The effects of outsourcing on unemployment

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Joint work with Stefan Groot

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tinbergen institute

Motivation

- Outsourcing leads to further fragmentation of the production process (output : value added went from 3.4 to 4.4 in past 20 years)
- Allows more specialisation and productivity increases in the long run
- Can have distributional effects and cause temporary unemployment

Aims

- Analysing the hazard rate of becoming involuntary unemployed, and the probability of finding a new job after becoming unemployed
- In particular, we look at the effects of outsourcing (domestic and international) on these hazard rates

Outline

- Data and stylized facts
  - outsourcing survey
  - unemployment data
- Methodology
  - Cox proportional hazard model
- Estimation results
  - hazard rate of becoming unemployed
  - probability of finding a new job
- Conclusions

Outsourcing survey

- Survey on outsourcing, by Eurostat in 2007
- ± 1000 firms (with > 100 employees)
- Binary measure:
  "did you outsource between 2001-2006, yes/no?"
- Distinction made between domestic and international

- Data
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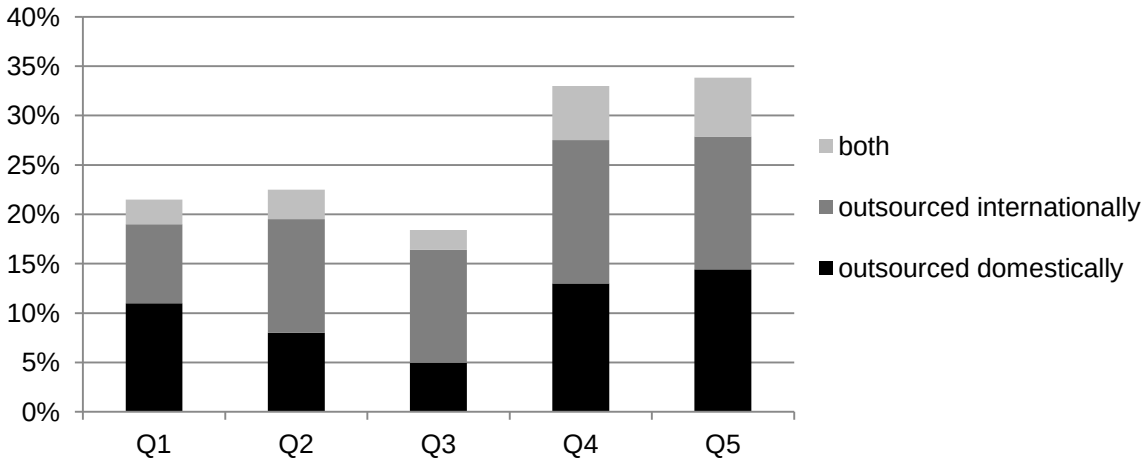
- Conclusions

Outsourcing shares (2001 – 2006) by size classes (2007) and destination



About 26% of the firms outsourced some of its activities between 2001-2006

- Data
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Outsourcing shares (2001 – 2006) by destination

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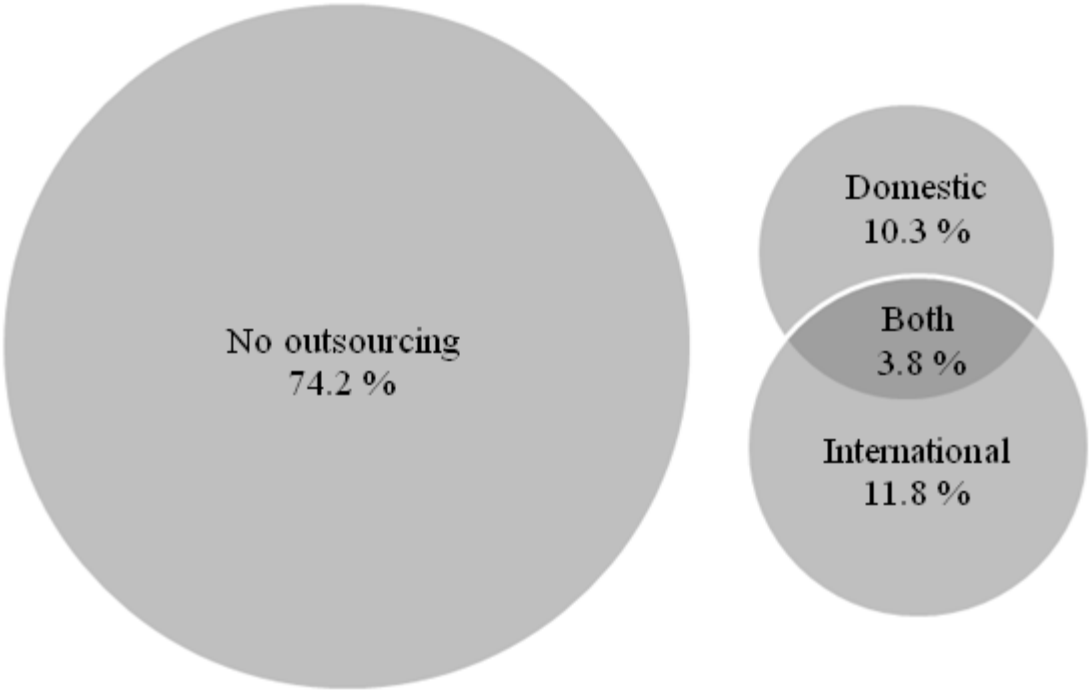

Unemployment data

- Tax data (SSB-Banen) contain information on all matches between employers and employees (2000-2008)
- These data can't distinguish between voluntary and involuntary unemployment
- Therefore we use data on unemployment benefits (SSB-WW)
- Merged with jobs based on end-date of job and start-date of unemployment benefits

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Cox proportional hazard model

- This is a duration model, that explains the hazard rate conditional on the duration
- For example: h_t is the probability of becoming unemployed shortly after 'surviving' for period *t*.
- The hazard rate is explained by:
  - (i) a base hazard rate that varies over time
  - (ii) a linear function of some explanatory variables

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Cox proportional hazard model

- Every job (fiscal relation between employer and employee) is an observation
- For each job the model needs the duration and failure (yes/no)
- A job can end in three ways:
  - (i) involuntary (failure)
  - (ii) voluntary (no failure)
  - (iii) still exists in 2008 (no failure)
- A job only affects the estimation results up until the duration of the job

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Base hazard rate

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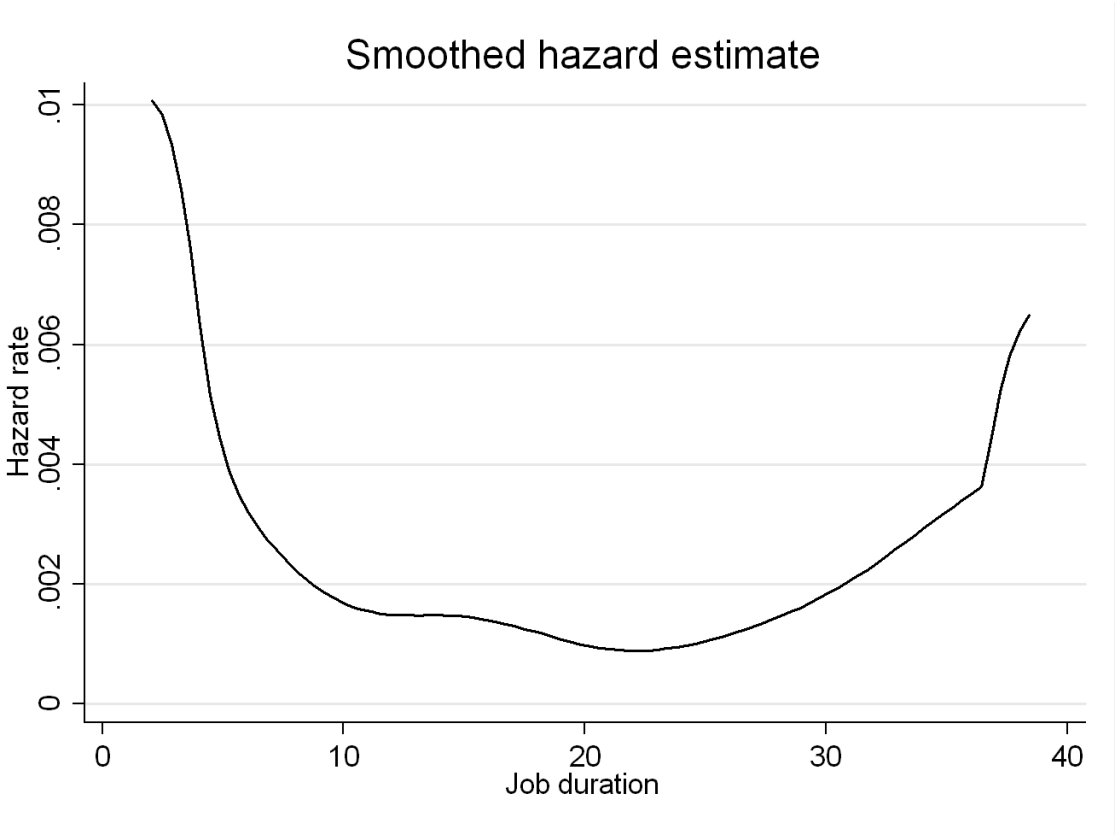

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Becoming unemployed

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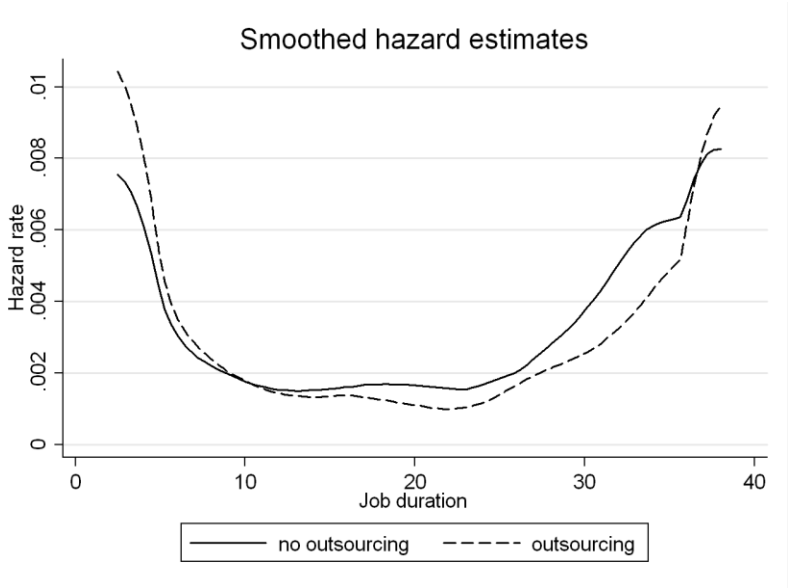
- Method
- Results
- Conclusions

no outsourcing vs outsourcing



Becoming unemployed

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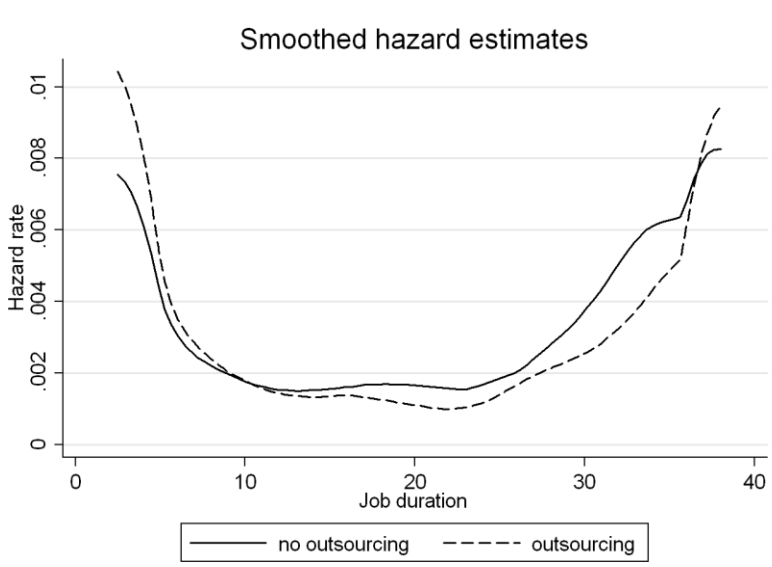
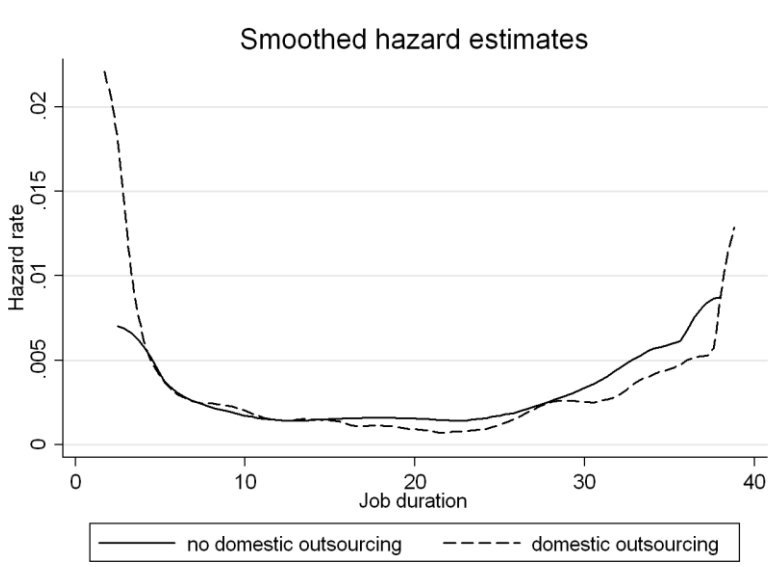


no outsourcing vs domestic



Becoming unemployed

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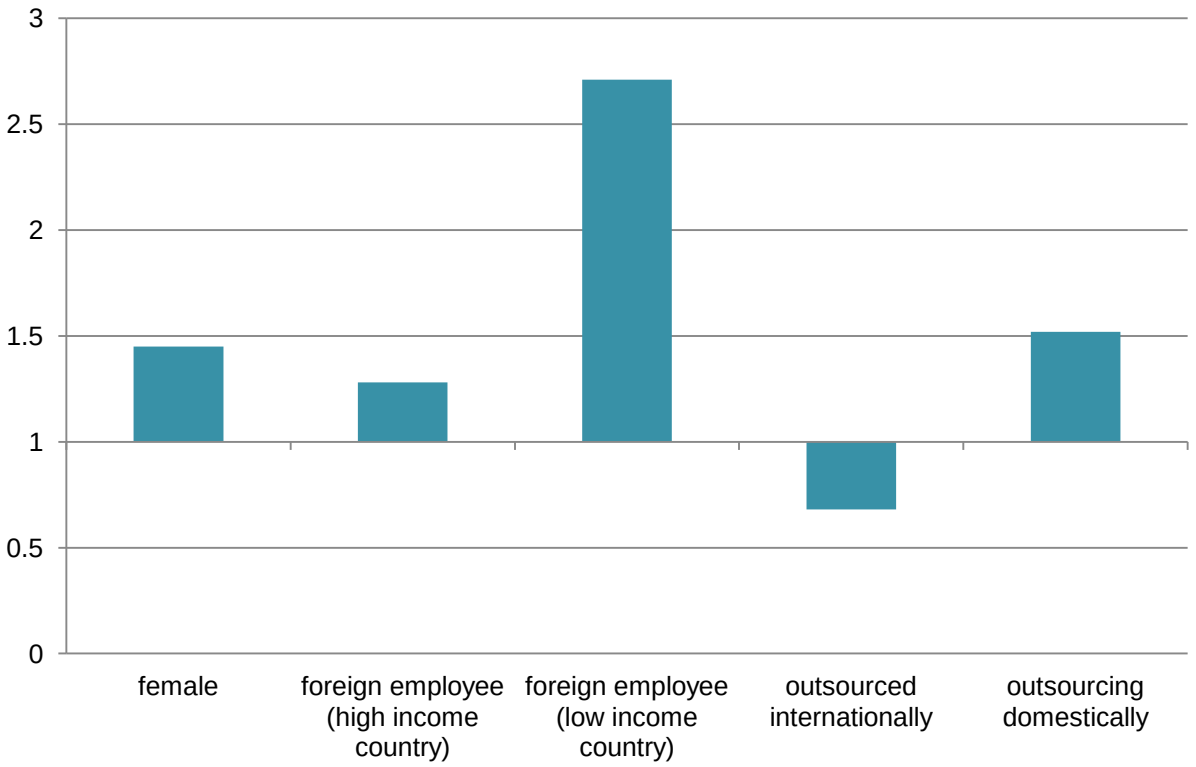

Becoming unemployed

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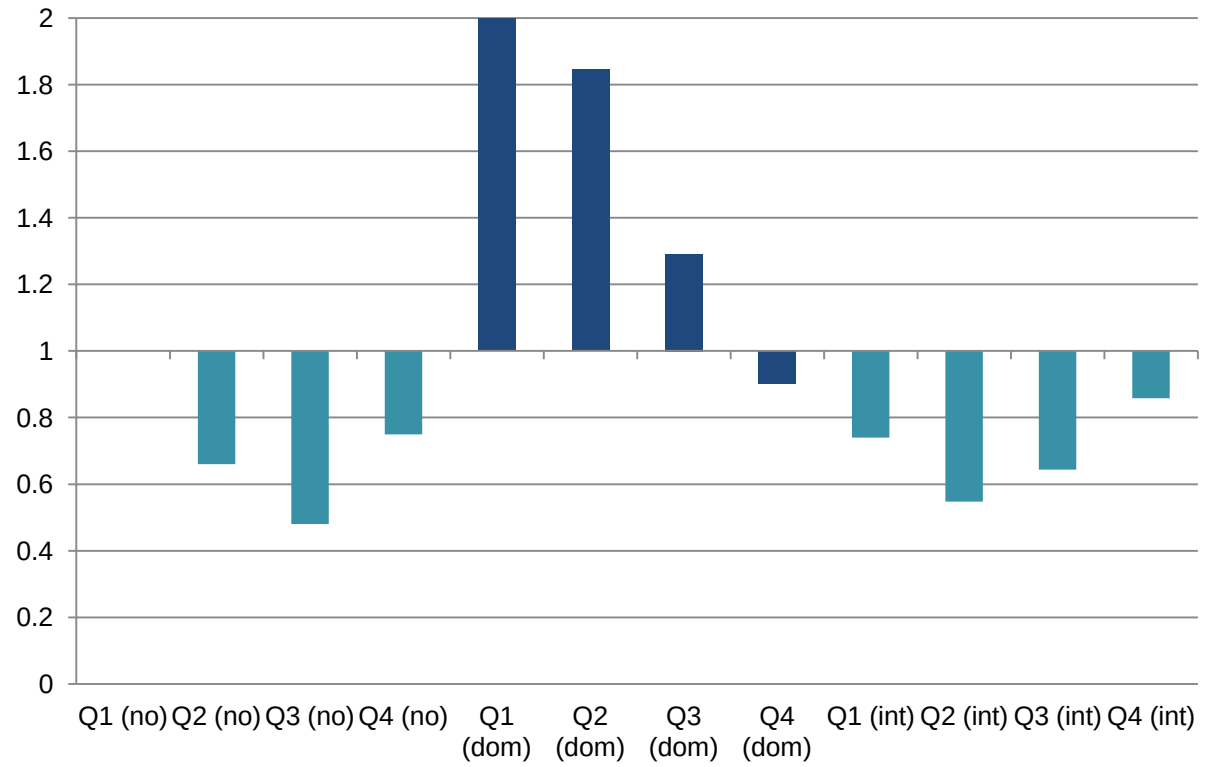
Interaction with wage quartiles (boundaries are 28k, 38k, 54k in 2008 wages):



Finding a new job

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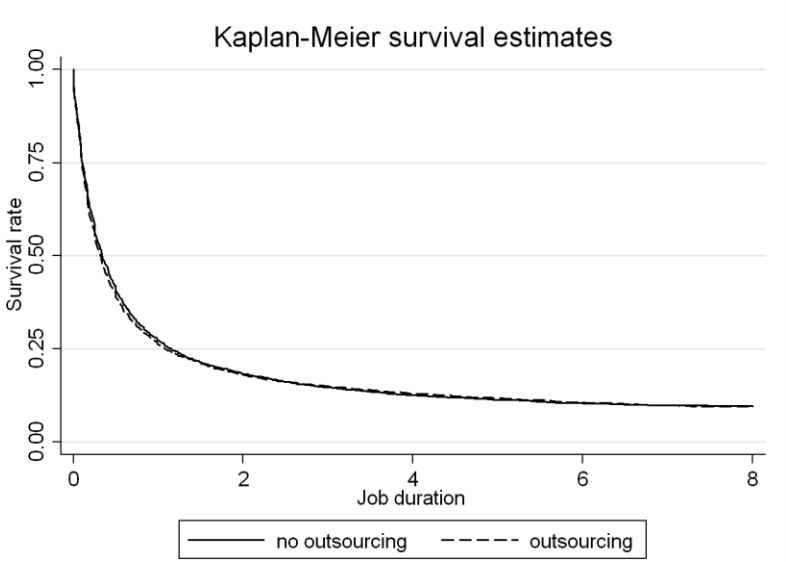

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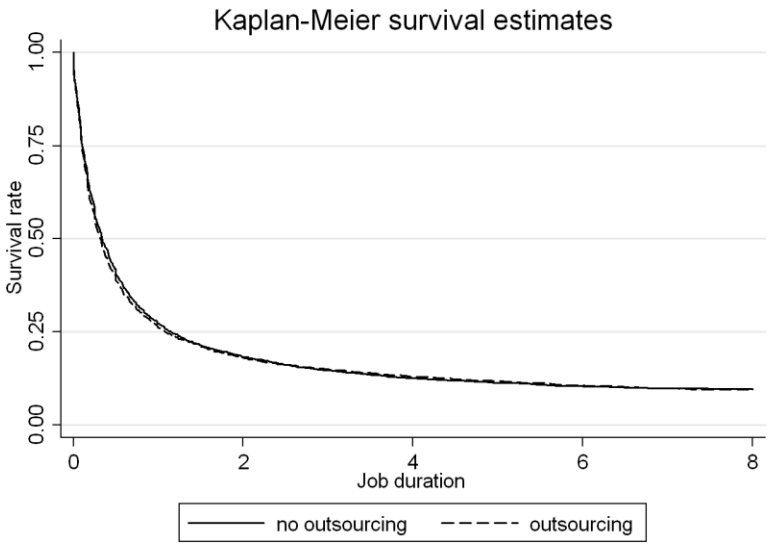
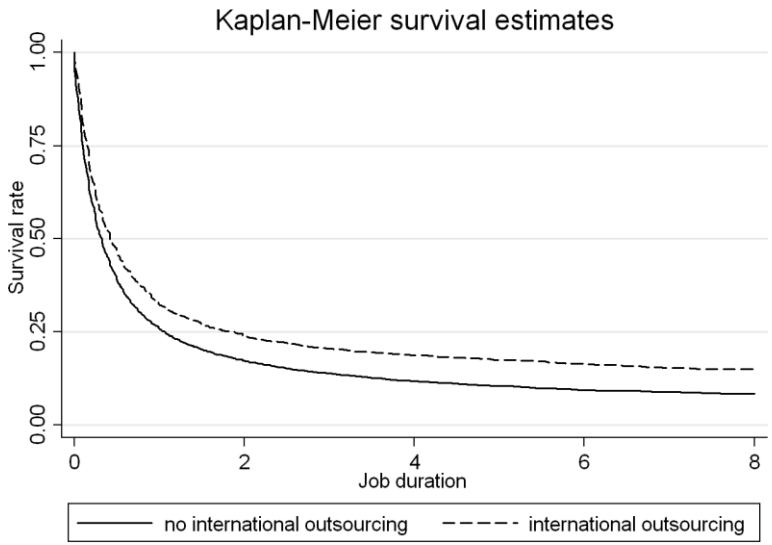


no outsourcing vs international



Finding a new job

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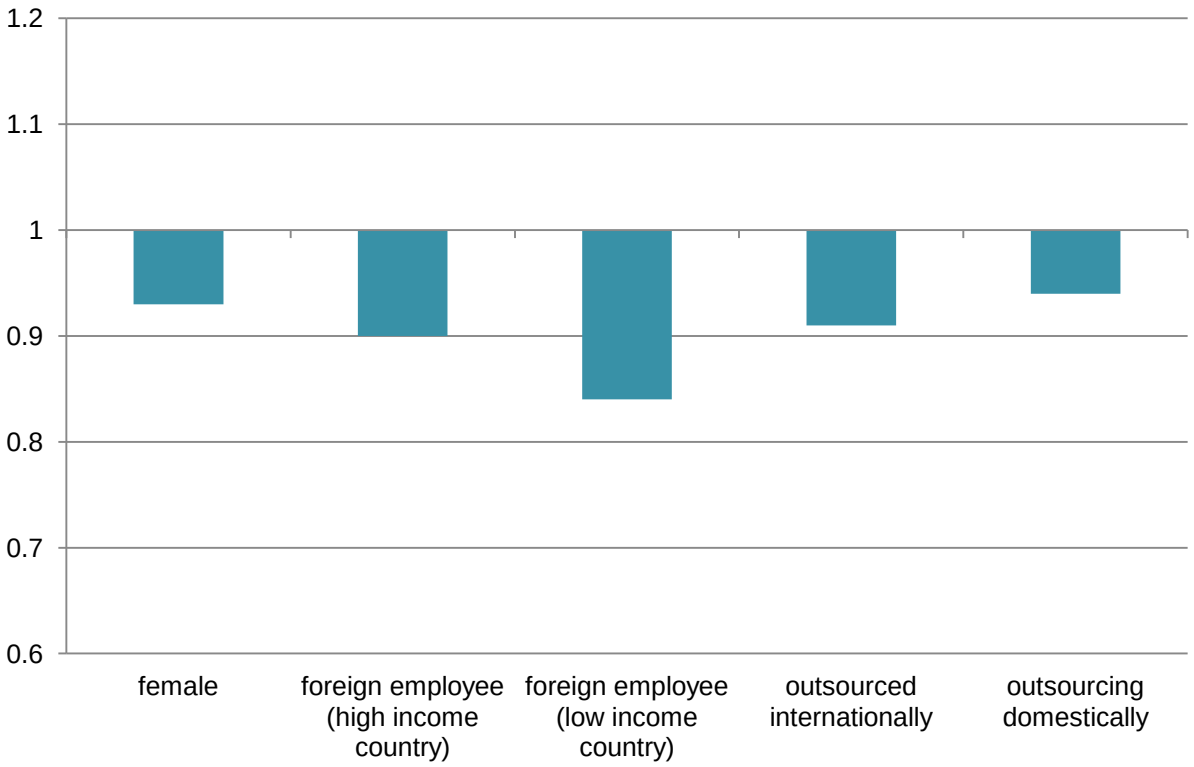

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Conclusions (i)

- Hazard rate for involuntary unemployment seems to follow U-shape
- Controlling for duration, risk is higher for women and foreign employees
- Different effects for domestic outsourcing (52% *more* risk) and international outsourcing (32% *less* risk)
- Domestic outsourcing increases hazard rate particularly for lower income groups

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Conclusions (ii)

- Probability of finding a new job is lower for woman and foreign employees
- Former employees of firms that outsourced internationally have about 10% less chance of finding a new job

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