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

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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:

- Non-cognitive traits, bargaining strategies
  (contra-evidence: *Fortin 2008*, *Manning/Swaffield 2008*)
- 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

	Baseline model		Stage 1: Initial potential			
Model	**0.1**	**0.2**	**1.1**	**1.2**	**1.3**	**1.4**
Matched on	-	-	social background and ability	education 1: educ. prior to labor market	education 2: field of study / field of VET	all
Independent variables	-	-	-	-	-	-
Female	-0.067***	-0.054***	-0.061***	-0.074***	-0.052***	-0.049***
	(0.013)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
Experience		0.048***	0.047***	0.044***	0.046***	0.044***
		(0.002)	(0.002)	(0.002)	(0.003)	(0.002)
Female * Exper.		-0.000	0.000	0.003	0.002	0.003
		(0.003)	(0.003)	(0.003)	(0.003)	(0.003)

Maximum likelihood random effects models

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

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

RE – Model: Stage 2

Dependent variable: Log monthly earnings

	Baseline model	**Stage 2: Labour market**		
Model	**0.2**	**2.1**	**2.2**	**2.3**
Matched on	-	all	all	all
Independent variables	-	job related human capital	characteristics of current job	all labour market variables
Female	-0.054***	-0.058***	-0.053***	-0.063***
	(0.014)	(0.012)	(0.012)	(0.012)
Experience	0.048***	0.025***	0.035***	0.023***
	(0.002)	(0.003)	(0.002)	(0.002)
Female * Exper.	-0.000	0.008**	0.004	0.007**
	(0.003)	(0.003)	(0.003)	(0.003)

Maximum likelihood random effects models

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

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

RE – Model: Stage 3

Dependent variable: Log monthly earnings

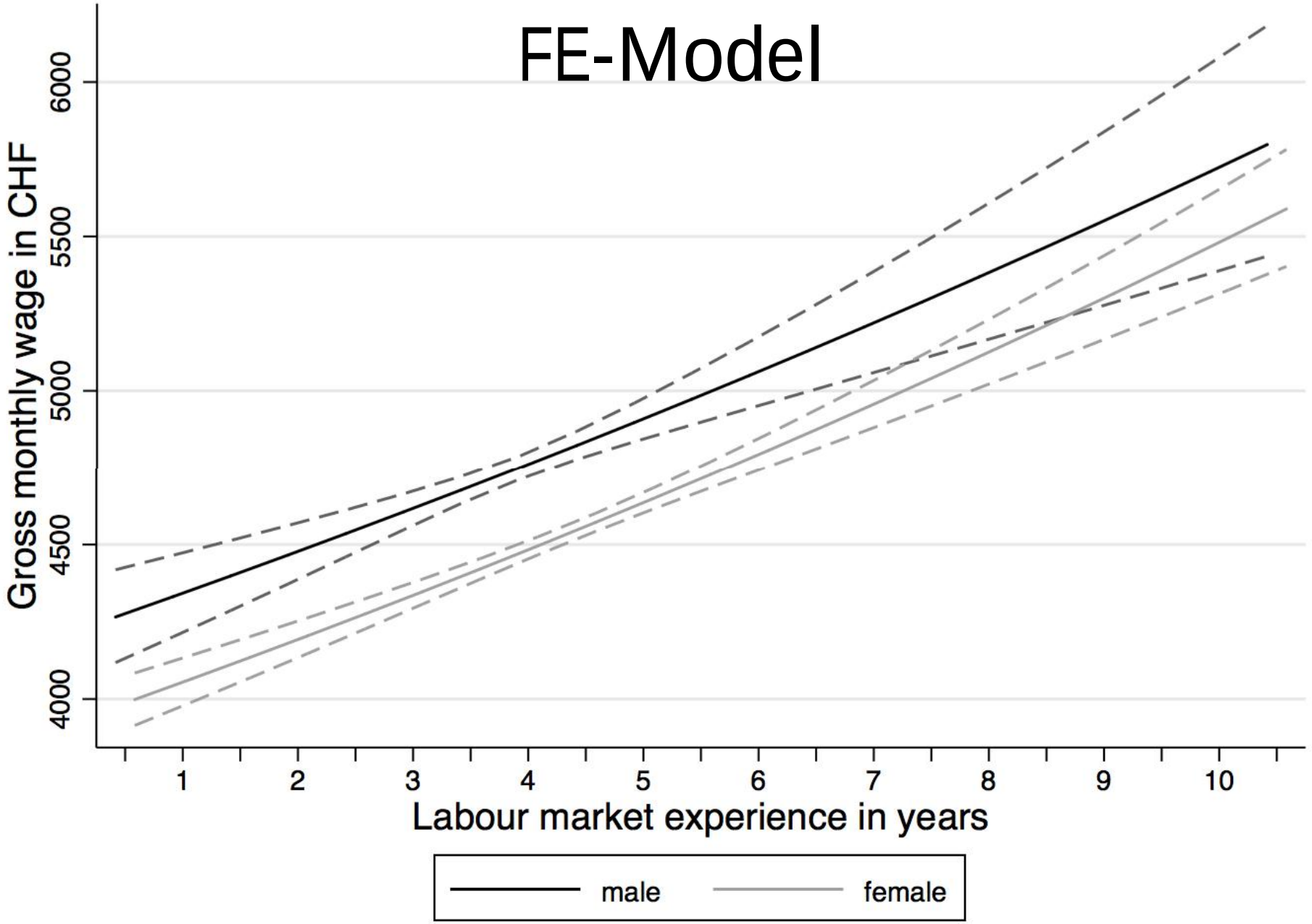
	Baseline model	**Stage 3: Parenthood Anticipation**			**Final model**
Model	**0.2**	**3.1**	**3.2**	**3.3**	**4**
Matched on	-	all	all	all	all
Independent variables	-	marriage	values	marriage and values	all
Female	-0.054***	-0.048***	-0.049***	-0.049***	-0.054***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.012)
Experience	0.048***	0.045***	0.044***	0.045***	0.025***
	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)
Female * Exper.	-0.000	0.004	0.003	0.004	0.006*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)

Maximum likelihood random effects models

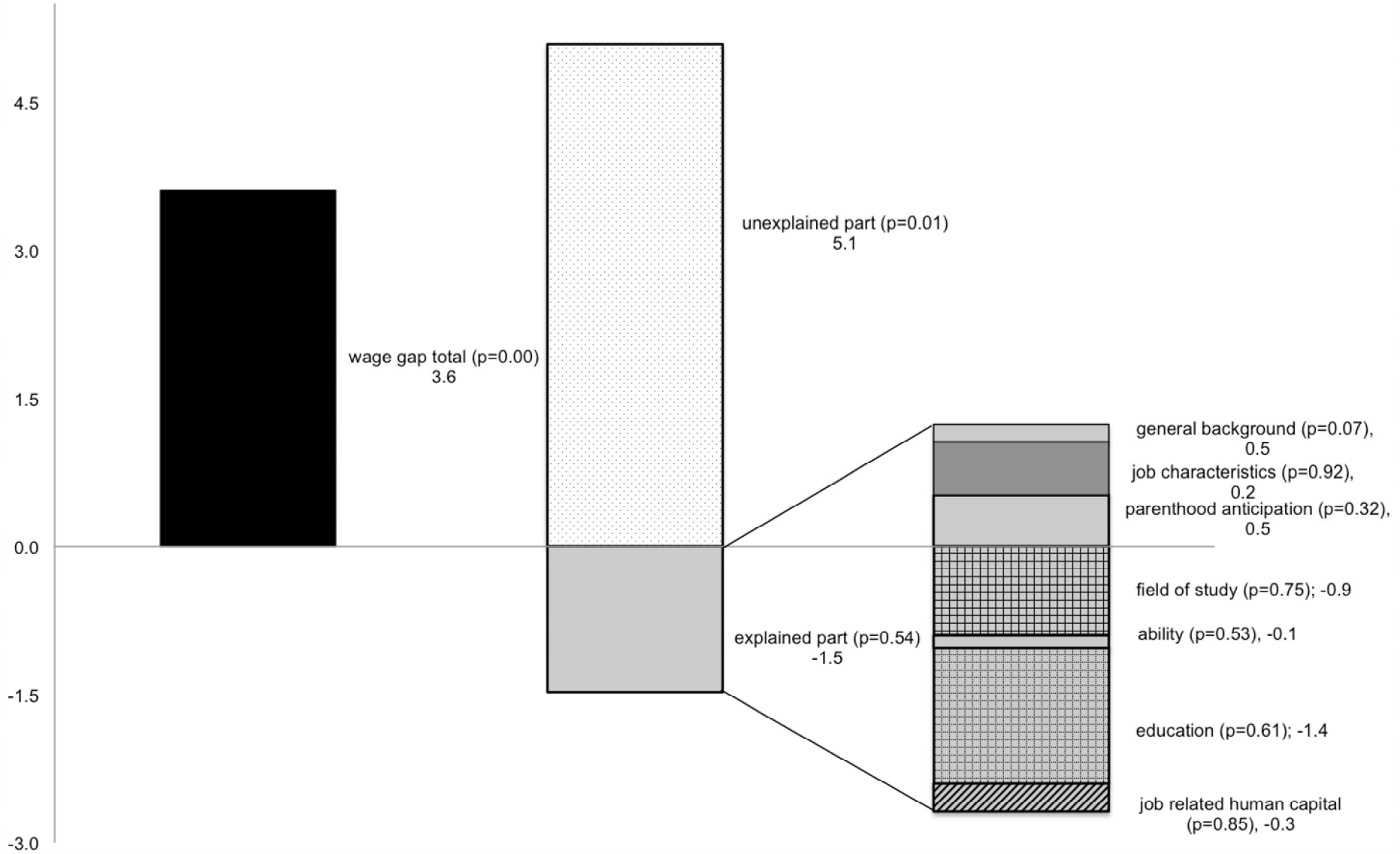
Standard error in parantheses, * p<0.05, ** p<0.01, *** p<0.001

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

FE-Model


Gross monthly wage in CHF
4000
4500
5000
5500
6000
1
2
3
4
5
6
7
8
9
10
Labour market experience in years
male
female

Decomposition



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

- Becker, G. S. (1964): *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. New York: National Bureau of Economic Research.
- Becker, G. S. (1985): Human capital, effort, and the sexual division of labor. *Journal of Labor Economics*, 3: 33–58.
- Bertschy, K., Walker, P,, Baeriswyl, A., Marti, M. (2014): Gender Wage Gap at Career Entry. A Quantitative Analysis for Switzerland. *Swiss Journal of Sociology*, 40: 279-305.
- DiPrete, T., Buchmann, C. (2013): *The Rise of Women: The Growing Gender Gap in Education and What It Means for American Schools*. New York: Russell Sage Foundation.
- Fortin, N. (2008): The Gender Wage Gap among Young Adults in the United States: The Importance of Money versus People. *The Journal of Human Resources*, 43: 884-918.

Literature II

- Gangl, M., Ziefle, A. (2009): Motherhood, labor force behavior, and women's careers: An empirical assessment of the wage penalty for motherhood in Britain, Germany, and the United Sates. *Demography*, 46: 341-369.
- Goldin, C. (2014): A Grand Gender Convergence: Its Last Chapter. *American Economic Review*, 104: 1-30.
- Hainmueller, J. (2012): Entropy Balancing for Causal Effects. A Multivariate Reweighting Method to Produce Balanced Samples in Observational Studies. *Political Analysis*, 20: 25-46.
- Manning, A., Swaffield, J. (2008): The gender gap in early-career wage growth. *Economic Journal*, 118: 983-1024.

Literature III

- Napari, S. (2009): Gender differences in early-career wage growth. Labour Economics, 16: 140-148.
- Ochsenfeld, F. (2014): Why do Womne's Fields of Study Pay Less? A Test of Evaluation, Human Capital, and Gender Role Theory. *European Sociological Review,* 30: 536-548.
- Polachek, S. W. (2004): *How the Human Capital Model Explains Why the Gender Wage Gap Narrowed*. Bonn: Forschungsinstitut zur Zukunft der Arbeit.