

# Estimating a Structural Equilibrium Job Search Model to Evaluate the Introduction of a Uniform Minimum Wage in Germany

MAXIMILIAN BLÖMER (ZEW), NICOLE GÜRTZGEN (ZEW, UNIVERSITY OF MANNHEIM), LAURA POHLAN (ZEW), HOLGER STICHNOTH (ZEW), GERARD VAN DEN BERG (ZEW, UNIVERSITY OF MANNHEIM)

## 1 Motivation

- Introduction of a uniform stationary minimum wage (MW) amounting to 8.50 € from 2015 in Germany
- Considerable bite: 15 % of all employees are estimated to be affected by the MW (SOEP)
- Thus far only ex-post evaluations of industry-specific minimum wages

## 2 Aim of the Project

- Insights into underlying transmission mechanisms and the labour market structure (competitive or monopsonistic)
- Insights into relevance of search frictions in the German labour market
- Ex-ante evaluation of economic impacts of different MW levels

## 3 Model Framework

- Based on Bontemps, Robin and van den Berg (1999) which incorporates worker and firm heterogeneity
- Workers are either employed or unemployed
  - Heterogeneous opportunity costs of employment  $b$ , the *cdf* of  $b$  is given by  $H(b)$
  - Job search frictions: unemployed and employed workers receive job offers at a Poisson rate  $\lambda$
  - Employed workers lose their job at Poisson rate  $\delta$
  - Wage offers are drawn from *cdf*  $F(w)$
- Firms maximise their steady-state profit flow to set wages optimally given their productivity level  $p$ , the *cdf* of  $p$  is given by  $\Gamma(p)$

## 4 Potential Effects of a MW

- Model allows for positive, zero and negative employment effects of different MW levels
- For MW levels below the lowest firm productivity level  $\underline{p}$ :
  - Unemployed with high  $b$  are now more likely to get appropriate offers
    - Equilibrium unemployment rate  $u$  goes down
- For MW levels above  $\underline{p}$ : effects on  $u$  are ambiguous:
  - The fraction of operating firms and hence the expected number of job offers goes down
    - Unemployment rate increases
  - Higher wage offers induce more workers to accept those
    - Unemployment rate decreases

## 5 Data

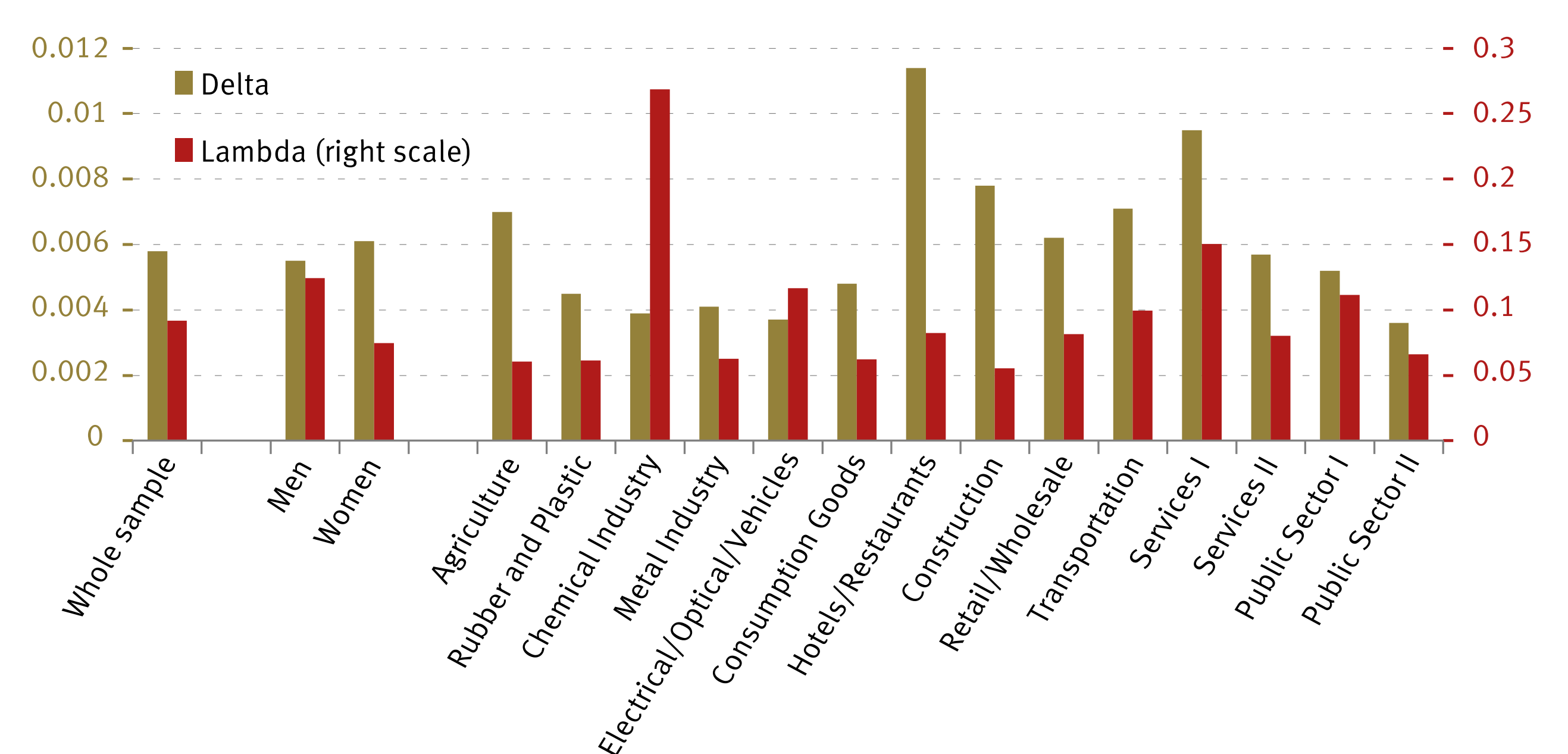
- Sample of Integrated Employment Biographies (SIAB)
- Longitudinal information on individuals' employment and unemployment histories up to 2010
- Stock sample of full-time employed, cut-off date January, 1<sup>st</sup> 2007

## 6 Results

- Maximum Likelihood estimates of structural model parameters  $\lambda$ ,  $\delta$ ,  $\mu$  and  $\sigma$  (parameters of  $H(b)$ )
- Heterogeneous results across gender and industries
- Preliminary results on the effects of different minimum wage levels on the equilibrium unemployment rate

## 7 Next steps

- Compare estimated  $H(b)$  with distribution of reservation wages from external data sources
- Relax assumption of equal job offer arrival rates for employed and unemployed
- In the long-run: endogenise the job arrival rate to allow for negative employment effects



Estimation results for delta and lambda for whole sample, by gender and by industry. Whole sample consists of 241,346 observations.



Preliminary results on unemployment effects of different minimum wage levels for whole sample. The inverse measure of market frictions  $\kappa$  is given by  $\lambda/\delta$ .