What drives the child penalty? The cases of Greece and Norway compared

Daphne Nicolitsas (University of Crete)

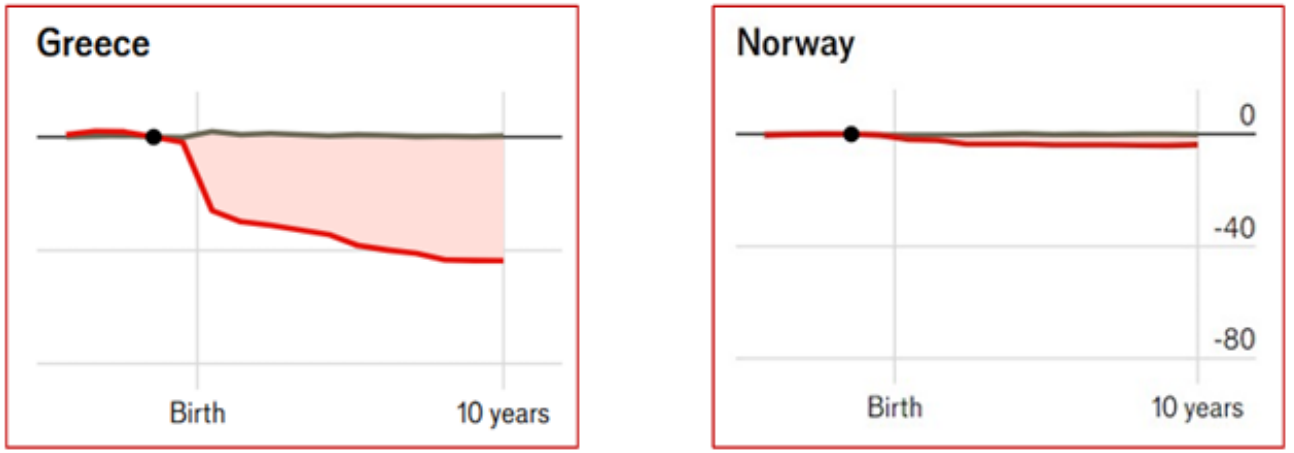
Manos Matsaganis (Polytechnic University of Milan)

23rd Conference on Research on Economic Theory and Econometrics
(Tinos, 7-11 July 2025)

The child penalty

- Labour market performance between men and women diverges – often sharply - following the birth of a child

Figure 1: **The child penalty in Greece and Norway**



Source: The Economist "How motherhood costs careers" (30 January 2024), based on results from Kleven, Landais & Leite-Mariante (2024).

Our paper

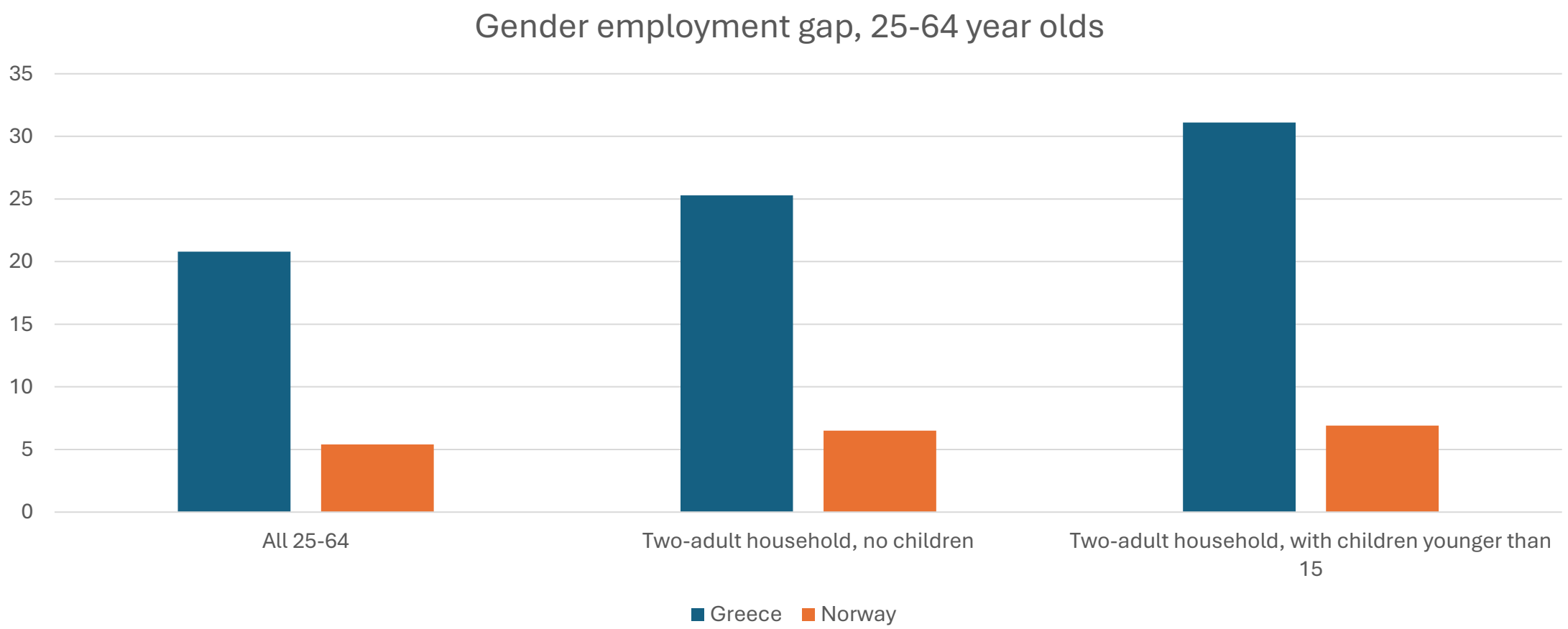
- We compare couples with children and similar couples with no children
- We measure the child penalty, in terms of employment, in Greece
- We compare the child penalty in Greece to that of Norway
- We provide possible explanations for the child penalty in Greece

Motivation

- Employment rates of women, especially mothers, are very low in Greece
- The employment gender gap is high in Greece, especially in couples with children aged <15

- We set out to
  - ✓Update estimates of the child penalty with different datasets
  - ✓Understand the drivers of child penalty
  - ✓Propose policy measures to attenuate the child penalty

Gender employment gap by household type Greece and Norway (2023)



Data and methodology

- Child penalty estimated in terms of *employment*

- Data: European Labour Force Survey (2017-2023)
  - *Kleven et al. use census data (1980-2001) for Greece & panel data (1993-2017) for Norway*

- Methodology: Pseudo-event study

  - Improvement over cross-sectional studies
    - *the latter can lead to biased results if individuals who become parents are not a random sample*

  - Match individuals who become parents to similar individuals with no children

Estimation with panel data

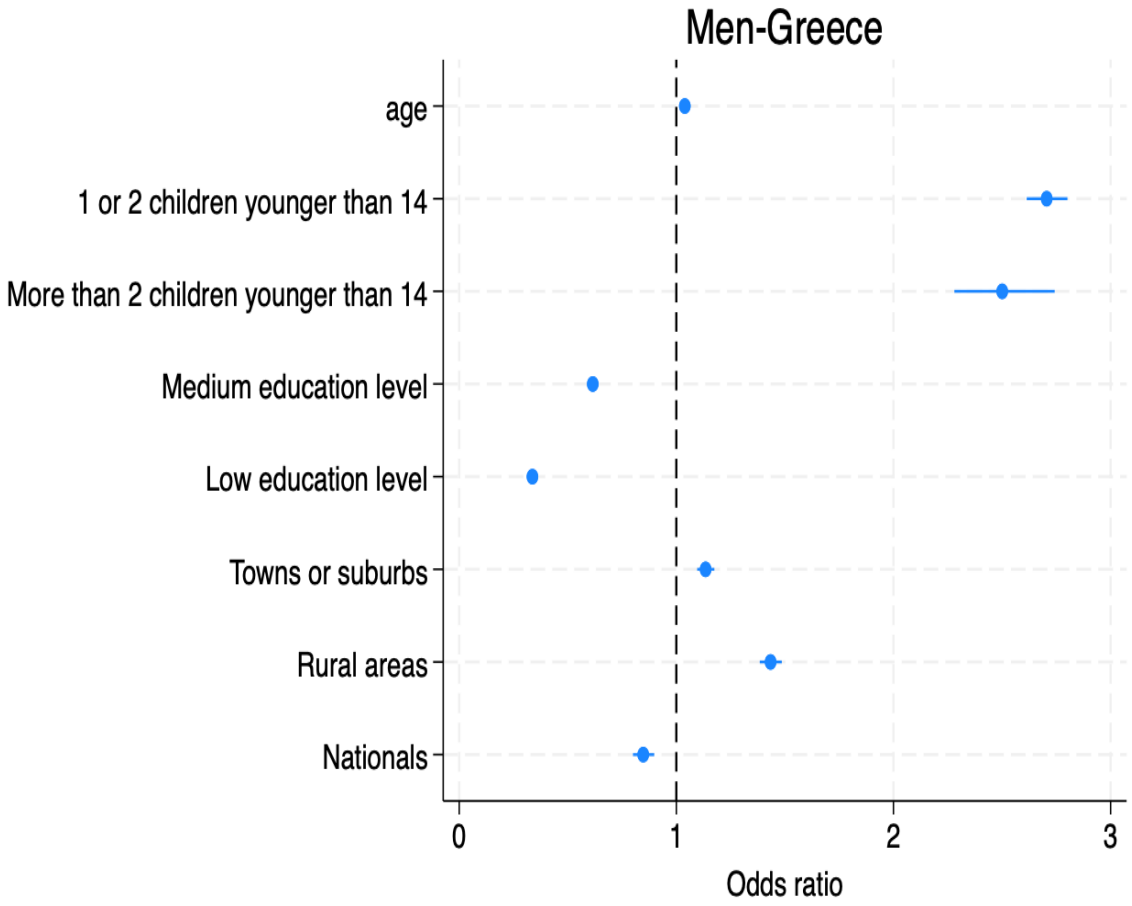
- We follow individuals aged 25-45 over time
- Assume we only had a panel for the period 2017-23, i.e. for the same years that we have the cross-sectional data for
- Regression to be estimated:

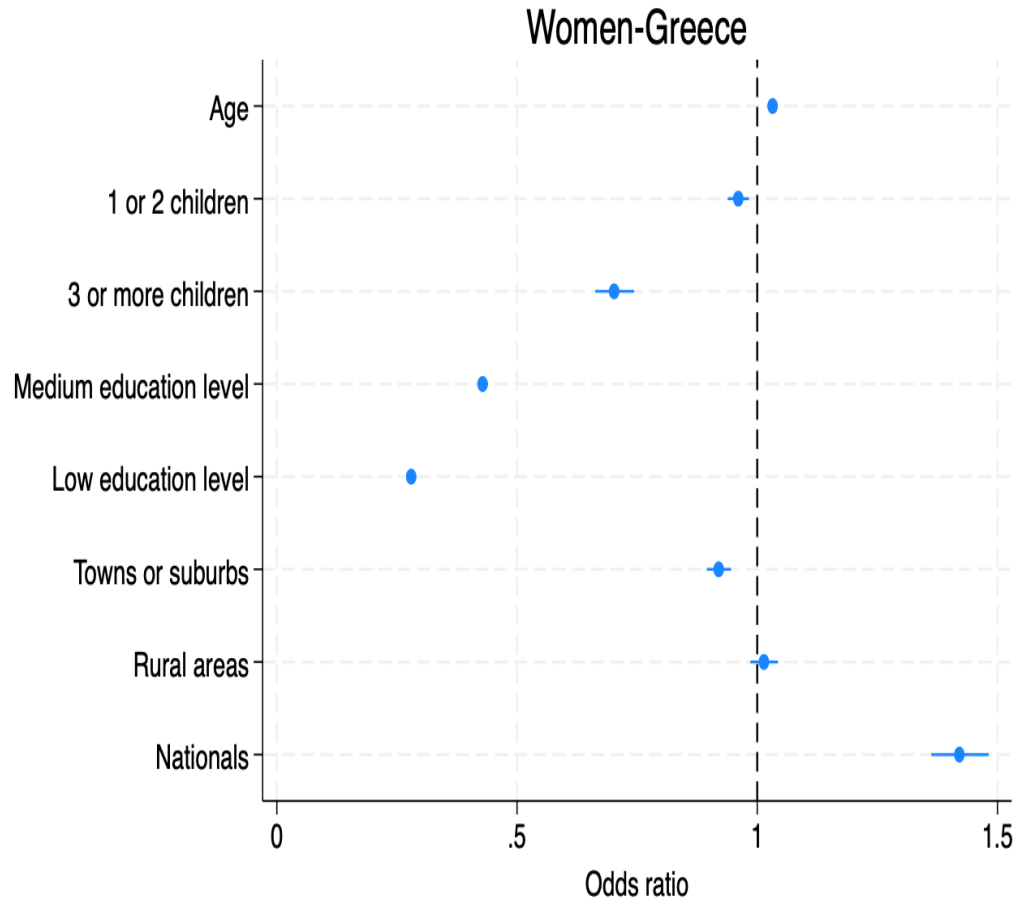
$$Y_{it}^{g} = \alpha^{g} \boldsymbol{D}_{it}^{event} + \beta^{g} \boldsymbol{D}_{it}^{Age} + \gamma^{g} \boldsymbol{D}_{it}^{y} + v_{it}^{g}$$

- Variable t measures time in relation to the time of birth
- So, for example, for individuals having their first child in 2019, t=0 in 2019, t=-1 and t=-2 for each year before the birth takes place and t=+1,…,+4 for the 4 years after the birth of the child
- Y is a dummy variable that takes the value 1 if the individual is employed and 0 otherwise
- g indicates the gender of the individual
- $\boldsymbol{D}_{it}^{event}$ is an event time dummy that takes the value 1 when the observation indicates that birth took place
- $\boldsymbol{D}_{it}^{Age}$ is a dummy for the age of the individual
- $\boldsymbol{D}_{it}^{y}$ is a year dummy
- Variable of interest: coefficient α^{g} on event dummy

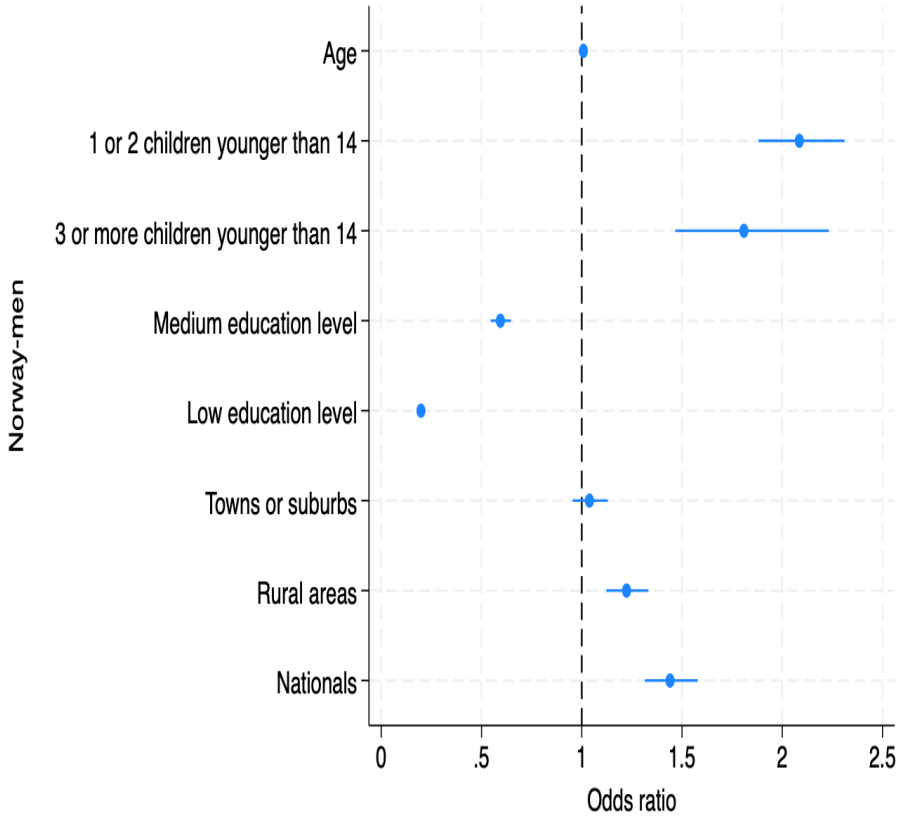
Estimation with cross-sectional data

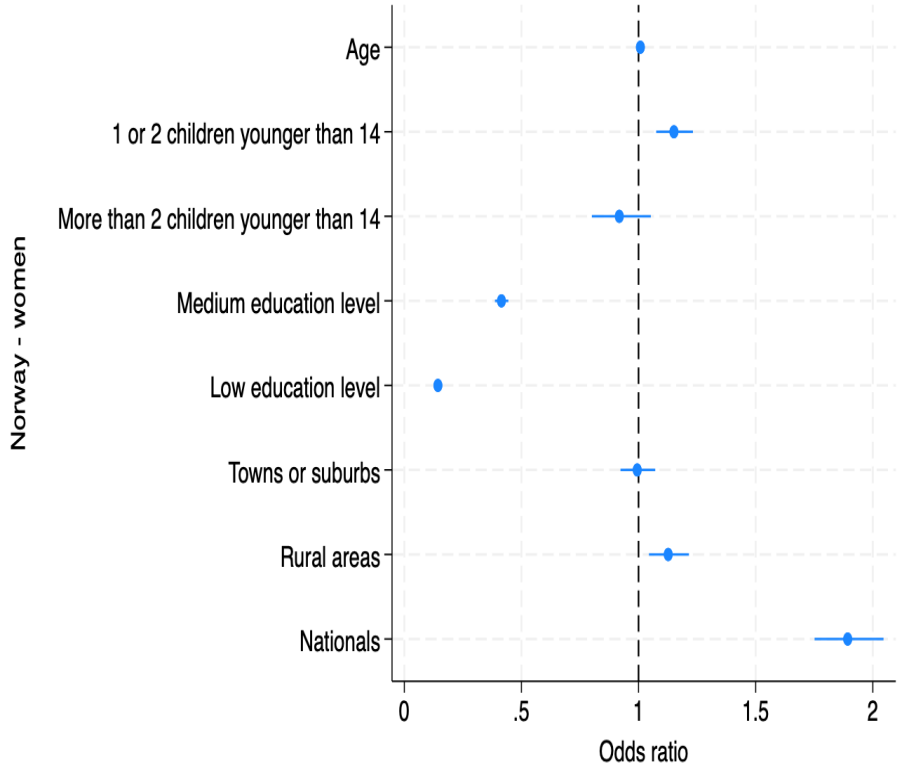
Odds ratios from logit estimates of the impact of children on employment probability using *cross-sectional* data - Greece



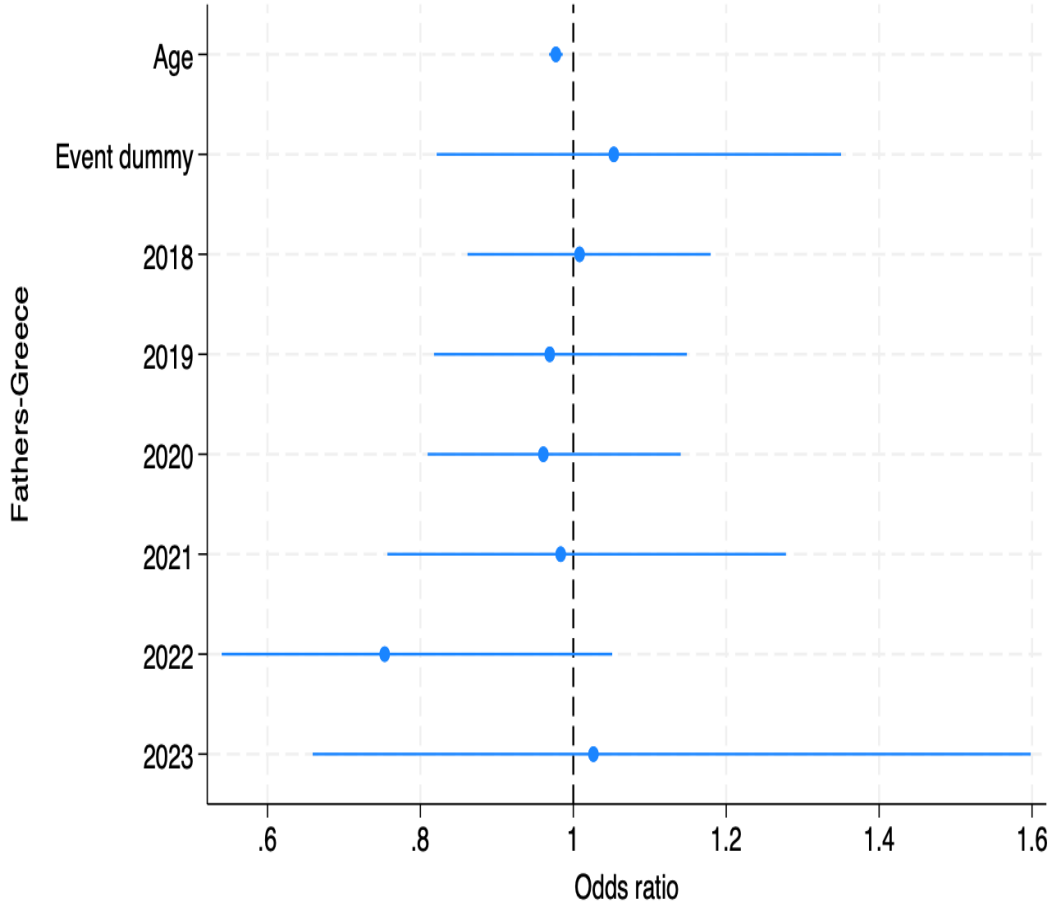


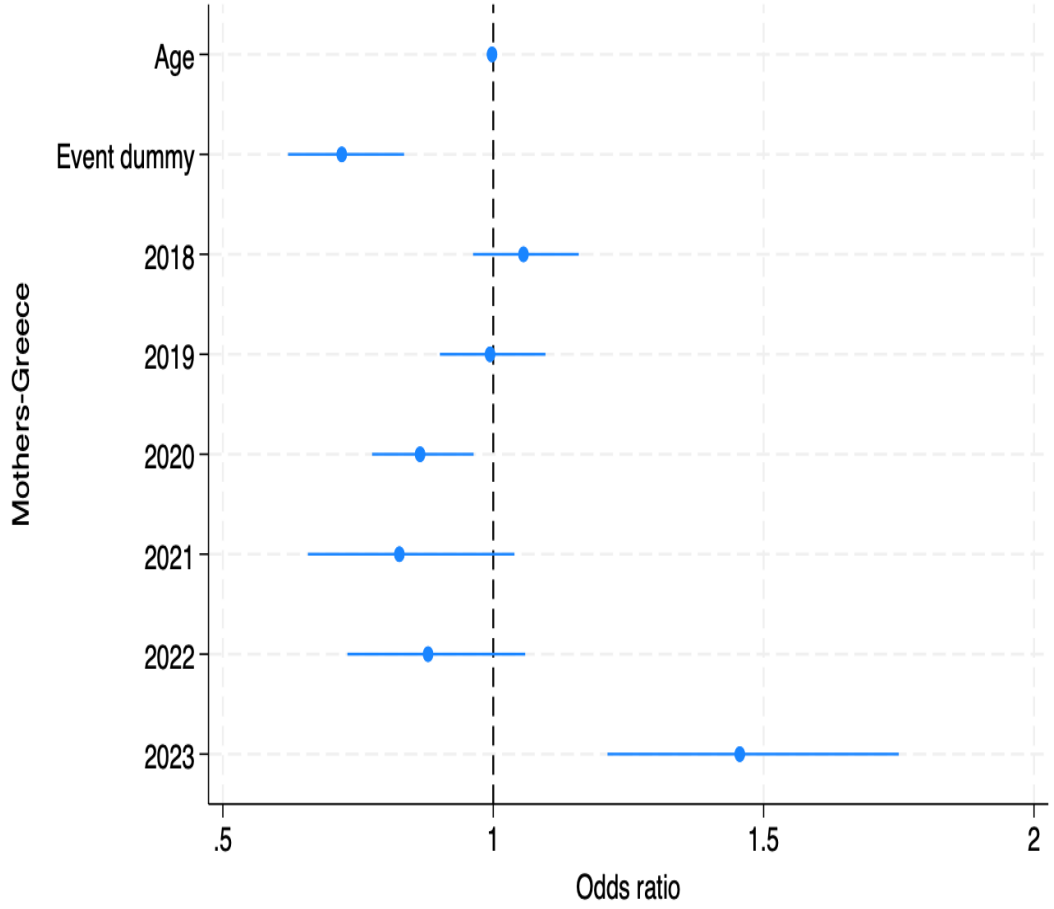
Odds ratios from logit estimates of the impact of children on employment probability using *cross-sectional* data - Norway



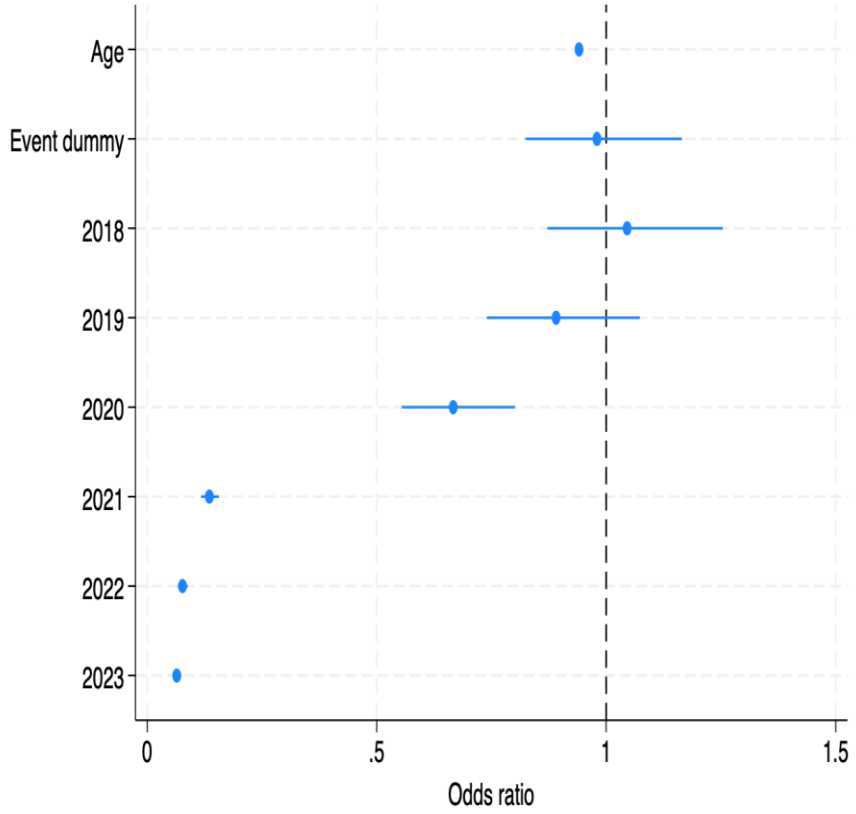


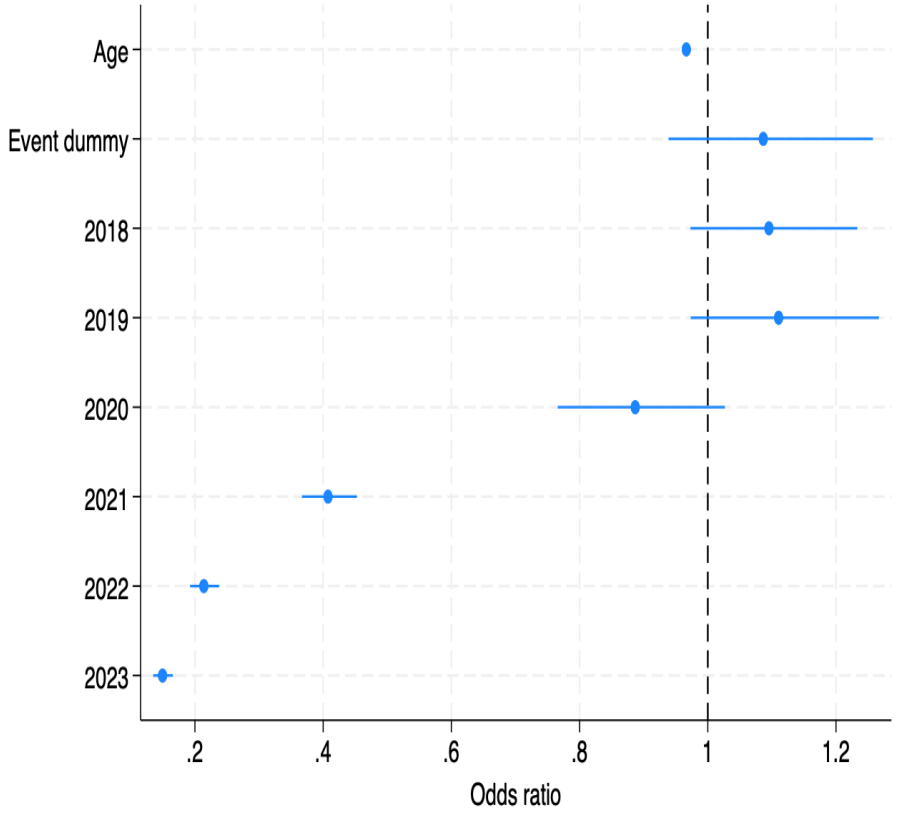
Odds ratios from logit estimates of the impact of children on employment probability using *pseudo-panel* data - Greece





Odds ratios from logit estimates of the impact of children on employment probability using *pseudo-panel* data - Norway





Explanations for high child penalty in Greece

- Social norms
- Institutional factors
- Work hours

Social norms

- 2024 Eurobarometer survey on gender stereotypes

- Do you agree with the statement: “All in all, family life suffers when the mother has a full-time job”?
  - Greece: 70% agreed (23% totally agreed, 47% tended to agree)
  - EU27: 51% agreed (15% totally agreed, 36% tended to agree)

- Do you agree with the statement: “the most important role of a woman is to take care of her home and family”?
  - Greece: 53% agreed (17% totally agreed, 36% tended to agree)
  - EU27: 38% agreed (12% totally agreed, 26% tended to agree)

Social norms evolve

- 2014 Eurobarometer survey
- Do you agree with the statement: “All in all, family life suffers when the mother has a full-time job”?
  - Greece: 75% agreed
  - EU27: 60% agreed

- 2017 Eurobarometer survey
- Do you agree with the statement: “the most important role of a woman is to take care of her home and family”?
  - Greece: 69% agreed
  - EU27: 44% agreed

Social norms interact with policy

- “Government policies are normative. They shape people’s attitudes.” (Ellingsæter, 2024)

- The greater availability of affordable childcare across countries tends to correlate with more permissive cultural norms about mothers relying on childcare in order to continue to work, rather than giving up work in order to look after their babies full-time (Pavolini & Van Lancker, 2018)

- In Norway, the expansion of childcare in the 2000s led to a significant rise in mothers’ employment (Andresen & Havnes, 2018)

- *Counter evidence: In Austria, expanding access to institutional childcare has not shifted strong norms regarding maternal care (Kleven, Landais, Posch, Steinhauer & Zweimüller, 2024)*

Institutions

- Childcare
- Paternity leave

Childcare

- If working mothers have to pay for a babysitter or nanny, government-subsidized childcare will increase not only the number of mothers working, but also their hours of work (Boeri & van Ours 2021)

- Norway has one of the world's most inclusive childcare systems, with very high participation rates (93.8% of all children aged 1-5 in 2024)

- In Greece, 29.6% (87.0%) of all children aged 0-2 (3-4) in 2023 were in formal childcare

Affordable childcare

- Norway
  - maximum childcare fee = €168 pcm (3.6% of average earnings)
  - childcare fee capped at 6% of total family income
  - support to low-income families: 20 hours of free daycare per week

- Greece
  - cost of private daycare in Athens (Thessaloniki): up to €600 (€500) pcm
  - cost of private daycare in Athens (Thessaloniki): 42.3% (35.3%) of average earnings
  - support to low-income families: childcare voucher for 34% of all children aged <4

Paternity leave

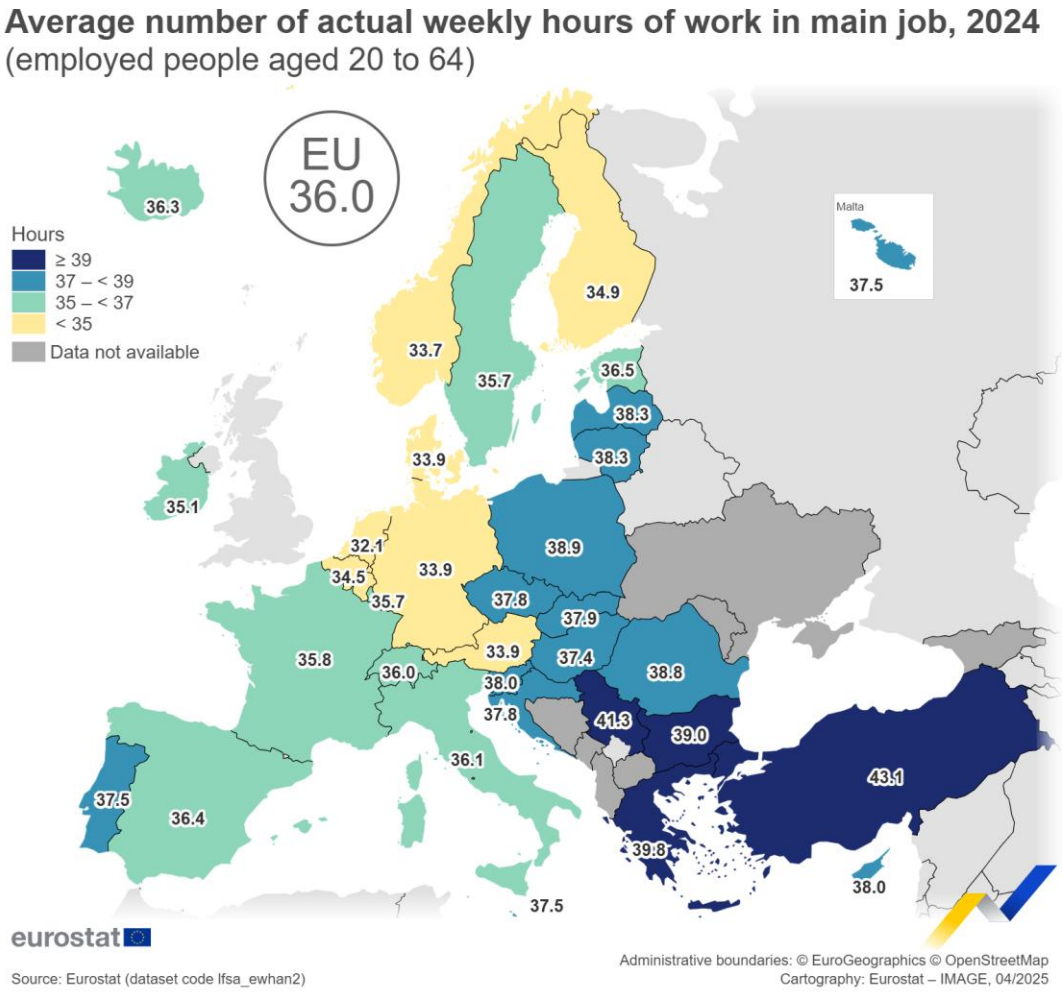
- Norway
  - Fathers entitled to a “use-it-or-lose-it” leave of 15 (19) weeks on full (80%) pay
  - Mothers and fathers choose how to share the rest of parental leave (18-26 weeks)
  - All parental leave (incl. paternity leave) paid by social insurance
  - 50% of fathers take the minimum quota, while 17% take longer paternity leave

- Greece
  - Since 2021, fathers entitled to a “use-it-or-lose-it” leave of 14 days on full pay
  - Paternity leave paid by employers
  - Anecdotal evidence on compliance: low in private sector / high in public sector (except in police and armed forces)

Hours of work in the EU

- Greek workers put in more hours in their (main) job than their counterparts to the north and west

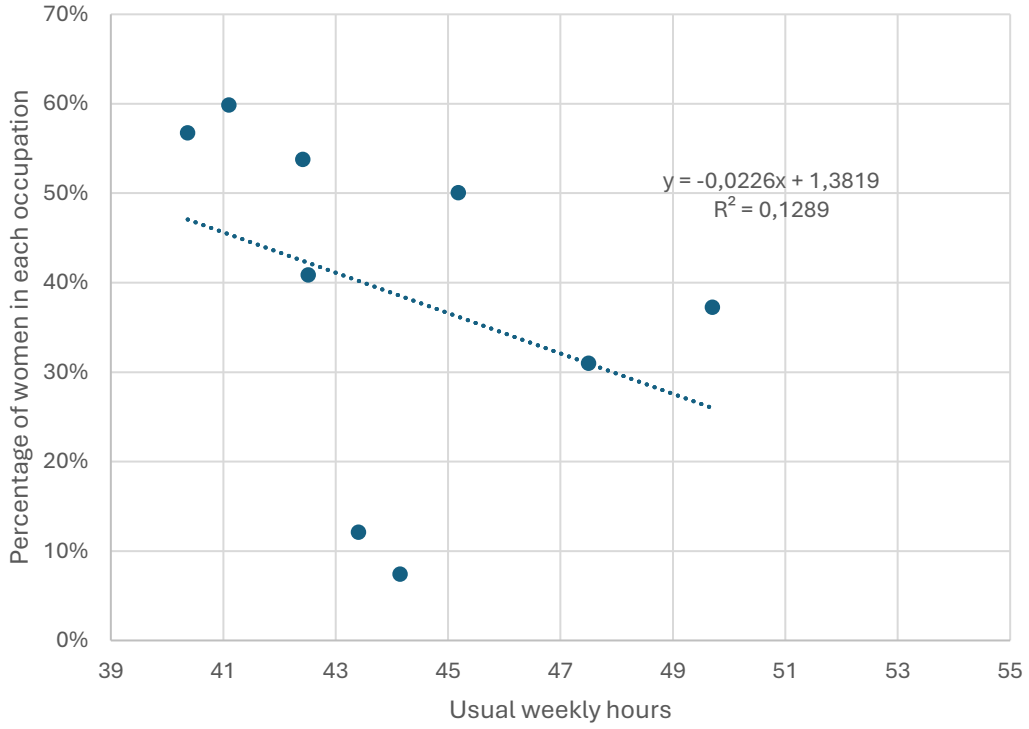
- *A large number (not shown in the graph), almost always male, hold second jobs*



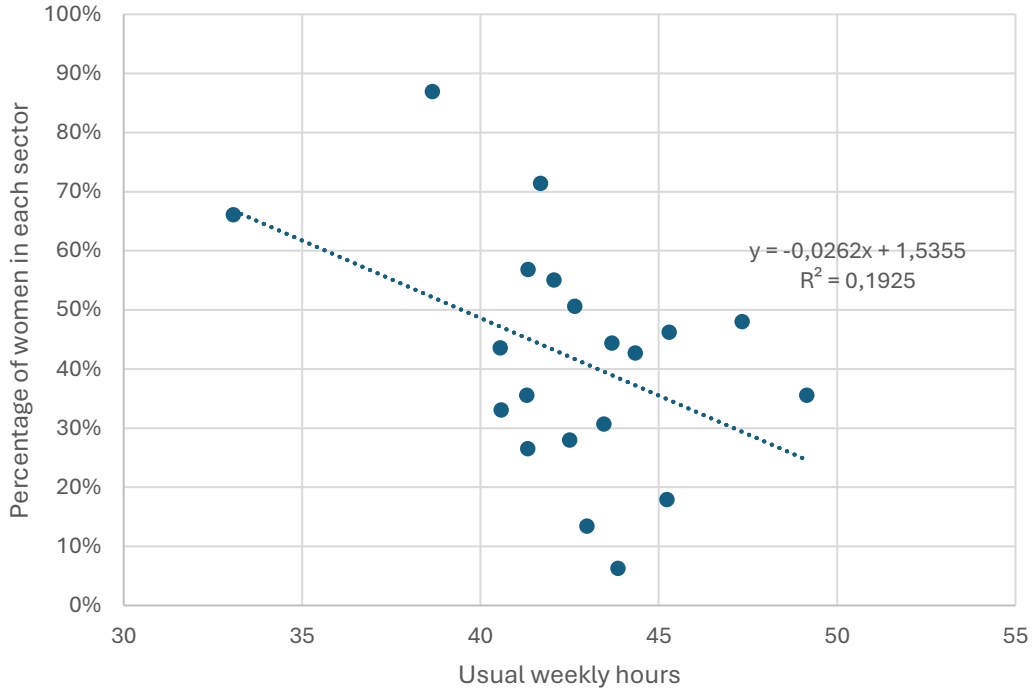
Hours of work in Greece

Occupations and sectors where long working hours are the norm are male-dominated

Percentage of women in one-digit occupations by usual weekly hours of men, 2023



Percentage of women in two-digit sectors by usual weekly hours of men, 2023



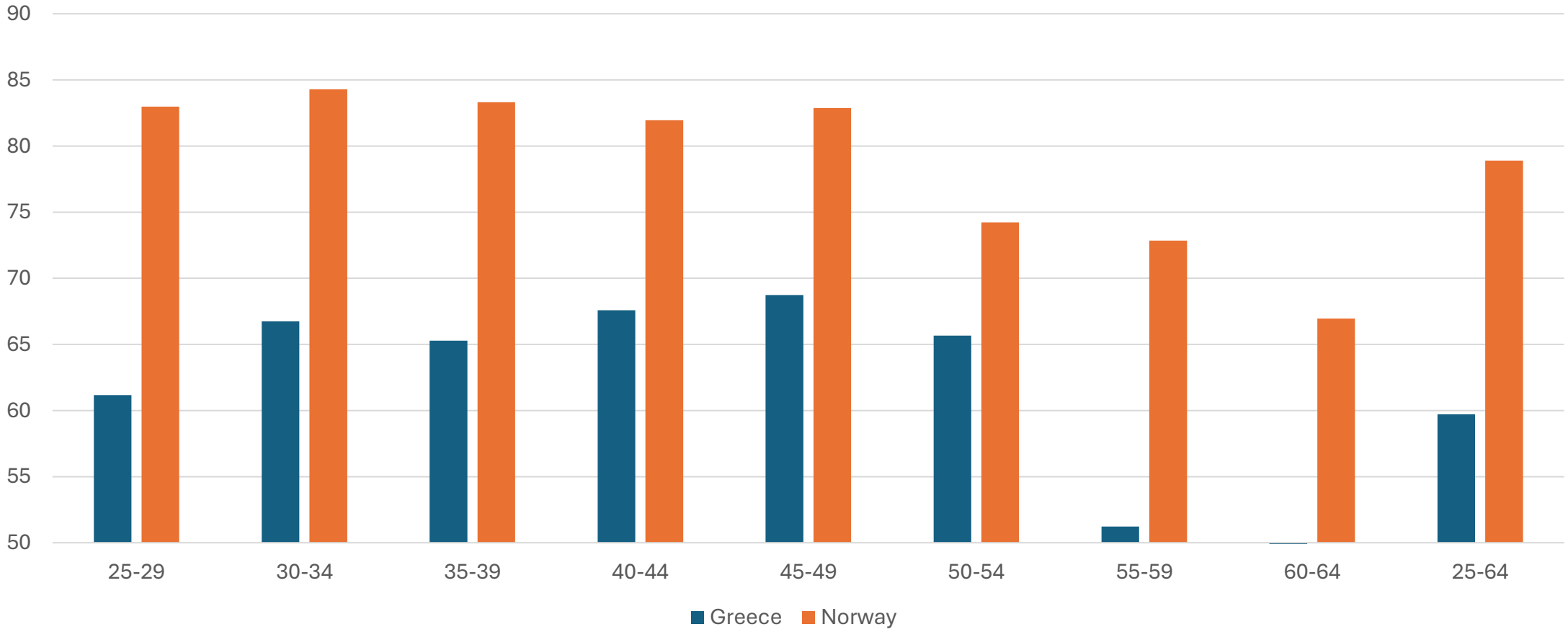
Main points

- Employment rates of women in Greece are low, especially for households with children younger than 15
- The birth of a child in Greece is associated with a decline in the employment probability of mothers by approximately 30%, but has no impact on the employment of fathers
- Institutional factors, social norms, and the way work is organised in Greece – characterised by long hours of work – are not conducive to an increase in female employment
- Quantifying the contribution of these factors in explaining the child penalty is the next question of this research project

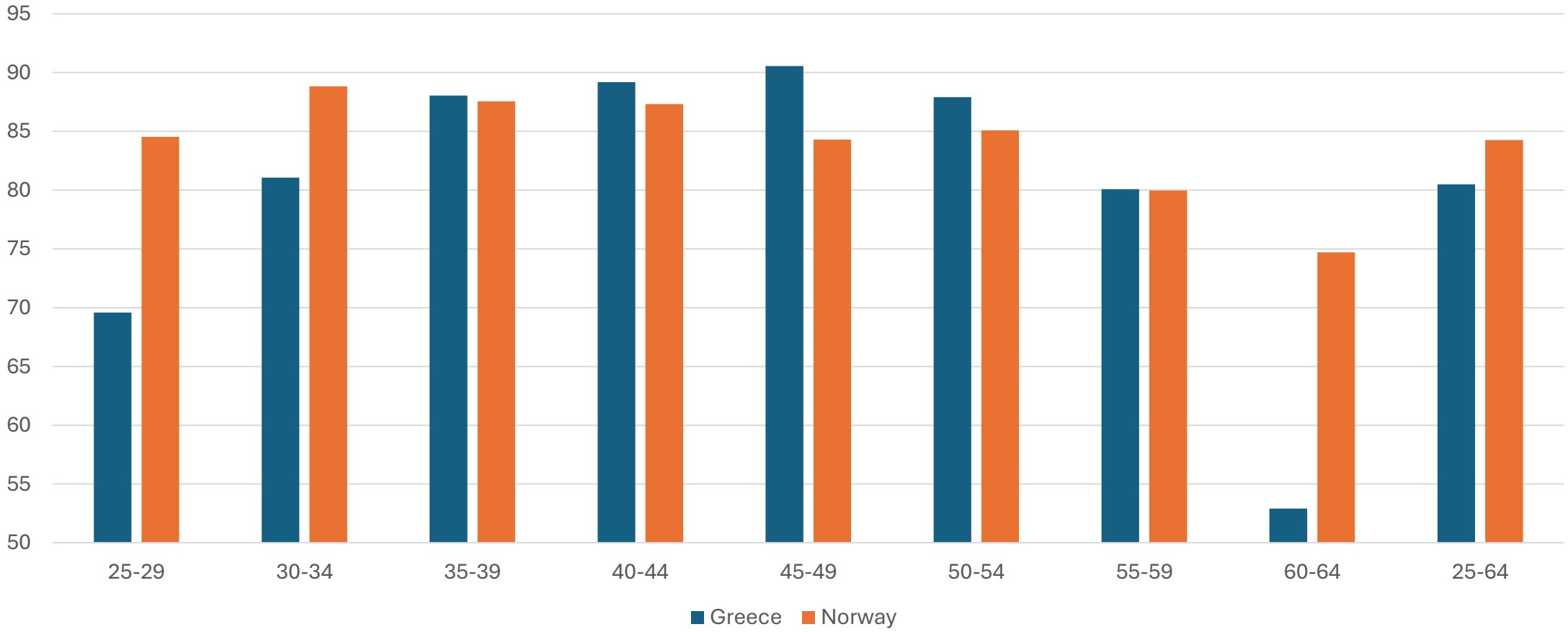
Thank you for your attention!

Extra slides

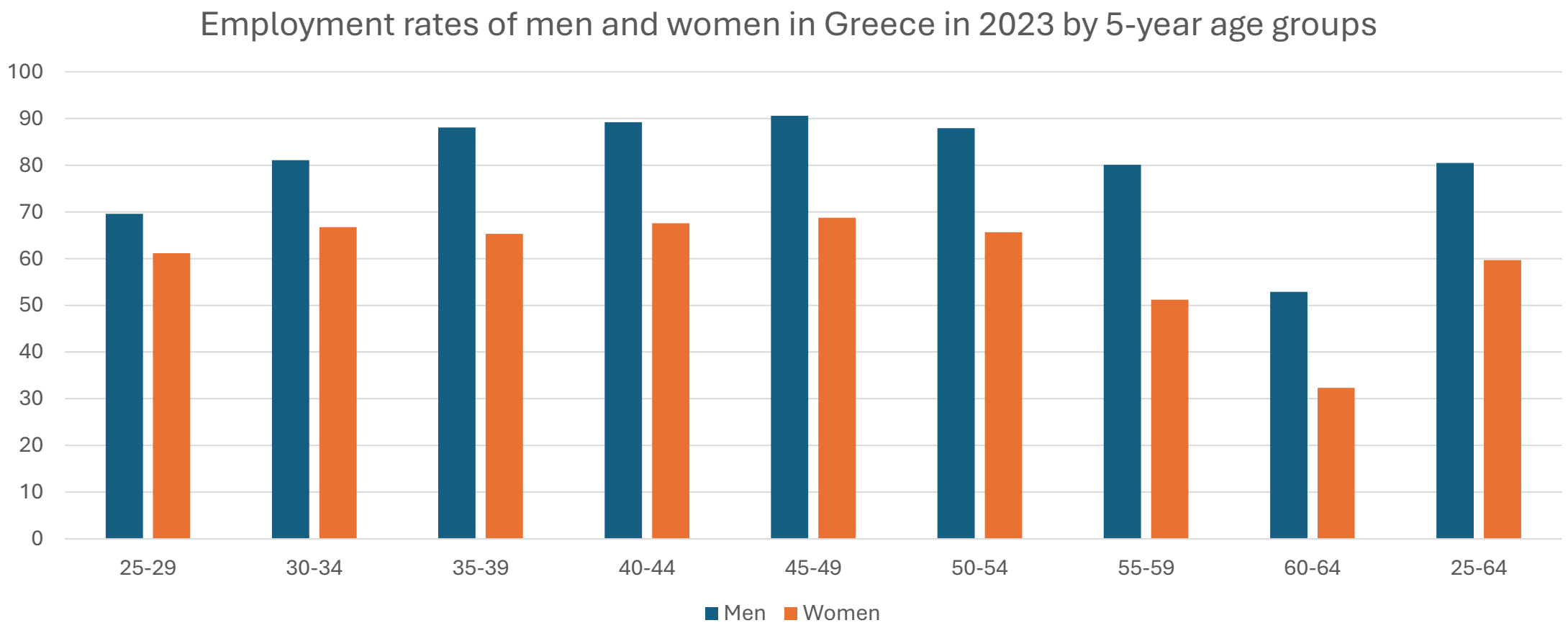
Employment rates of women in Greece and Norway (2023)



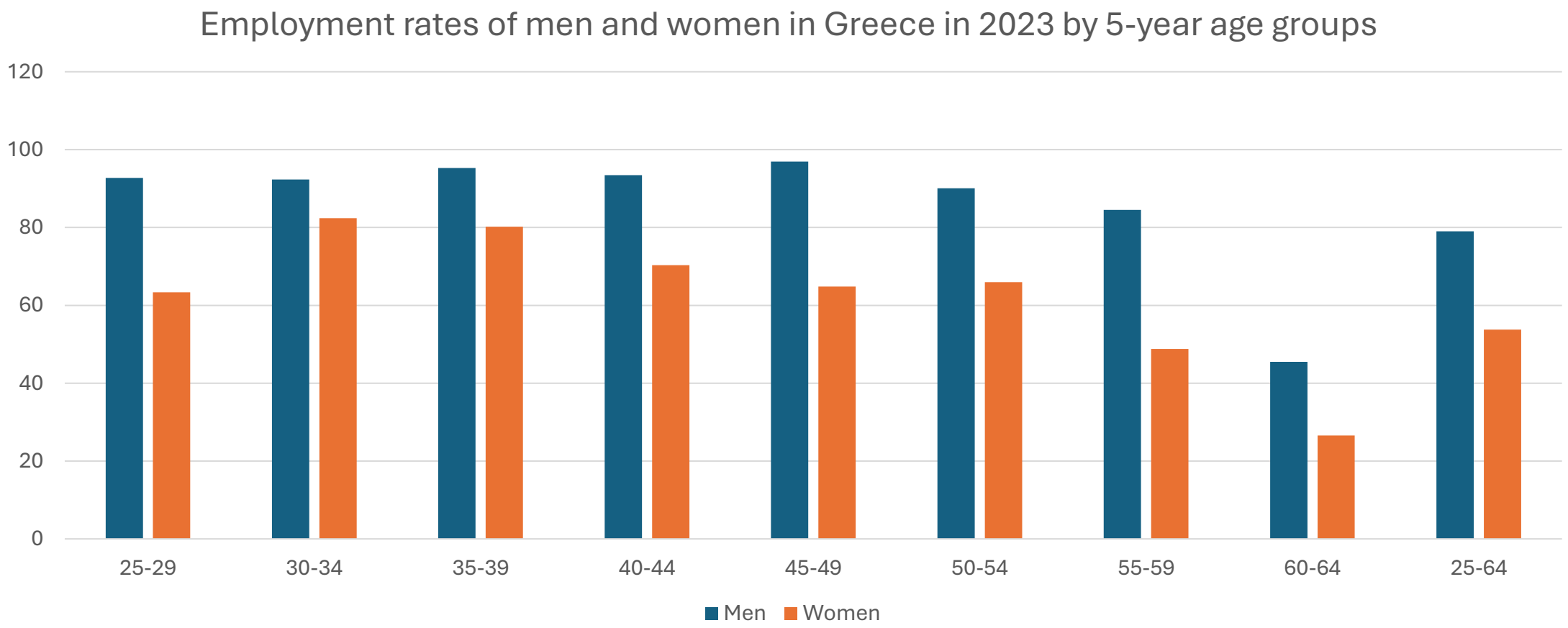
Employment rates of men in Greece and Norway (2023)



Greece: the employment rate gender gap for individuals 25-64 is 20.8 pp in Greece in 2023



Greece: the employment rate gender gap in a two-adult household (25-64) with no children is 25.3 pp in 2023



The employment rate gender gap is 5.4 pp in Norway in 2023