Higher education and unemployment in Europe: An analysis of the academic subject and national effects.

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Objetives

- Compare the effect of higher education on unemployment across the Europe 15 area.
- Identify the effect on both the Short Term and Long Term unemployment.
- Analyze the effect of the academic subject on both types of unemployment.
- Analyze the country specific differences.

Motivation

- Employment conditions for graduates are increasingly difficult.
- Europe is implementing an unified higher education area (Bologna declaration).
- Comparative analysis of field and country cases may help to correctly direct policies.
- European Labor Force Survey (ELFS) now provides homogenized (comparable) data on higher education (field and level) and labor market status.

Data and method

- European Labour Force Survey
  - Quarterly survey on the 27 EU members
  - We make use of EU 15 countries (quality and quantity of the data) on the Spring Quarter of 2005.
  - Sample of 542,512 observations
  - Academic fields are homogenized following the International Standard Classification of Education 1997
- Multinomial Logit
  - 3 Categories: Employment, ST unemployment and LT unemployment
  - ST unemployment (Reference), we estimate:
    - P (employment over ST unemployment)
    - P (LT unemployment over ST unemployment)

Table 1. Explanatory variables: Sample frequencies			
Variables	Frequency	Variables	Frequencies
Gender	[% of total sample]	*Higher education subject [% of graduates]*	
Female	50.8	No applicable	
Male	49.2	General programmes	0.7
Marital status		Education science	12.6
Single	37.4	Humanities & arts	8.2
Married	54.5	Foreign languages	2.5
Other	8.1	Social, business & law	27.7
Age group		Science	1.0
15-24	18.3	Biology & Environment	2.1
25-34	18.9	Physics & chemistry	2.6
35-44	23.2	Mathematics & statistics	1.2
45-54	21.1	Computer science	2.3
55+	18.3	Computer use	0.4
Education level		Engineering	16.1
Low	37.9	Agriculture & veterinary	2.16
Medium	41.2	Health & welfare	15.5
High	20.7	Services & tourism	3.9

Main findings

- An academic degree reduces the likelihood of unemployment.
- Descriptive Statistics
  - Total Unemployment: 7,9% (NG) to 4,7% (G)
  - ST Unemployment: 4,5% (NG) to 2,8% (G)
  - LT Unemployment: 3,4% (NG) to 1,9% (G)
- European level regression: The effect is larger in reducing ST unemployment.
- The effect largely varies across disciplines and countries.

Table 3. M-Logit & O-Logit results

Variables	*Employment|STU (from m-logit)*		*LT|STU (from m-logit)*		*O-Logit*	
Higher education	.89**	[.020]	-.10**	[.030]	-.93**	[.015]
Medium education	§		§		§	
Lower education	.51**	[.015]	.07**	[.022]	-.52**	[.012]
Austria	-.00	[.034]	.25**	[.077]	.07*	[.034]
Belgium	-.26**	[.047]	1.4**	[.071]	.81**	[.035]
Denmark	-.38**	[.061]	.78**	[.096]	.60**	[.048]
Finland	-.86**	[.032]	-.16**	[.068]	.75**	[.029]
France	-.22**	[.032]	1.27**	[.055]	.69**	[.025]
Germany	-.41**	[.028]	1.48**	[.050]	1.00**	[.023]
Greece	-.11**	[.035]	1.54**	[.057]	.74**	[.026]
Ireland	.42**	[.037]	.70**	[.067]	-.20**	[.031]
Italy	.37**	[.032]	1.62**	[.054]	.30**	[.024]
Luxemburg	.30**	[0.06]	.43**	[.121]	-.19**	[.056]
Netherlands	.21**	[.033]	.90**	[.059]	.07**	[.027]
Portugal	.31**	[.043]	1.26**	[.069]	.14**	[.033]
Sweden	-.35**	[.027]	.74**	[.052]	.57**	[.023]
Spain	-.47**	[.033]	.54**	[.077]	.31**	[.030]

Field of study effects (European Level)

- Reference category: *Social, business & law.*
  - Average effect*: Foreign language, physics and chemistry, mathematics and statistics, and computer science.*
- Differences *on P(Employment over ST unemployment)*
  - Below the average effect: Humanities and arts, Biology and environment, Computer use.
  - Over the average effect: Education science, Engineering.
- Differences on *P(LT unemployment over ST unemployment)*
  - Below the average: Agriculture & Veterinary and Engineering.
  - Over the average: Biology & environment, Science, Computer use.
- Health and welfare degrees.
  - Provide the best insurance against ST and LT unemployment.

Country specific effects

- Reference category (average effect): United Kingdom.
  - Austria, Netherland, Spain.
- Poor performing countries
  - Reduced impact on the ST
    - Greece, Portugal, Luxemburg, Sweden, Denmark, France and Germany.
- Better performing countries
  - Graduates from Ireland and Belgium have the more optimistic employment prospects.
- Special cases
  - Italy (more ST but less LT). Restriction to access labor market
  - Finland (less ST but more LT). Downsizing of the public sector.

Conclusions

- Higher education still reduces the likelihood of unemployment.
- The effect is more observable on the ST unemployment.
- The effect on LT unemployment is not very strong as it may be caused by some structural factors such as changes on the national production function. (ie. Agriculture and engineering fields).
- Factors explaining the results need to be thoroughly investigated:
  - Higher education system
  - Labour market trends.
- The benchmark cases for policy makers are
  - Health and welfare studies
  - Ireland and Belgium.