The Labor Market Returns to Delaying Pregnancy

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Motherhood and the Labor Market

Women alter career and fertility plans to minimize impact of children

(Polachek 1981; Goldin & Katz 2002; Caucutt, Guner & Knowles 2002; Baily 2006; Bronson 2014; Adda, Dustmann & Stevens 2017)

Research Questions:

1. What are the labor market impacts of pregnancies?
2. Does the impact vary with circumstances?
    - Age
    - Investment in human capital
    - Pregnancy intentions

Data

- Swedish labor market + prescriptions + medical data

Methodology

- Study unplanned pregnancies when using long-acting reversible contraception (LARC)
- Compare women who received LARC at same time, same age

Identifying Unplanned Pregnancies

- Define pregnancies as “unplanned” if occur within 9 months of getting an IUD or implant prescription
  - Observe 350 unplanned LARC pregnancies

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  - Observe 350 unplanned LARC pregnancies
- Concern #1: Measurement Error
  - 0.1% LARC users change intention after six months (Grunloh et al., 2013)
  - Results robust to using different windows
- Concern #2: Pregnancies are more likely when more fertile, more intercourse
  - Labor market outcomes are balanced
  - Small differences in education
  - Divorced and married women more likely to have unplanned pregnancies

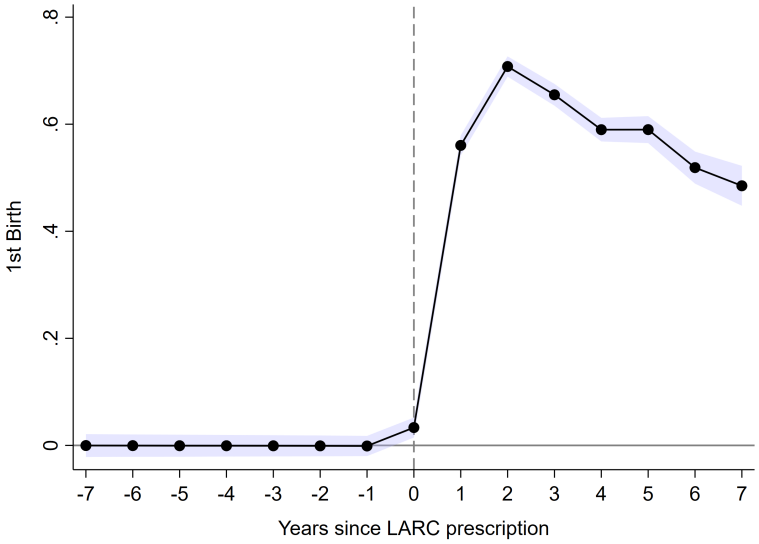
  $\rightarrow$ Results robust to matching additionally on, e.g., civil status and education

Estimation of Impact of Pregnancy (Reduced Form)

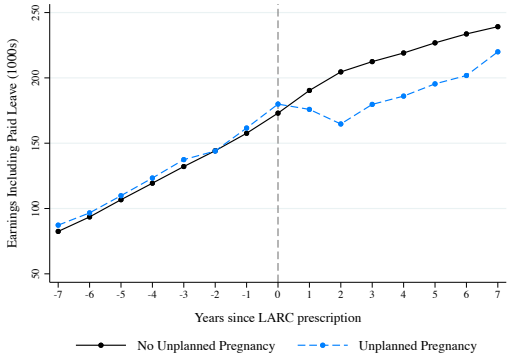
$$Y_{is} = \sum_{t=-7}^{7} \alpha_t^{LARC} \mathbf{1}\left[t = s - year_i\right] UnplannedPregnancy_i + \sum_{t=-7}^{7} \sum_{y} \sum_{j} \delta_{tyj}^{LARC} \mathbf{1}\left[t = s - year_i\right] \mathbf{1}\left[y = year_i\right] \mathbf{1}\left[j = age_{i,year_i}\right] + \varepsilon_{is} \quad (1)$$

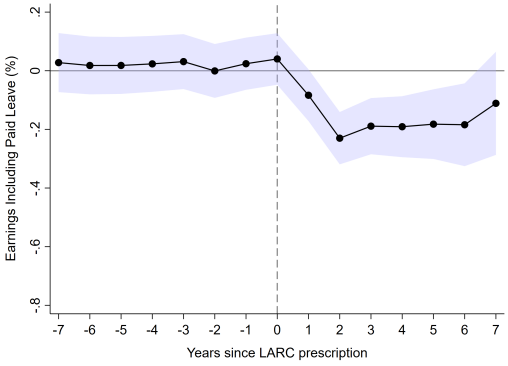
- Y_{is} is the outcome of interest (e.g., labor market earnings) in year s for woman i
- s calendar year; $year_i$ year of LARC for woman i; t year relative to $year_i$ for i
- α_t^{LARC} is the parameter of interest
- Implicitly test identifying assumption: $\alpha_{-7}^{LARC} = ... = \alpha_{-1}^{LARC} = 0$

Impact of Pregnancy on Childbirth



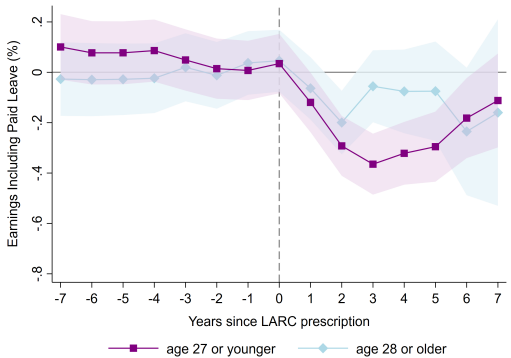
Impact of Pregnancy on Earnings





▸ with abortion

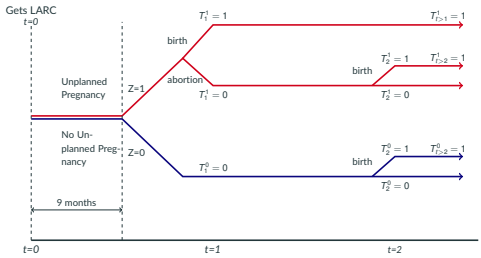
Heterogeneity



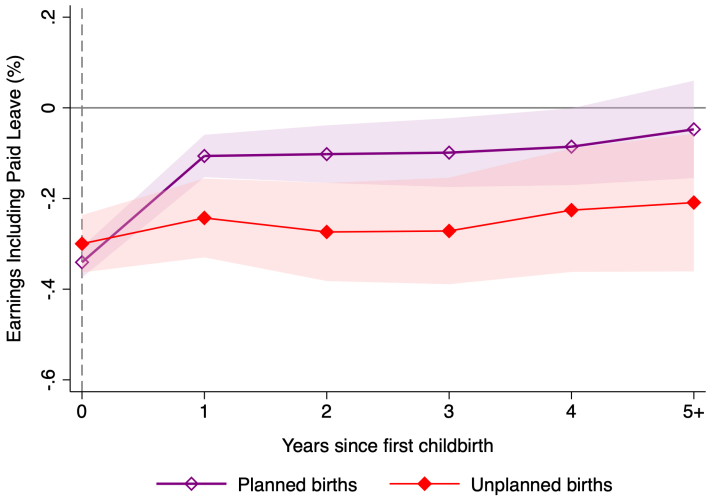
- Do older women have children sooner?
- More likely to get an abortion?
- Or are there heterogeneous effects?

Estimating: Pregnancy vs. Birth

- What is the impact of unplanned *birth*?
  - → Use pregnancy as an instrument for birth
    - Challenging to estimate dynamic TE with dynamic compliance
    - Methodological contributions:
      - Identification strategy for dynamic LATE
      - Develop IV-GMM methodology for estimating dynamic LATE
    - but need impact of planned births
      - → Jointly estimate with IVF sample to estimate planned birth impacts
      - Many alternatives in paper

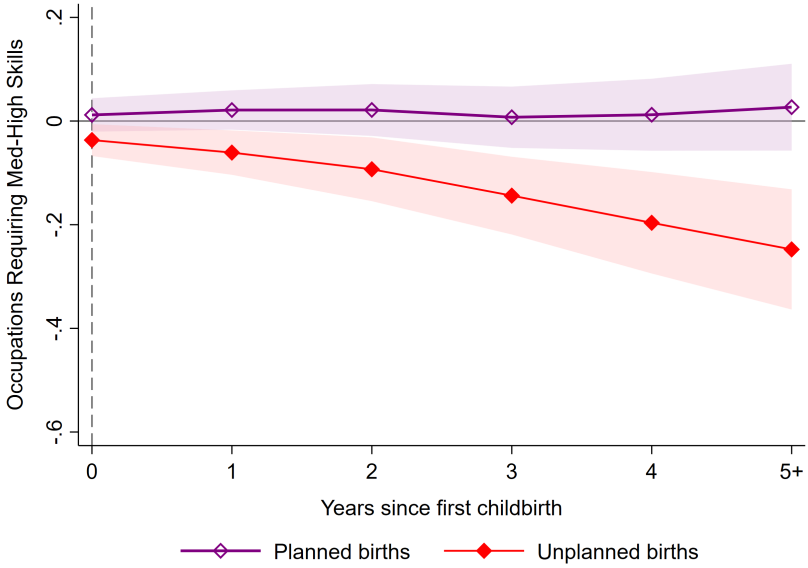


Impact of Birth on Earnings

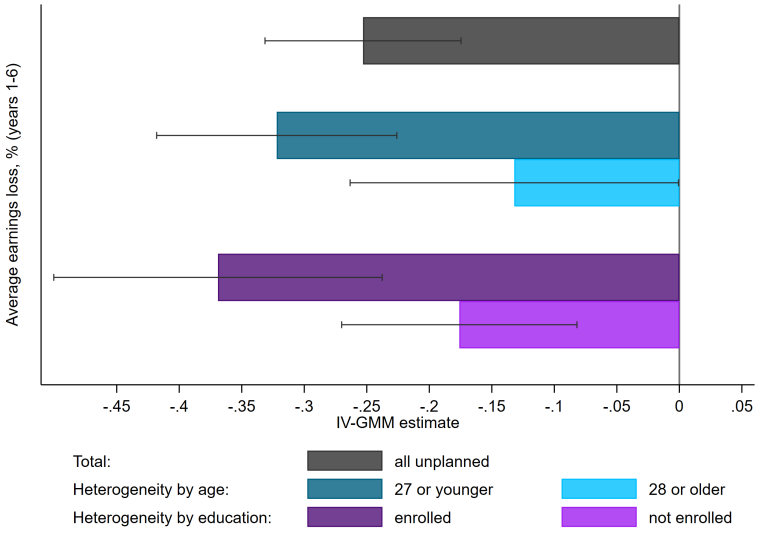


re-weighted

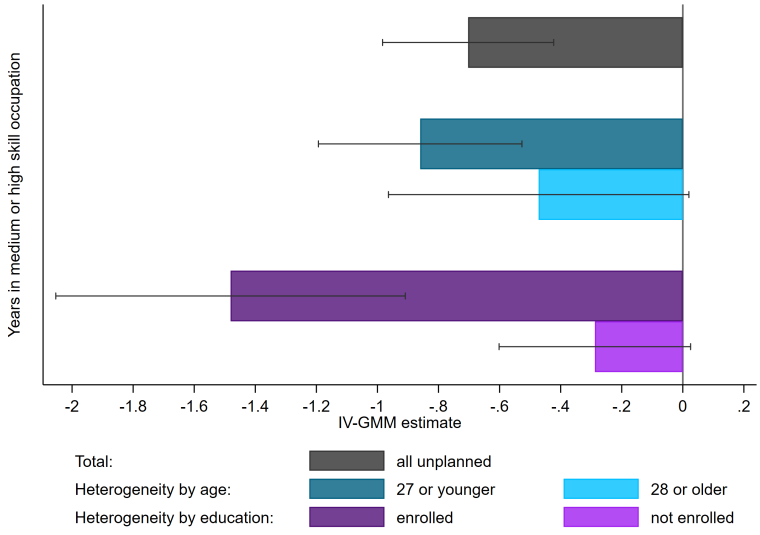
Impact of Birth on Occupation



Heterogeneity: Unplanned Birth Impact on Earnings



Heterogeneity: Unplanned Birth Impact on Occupation



Relation to literature on the impact of children (by empirical design)

- **Event Studies** (Angelov et al., 2016; Kleven et al., 2019a,b; Chung et al., 2017; Andresen et al., 2022; Eichmeyer et al., 2023)
- **Miscarriage** (Hotz et al., 2005; Miller, 2011; Bíró et al., 2019)
- **IVF Success** (Lundborg et al., 2017, 2024; Bensnes et al., 2023)
- **Abortion Access** (Miller et al., 2023; Brooks et al., 2020; Londoño-Vélez et al., 2024)

Strengths of LARC Pregnancy Design

→ Comparable control group unaffected by major life event

→ Anticipation unlikely to be important

→ Compliers are women who decide to continue an unplanned pregnancy

Summary and Conclusions

- Unplanned pregnancy and birth associated with large and persistent earnings impacts
  - Short-term: ↓ non-employment, ↓ probability of promotion
  - Med/long term: occupational and earnings trajectories ↓
- Impacts are larger for women enrolled in education, younger women
- Impacts are smaller for planned and second births
- Timing important, delay mitigates impact of children on careers