Family, Labor Markets, and Policy

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Background and motivation

- During the second half of the 20th Century women made major inroads in labor markets across all developed economies.

  - "Grand Convergence" in employment and earnings.
  - Entering male-dominated fields and occupations.
  - Narrowing and reversal of the gender gap in college graduations.
  - Delayed family formation and fertility.

- Many factors technological and cultural eased female labor market entry and investments in human capital.

Remaining gender gaps

- But differences with respect to men remain, mostly driven by children. Parenthood produces sizable and permanent setbacks in women's careers but not men's.

- Changing role of women generated, and often eased by, government intervention and (increasingly) firms' policies targeting families.

- Both equity and efficiency arguments permeate the economic and political discourse on family policies.
  - Social justice arguments about (un)equal opportunities.
  - Efficiency arguments if barriers for women lead to sub-optimal allocation of talent.

Roadmap

- ▶ Trends fertility, marriage, employment and wages for 24 countries:
  - ▶ Anglo-Saxon & Scandinavia
  - ▶ Continental Europe & Ireland
  - ▶ Southern Europe, Central and South America &Taiwan
  - ▶ Data sources: IPUMS International and Luxembourg Income Study (LIS)

- ▶ Framework illustrating role of preferences, productivity and government policies on household time allocation decisions.

- ▶ Lessons from past and present family-related policies.

- ▶ Promising avenue: Role of firms

- ▶ Presentation based on:
  - ▶ Albanesi, Olivetti and Petrongolo (2022)
  - ▶ Olivetti and Petrongolo (2017)
  - ▶ Many references within ...
  - ▶ Our current research agendas

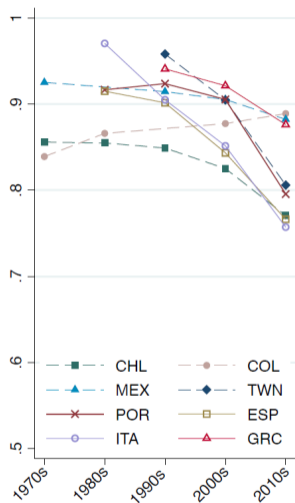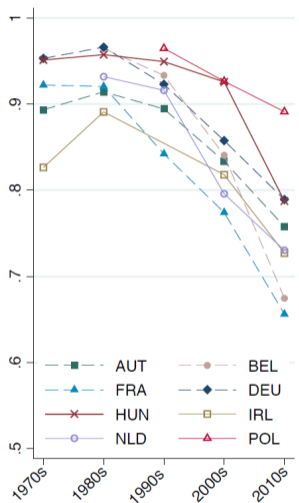# Share of college graduates among men and women
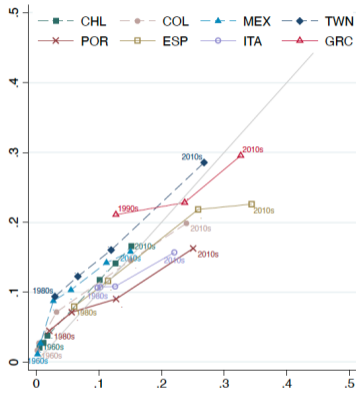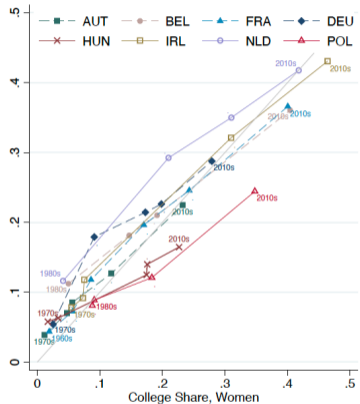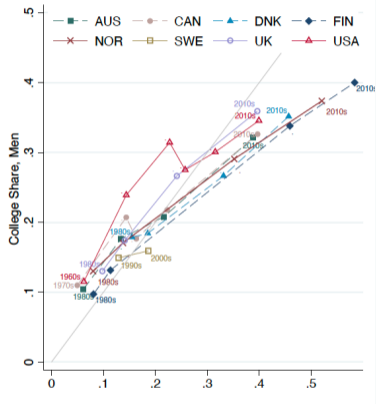
Notes: Sample: men and women 34-44. Share of college educated women growing on average by 7.3pp per decade (9.5 in group 1, 5pp in group 2); 4.3 for men. *Data Source*: LIS and IPUMS International.

Current differences in college major
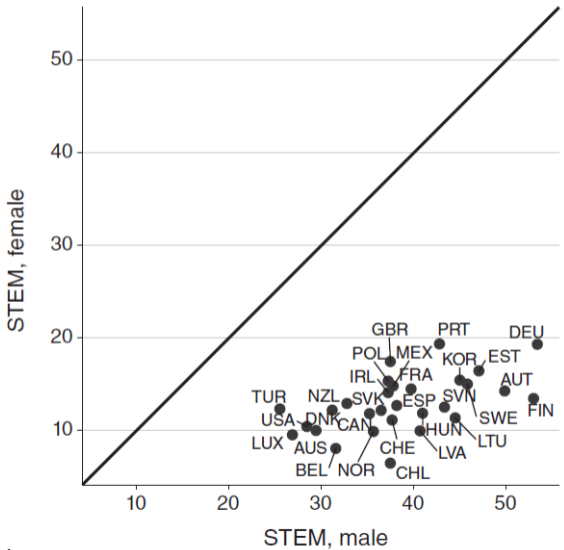
Source: Bertrand (2020).

Marriage trends: 1970s to 2010s
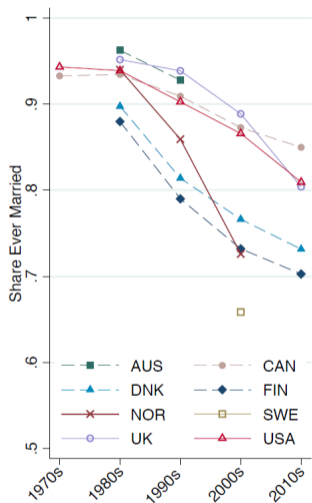
Notes: Women aged 35-44. Largest decline (30pp+ in some EU countries); smallest (10pp or less) in the Americas and south EU. *Data Source*: LIS and IPUMS International.

Fertility trends: 1970s to 2010s
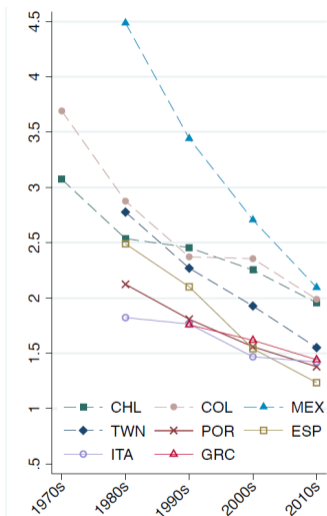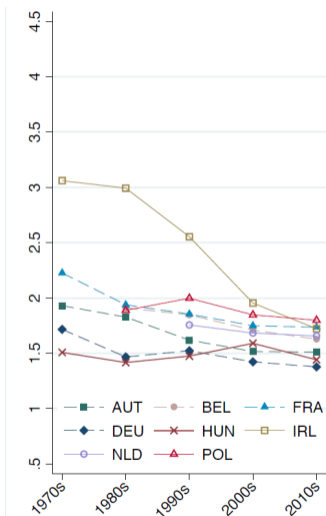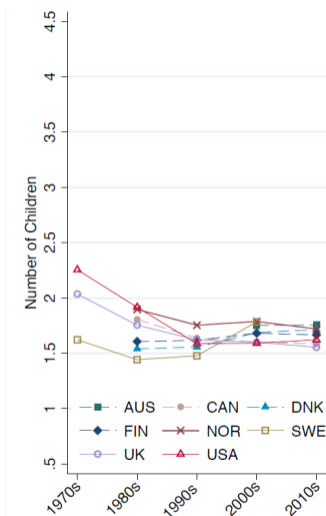
Notes: Women aged 35-44. *Data Source*: LIS and IPUMS International.

Gender employment Gaps: 1970s to 2010s
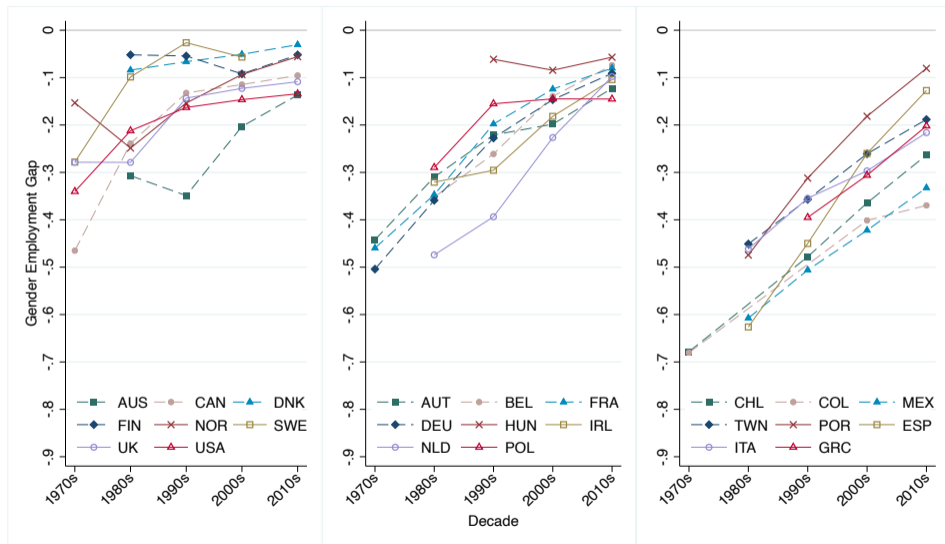
Notes: Men and women aged 25-54. Huge declines in group 3. *Data Source*: LIS and IPUMS

Gender earnings gaps: 1970s to 2010s

Panel A: Gender Pay Gap, Employed
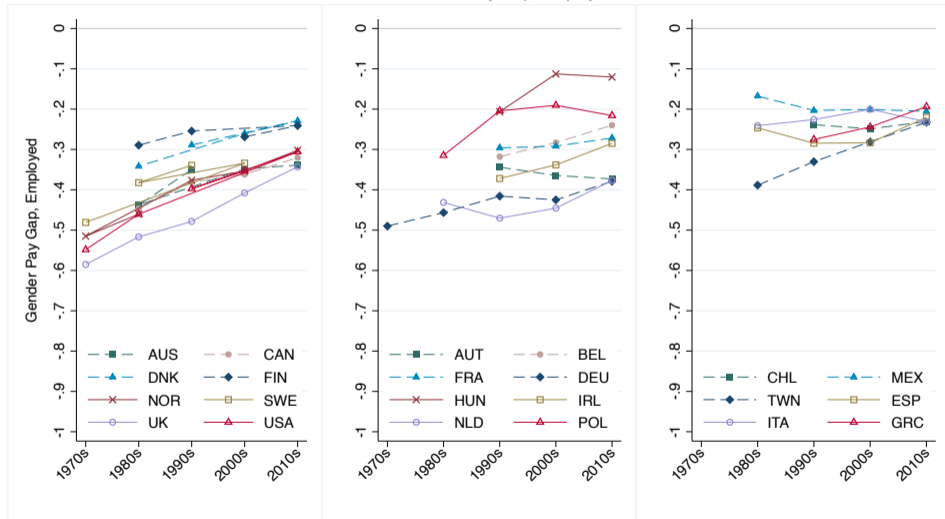
Notes: Men and women aged 25-54 with positive annual earnings. *Data Source*: LIS and IPUMS

Marriage, children and earnings

$$Y_{ict} = \sum_c \alpha^c M_{ict} + \sum_c \phi^c K_{ict} + \beta X_{ict} + \pi_c + \gamma_t + \epsilon_{ict}, \qquad (1)$$

▶ $i =$ individuals; c denotes birth cohorts, t denotes years
▶ Currently married (or in legal union) dummy: M_{ict}
▶ Children dummy: K_{ict}
▶ Fully interacted with cohort dummies: 1940-49, 1950-59, 1960-69 and 1970-79
▶ $X_i =$ age (quartic polynomial) and education dummies
▶ Cohort and time dummies: π_c, γ_t
▶ Outcomes, Y_{it}: employment dummy, (log) earnings.
▶ Specification as in Juhn and McCue, 2017.

The marriage *employment* deficit/surplus
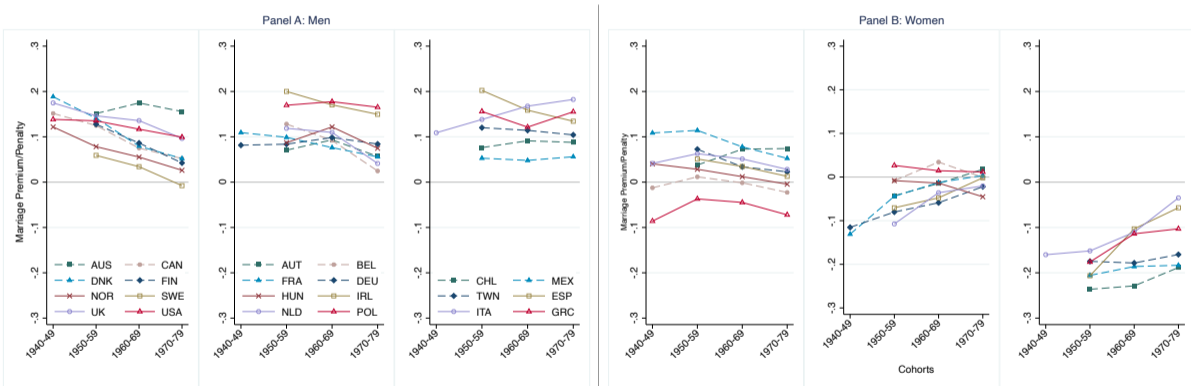
Notes: Men and women aged 25-54. *Data Source*: LIS and IPUMS International.

The child *pay* deficit/surplus

Panel A: Men

Panel B: Women
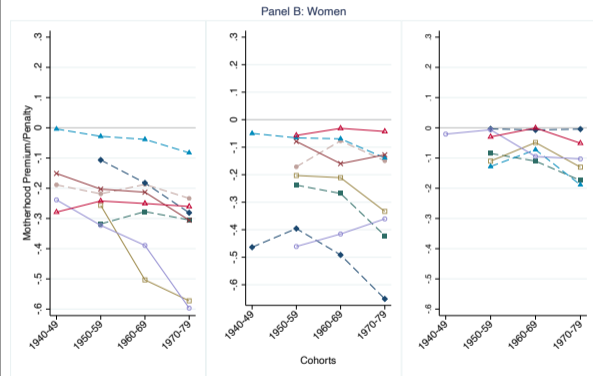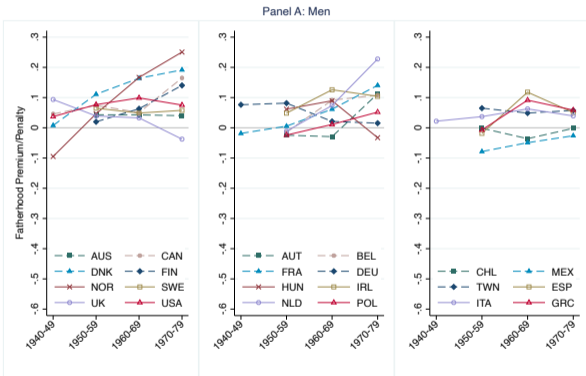
Notes: Men and women aged 25-54. *Data Source*: LIS and IPUMS International.

Recap

- Gender convergence in education, employment and earnings.

- Declining fertility and (especially legal) partnerships.

- According to most indicators, female outcomes look much more similar across countries in recent years than they did in the 1970s.

- As of the 2010s, gender convergence is far from complete, with an increasing share of gender gaps being explained by household composition.

- To the extent that the career costs of marriage and children are largely pinned down by conservative gender roles, government support to families faces an uphill struggle in the attempt to close the remaining gaps.

Illustrative framework

- ▶ Each household has two adult partners, i and j, and n children (exogenous).
  - ▶ Partners enjoy utility from own and partner's consumption and household public good (children).
  - ▶ Each chooses allocation time in the market (h) and at home ($1 - h$).
  - ▶ Taking as given the other partner's time allocation, the number of children and each partner's wage (w), productivity in home production (α) and preferences for public good (β).

- ▶ Non cooperative model but time allocation of partners is efficient and consistent with their comparative advantage.

Illustrative framework

- Partner i's labor supply h_i maximizes the following indirect utility function, taking as given w_i, w_j and h_j:

$$U_i(w_i, w_j, n) = max_{h_i \in [0,1]} \left[w_i h_i + w_j h_j + \beta_i \phi(\alpha_i(1 - h_i) + \alpha_j(1 - h_j))n \right]$$

  - ϕ strictly increasing, concave, and twice differentiable.

- First-order condition, interior solution:

$$\frac{w_i}{\beta_i \alpha_i} = \phi'(\alpha_i(1 - h_i) + \alpha_j(1 - h_j))n.$$

  - Partner i chooses full specialization at home ($h_i = 0$) or on the labor market ($h_i = 1$) if LHS $<$ or $>$ RHS, respectively.

Illustrative framework

▶ Spousal gaps in labor supply and patterns of specialization depend on comparative advantages.

▶ Assume $\frac{w_i}{\beta_i \alpha_i} < \frac{w_j}{\beta_j \alpha_j}$. That is, i is the secondary earner.

▶ Spouse i works less in the market and is more likely to specialize in home production.
  ▶ Due to lower market returns (w_i) and/or higher household returns ($\beta_i \alpha_i$), encompassing productivity and preferences.
  ▶ Note that ($\beta_i \alpha_i$) may reflect the role of gender norms
  ▶ norms about how much of the household public good should be produced at home (β_i) and how much should be produced by a certain spouse (α_i)

Marginal income taxes

- Marginal income taxes $\tau_i, \tau_j > 0$ - direct taxes on labor income or income-related benefits.

$$\frac{w_i(1 - \tau_i)}{\beta_i \alpha_i} = \phi'(\alpha_i(1 - h_i) + \alpha_j(1 - h_j))n.$$

- If $\tau_i = \tau_j$, no distortion.

- If $\tau_i > \tau_j$, taxes induce more unequal time allocation across spouses, with the secondary earner more likely to specialize in home production and the primary earner more likely to specialize in market work.

Childcare support

- ▶ Suppose $m_i, m_j \geq 0$, is the amount of childcare services purchased at market price p by each partner, taking as given choice of the other. Childcare spending perfect substitute for parental time.

- ▶ First order conditions for time allocation of i and childcare expenditure:

$$\frac{w_i}{\beta_i \alpha_i} = \phi'(\alpha_i(1 - h_i) + \alpha_j(1 - h_j) + m_i + m_j)n,$$

$$-p + \beta_i \phi'(\alpha_i(1 - h_i) + \alpha_j(1 - h_j) + m_i + m_j)n \leq 0.$$

- ▶ May induce more unequal time allocation if higher-wage individuals (within and across households) choose higher values of childcare spending and increase their labor supply relative to case with no childcare services.

Childcare support

- Tax-deductions: $(w_i h_i - pm_i)(1 - \tau_i)$
  - The partner with the higher marginal tax rate faces a cheaper cost of childcare and has an incentive to purchase more of it, all else equal.

- Proportional subsidy: $p(1 - s)$, $s \in (0, 1)$
  - May or may not induce more unequal time allocations.

- In kind: fixed amount $\overline{m}$
  - Non-parental childcare: $m = m_i + m_j + \overline{m}$.
  - Given concavity of $\phi()$, $\overline{m}$ reduces the amount of childcare purchased and increases labor supply of each partner.

Parental leave

- Two period model. Assume j fully specialized in market work.
- Period 2: Same as static.
- Period 1:
    - i chooses fraction spent on parental leave $l_i \in [0, 1]$
    - l_i impact wages in period 2: $w_i^2 = \mathcal{W}(1 - l_i)$, with $\mathcal{W}$ strictly increasing, concave, and twice differentiable.
- First order condition (interior solution):

$$w_i^1 + \mathcal{W}'(1 - l_i)\frac{\partial U_i^2(w_i^2, w_j, n)}{\partial w_i^2} = \rho w_i^1 + \beta_i \phi'(l_i) n$$

- If cost exceeds benefits for any positive value of l, then $l_i = 1$. Otherwise, no leave is taken ($l_i = 0$).

Lessons from the past and the present

▶ What can we learn from decades of legislation and policy evaluation of the role of family policies?

▶ **Parental leave**:
   ▶ *Little or no evidence of beneficial effects* of longer parental leave on maternal participation and earnings.

      ▶ Parental leave extensions delay mother's return to work after childbirth with potential negative impacts on maternal earnings in the short-run.

      ▶ There does not seem to be long-lasting effects (positive or negative) of parental leave breaks on maternal earnings.

      ▶ Fathers do respond to incentives but rarely take up more than their reserved quotas.

      ▶ Potential pitfalls of gender-neutral policies.

Lessons from the past and the present

- **Childcare**
  - Generous childcare spending encourages women's participation if subsidized childcare replaces maternal time.
  - This may not be the case in situations where conservative gender norms effectively limit the ability of mothers to use formal childcare.
  - Impacts on child development of formal childcare depend on what the alternative arrangements would be and tend to be more beneficial for disadvantaged households.
  - In-work benefits targeted to low-earners have clear positive impacts on lone mothers' employment and negligible impacts on other groups.

- **Taxation**: distortionary taxes on secondary earner discourage women's work, depend on family structure

Promising areas for future research

(I) Process of policy adoption and political economy dimensions
to relate evolving support for various forms of intervention to changing norms,
demographics and household structures.

(II) Role of employers in complementing public support to families

- ▶ Mothers seem to have higher demand than fathers for non-wage job attributes –
  work flexibility and the opportunity to work from home – but evidence on causal
  impacts of these factors on the gender gap in earnings is to date quite limited.

- ▶ Some firms may have incentive to offer family friendly amenities (at least to some
  workers).
    - ▶ varying willingness to pay for amenities
    - ▶ source of pay differentials if for example men and women place different values to
   non-wage amenities

More and more firms provide family-friendly amenities

- Paid family leave

- Employer-provided childcare

- Working from home

- Flexible working hours

- ...

1. Working from home

- Women, especially mothers, have higher commuting costs than men and likely value WFH opportunities more than men

- After covid-related surge in WFH, **hybrid work is here to stay**, especially among educated workers.

- What's in it for firms and are there any gendered impacts?
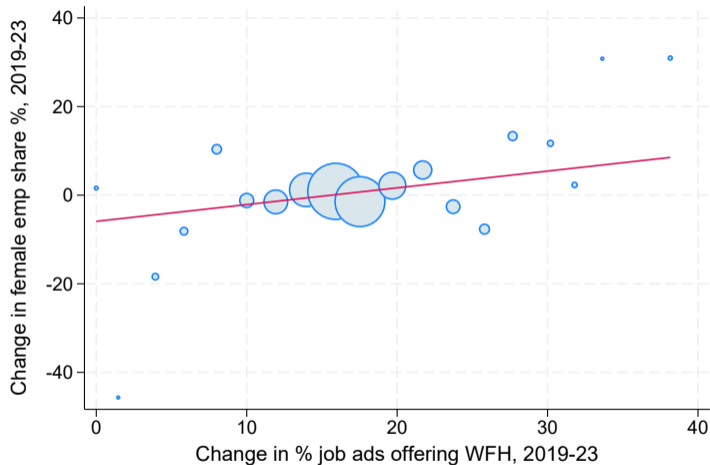
Evolution of WFH
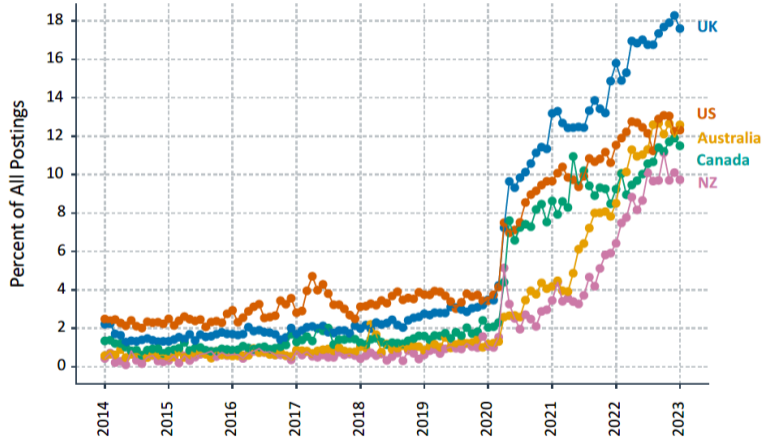
What did the WFH surge imply for gender equality?
Source: Hansen et al (2023)

WFH data

- ▶ Take job advert data from the US

- ▶ Aggregate them by industry, occupation and local area
  $\rightarrow$ approx 4,500 labour market segments

- ▶ Huge variation in WFH across these segments
  - ▶ WFH rose by $5.5\times$ in IT-related occupations between 2019-23
  - ▶ and "only" 40% in healthcare support occupations

- ▶ For each segment, estimate a variety of gender outcomes

- ▶ and correlate these with the incidence of WFH opportunities
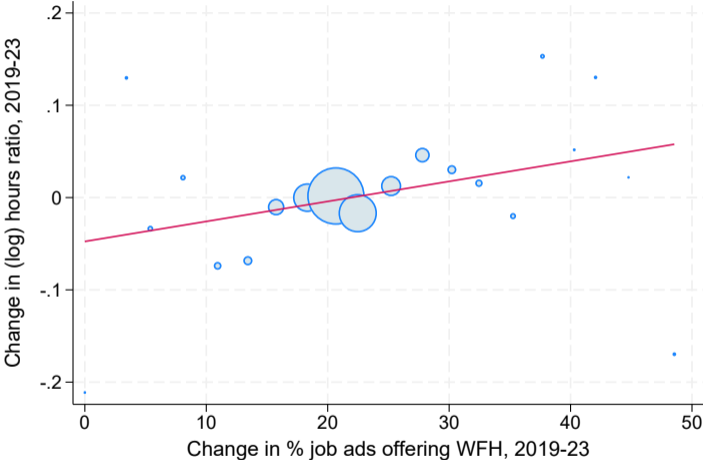
WFH opportunities and **women's employment**

Jobs that saw a **10pp** increase job adverts featuring WFH had an **increase** in the female emp share of **3.7pp**

N = 2,168, Slope = 0.366* (0.173); Controls: occupation, industry and local area FE

Source: Hall, Lambert and Petrongolo (2024)

WFH opportunities and **gender gaps in hours**

Jobs that saw a **10pp** increase job adverts featuring WFH had an **increase** in women's relative hours of **2.3%**

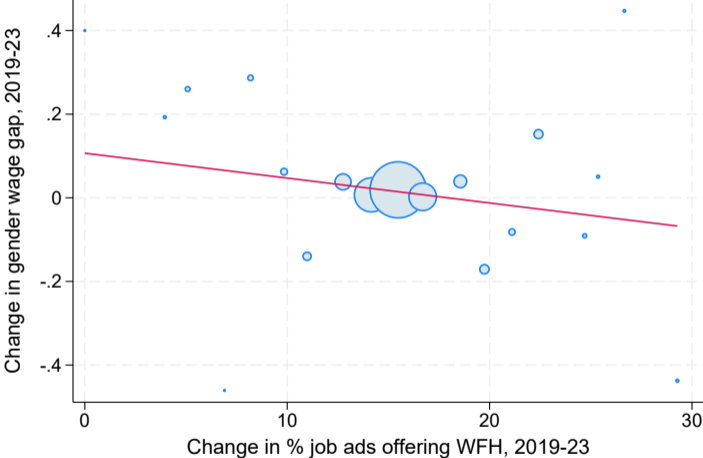N = 2,888, Slope = 0.234* (0.107); Controls: trends by occupation, industry and local area

Source: Hall, Lambert and Petrongolo (2024)

WFH opportunities and **gender gaps in wages**

Jobs that saw an increase job adverts featuring WFH had **slower wage growth** for women than for men – but not statistically significant

N = 652, Slope = -0.676 (0.578); Controls: occupation, industry and local area FE

Source: Hall, Lambert and Petrongolo (2024)

Gendered impacts of WFH?

- Occupations/industries that introduced WFH opportunities saw an increase in female presence

    - Does WFH give women the possibility to combine family responsibilities and **financially rewarding careers**?
    - Are women who WFH missing out on valuable **presence at work and proximity to co-workers**?
    - Are women who opt for WFH bearing **higher penalties** than men who opt for WFH?

- Lack of systematic wage gains for women in jobs with higher WFH incidence does not give ground for optimism

- But these are very important open questions that deserve further scrutiny

2. Work flexibility

- Women (mothers especially) value flexibility and control over their schedules more than men

- Is flexibility a stepping-stone or a dead-end?

- Extract information on flexible work from universe of job adverts in Denmark
  (Adams, Jensen and Petrongolo, 2023)

- Classify job adverts using ML on large sets of words

- Cases of employee-led or employer-led flexibility

  - plan your own day, flexible working hours, etc.
    – vs
  - on-call shifts, overtime work, willingness to travel, etc.

- Flexibility indicators are aggregated at employer*occupation level

- Individuals are assigned a work-flexibility indicator according to their employer*occupation

# Decomposition of wage gaps for college graduates (3yrs degree)
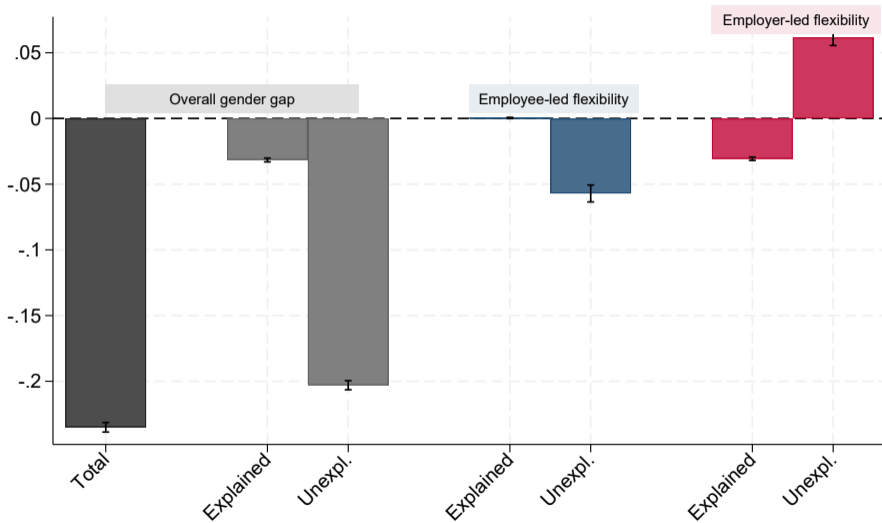
Sample: mothers and fathers, 10 years after graduation. Source: Adams-Prassl, Jensen and Petrongolo (2023)

Recap

▶ While there is evidence that women value WFH and flex hours more than men,

  ▶ the incidence of these traits is quite similar across genders
  ▶ women seem to pay a higher price for them

    ▶ in the short-run, via **compensating differentials**
    ▶ and in the long-run, via **underutilisation of valuable skills**

▶ Issues of equity and allocative efficiency –

  ▶ employers may be missing out on valuable skills of women who give up a good match for their talent in order to seek family-friendly working conditions

Work flexibility and skill requirements
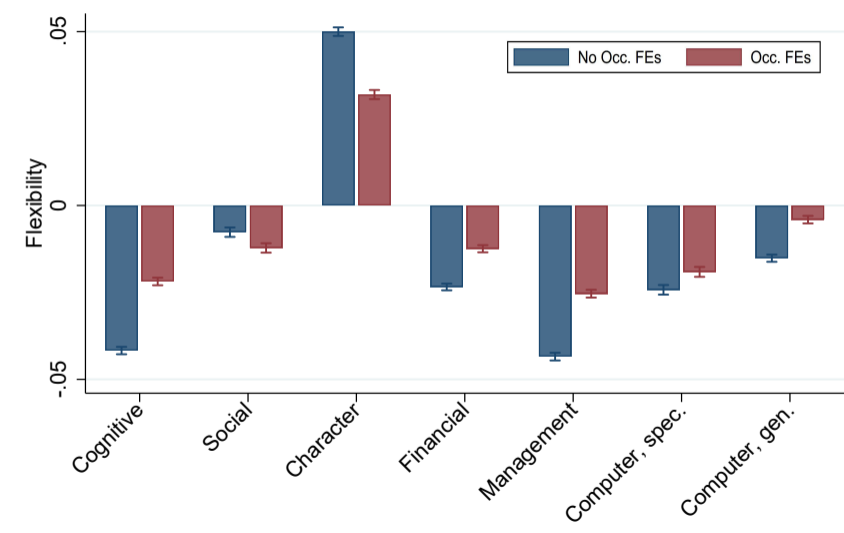
Open questions and the way forward

▶ Investigate causes, alongside consequences, of women's preferences for certain careers and job attributes

▶ Deeper source of inequality and inefficiency is the heavily gendered allocation of roles within the household

▶ But **some of the labour market consequences may be addressed in the workplace**
  ▶ by making high-quality jobs available with family-friendly features
  ▶ family friend features as "productive" amenities

Open questions and the way forward

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▶ Deeper source of inequality and inefficiency is the heavily gendered allocation of roles within the household

▶ But **some of the labour market consequences may be addressed in the workplace**
  ▶ by making high-quality jobs available with family-friendly features
  ▶ family friend features as "productive" amenities

▶ Broader question:
  ▶ **workplace culture, inclusivity, and productivity**

Thank you!