

Reassessing the Pay Gap for Temps in Germany

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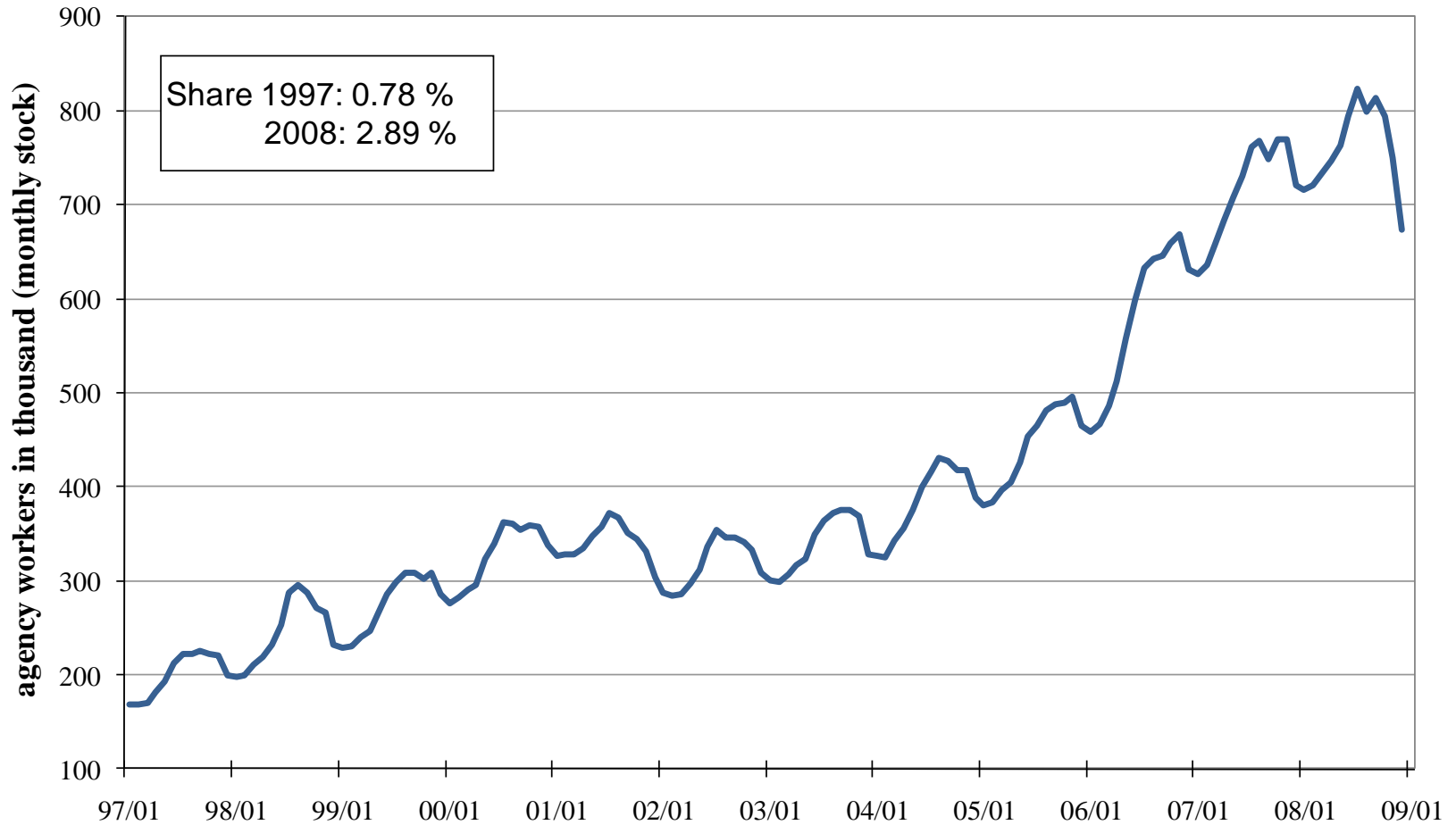
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Outline

- Motivation
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- Data
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Motivation



Source: Labor Placement Statistics, Federal Employment Agency

Motivation

Why are temp jobs often considered as “bad jobs”?

- Short job duration
 - Higher unemployment risks
 - Greater income volatility
 - ...
 - Comparably lower wages
 - Lack of representation by unions
- Directive of European Commission (2008)
- Equal pay or
 - Remuneration according to a collective agreement

Motivation

Research questions

- Are there wage differentials and are these a result of worker's characteristics, occupation or the worker's employment career?
- What are the reasons for changes in the temp wage differential?
- Does representation by unions affect the wage differential?

Theoretical Literature

Wage advantage

- Theory of compensating wage differentials (Rosen 1986): wages should compensate for undesirable job characteristics

Wage disadvantage

- Human capital theory (Becker 1964): Temp employment has features of an investment (labor market entrants and unemployed workers).
- Matching theory (Neugart & Storrie 2006): Temp agencies improve the match quality and reduce search costs

Empirical Evidence

- *US* : Segal / Sullivan (1998), 1984-94, 10 %
 - *UK*: Forde / Slater (2005), 2000: 9 %
 - *Israel*: Cohen / Haberfeld (1993), 1983: 8 %
 - *Germany*: Kvasnicka / Werwatz (2002), 1980-1990: 17 %
 - *Portugal*: Böheim / Cardoso (2007), 1995-2000: 2 %
- Due to data availability most studies are based on cross-section data and do not control for occupational differences or the employment history

Data

- IAB employment sample (IABS)
 - 2 % random sample of all dependent employees
 - Supplementary information on spells of unemployment
- Spell data: empl. career past 5 years
- Quarterly panel data set: 1997 – 2004, primary job
- Full-time employees, age 17-60,
 - No self-employed or civil servants
 - Number of spells: 12,009,311
 - Number of temp spells: 157,307
 - Number of workers : 631,551
- Identification of temporary agency workers by economic branch (Staff of the temp agency 5 to 7 percent)

Empirical Strategy

(1) OLS model

$$w_{it} = \alpha_0 + \tau_t + \beta D_{it} + \gamma x_{it} + \varepsilon_{it}$$

(2) Fixed effects regression

$$w_{it} = \tau_t + \alpha_i + \beta D_{it} + \gamma x_{it} + \varepsilon_{it}$$

Empirical Strategy

(3) Decomposition 1997 – 2004, JMP (1991), Blau/Kahn (2006)

$$\Delta w = \underbrace{\underbrace{(\Delta x_2 - \Delta x_1)\beta_1}_{\text{quantity effect}} + \underbrace{\Delta x_1(\beta_2 - \beta_1)}_{\text{price effect}}}_{\text{observed}} + \underbrace{\underbrace{(\Delta\theta_2 - \Delta\theta_1)\sigma_1}_{\text{gap effect}} + \underbrace{\Delta\theta_1(\sigma_2 - \sigma_1)}_{\text{price effect}}}_{\text{unobserved}}$$

reference group: non-temp workers; reference year: 1997

(4) Difference-in-difference approach

$$w_{it} = \tau_t + \beta D_{it} + \gamma x_{it} + \delta R + \lambda(D_{it}R) + \alpha_i + \varepsilon_{it}$$

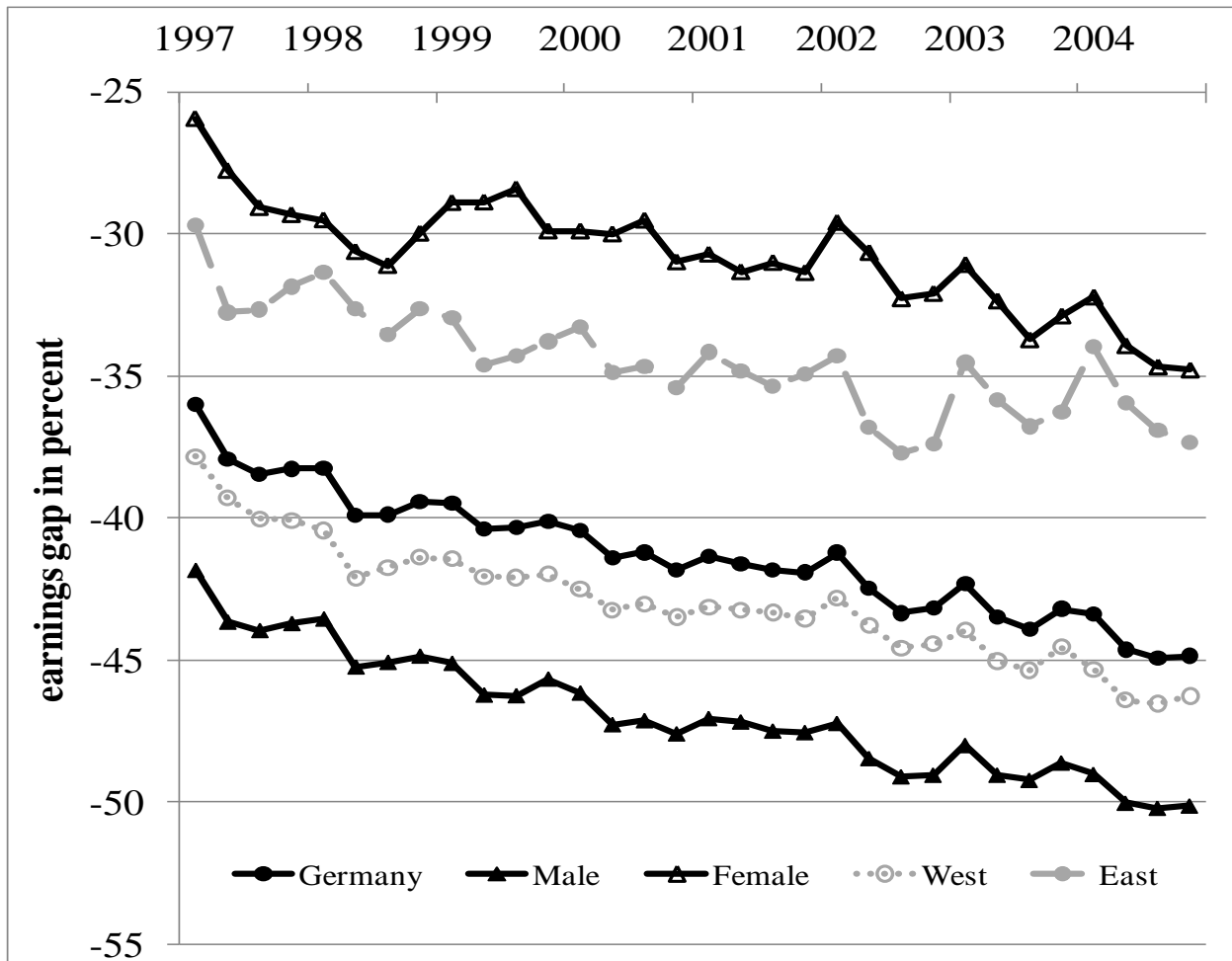
Data

- Dependent variable: log real daily wage (base year 2000)
- Baseline model:
 - gender, nationality, age, age2, education
 - firm size, age of the firm, share high skilled
 - GDP, local labor market conditions (size and tightness)
 - 6 occupation dummies
- Employment career (past 5 years)
 - tenure of the present job, tenure2,
 - previous LFS:
 - regular employed, temporary agency worker, not in the labor force, unemployed,
 - UB recipient; UA recipient
 - duration of previous LFS (0-6, 7-12, >12),
 - number of previous (temp) jobs,
 - total employment duration in weeks

Descriptives

| | 1997-2004 | | 1997 | | 2004 | |
|---------------------------------------|-----------|----------|------|----------|------|----------|
| | temp | non-temp | temp | non-temp | temp | non-temp |
| Average real gross wage | 50 | 88 | 51 | 84 | 48 | 90 |
| Male | 0.76 | 0.64 | 0.79 | 0.64 | 0.75 | 0.64 |
| Education | | | | | | |
| no vocational training | 0.20 | 0.10 | 0.19 | 0.11 | 0.19 | 0.09 |
| with vocational training | 0.74 | 0.79 | 0.75 | 0.79 | 0.75 | 0.78 |
| University | 0.06 | 0.12 | 0.06 | 0.10 | 0.06 | 0.13 |
| Occupation | | | | | | |
| Technical occupation | 0.03 | 0.08 | 0.04 | 0.09 | 0.03 | 0.09 |
| Manufacturing other | 0.08 | 0.16 | 0.09 | 0.18 | 0.07 | 0.15 |
| Manufacturing metal sector | 0.32 | 0.16 | 0.42 | 0.17 | 0.27 | 0.16 |
| Laborer | 0.25 | 0.01 | 0.19 | 0.01 | 0.32 | 0.01 |
| Clerical occupation | 0.13 | 0.36 | 0.10 | 0.35 | 0.15 | 0.37 |
| Service occupation | 0.18 | 0.21 | 0.16 | 0.20 | 0.17 | 0.22 |
| Previous labor force status | | | | | | |
| Unemployed | 0.38 | 0.15 | 0.38 | 0.13 | 0.43 | 0.16 |
| Not in the labor force | 0.27 | 0.22 | 0.30 | 0.17 | 0.22 | 0.24 |
| Employed as temp | 0.16 | 0.01 | 0.16 | 0.01 | 0.16 | 0.01 |
| Previous empl. characteristics | | | | | | |
| No. of all previous jobs | 2.63 | 1.04 | 2.41 | 0.96 | 3.00 | 1.09 |
| Total empl duration past 5 years | 160 | 230 | 156 | 231 | 178 | 238 |

Raw wage gap



Adjusted wage gap

| | Germany | West | East |
|-------------------------------|------------|-----------|-----------|
| (1) Base model (OLS) | -0.378 | -0.399 | -0.292 |
| se | -(0.003) | -(0.003) | -(0.003) |
| R2 | 0.48 | 0.46 | 0.45 |
| (2) Empl. career (OLS) | -0.242 | -0.257 | -0.183 |
| se | -(0.003) | -(0.003) | -(0.003) |
| R2 | 0.53 | 0.51 | 0.51 |
| (3) Empl. career (FE) | -0.225 | -0.241 | -0.178 |
| se | -(0.002) | -(0.003) | -(0.001) |
| R2 | 0.38 | 0.30 | 0.29 |
| No of spells | 12,009,311 | 9,580,412 | 2,428,899 |
| No. of temp spells | 157,307 | 126,794 | 30,513 |
| No. of workers | 631,551 | 506,506 | 144,310 |
| Avg. spells per worker | 19 | 18.9 | 16.8 |

Decomposition of the wage gap 1997 / 2004

| | Germany | West | East |
|---|---------|--------|--------|
| Change in raw differential | 0.114 | 0.118 | 0.064 |
| Qualification gap | 0.119 | 0.116 | 0.103 |
| <i>Change in observed quantities</i> | 0.046 | 0.042 | 0.040 |
| <i>Change in observed prices</i> | 0.072 | 0.074 | 0.064 |
| Change in unexplained earnings gap | -0.004 | 0.002 | -0.039 |
| <i>Gap effect</i> | -0.030 | -0.026 | -0.059 |
| <i>Unobserved prices</i> | 0.026 | 0.028 | 0.020 |

Decomposition of the wage gap 1997 / 2004

| | | Germany | West | East |
|--------------------------------------|--|--------------|--------------|--------------|
| Change in observed quantities | | 0.046 | 0.042 | 0.040 |
| <i>Education</i> | | 0.013 | 0.016 | 0.006 |
| <i>Employment history</i> | Previous labor force status | -0.002 | -0.003 | -0.001 |
| | Job tenure and job tenure ² | 0.000 | 0.000 | 0.000 |
| | Empl. duration past 5 years | -0.022 | -0.028 | -0.005 |
| | No. of (temp) jobs | 0.011 | 0.012 | 0.004 |
| <i>Occupational variables</i> | Manufacturing metal | -0.022 | -0.020 | -0.024 |
| | Laborer | 0.027 | 0.024 | 0.034 |
| Change in observed prices | | 0.072 | 0.074 | 0.064 |
| <i>Education</i> | | 0.003 | 0.003 | 0.002 |
| <i>Employment history</i> | Previous labor force status | 0.017 | 0.017 | 0.014 |
| | Job tenure | 0.006 | 0.005 | 0.007 |
| | Empl. duration past 5 years | 0.014 | 0.015 | 0.009 |
| | No. of (temp) jobs | 0.004 | 0.005 | 0.012 |
| <i>Occupational variables</i> | Manufacturing metal | -0.002 | -0.002 | -0.001 |
| | Laborer | 0.015 | 0.016 | 0.015 |

The effect of collective bargaining

Regulation of the temporary help sector in Germany

- 1997 – 2002
 - Max. period of assignment 12 months
 - Only one fixed-term contracts is allowed
 - Synchronisation ban from the second assignment on

- 2003
 - No regulation **if** an agency applies a **collective agreement**;
otherwise regulations still apply and **equal pay** from the first
day of an assignment on

 - Directive of the EC in 2008

- 97% of the agencies signed a collective agreement in 2003 (DID)

The effect of collective bargaining

| | Germany | West | East | Germany | |
|----------------------|---------|---------|---------|-------------------|---------|
| | All | All | All | Robustness checks | |
| Temp (coeff.) | -0.216 | -0.230 | -0.176 | - | -0.214 |
| se | (0.002) | (0.003) | (0.005) | - | (0.003) |
| Reform (coeff.) | -0.025 | -0.032 | -0.026 | -0.028 | a) |
| se | (0.001) | (0.001) | (0.001) | (0.001) | |
| Temp*Reform (coeff.) | -0.054 | -0.063 | -0.025 | -0.051 | -0.033 |
| se | (0.004) | (0.004) | (0.007) | (0.006) | (0.004) |
| Temp*1999 (coeff.) | | | | | -0.008 |
| se | | | | | (0.003) |
| Temp*2000 (coeff.) | | | | | -0.006 |
| se | | | | | (0.003) |
| Temp*2001 (coeff.) | | | | | -0.001 |
| se | | | | | (0.003) |
| Temp*2002 (coeff.) | | | | | -0.024 |
| se | | | | | (0.003) |

a) The model is estimated with yearly time dummy variables which for compactness are not reported



Conclusions

- High temp wage gap
- Employment history matters
- Worsening qualification and rising relative skill prices explain the change in the wage gap
- “Unionization” of the temp sector in Germany could not stop the widening wage gap