The gender wage gap opens long before family formation: Panel evidence on early careers in Switzerland

Benita Combet & Daniel Oesch
University of Lausanne

Analytische Soziologie: Theorie und empirische Anwendungen
Venice International University
Motivation I

• Traditional explanation of the gender wage gap: differences in human capital (Becker 1964)

• However:
  – Gender gap in university completion favours women (DiPrete / Buchmann 2013)
  – Gender gap in work experience narrowed considerably (Goldin 2014)
Motivation II

• „I go as far as to argue that this detrimental [household] division of labor is at the root of almost all the [gender] wage gap“ (Polachek 2004: 27)

• „Gender wage gap is perhaps better termed a family wage gap“ (Gangl/Ziefle 2009: 341)
Motivation III

⇒ Division of labour within household *(Becker 1985)*:
  -  ♂: specialize in paid work, continue to invest in job-specific skills
  -  ♀: specialize in child care, choose family-friendly jobs

Therefore:

If the wage gap is solely due to the division of labour within families, we should not observe it before family formation sets in.
Previous research

Gender wage gap in the beginning of the career:

- Germany: 6% (Ochsenfeld 2014)
- Finland: 10% (Napari 2009)
- Switzerland: 7% (Bertschy et al 2014)
- U.K.: 8% (Manning/Swaffield 2014)
- U.S.: 10% (Goldin 2014), 14% (Fortin 2008)

Contra-arguments:

- Differing behaviour because parenthood is anticipated
Our contribution

• Focus on the wage development in early career.
  – Gender wage gap
  – Gender gap in wage growth

• Difference to previous research:
  – Controlling for parenthood anticipation
    • Values (towards work and family)
    • Behaviour (by restraining the sample)
  – Knowledge about intellectual capacities (PISA), extensive knowledge of education and job characteristics
Dataset & Approach

• Longitudinal dataset TREE
  • following a school-leaver cohort (mostly born 1984/1985) from 2000 to 2014
  • emphasis on school-to-work transition

• Dependent variable:
  gross monthly wage in Swiss Francs (CHF),
  • standardized for a full-time job (40 hours per week)
  • adjusted to inflation
  • logarithm

• Focus on 3 career stages
  1. Initial potential of respondents
  2. Labour market behaviour
  3. Parenthood anticipation / Family formation
Three career stages

1. Initial potential:
   Matching with entropy balancing *(Hainmueller 2012)*
   – socio-demographic characteristics
   – general educational ability
   – educational certificates achieved before entering the labour market
     • Number of educational certificates
     • 1st / 2nd educational credential on upper secondary / tertiary level
     • Field of study / fields of vocational education
Three career stages

2. Labour market
   Adding independent variables:

   a) Job related human capital:
      - Number of jobs (squared)
      - Additionally acquired educational certificates

   b) Characteristics of current job
      - Occupation (ISCO 1-digit), sector (NOGA), canton of the firm, size of the firm, working hours per week, number of subordinates, permanent or fixed-term contract, work situation (night shifts, week-end shifts, strains in job, variety of tasks, autonomy in job)
Three career stages

3. Parenthood anticipation / Family formation

Independent variables

• Marriage status

• Pre-labour market values concerning work motivation (intrinsic and extrinsic) and partnership / family
Methods

Sample:
• Individuals after they completed their education.
• Restriction with observations min. 3 years prior parenthood => differing behaviour b/c of parenthood anticipation

Analyses:
• Random-Effect Models: Overall gender wage gap and wage growth
• Fixed-Effect Models: Sensitivity analysis for wage growth
• Blinder-Oaxaca decomposition Differences in endowments and factors contributing to it in first 1.5 years
## RE – Model: Stage 1

**Dependent variable:** Log monthly earnings

<table>
<thead>
<tr>
<th>Model</th>
<th>Baseline model</th>
<th>Stage 1: Initial potential</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.1</td>
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<tr>
<td>Matched on</td>
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<td>-</td>
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<tr>
<td>Independent variables</td>
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<tr>
<td>Female</td>
<td>-0.067*** (0.013)</td>
<td>-0.061*** (0.014)</td>
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<tr>
<td>Experience</td>
<td>0.048*** (0.002)</td>
<td>0.047*** (0.002)</td>
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<tr>
<td>Female * Exper.</td>
<td>-0.000 (0.003)</td>
<td>0.000 (0.003)</td>
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</tbody>
</table>

Maximum likelihood random effects models
Standard error in parentheses, * p<0.05, ** p<0.01, *** p<0.001
N_{observations} = 3093, N_{individuals} = 1693
## RE – Model: Stage 2

### Dependent variable: Log monthly earnings

<table>
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<tr>
<th>Model</th>
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<th>Stage 2: Labour market</th>
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<td>Independent</td>
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<td>job related human capital</td>
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<tr>
<td>variables</td>
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<td>characteristics of current job</td>
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<tr>
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<td>(0.012)</td>
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<tr>
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<td>0.008**</td>
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Maximum likelihood random effects models

Standard error in parentheses, * p<0.05, ** p<0.01, *** p<0.001

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## RE – Model: Stage 3

**Dependent variable:** Log monthly earnings

<table>
<thead>
<tr>
<th>Model</th>
<th>Baseline model</th>
<th>Stage 3: Parenthood Anticipation</th>
<th>Final model</th>
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<tr>
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<tr>
<td>Experience</td>
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<td>(0.002)</td>
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<tr>
<td>Female * Exper.</td>
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<td>0.004</td>
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Maximum likelihood random effects models
Standard error in parentheses, * p<0.05, ** p<0.01, *** p<0.001

N_{observations} = 3093, N_{individuals} = 1693
Decomposition

wage gap total (p=0.00) 3.6

explained part (p=0.54) -1.5

unexplained part (p=0.01) 5.1

general background (p=0.07), 0.5
job characteristics (p=0.92), 0.2
parenthood anticipation (p=0.32), 0.5
field of study (p=0.75); -0.9
ability (p=0.53), -0.1
education (p=0.61); -1.4
job related human capital (p=0.80), -0.3
Summary

• Division of labour within household as explanation for the gender wage gap
  – but then we should not observe it before family formation sets in
  – and anticipatory behaviour / character traits are controlled

• Results:
  – 5.5 percentage wage gap difference in favour of men
  – In first 1.5 years caused by unexplained / unobserved factors
Literature I


Literature II


Literature III

