Cross-national Variation in Tertiary Graduate Unemployment Rates

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Research Questions

→ What determines variation in tertiary graduates labor market entry and unemployment rates?

→ What has been the impact of educational expansion?

→ What role do labor market institutions play?

→ What is the role of differentiation at the tertiary level, e.g. between fields of study?

Here: Develop a *simple* model of cross-national variation in tertiary graduate unemployment rates
Modeling variation in tertiary graduate unemployment rates

(cf. Breen 2005)

Supply
→ Supply of skilled workers

Demand
→ Regulation of permanent employment contracts
→ Regulation of fixed-term contracts
Supply of skilled labor

Tertiary graduates

→ Greater supply leads to more competition and unemployment.

Apprenticeship sector

→ Attractive apprenticeship sector diverts able individuals from higher education (Shavit and Müller, 2000).

→ Less competition, less unemployment among tertiary graduates.
Demand for tertiary graduates

Employment protection legislation

→ Regulation of **permanent** employment contracts
  → Higher firing costs, lower hiring rate, longer search duration for first employment, higher initial unemployment (e.g. Breen, 2005).

→ Regulation of **fixed-term** employment contracts
  → Fixed term contracts end after specified duration.

  → Lower firing costs, more hiring, lower unemployment among LM entrants
    → Problem of partial deregulation in France, Spain (Blanchard and Landier, 2002)
Hypotheses

Educational expansions

→ at tertiary level leads to higher unemployment, especially in the early career.

Extensive apprenticeship sectors

→ reduce unemployment among tertiary graduates

Strong regulation of permanent employment contracts

→ raises unemployment rates among tertiary graduates, particularly in the early career.

Low regulation of fixed-term employment contracts

→ Facilitates employment of tertiary graduates.
Data

European Union Labour Force Survey (EULFS)

- Data from 19 countries in 2005 and 2006
- Sample restricted to
  - tertiary graduates (ISCED 5a, 5b, 6), who
  - have obtained highest degree within 0-10 years from time of survey
  - and are between 20 and 39 years old.

Country level covariates

- Educational expansion: average share of 20-39 year-olds with ISCED 5/6 degree (EULFS 2005/6)
- Size of apprenticeship sector: share of ISCED 3/4 students enrolled in programs combining school-based education with work-based training (OECD, Kogan et al. 2008)
- Regulation of permanent employment (OECD, 2004)
- Regulation of fixed-term contract (OECD, 2004)
- Adult (ages 40-54) unemployment rate (EULFS 2005/6)
Two-step multilevel analysis

→ First-step: Country-specific logistic regressions

→ Dependent variable: individual unemployed at time of survey (=1)

→ Covariates:
  → Potential labour force experience (year of survey – year of graduating), entered as nine dummy variables (Reference group: 0-1 years of plfx)
  → Dummies for female, ISCED 6 degree, ISCED 5b degree, and year of survey

→ Convert estimated coefficients into predicted probabilities

→ Second-step: OLS regression of first step probability effects on country-level covariates (adjusting for uncertainty of first-step estimates)
  1. Adjusted unemployment rates
  2. Reduction of unemployment probability when moving from 0/1 to 10 years of potential labor force experience
Unemployment Rate Tertiary Graduates  
Share of Tertiary Graduates among 20-39 year-olds

Source: EULFS 2005/6
## Adjusted unemployment rates

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Notes: * p<0.1; ** p<0.05; *** p<0.01; EULFS 2005/6, own calculations.
Adjusted unemployment rates

Predicted unemployment rate with 95% c.i.

Regulation of Fixed-Term Contracts
Adjusted unemployment rates

Predicted unemployment rate with 95% c.i.

Size of apprenticeship sector
Regulation of Fixed-Term Contract vs. % Enrolled in Apprenticeship System

Countries:
- GR
- ES
- FI
- IT
- RO
- SI
- BE
- BE
- HU
- NL
- AT
- CZ
- SK
- DE
Unemployment Dynamics

A
High EPLfix
No Appren

B
Low EPLfix
No Appren

C
Low EPLfix
High Appren

X-Axis: Potential labour force experience
Reduction of unemployment probability when moving from 0-1 to 10 years of potential labor force experience

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Notes: * p<0.1; ** p<0.05; *** p<0.01; EULFS 2005/6, own calculations.
Unemployment Dynamics

Predicted unemployment rate with 95% c.i.

Regulation of Fixed-Term Contracts
Unemployment Dynamics

Predicted unemployment rate with 95% c.i.

Size of apprenticeship sector
Unemployment Dynamics

Predicted unemployment rate with 95% c.i.

Share of Tertiary Graduates
Conclusion / Discussion

Main results

→ Low regulation of fixed-term is robustly associated with lower unemployment among tertiary graduates.
  → “Not traps, but stepping stones”?  
→ In countries with extensive apprenticeship system, unemployment among tertiary graduates is also lower.
  → …mechanism?
→ Greater supply of tertiary graduates is associated with faster labor market entry.
  → …measurement/mechanism?
→ Regular employment protection does not matter.
Unemployment Dynamics

Predicted unemployment rate with 95% c.i.

Share of Tertiary Graduates
Unemployment Dynamics

coeff = 0.42924633, se = 0.19526649, t = 2.2