Labour market inequalities and fertility in the context of globalisation and technological change

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Labour market and fertility

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GLOBALISATION

TECHNOLOGICAL CHANGE

STRUCTURAL LABOUR MARKET CHANGE

Labour market and fertility

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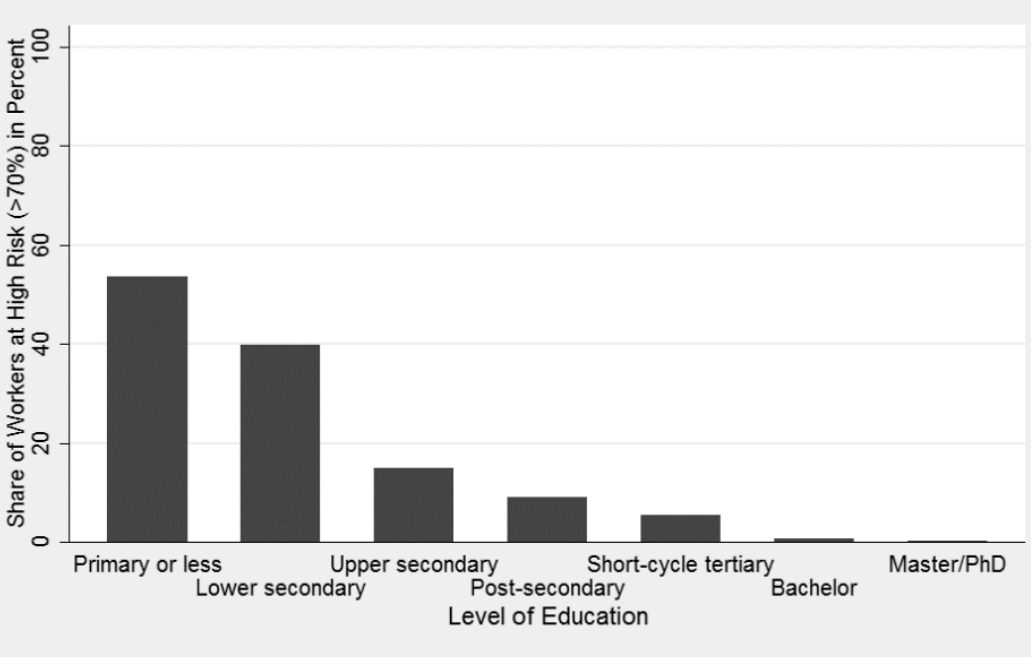
Risks of automation

- 9-14% of jobs at high risk of full automation (more than 70% of tasks automatable)
- 25-32% jobs at medium risk (50-70% of tasks automatable)

Source: Arntz et al. (2017), Nedelkoska and Quinitni (2018)

Figure 6. **Share of Workers with High Automatibility by Education**



Source: Authors' calculation based on the Survey of Adult Skills (PIAAC) (2012)

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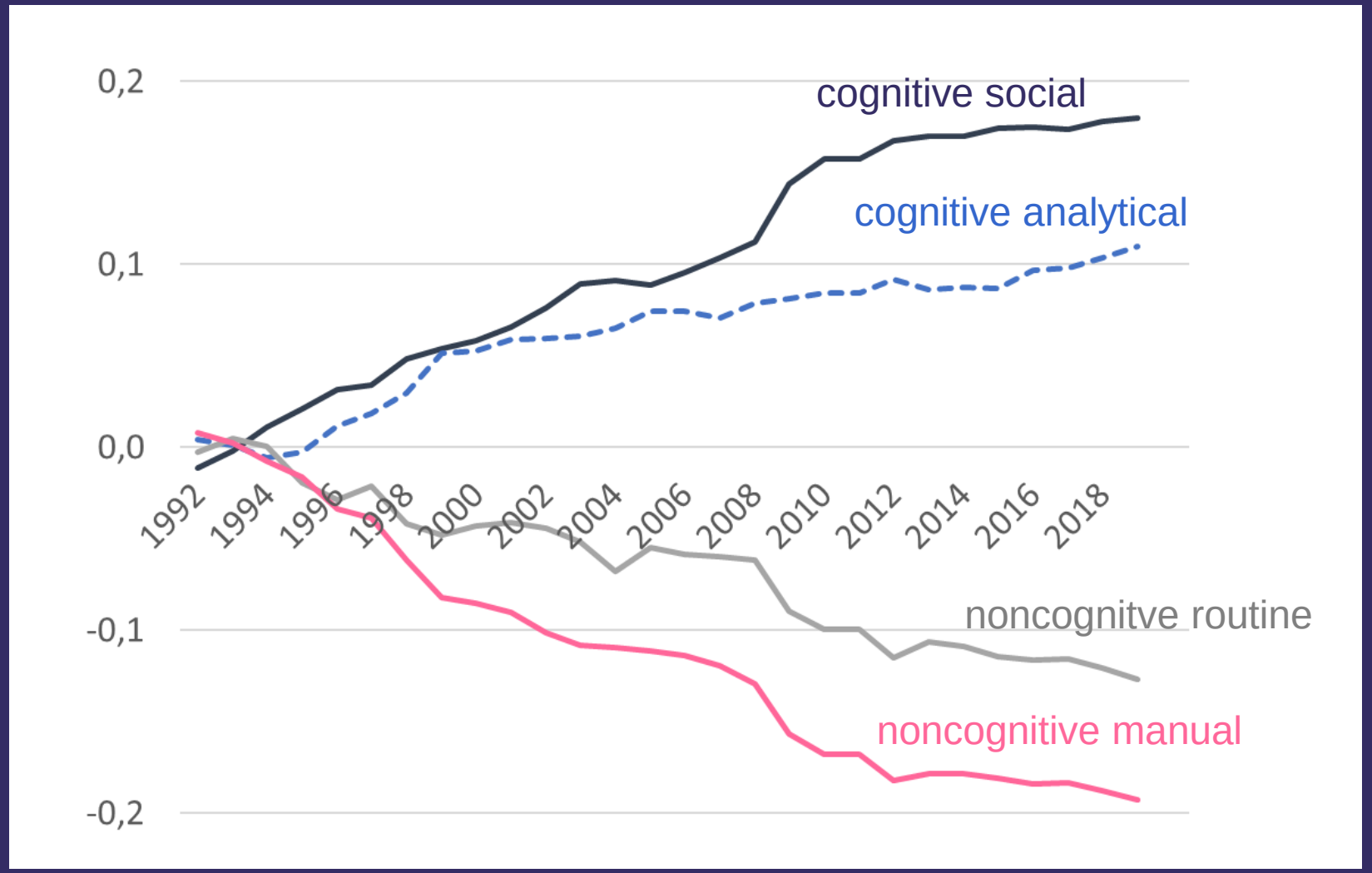
Structural labour market change

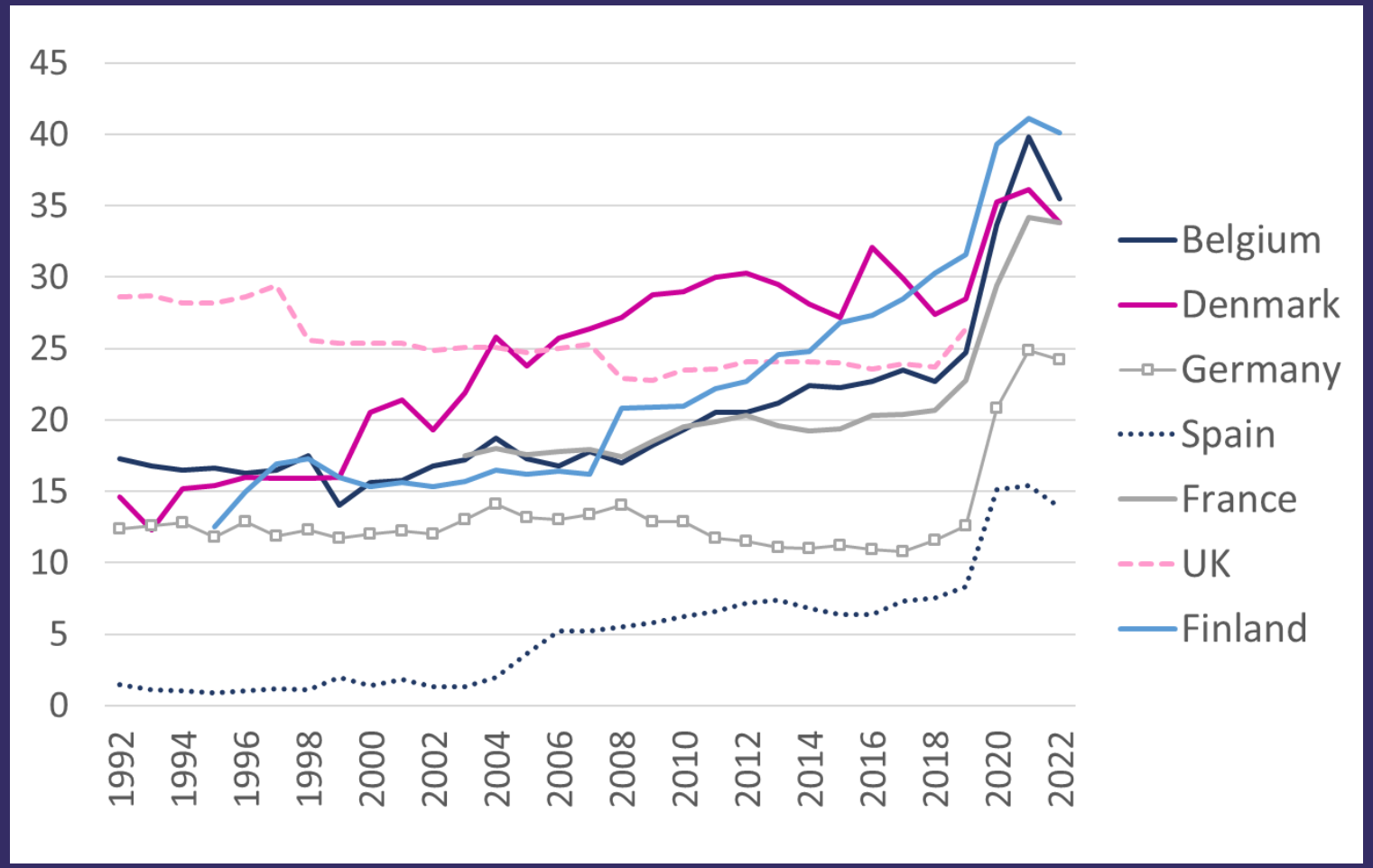
Changing task content of jobs, 1992-2019



Countries covered: Belgium, Denmark, Germany, France, Italy, Spain, Netherlands, UK

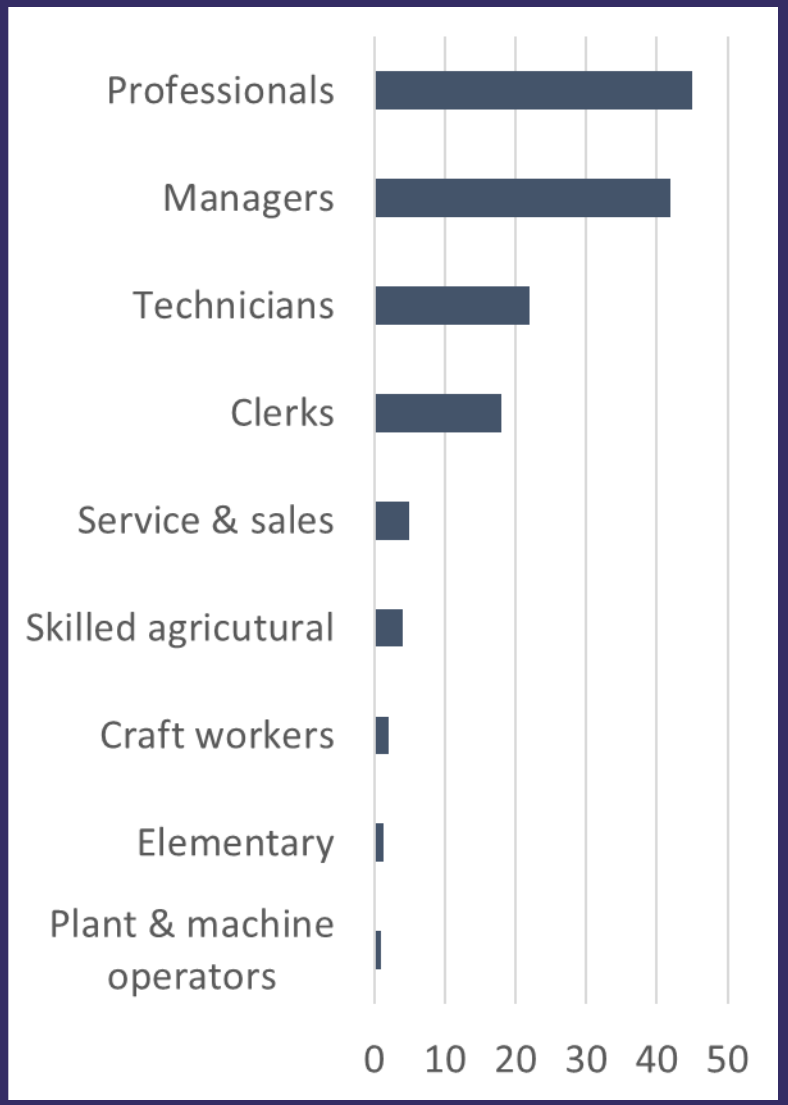
Source: W. Hardy based on EU-LFS and ESCO

% Working from home
(usually or sometimes)



Source: Eurostat

% working from home in 2020



Source: Eurofound

Structural labour market change

- growing inequalities between high and low-to-middle skilled
    - Employability
    - Earnings
    - Job stability
    - Social protection
    - Work autonomy (flexi time and place)
- ongoing change (not cyclical)

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STUDY 1: Cognitive work and fertility

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COGNITIVE WORK

- Analytical
- Social /interpersonal

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Co-authors: H. Bogusz, M. Kreyenfeld

Event: Entry to parenthood

Countries: Germany

Period: 1986-2019

Data:

- German Socio-Econ Panel (SOEP)
- The Employment Survey of the German Federal Institute for Vocational Education and Training (BiBB)

Method:

- Discrete-time EHA

Measure:

- Cognitive task intensity (at the occupational level)

$$\frac{number\ of\ cognitive\ tasks}{number\ of\ all\ tasks}$$

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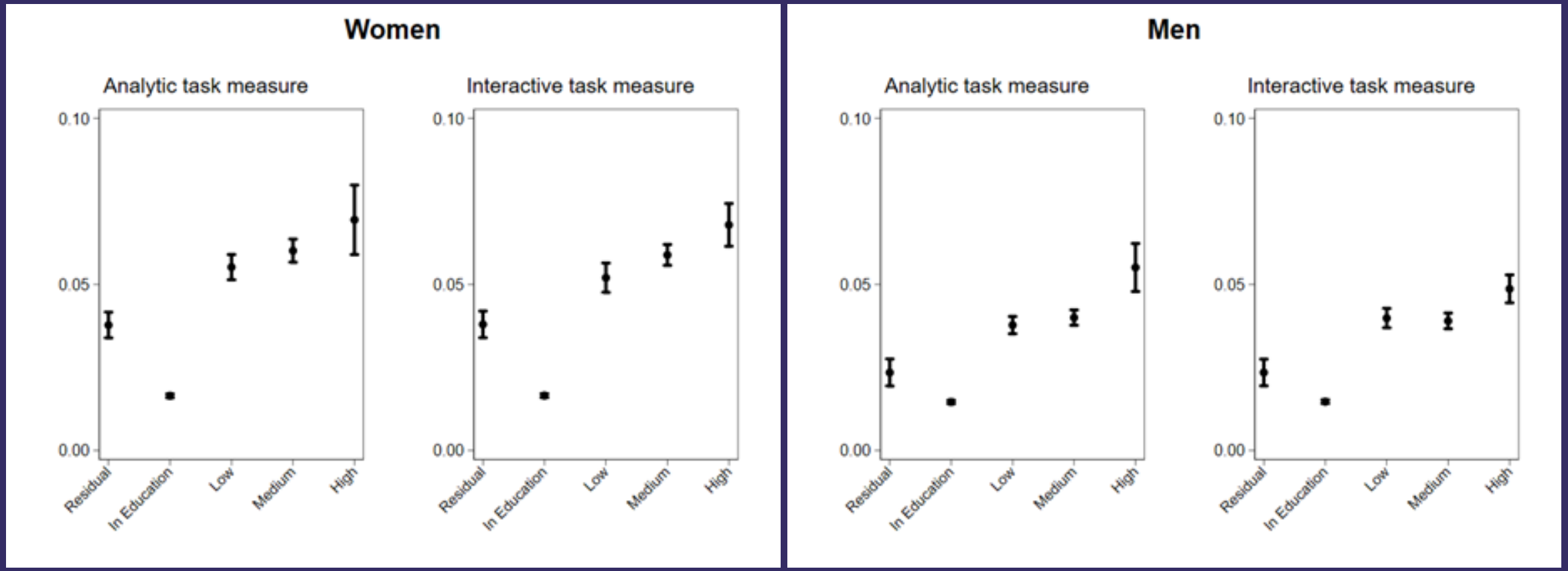
Cognitive work and entry to parenthood



Source: Bogusz, Matysiak, Kreyenfeld, forthcoming

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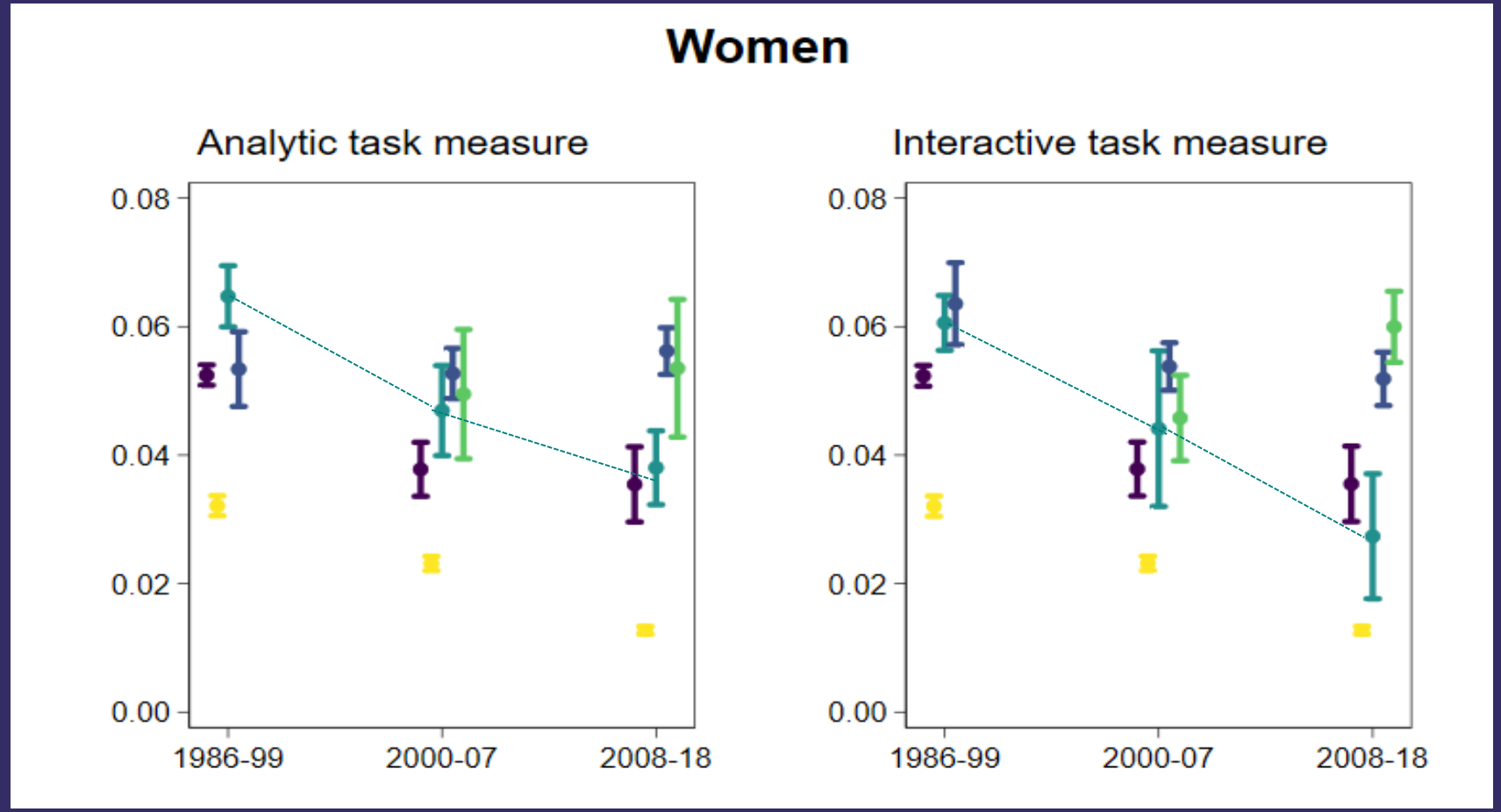
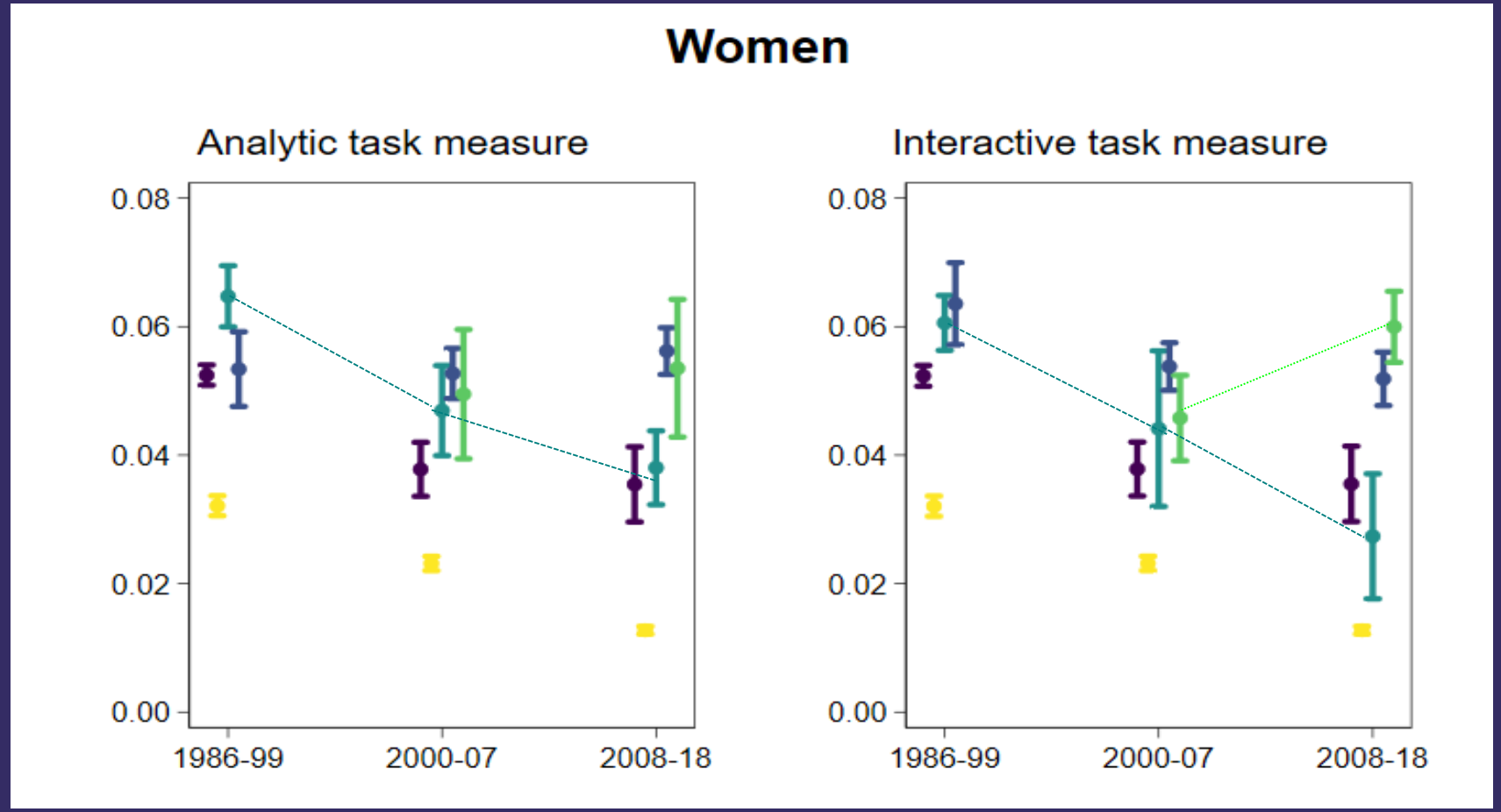
Cognitive work and entry to parenthood



Source: Bogusz, Matysiak, Kreyenfeld, forthcoming

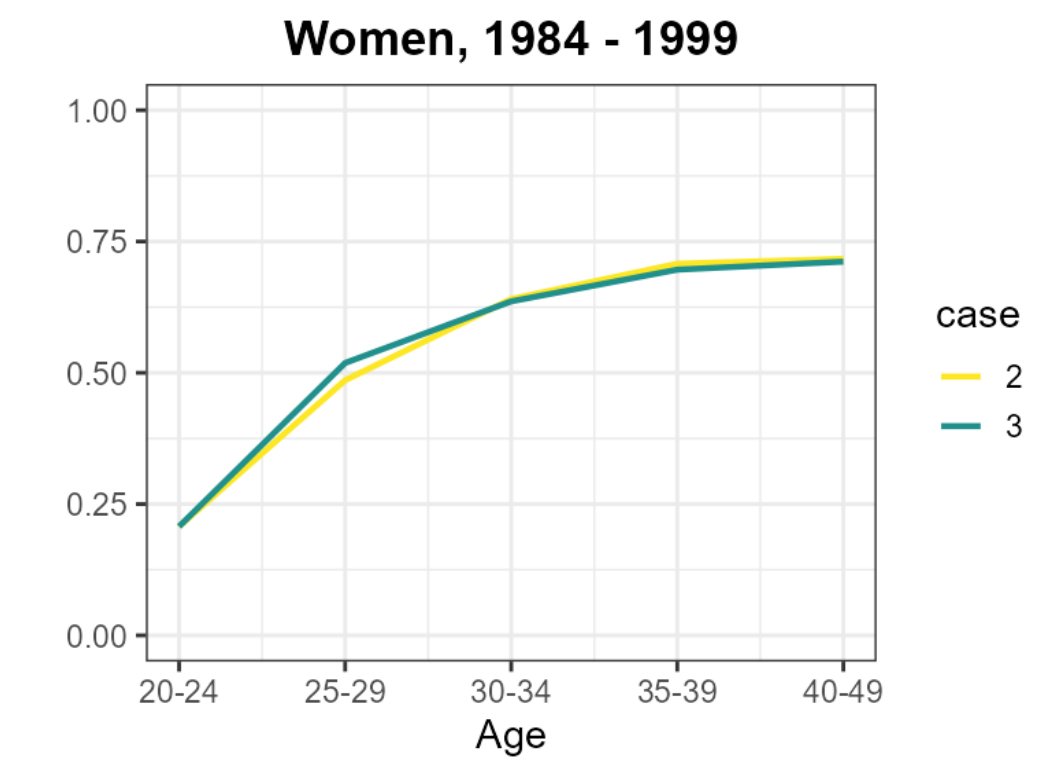
Cognitive work and entry to parenthood

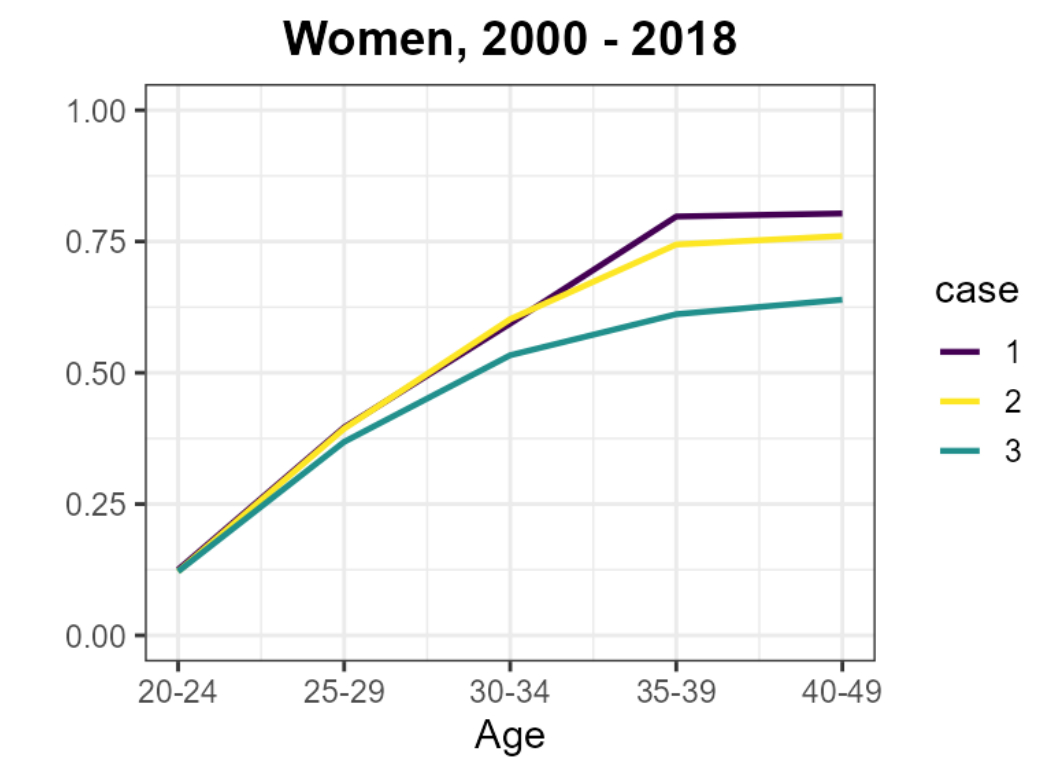


Source: Bogusz, Matysiak, Kreyenfeld, forthcoming

Cognitive work and entry to parenthood

First birth cumulative incidence curves





Case 1: a person is in education until age 29 and then has high analytic task intensity.
Case 2: a person is in education until age 24 and then has medium task analytic intensity.
Case 3: a person has always low analytic task intensity.

Source: Bogusz, Matysiak, Kreyenfeld, forthcoming

- Cognitive workers most likely to become parents
- Decline in first birth risks / increase in childlessness among workers with low cognitive intensity over time

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STUDY 2: Fertility effects of automation

AUTOMATION

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Stability of employment

Wages

Quality of jobs

Uncertainty

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Co-authors: L. Andersson, W. Hardy

Countries: Sweden

Period: 1993-2017

Data:

- Swedish register data
- IFR robot stocks (industry-specific) at 3 digit since 1993

Measure:

- Exposure to robots

Method:

- Discrete-time EHA

$$Exposure\ to\ robots_{r,t} = \frac{robots^{c}_{i,t}}{empl_{i,t_0}}$$

replacement of initial employment (at *t0*) in the industry *i* by robots

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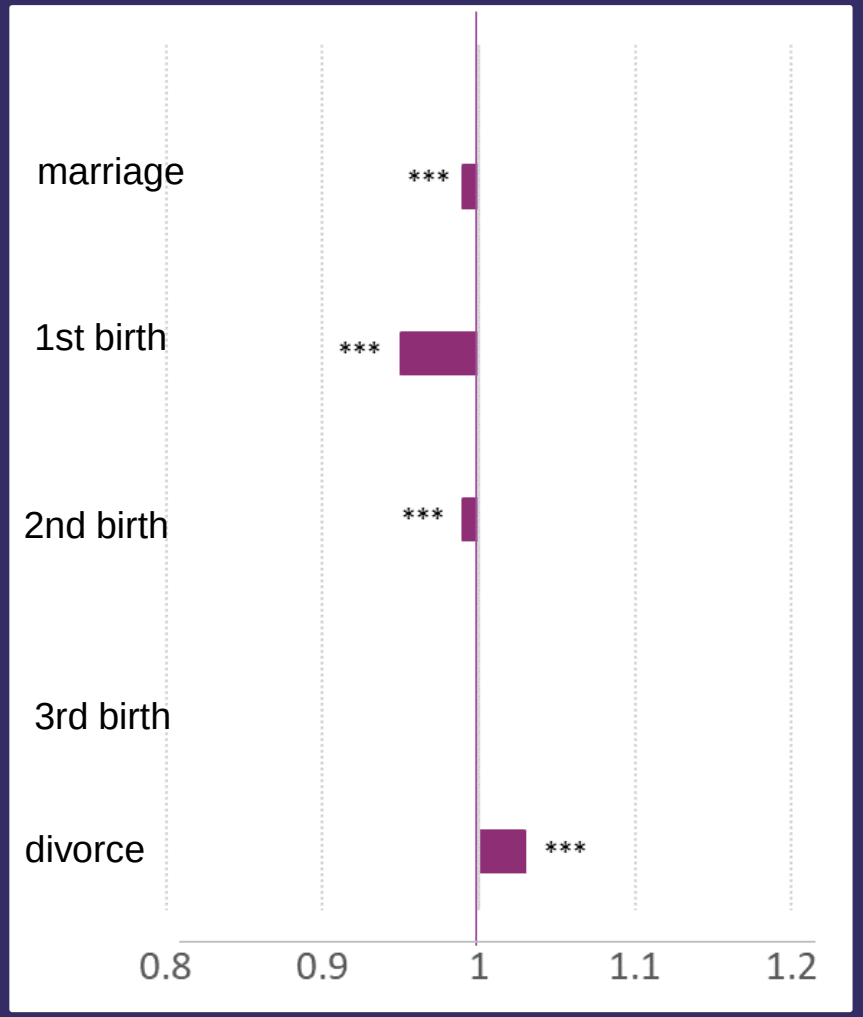
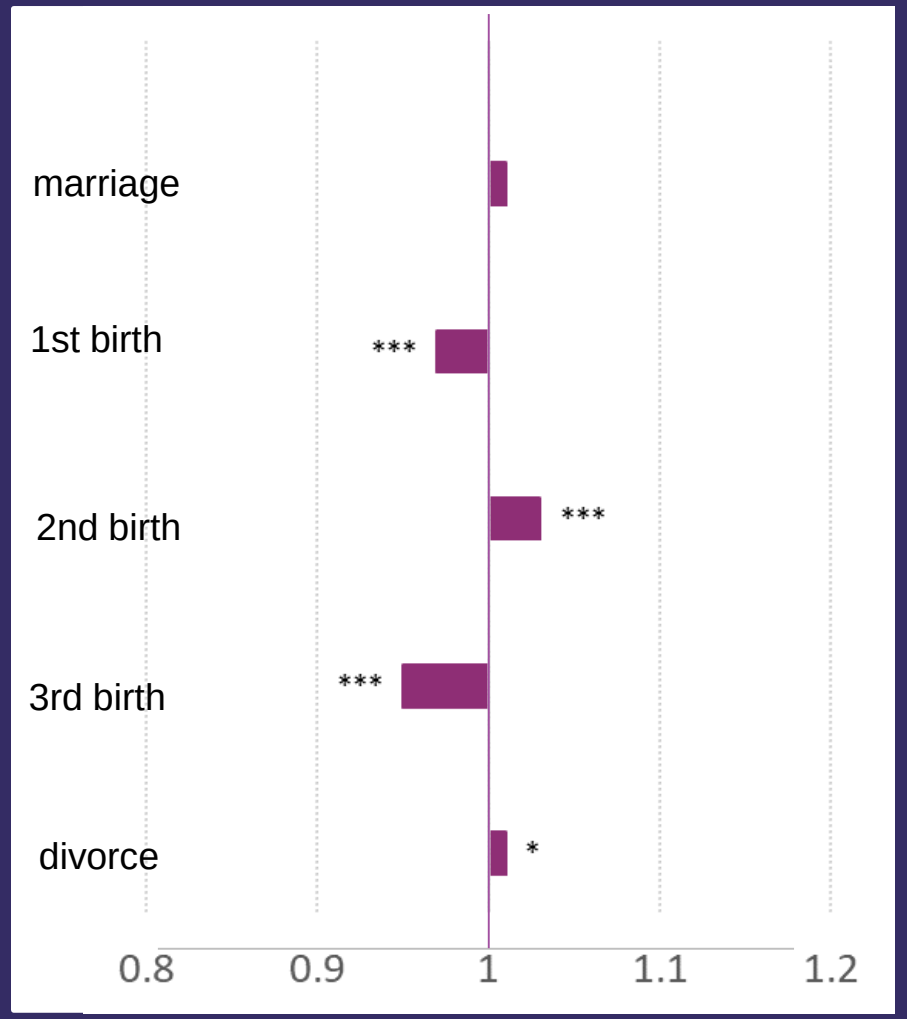
Fertility effects of automation, Sweden

MEN



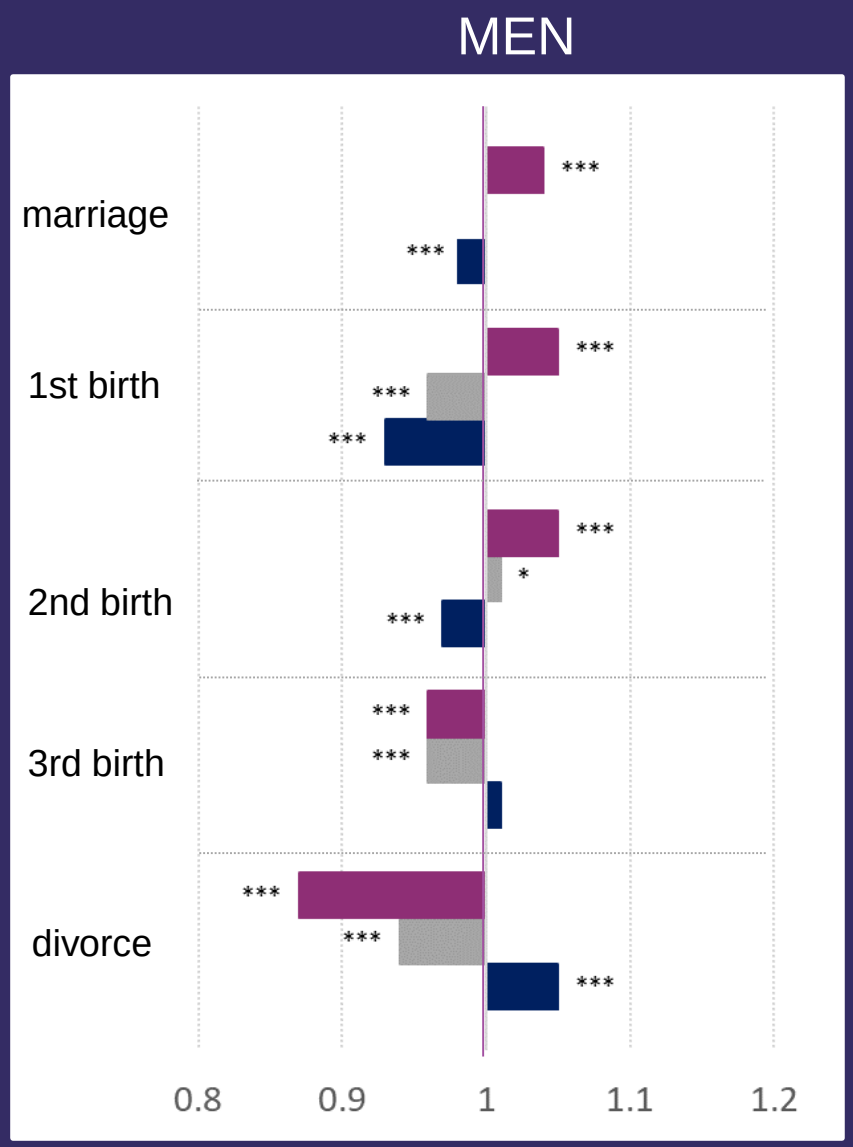
WOMEN

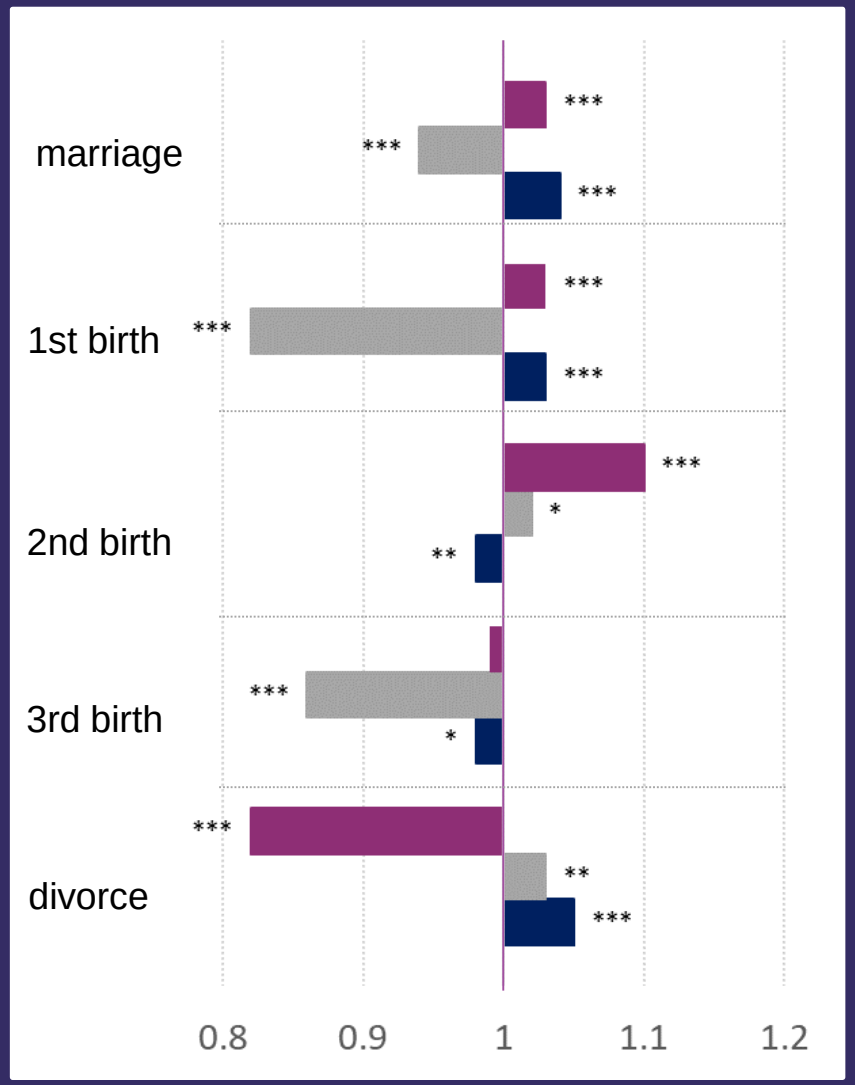


Note: Association between a change in 1 st dev in robot adoption in an industry and risk of event

Source: Andersson, Hardy, Matysiak (work in progress)

Fertility effects of automation, Sweden





ISCED 6-8
ISCED 4-5
ISCED 1-3

Note: Association between a change in 1 st dev in robot adoption in an industry and risk of event

Source: Andersson, Hardy, Matysiak (work in progress)

- Working in a sector with high automation hampers family formation of low / middle skilled workers

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STUDY 3. Work from home and fertility

WORK FROM HOME

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Co-authors: B. Osiewalska

Countries: UK

Data:

- UKHLS 2009-2019

Sample

- partnered women aged 18-44

2,125

2,143

Method:

- Discrete-time EHA

Controls:

- Woman's age, ethnicity, health status, family orientation, partnership status, education, men's income, calendar time

Measures:

- Regular use of WfH
- Irregular use / access to WfH

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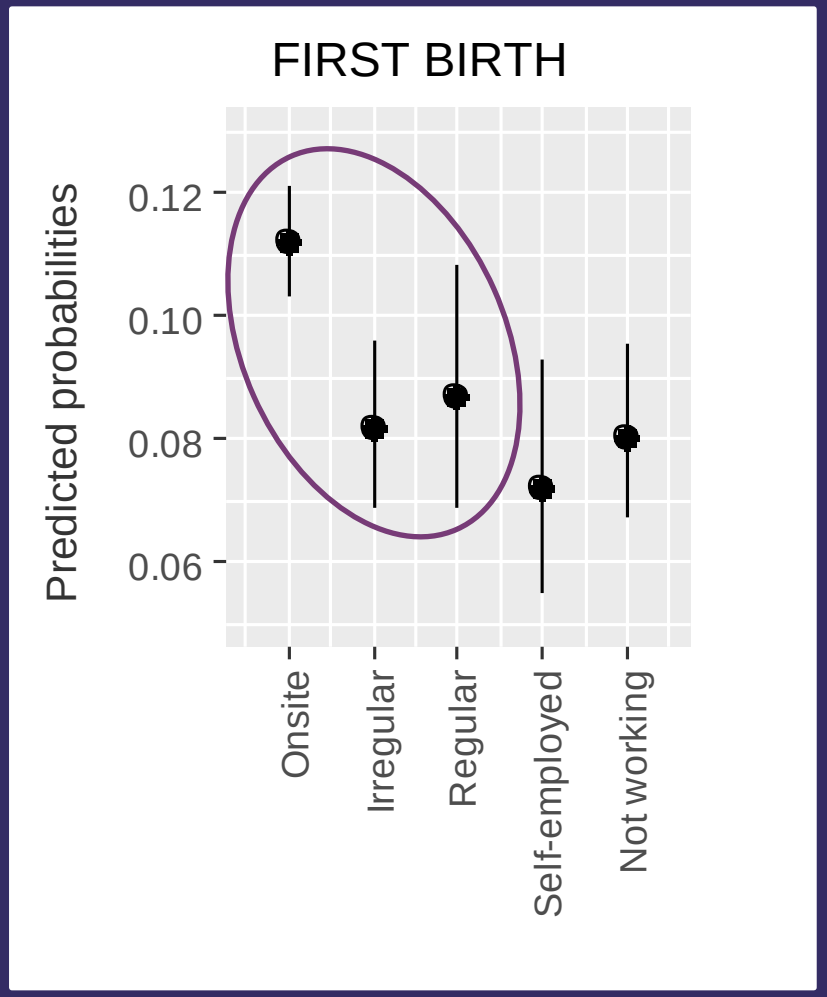
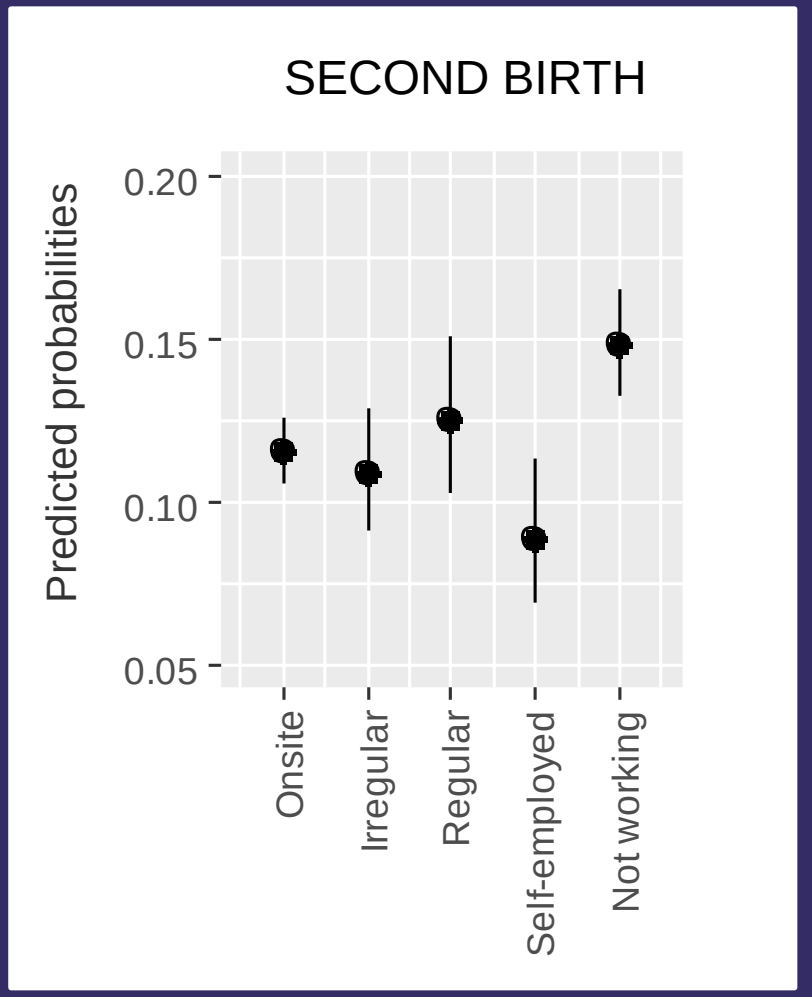
Work from home and fertility





Source: Osiewalska and Matysiak, ongoing

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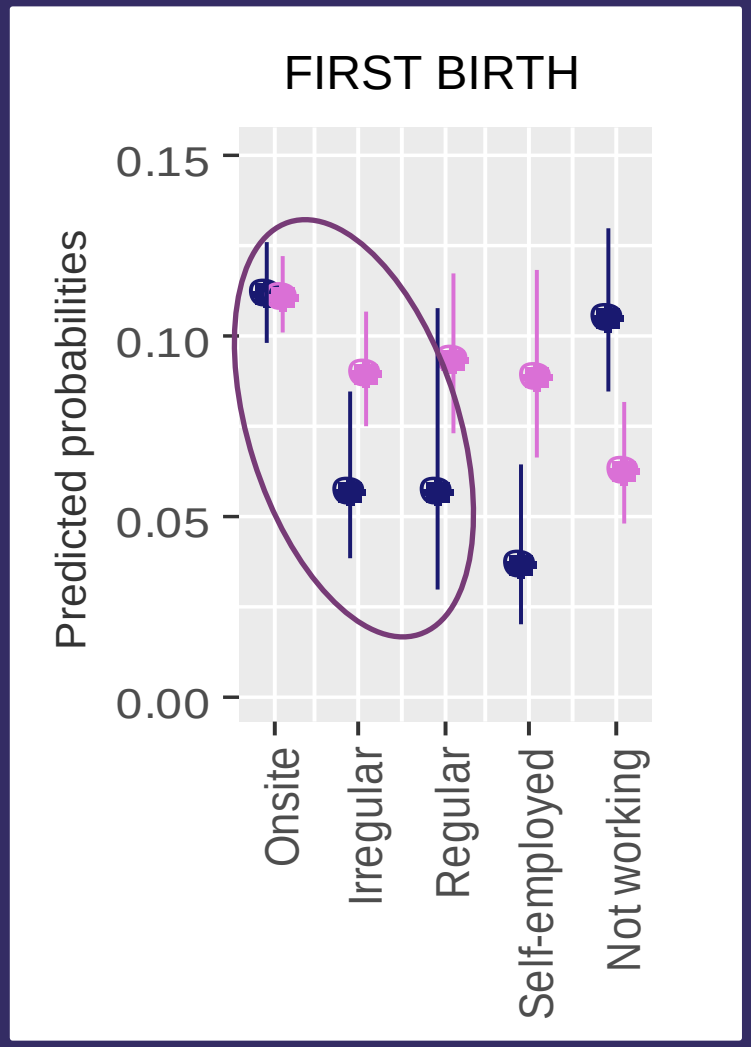
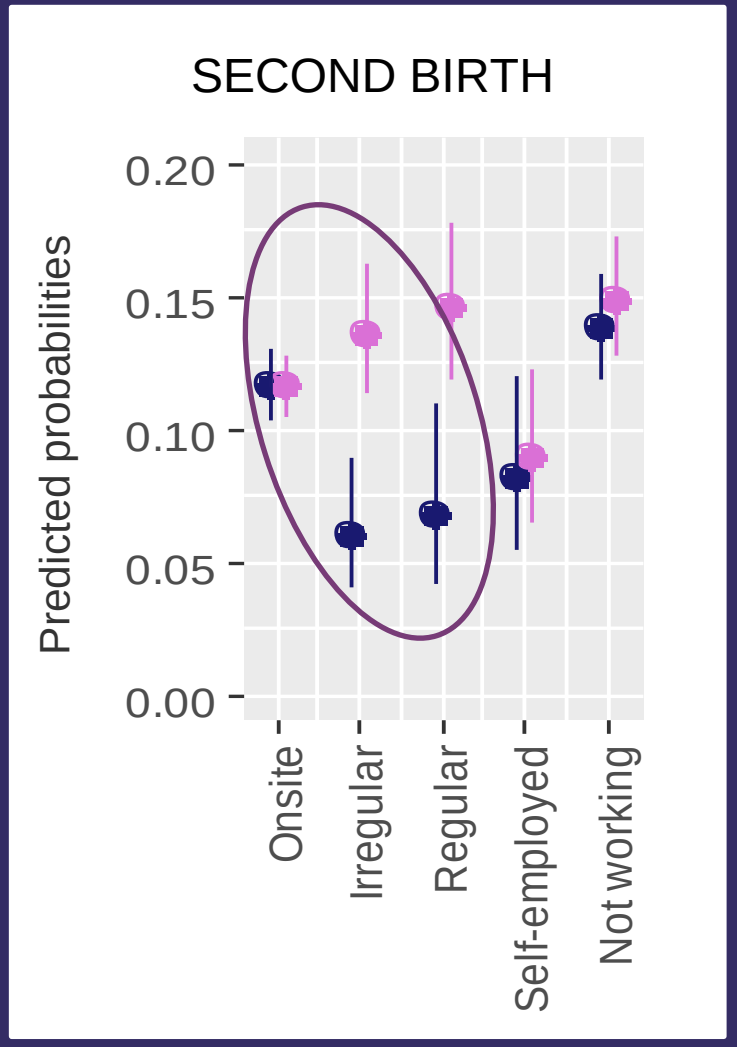
Work from home and fertility





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Source: Osiewalska and Matysiak, ongoing

- Signs of positive relationship between workplace autonomy and second birth risks
- But only among the highly educated!

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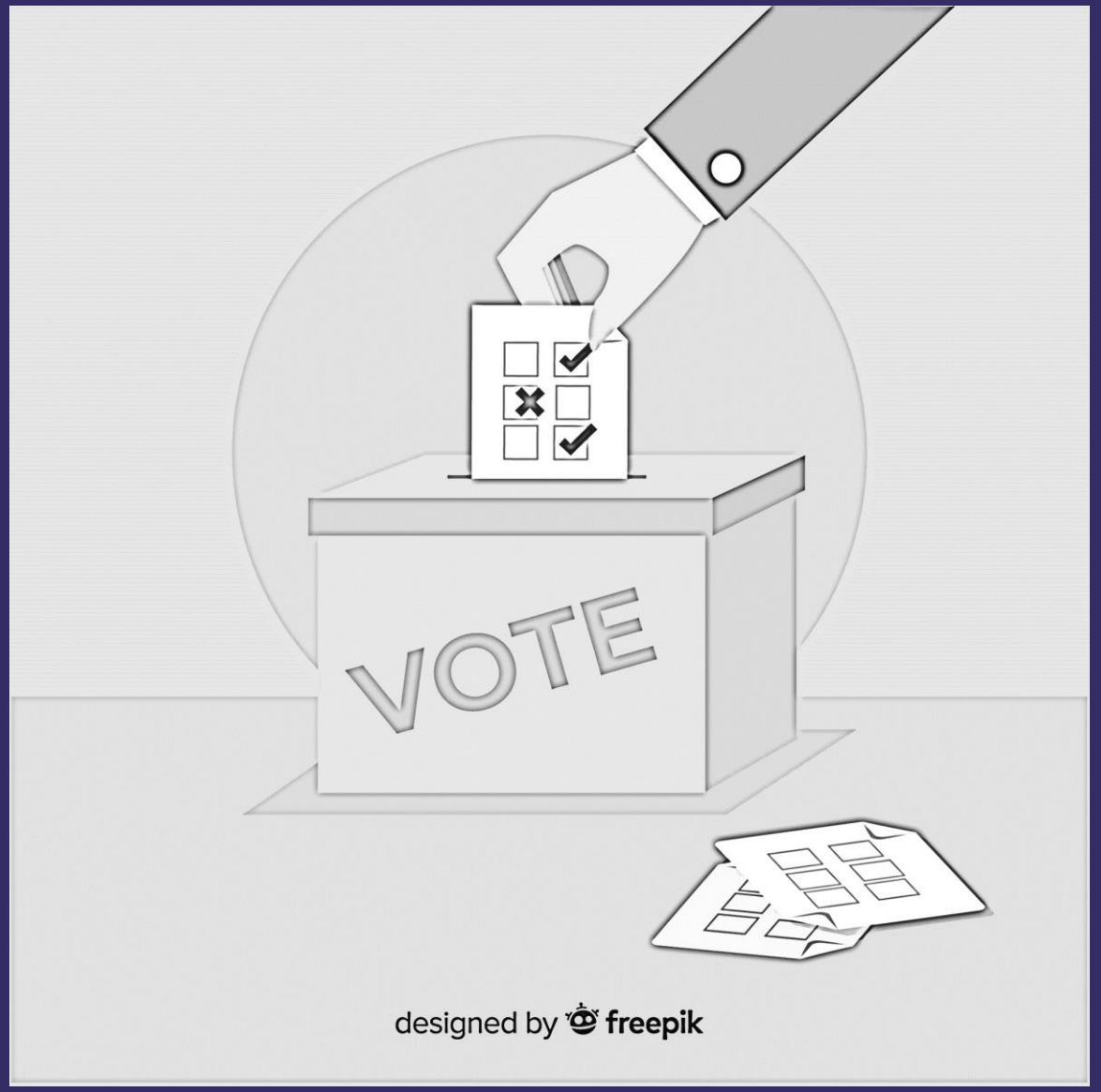

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ORIGINAL ARTICLE

Globalization, robotization, and electoral outcomes: Evidence from spatial regressions for Italy

Mauro Caselli, Andrea Fracasso, Silvio Traverso

First published: 08 June 2020 | https://doi.org/10.1111/jors.12503 | Citations: 12

- Effects of flows of migrants, foreign competition in international trade, and diffusion of robots on local electoral outcomes in 2001, 2008 and 2013
  - All increase in far-right votes in 2001 and 2008
  - Only robotization continues to have such an impact in 2013 (immigration increased votes for Far Star Movement at the expense of far right)

Political machinery: did robots swing the 2016 US presidential election?

Carl Benedikt Frey, Thor Berger, Chinchih Chen

Oxford Review of Economic Policy, Volume 34, Issue 3, Autumn 2018, Pages 418–442, https://doi.org/10.1093/oxrep/gry007

Published: 02 July 2018

positive and significant effect of workers' exposure to robot adoption on the change in the regional share of votes in favour of the Republican candidate (2016 vs 2012 elections; Trump vs Romney)

Western Europe 1990-2018

Import competition, automation and financial crisis positively related to suport for populist parties

THANK YOU!

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