Smaller Differences in Bigger Cities

Regional (Im)obility and Spatial Inequalities in the Gender Pay Gap

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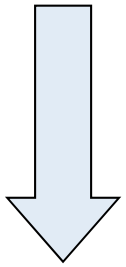
1 Motivation

- Regional Sociology & Regional Economics:
  - Relevance of regional opportunity structures for inequality on the labor market
  - In particular urban labor markets are found to be advantegeous; → urban wage premium (Glaeser & Maré 2001)
- Mobility research
  - positive effects of regional mobility on individual labour market outcomes (Blau & Duncan 1967)
  - Commuting and migration enables workers to take advantage of better opportunities in distant geographic regions
- How do regional opportunity structures and the mobility of households interact to produce spatial patterns of wage inequality between men and women ?

Argumentation

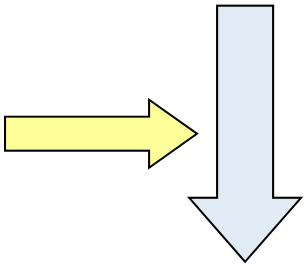
Differing mobility opportunities by gender



Labour market inequalities

Argumentation

Differing mobility opportunities by gender

regional determinants 

Labour market inequalities

Theoretical background: the supply side

- New Home Economics
- Collective decision making process in households tends to impose mobility restrictions on women (Mincer 1978; Madden 1977,1981)
- Women‘s prevalence as secondary earners leads to
  - Lower propensity to move for own career advancement
  - Lower propensity to commute due to household responsibilities
  - Thus women‘s job search radius is spatially more confined

→ Lower *spatial* elasticity of female labor supply

The Small Market Effect

- Economic theory: labour market will penalize agents who exhibit lower inelasticities
  - Women are overrepresented in low-wage local occupations and underrepresented in high-wage local occupations (Ofek & Merril 1997)
  - Wage differences even in perfect marktes without discrimination → no gender pay gap in *local* occupations

- Basic thesis: size of penalty will vary with labor market size
  - Greatest penalties incurred in small labor markets
  - Small disadvantages in large labor markets

Labor market mechanisms & small market effect

- Small-Market Effect is intensified by several mechanisms
  - Overeducation (Frank 1978; Büchel & van Ham 2003)
  - Monoposonistic discrimination (Manning 2003; Hirsch et al.2009)
  - Overcrowding (Bergmann 1974)

- Control group par excellence: single individuals

Hypotheses

- Gender pay gap should be lower in metropolitan areas for married individuals– *ceteris paribus*
- Married women should profit relatively more from living in metropolitan areas – compared to men and single women
- Married men should profit more than single men

- Ceteris paribus = accounting for
  - differences in human capital by gender & region & marital status
  - structural determinants that vary by region & gender & marital status

Data and Methods

- SOEP 1995-2007
  - Pooled data: age 18-59
  - Married vs. single households (N:18097; N:6923)
  - Region:
    - classification of BBR (Bundesamt für Bauwesen und Raumordnung) : 9 types of regions by settlement stucture
    - Type 1: highly urbanized cities (=Hamburg, Frankfurt, München, etc.) → hotspots (Hirsch et al. 2009)
    - Hotspots vs. all other regional types
  - Variants of extended Mincer Equation
    - DV: log(wage) – deflated (base: 2001)
    - IV: human capital, household, occupation, industry + region, sex
  - Random-Effects Model ; Oaxaca-Blinder Decomposition

Gender Pay Gap and Urban Size

Tabelle 3: RE-Regression of log Gross Wages on Urban Size, Married Individuals 1995-2007

	(1)		(2)		(3)	
	coeff.	std. err.	coeff.	std. err	coef.	std. err
Humankapital						
hours (log)	1.134 ***	0.028	1.143 ***	0.028	1.154 ***	0.029
hours $(log)^2$	-0.065 ***	0.005	-0.068 ***	0.005	-0.073 ***	0.005
education	0.070 ***	0.001	0.071 ***	0.001	0.055 ***	0.001
experience	0.030 ***	0.001	0.029 ***	0.001	0.026 ***	0.001
experience2	0.000 ***	0.000	0.000 ***	0.000	0.000 ***	0.000
share part-time	-0.287 ***	0.012	-0.297 ***	0.012	-0.283 ***	0.011
tenure	0.009 ***	0.000	0.009 ***	0.000	0.008 ***	0.000
age	-0.007 ***	0.001	-0.007 ***	0.001	-0.007 ***	0.001
Household						
child present* sex			-0.039 ***	0.007	-0.039 ***	0.007
child <7 * sex			-0.058 ***	0.007	-0.050 ***	0.007
child present			0.016 ***	0.005	0.018 ***	0.005
child <7			0.014 ***	0.004	0.015 ***	0.004
Segregation						
Agriculture, non-defined (=ref.)						
Energy					0.183 ***	0.021
Manufacturing					0.149 ***	0.015
Construction					0.162 ***	0.015
Trade					0.066 ***	0.015
Transport					0.105 ***	0.016
Bank Insurance					0.189 ***	0.018
Social & Personal Service					0.116 ***	0.015
Public Administration					0.085 ***	0.015
Firmsize <20 (=ref.)						
firmsize 20 -199					0.080 ***	0.004
firmsize 200-1999					0.122 ***	0.005
firmsize >=2000					0.137 ***	0.005

Gender Pay Gap and Urban Size

Fortsetzung Tabelle 3: RE-Regression of log Gross Wages on Urban Size, Married Individuals. 1995-2007, S.43

	(1)		(2)		(3)	
	coeff.	std. err.	coeff.	std. err	coef.	std. err
blue-collar (=ref.)						
white collar (low, medium)					0.106 ***	0.004
white collar (high, managerial)					0.249 ***	0.006
civil service					0.193 ***	0.011
Region						
East Germany	-0.294 ***	0.008	-0.292 ***	0.008	-0.261 ***	0.007
hotspot	0.021 **	0.010	0.022 **	0.010	0.017 *	0.010
hotspot_sex	**0.039 *** **	**0.015**	**0.037 *** **	**0.015**	**0.029 ** **	**0.014**
sex	-0.297 ***	0.008	-0.267 ***	0.009	-0.254 ***	0.008
Period dummies	yes		yes		yes	
constant	3.401 ***	0.000	3.411***	0.000	3.322 **	0.049
N (person years)	64059		64059		61649	
N (persons)	12829		12829		12547	
R^2 (overall)	0.710		0.710		0.7521	
Error Variance Components						
σ^2_v (individuals)	0.34		0.34		0.29	
σ^2_ε (observations)	0.21		0.21		0.20	
rho	0.72		0.72		0.67	

Gender Pay Gap and Urban Size: Singles

Tabelle 4: RE-Regression of log Gross Wages on Urban Size, Single Individuals 1995-2007

	(1)			(2)			(3)		
	coef.		std. err	coef.		std. err	coef.		std. err
Human capital									
hours (log)	1.044	***	0.056	1.048	***	0.056	1.038	***	0.055
hours $(log)^2$	-0.052	***	0.010	-0.053	***	0.010	-0.057	***	0.009
education	0.084	***	0.002	0.084	***	0.002	0.065	***	0.002
experience	0.043	***	0.002	0.043	***	0.002	0.038	***	0.002
experience2	-0.001	***	0.000	-0.001	***	0.000	-0.001	***	0.000
share part-time	-0.483	***	0.020	-0.482	***	0.020	-0.448	***	0.019
tenure	0.011	***	0.001	0.011	***	0.001	0.009	***	0.001
age	-0.005	***	0.001	-0.005	***	0.001	-0.003	**	0.001
Household									
child present* sex				-0.016		0.031	-0.009		0.030
child <7 * sex				-0.198	***	0.072	-0.227	***	0.070
child present				-0.003		0.029	0.000		0.027
child <7				0.183	***	0.070	0.195	***	0.068
Segregation									
Agriculture, non-defined (=ref.)									
Energy							0.113	**	0.052
Manufacturing							0.084	**	0.034
Construction							0.097	***	0.035
Trade							-0.018		0.034
Transport							0.054		0.036
Bank Insurance							0.067	*	0.039
Social & Personal Service							-0.017		0.033
Public Administration							-0.032		0.036
Firmsize <20 (=ref.)									
firmsize 20 -199							0.057	***	0.009
firmsize 200-1999							0.089	***	0.010
firmsize >=2000							0.102	***	0.011

Gender Pay Gap and Urban Size: Singles

Fortsetzung Tabelle 4: RE-Regression of log Gross Wages on Urban Size, Single Individuals. 1995-2007

	(1)			(2)			(3)		
	coef.		std. err	coef.		std. err	coef.		std. err
blue-collar (=ref.)									
white collar (low, medium)							0.205	***	0.009
white collar (high, managerial)							0.334	***	0.013
civil service							0.175	***	0.024
Region									
East Germany	-0.311	***	0.014	-0.310	***	0.014	-0.260	***	0.014
hotspot	-0.002		0.022	-0.004		0.022	-0.033	+	0.021
hotspot_sex	**-0.017**		0.030	**-0.017**		0.030	**0.019**		0.028
sex	-0.126	***	0.014	-0.120	***	0.015	-0.145	***	0.014
Period dummies	yes								
constant	3.134	***	0.090	3.132	***	0.090	3.209	***	0.095
σ^2_ν	0.401			0.401			0.361		
σ^2_ε	0.237			0.237			0.224		
rho	0.741			0.741			0.722		
N (person years)	15644			15644			14939		
N (persons)	4503			4503			4341		
R^2 (overall)	0.598			0.597			0.645		

Significance-levels: p<0.01(***), p<0.05 (**), p<0.1 (*)

Gender Pay Gap and Urban Size: by groups

Table 6: RE-Regression of log Gross Wages on Urban Size, 1995-2007

	WOMEN				MEN			
	Married		Single		Married		Single	
	coeff	std. err	coeff	std. err	Coeff	std. err	coeff	std. err
Human capital								
hours (log)	0.857 ***	0.037	0.844 ***	0.063	1.351 ***	0.064	1.506 ***	0.134
hours (log)^2	-0.011	0.006	-0.014	0.011	-0.138 ***	0.010	-0.154 ***	0.022
education	0.056 ***	0.002	0.068 ***	0.003	0.050 ***	0.001	0.065 ***	0.003
experience	0.025 ***	0.001	0.037 ***	0.003	0.021 ***	0.001	0.039 ***	0.003
experience2	0.000 ***	0.000	-0.001 ***	0.000	0.000 ***	0.000	-0.001 ***	0.000
share part-time	-0.191 ***	0.013	-0.309 ***	0.024	-0.546 ***	0.030	-0.695 ***	0.033
tenure	0.010 ***	0.000	0.010 ***	0.001	0.006 ***	0.000	0.008 ***	0.001
age	-0.007	0.001	-0.002 ***	0.002	-0.002	0.001	-0.007 ***	0.002
Household								
child present	-0.016 ***	0.006	-0.003	0.013	0.019 ***	0.004	-0.010	0.026
child <7	-0.018 ***	0.007	-0.017	0.018	0.011 ***	0.004	0.200 ***	0.065
Region								
East Germany	-0.197 ***	0.011	-0.274 ***	0.019	-0.330 ***	0.009	-0.244 ***	0.020
hotspot	**0.041** ***	0.011	-0.022	0.020	**0.014** *	0.009	-0.023	0.019
industry	yes		yes		yes		yes	
occupation	yes		yes		yes		yes	
Period dummies	yes		yes		yes		yes	
constant			3.038 ***	0.117	3.498 ***	0.109	2.942 ***	0.215
σ^2_v	0.299		0.354		0.267		0.358	
σ^2_ε	0.234		0.232		0.170		0.213	
rho	0.619		0.700		0.711		0.739	
N	27811		7999		33838		6961	
N (groups)	5986		2335		6561		2012	
R^2 (overall)	0.739		0.680		0.599		0.572	

Gender Pay Gap and Urban Size: decomposition

Tabelle 7: Oaxaca-Blinder decomposition of male-female wage differentials by region and marital status

	(1) human capital			(2) human capital + household			(3) human capital + household + industry & occupation		
	not hotspot	hotspot	Diff.	not hotspot	hotspot	Diff.	not hotspot	hotspot	Diff.
MARRIED									
explained									
endwoment	**0.516** *** (0.005)	**0.432** *** (0.012)	**-0.084**	**0.488** *** (0.006)	**0.413** *** (0.013)	**-0.075**	**0.486** *** (0.007)	**0.379** *** (0.017)	**-0.107**
unexplained									
coefficient +	0.250 *** (0.009)	0.147 *** (0.019)		0.235 *** (0.012)	0.124 *** (0.024)		0.254 *** (0.034)	0.124 (0.124)	
interaction =	-0.046 *** (0.008)	0.047 *** (0.018)		-0.052 *** (0.009)	0.043 *** (0.019)		-0.012 (0.009)	0.078 *** (0.026)	
total	**0.204**	**0.193**	**-0.011**	**0.183**	**0.167**	**-0.016**	**0.241**	**0.202**	**-0.039**
SINGLES									
explained									
endwoment	**0.172** *** (0.009	**0.125** *** (0.020)	**-0.047**	**0.203** *** (0.011)	**0.169** (0.023)	**-0.034**	**0.208** *** (0.014)	**0.148** *** (0.035)	**-0.060**
unexplained									
coefficient +	**0.094** *** (0.011)	**0.110** *** (0.021)		**0.090** *** (0.018)	**0.135** (0.033)		**0.112** (0.072)	**0.245** (0.213)	
interaction =	**0.018** *** (0.006)	**0.000** (0.012)		**0.021** * (0.012)	**-0.021** (0.023)		**0.056** *** (0.016)	**0.004** (0.042)	
total	**0.112**	**0.110**	**-0.002**	**0.110**	**0.114**	**0.004**	**0.168**	**0.248**	**0.050**

Significance-levels: p<0.01(***), p<0.05 (**), p<0.1 (*); effect coding using B. Jann's "devcon" command

Summary & Implications

- Houshold structure tends to impose restrictions on individual mobility
- Economic asymmetry in households leads to differential impact of mobility restrictions on men and women;
- Size of the labour market can to some degree counterbalance this disadvantages

→ Increasing importance of metropolitan regions especially for dual-career couples

→ Also for married men

Outlook

- Analysis of different occupations, qualification groups
- Extending the regional analysis
- Heckman type selection correction for multi-level data
- Matching techniques

Thank You for Your Attention !