STIJN BAERT
BART COCKX
NIELS GHEYLE
CORAA VANDAMME

DO EMPLOYERS DISCRIMINATE LESS
IF VACANCIES ARE DIFFICULT TO FILL?
EVIDENCE FROM A FIELD EXPERIMENT IN THE YOUTH LABOUR MARKET
Motivating gaps

Potential explanations for gaps

- Differences in supply side endowments
- Differences in supply side preferences and behaviour
- Differences in demand side preferences and behaviour

Unemployment in EU-27 for 15-24 aged (2011, EU LFS)

- Native: 20.8%
- Extra-EU-27 nationality: 31.0%

Unemployment in Belgium for 15-24 aged (2011, EU LFS)

- Native: 18.0%
- Extra-EU-27 nationality: 33.4%
Do employers discriminate against foreign school leavers?

Employers in Belgium
- Comprehensive anti-discrimination legislation
- High unemployment among ethnic minorities

Research population school leavers
- “Target group for intensive labour market assistance”
- Scarring effects

Baert, Cockx, Gheyle, Vandamme (2012)
Do employers discriminate less if vacancies are difficult to fill?
## Overview

### Roadmap

1. Literature and our contribution
2. Research methodology
3. Research results
4. Conclusion
1. Literature review and our contribution

**Former contributions**

- Direct and indirect **theoretical evidence** for negative relationship between discrimination and labour market tension
  - Employers with monopsony power have an opportunity to select workers according to their preferences
  - Higher arrival rates of employees at vacancies lower cost of discriminating because less foregone output when a minority worker is turned away

**Our contribution**

- Direct **empirical evidence** of relationship between discrimination and labour market tension away.

Baert, Cockx, Gheyle, Vandamme (2012)
2. Research methodology

Correspondence methodology

- Pairs of fictitious job applications are sent to real job openings.
  - Both applications differ only by the minority status of the candidate.
  - By monitoring the subsequent call back, discrimination is identified.

- “Golden standard” to identify discrimination in the labour market
  - Employer discrimination is disentangled from supply side determinants of LM outcomes.
  - Selection on unobservable characteristics is not an issue.

- Bertrand and Mullainathan (AER, 2004) is seminal work.
2. Research methodology

Research design (1)

- CURRICULUM VITAE TYPE A
  - PROFESSIONAL BACHELOR IN BUSINESS ADMINISTRATION

- CURRICULUM VITAE TYPE A
  - VOCATIONAL SECONDARY EDUCATION IN METALLURGY

- CURRICULUM VITAE TYPE A
  - VOCATIONAL SECONDARY EDUCATION IN ORGANIZATION HELP

- CURRICULUM VITAE TYPE A
  - TECHNICAL SECONDARY EDUCATION IN COMMERCE

- CURRICULUM VITAE TYPE B
  - PROFESSIONAL BACHELOR IN BUSINESS ADMINISTRATION

- CURRICULUM VITAE TYPE B
  - VOCATIONAL SECONDARY EDUCATION IN METALLURGY

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Baert, Cockx, Gheyle, Vandamme (2012)
2. Research methodology

Research design (2)

CURRICULUM VITAE
TYPE A

PROFESSIONAL
BACHELOR IN
BUSINESS
ADMINISTRATION

JONAS MERTENS

CURRICULUM VITAE
TYPE B

PROFESSIONAL
BACHELOR IN
BUSINESS
ADMINISTRATION

OKAN DEMIR

Vacancy N
2. Research methodology

Research design (3)

Positive call back

- Sensu stricto: invitation for interview
- Sensu lato: any positive reaction

CURRICULUM VITAE TYPE A

PROFESSIONAL
BACHELOR IN
BUSINESS
ADMINISTRATION

OKAN DEMIR

CURRICULUM VITAE TYPE B

PROFESSIONAL
BACHELOR IN
BUSINESS
ADMINISTRATION

JONAS MERTENS

Call Back

Vacancy N+1

Call Back

Baert, Cockx, Gheyle, Vandamme (2012)
3. Research methodology

Research design (4)

How is “difficult to fill” (high labour market tension) measured?

- Each vacancy can be matched with a profession following the AMI-classification.

- For each profession we know the labour market tension.
  - Median duration time (in 2011) of job openings for this profession
  - Bottleneck status (in 2011) of this profession
## Descriptive statistics

### Descriptive statistics: invitation for job interview

<table>
<thead>
<tr>
<th></th>
<th>Call back Flemish</th>
<th>Call back Turkish</th>
<th>Call back ratio</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All vacancies</td>
<td>0.19</td>
<td>0.13</td>
<td><strong>1.44</strong></td>
<td>2.04</td>
</tr>
<tr>
<td>Vacancies for bottleneck</td>
<td>0.17</td>
<td>0.17</td>
<td><strong>1.03</strong></td>
<td><strong>0.07</strong></td>
</tr>
<tr>
<td>professions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vacancies for non-bottleneck</td>
<td><strong>0.21</strong></td>
<td><strong>0.10</strong></td>
<td><strong>2.05</strong>*</td>
<td><strong>2.64</strong></td>
</tr>
<tr>
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</table>

3. Research results

Baert, Cockx, Gheyle, Vandamme (2012)
Do employers discriminate against foreign school leavers?

Do employers discriminate less if Vacancies are difficult to fill?

### Main regression results

#### Probit-estimates, marginal effects: invitation for job interview

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkish origin</td>
<td>-0.06***</td>
<td>0.02</td>
<td>***</td>
</tr>
<tr>
<td>Pseudo R-squared</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>752</td>
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</tr>
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White heteroskedasticity-consistent standard errors, corrected for clustering at the vacancy level, in parentheses. ***(**)(*) indicates significance at the 1% (5%) (10%) level.

#### Probit-estimates, marginal effects: invitation for job interview

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<td>Turkish*Non-bottleneck profess.</td>
<td>-0.11***</td>
<td>0.02</td>
<td>***</td>
</tr>
<tr>
<td>Bottleneck profess.</td>
<td>-0.03</td>
<td>0.03</td>
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White heteroskedasticity-consistent standard errors, corrected for clustering at the vacancy level, in parentheses. ***(**)(*) indicates significance at the 1% (5%) (10%) level.

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Baert, Cockx, Gheyle, Vandamme (2012)
3. Research results

Sensitivity analyses (1)

Conducted sensitivity analyses

- Alternative outcome variable
  - Any positive reaction

- Alternative tension variable
  - Median vacation duration time for profession

- Additional interactions with origin
  - Education level, customer contact, fraction foreign workers in sector

- Alternative model
  - Linear probability model
  - Heteroskedastic probit model

Probit-estimates, marginal effects: any positive reaction

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>Standard Error</th>
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<tr>
<td>Turkish*Bottleneck profession</td>
<td>-0.01</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Turkish*Non-bottleneck profess.</td>
<td>-0.15***</td>
<td>(0.03)</td>
</tr>
</tbody>
</table>

Other adopted variables: indicator variable “bottleneck profession”.
White heteroskedasticity-consistent standard errors, corrected for clustering at the vacancy level, in parentheses. ***(**)(*) indicates significance at the 1% (5%) (10%) level.
3. Research results

Sensitivity analyses (2)

Conducted sensitivity analyses

- Alternative outcome variable
  - Any positive reaction
- Alternative tension variable
  - Median vacation duration time for profession
- Additional interactions with origin
  - Education level, customer contact, fraction foreign workers in sector
- Alternative model
  - Linear probability model
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Probit-estimates, marginal effects: invitation for job interview

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<tr>
<td>Turkish</td>
<td>-0.06***</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Turkish*Median vacation duration time for profession</td>
<td>0.04***</td>
<td>(0.01)</td>
</tr>
</tbody>
</table>

Other adopted variables: indicator variable “median vacation duration time in profession”.
White heteroskedasticity-consistent standard errors, corrected for clustering at the vacancy level, in parentheses. ***(**)(**)) indicates significance at the 1% (5%) (10%) level.
3. Research results

Sensitivity analyses (3)

Conducted sensitivity analyses

- Alternative outcome variable
  - Any positive reaction
- Alternative tension variable
  - Median vacation duration time for profession
- Additional interactions with origin
  - Education level, customer contact, fraction foreign workers in sector
- Alternative model
  - Linear probability model
  - Heteroskedastic probit model

Probit-estimates, marginal effects: invitation for job interview

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<tr>
<td>Turkish*Bottleneck profession</td>
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<tr>
<td>Turkish*Non-bottleneck profess.</td>
</tr>
<tr>
<td>Turkish*High educated</td>
</tr>
<tr>
<td>Turkish*Customer contact</td>
</tr>
<tr>
<td>Turkish*% foreign workers in sector</td>
</tr>
</tbody>
</table>

Other adopted variables: indicator variables “high educated” and “customer contact” and normalized variable “% foreign workers in sector”. White heteroskedasticity-consistent standard errors, corrected for clustering at the vacancy level, in parentheses. ***(**)(*) indicates significance at the 1% (5%) (10%) level.
## Sensitivity analyses (4)

### Sensitivity analyses

- **Alternative outcome variable**
  - Any positive reaction

- **Alternative tension variable**
  - Median vacation duration time for profession

- **Additional interactions with origin**
  - Education level, customer contact, fraction foreign workers in sector

- **Alternative model**
  - Linear probability model
  - Heteroskedastic probit model

### Heteroskedastic probit model

- **Critique** (Heckman and Siegelman, 1993): differences in variance of unobs. characteristics can generate spurious evidence of discrimination.

- **Solution**: heteroskedastic probit
  - Allows variance of error term to vary with ethnicity
3. Research results

Sensitivity analyses (5)

Sensitivity analyses

- Alternative outcome variable
  - Any positive reaction

- Alternative tension variable
  - Median vacation duration time for profession

- Additional interactions with origin
  - Education level, customer contact, fraction foreign workers in sector

- Alternative model
  - Linear probability model
  - Heteroskedastic probit model

Heteroskedastic probit, marginal effects: invitation for job interview

<p>| | | |</p>
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<td>-0.11***</td>
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Other adopted variables: indicator variable “Turkish*High educated”, indicator variable “Bottleneck profession” and 7 cv profile indicator variables. White heteroskedasticity-consistent standard errors, corrected for clustering at the vacancy level, in parentheses. ***(**)(*) indicates significance at the 1% (5%) (10%) level.
4. Conclusion

Research conclusions

- Hiring discrimination against foreign school leavers still apparent in Belgian LM.
- Hiring discrimination is lower for professions for which labour market tension is high
  - Employers use labour market power to discriminate against foreign school leavers
3. Research results

Sensitivity analyses (4)

Conducted sensitivity analyses

- Alternative outcome variable
  - Any positive reaction
- Alternative tension variable
  - Median vacation duration time for profession
- Additional interactions with origin
  - ...
  - Male recruiter
- Alternative model
  - Linear probability model
  - Heteroskedastic probit model

Probit-estimates, marginal effects: invitation for job interview

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<td>(0.03)</td>
</tr>
<tr>
<td>Turkish*Male recruiter</td>
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<td>(0.03)</td>
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<tr>
<td>Bottleneck profess.</td>
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<td>(0.04)</td>
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<tr>
<td>Male recruiter</td>
<td>-0.08**</td>
<td>(0.04)</td>
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Baert, Cockx, Gheyle, Vandamme (2012)
3. Research results

Sensitivity analyses (5)

Conducted sensitivity analyses

- Alternative outcome variable
  - Any positive reaction
- Alternative tension variable
  - Median vacation duration time for profession
- Additional interactions with origin
  - Education level, customer contact, fraction foreign workers in sector
- Alternative model
  - Linear probability model
  - Heteroskedastic probit model

LPM: invitation for job interview

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<tr>
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White heteroskedasticity-consistent standard errors, corrected for clustering at the vacancy level, in parentheses. ***(***)(*) indicates significance at the 1% (5%) ((10%)) level.

Baert, Cockx, Gheyle, Vandamme (2012)
4. Conclusion

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<tr>
<th>Policy advice</th>
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<tbody>
<tr>
<td>Need for discrimination detection (and punishment).</td>
</tr>
<tr>
<td>Need for awareness campaigns presenting success stories.</td>
</tr>
<tr>
<td>Stimulation of labour market competition is in favour of equal treatment.</td>
</tr>
</tbody>
</table>