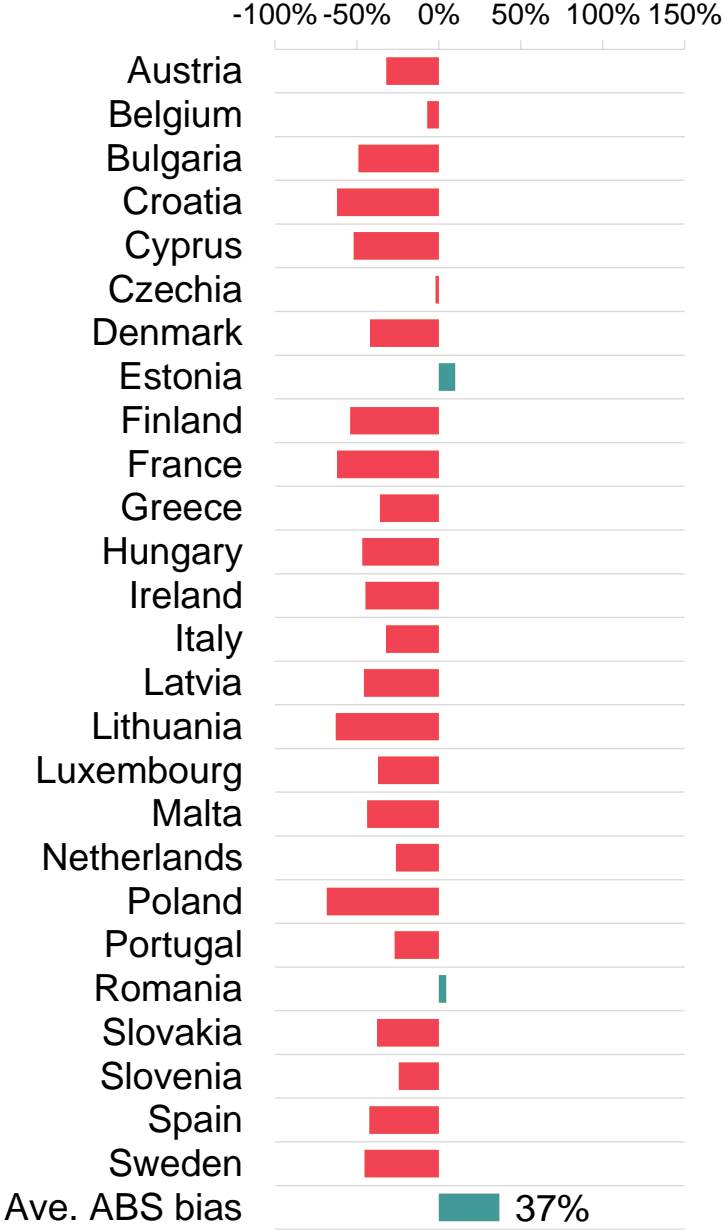
(Survey estimate – EU-LFS estimate) / EU-LFS estimate



CAPI 2015

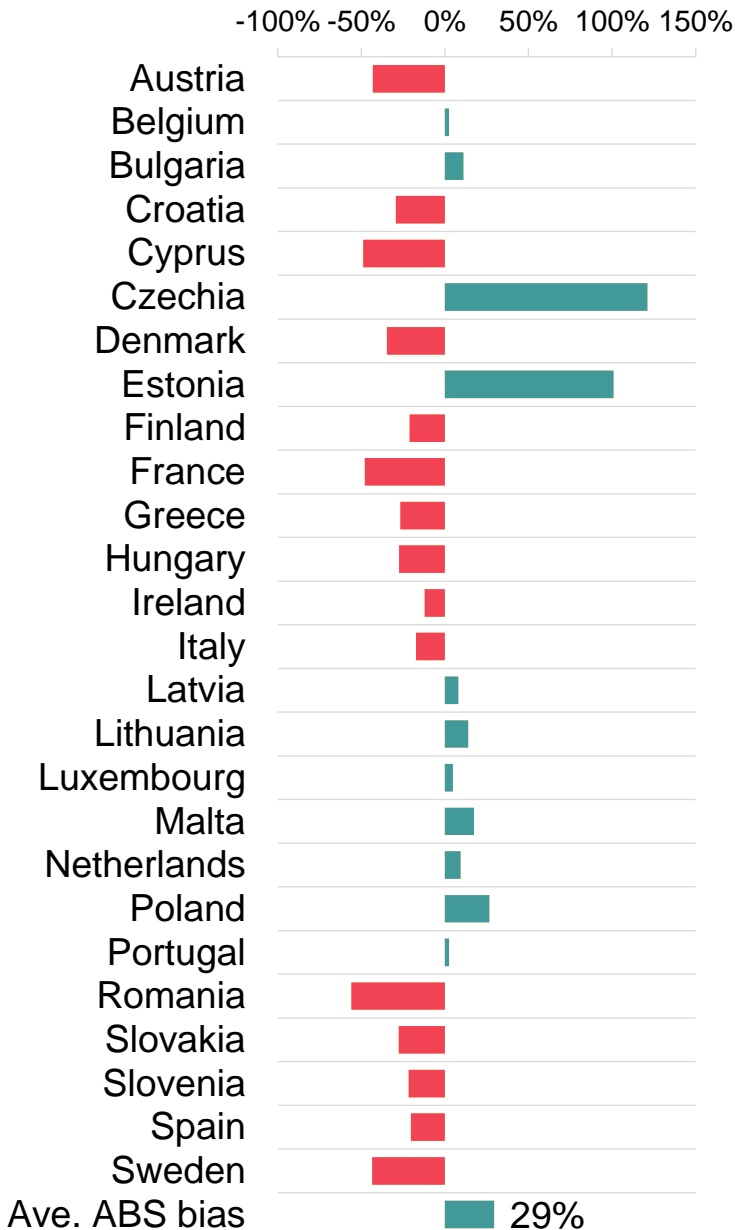
Lowest educated ISCED 0-2

Weighted survey comparisons



CATI 2021

(Survey estimate – EU-LFS estimate) / EU-LFS estimate



CAPI 2015