

Graduates and 'Graduate Jobs' In Europe: A Picture of Growth and Diversification

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Is this the global graduate labour market?



The high skills supply and demand race: recent years and future prospects.

- Optimists:
 - sustained high earnings premiums reflect implicit high growth in demand for graduate skills; strong contributions to economic growth
- Pessimists:
 - loose link between technology and skills
 - high-skills demand determined more by employer strategies than the supply of high skills
 - "digital Taylorism"
 - some high-skills demand needn't be fulfilled graduates
 - increased signalling, rising underutilisation of skills
 - stable earnings premiums not decisive

A “complementary” approach

- Examine direct evidence of the trend supply *and* demand for graduate labour;
- *And* examine earnings premium evidence; especially a focus on heterogeneity in the labour market with dispersion in the premiums
- Value of a comparable international picture: common origins but institutional specificities

Outline 1

1. Growth of graduate labour supply

- Growing everywhere?
- Growing apart?

2. Growth of graduate jobs

- Sources of growth
- Do countries deploy graduates in similar ways?
- Is there a similar pattern across countries in the growth of graduate jobs?

Outline 2

3. Graduate underemployment

- do graduates of different countries experience underemployment to a similar extent? If not, why?
- is there a similar pattern of change?

4. Graduate wage trends and dispersions

- Average earnings premium holding up everywhere?
- Premium dispersion: is it growing?

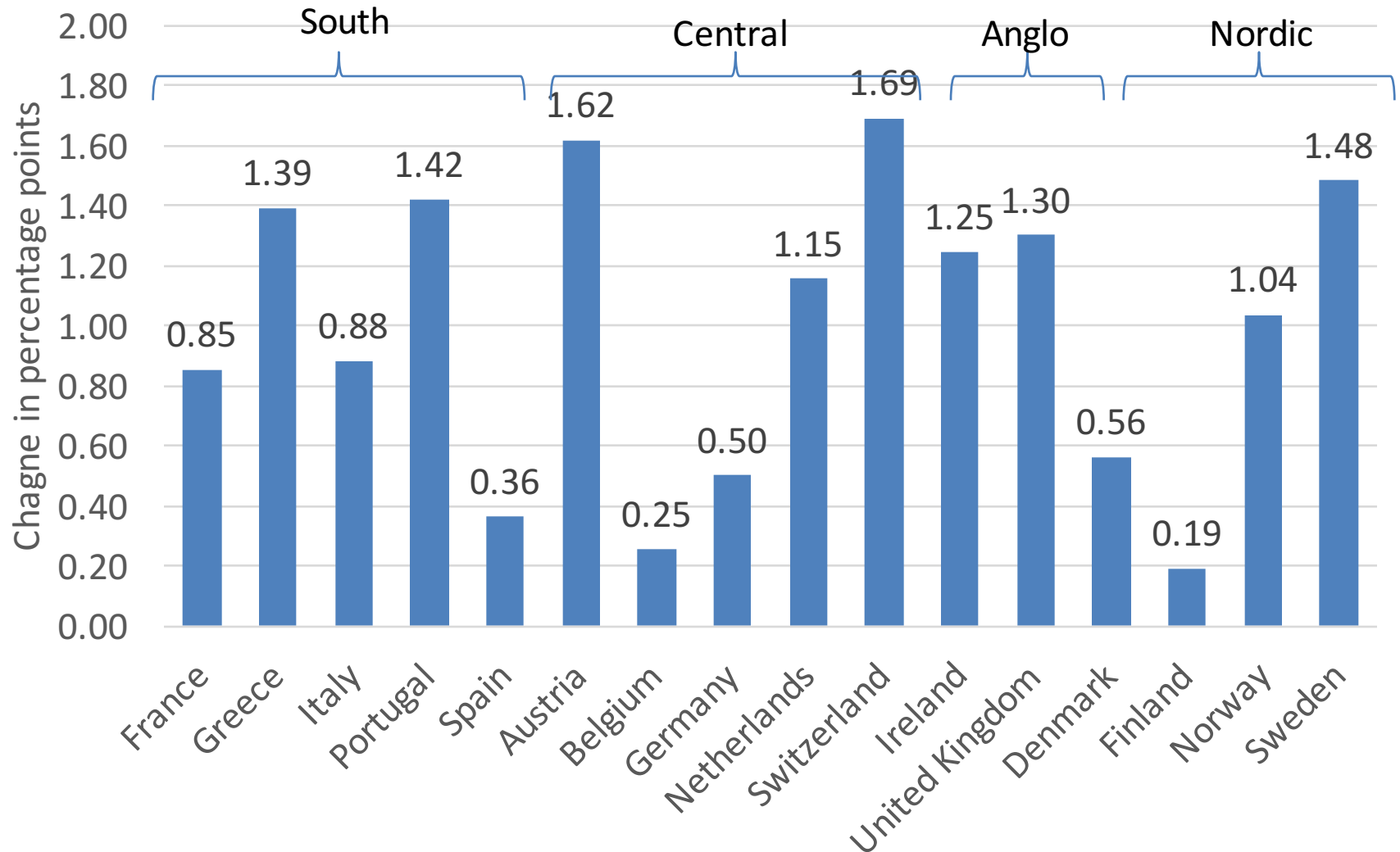
Implications and speculations.

Data

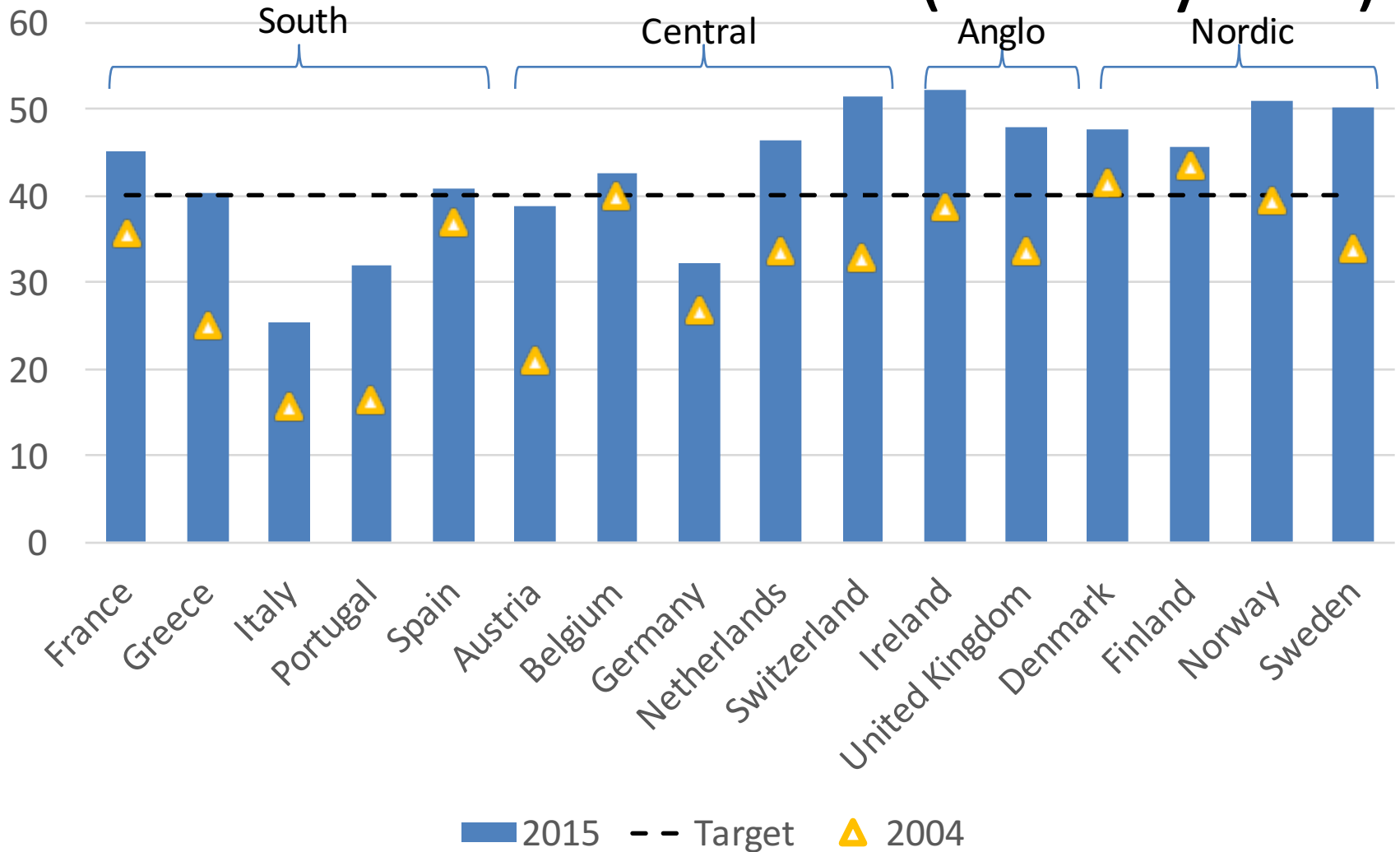
- Recent published studies, national/international
- European Statistics on Income and Living Conditions (EU-SILC), 2004-2014
- European Union Labour Force Survey (EU-LFS), 2003-2013
- OECD PIAAC Survey of Adult Skills

Growth of Graduate Labour Supply

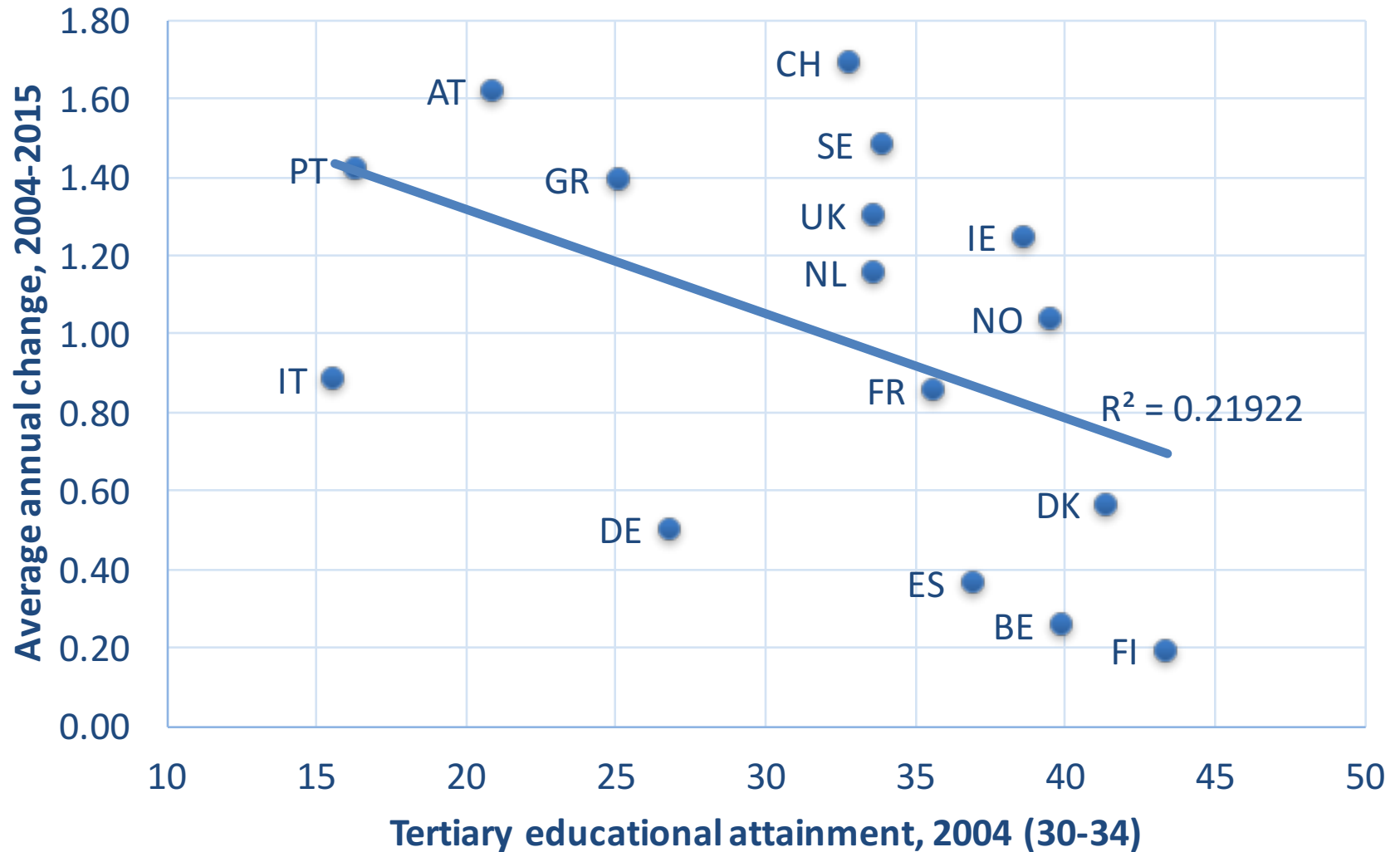
Average annual change of tertiary educational attainment, 2004-2015 (30-34 years)



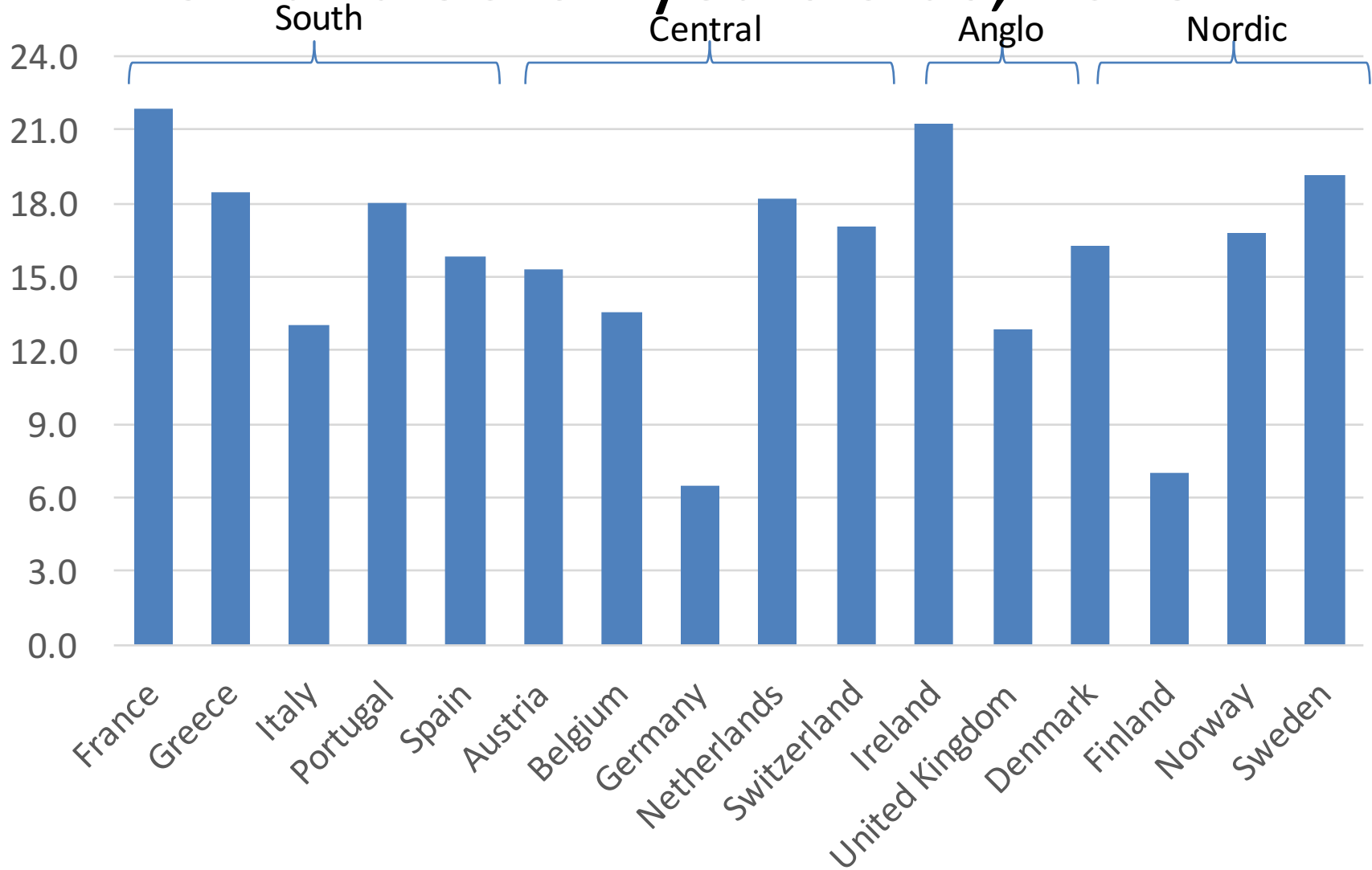
Level of tertiary educational attainment 2004 & 2015 (30-34 years)



Convergence or divergence across countries?



Gap in tertiary education between 30-34 and 50-64 years olds, 2015



In brief:

- Tertiary-educated graduates have become more prevalent everywhere, but at a widely varying pace
- Only weak evidence of convergence

Growth of Graduate Jobs

Drivers of changing high skills demand

- technological change
 - Skill-Biased-Technological-Change ("knowledge economy")
 - task-biased change
- managerial cultures
- globalisation
 - offshoring
- changing product (hence industry) demand
 - e.g. demographic-induced

Change in Britain: 97/01 to 06-12

– “Graduate jobs” as % of employment:

31%

41%

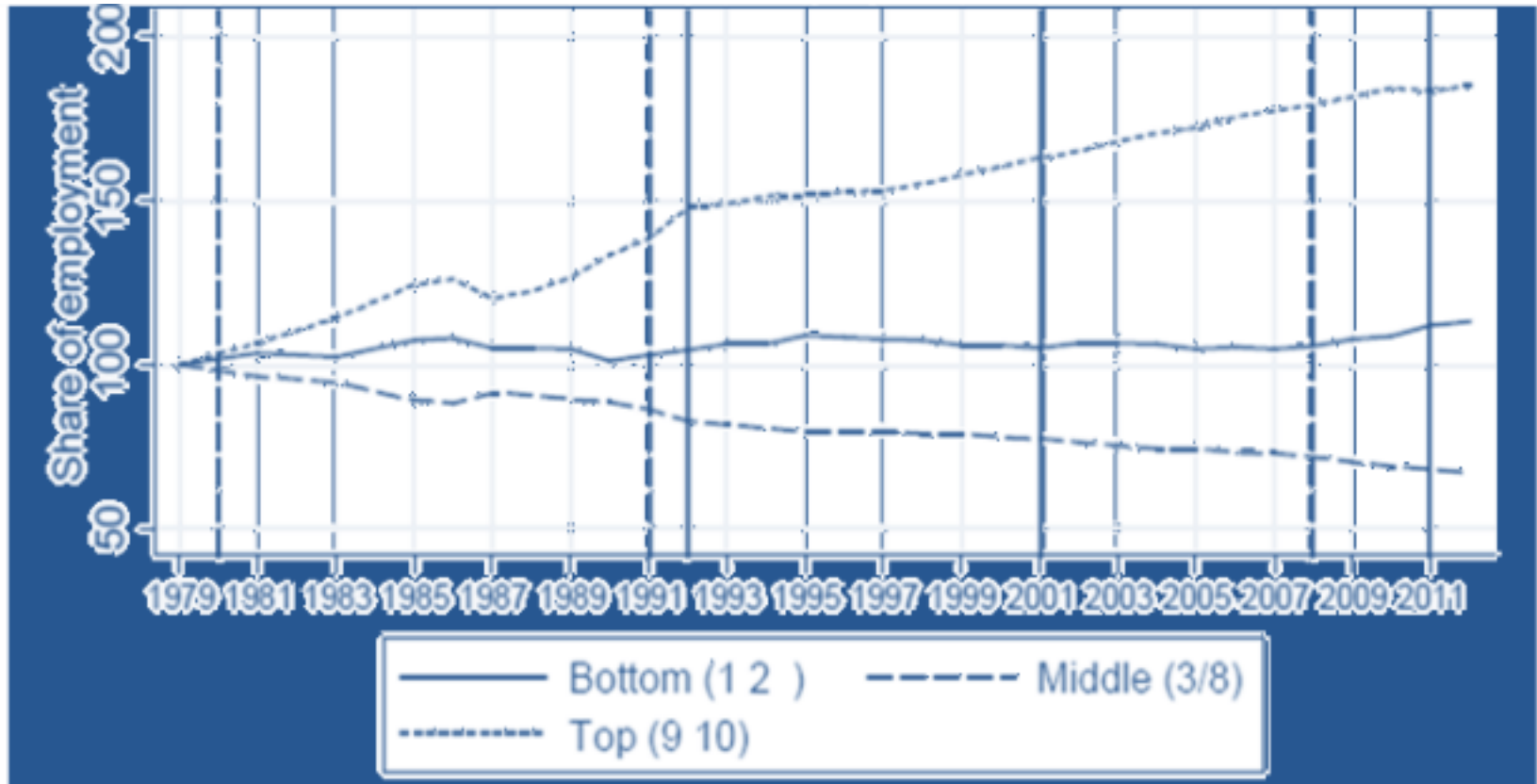


– Graduates as % of employment:

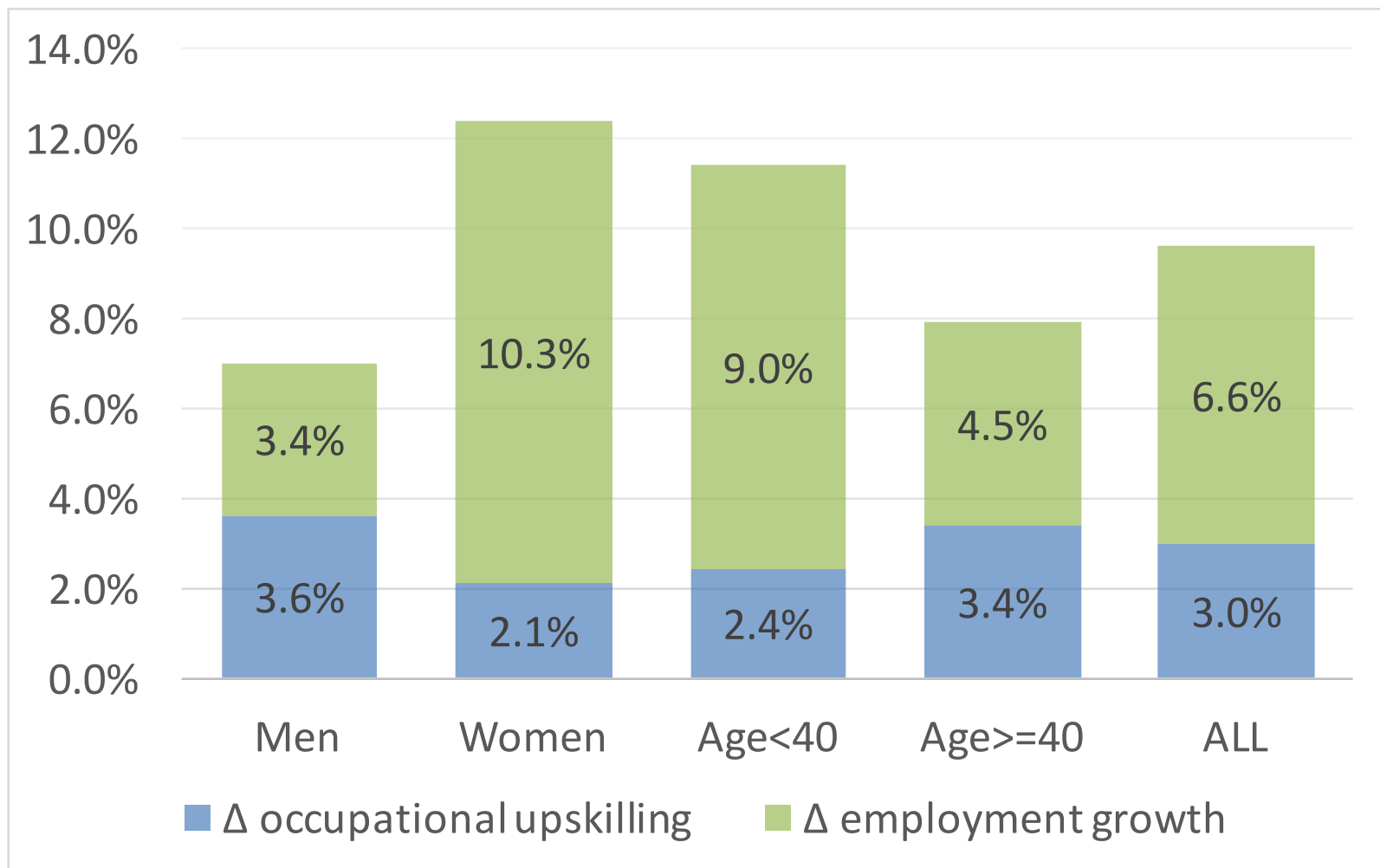
30%

42%

Employment polarisation and the long-term growth of top quintile jobs in Britain

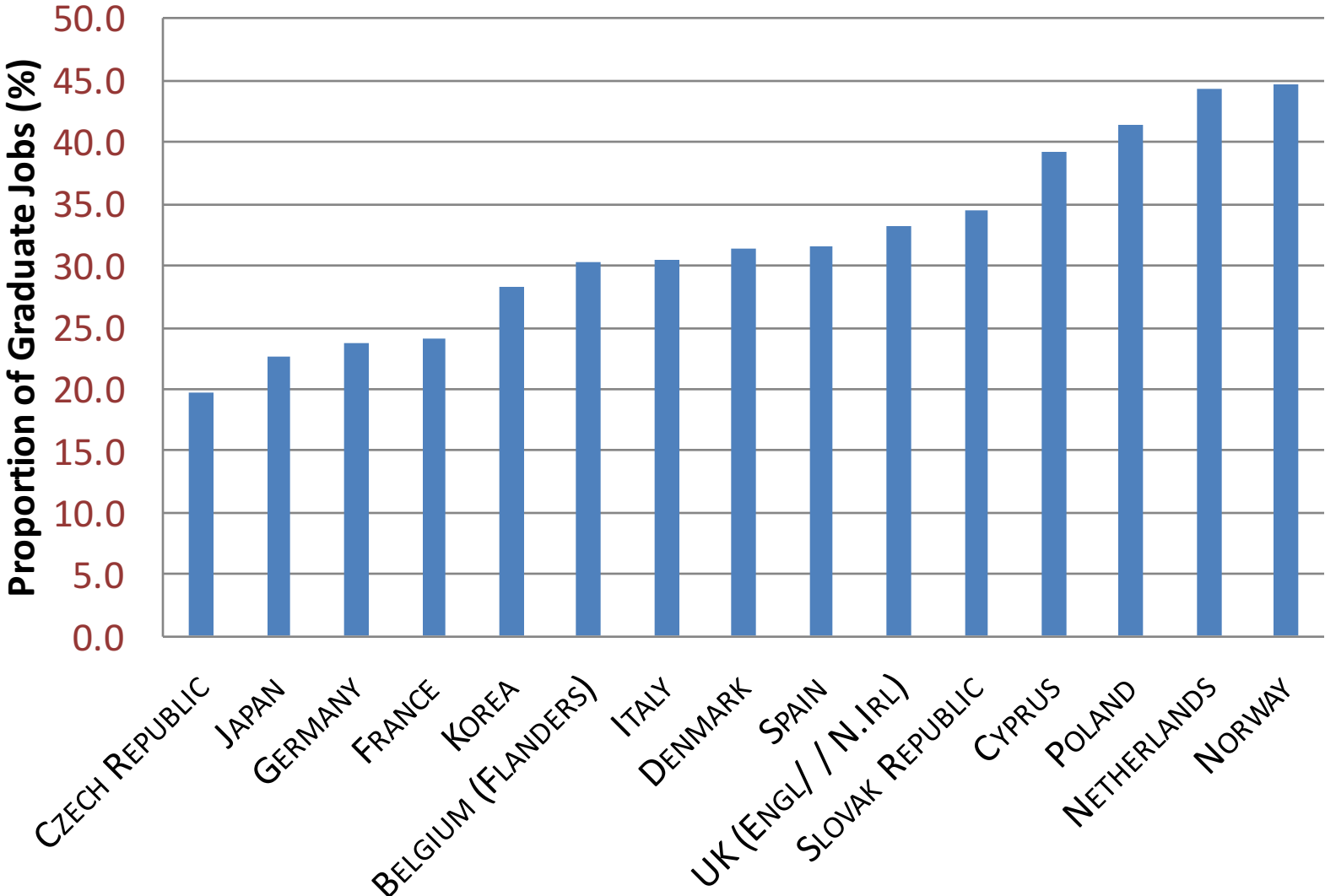


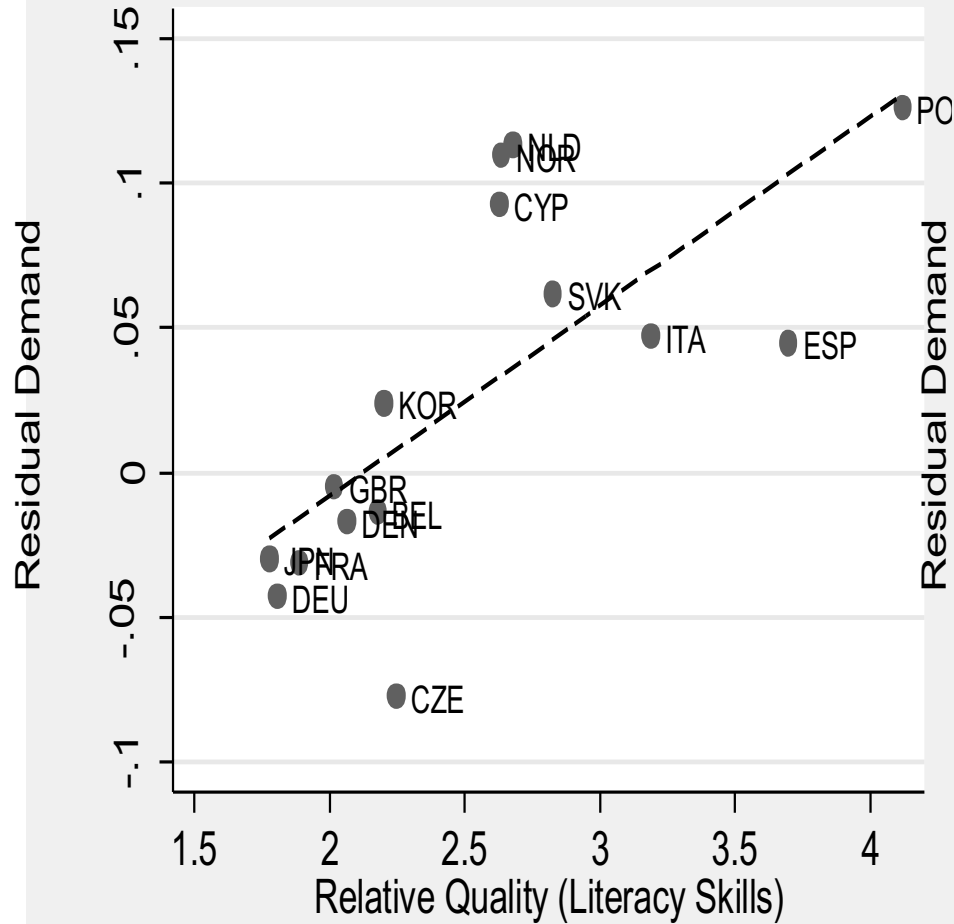
Decomposing the Growing Share of Graduate Jobs



- do countries deploy graduates in similar ways?
- is there a similar pattern across countries in the growth of graduate jobs?

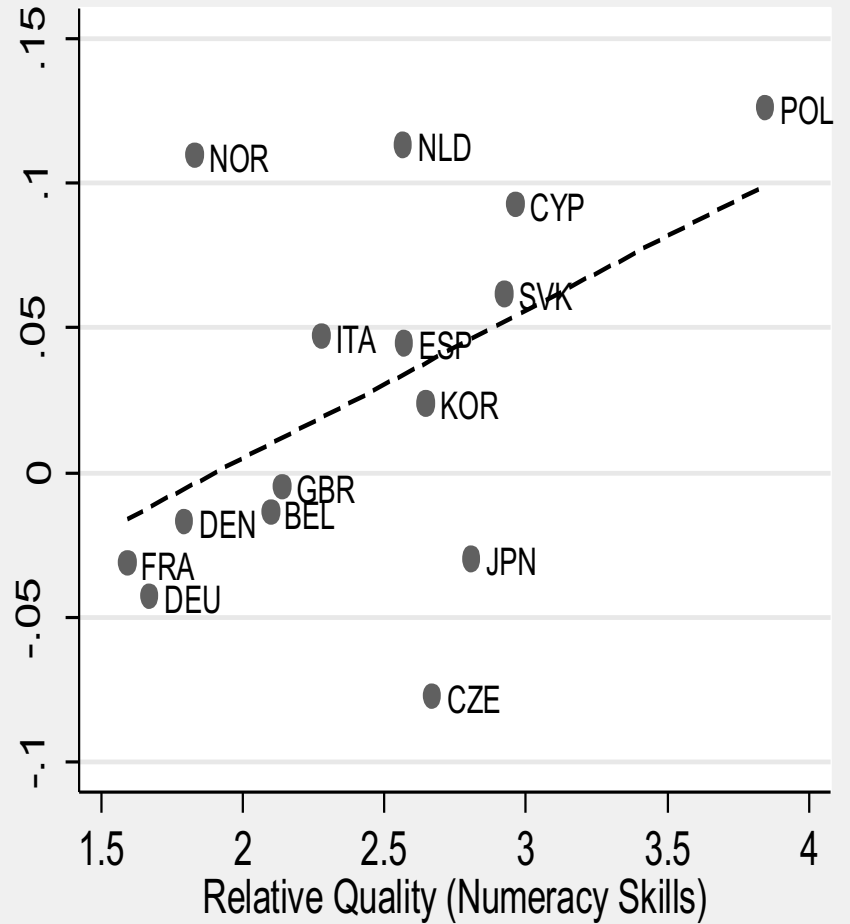
Proportion of graduate jobs across countries





● Relative Quality - - - - - Fitted Values

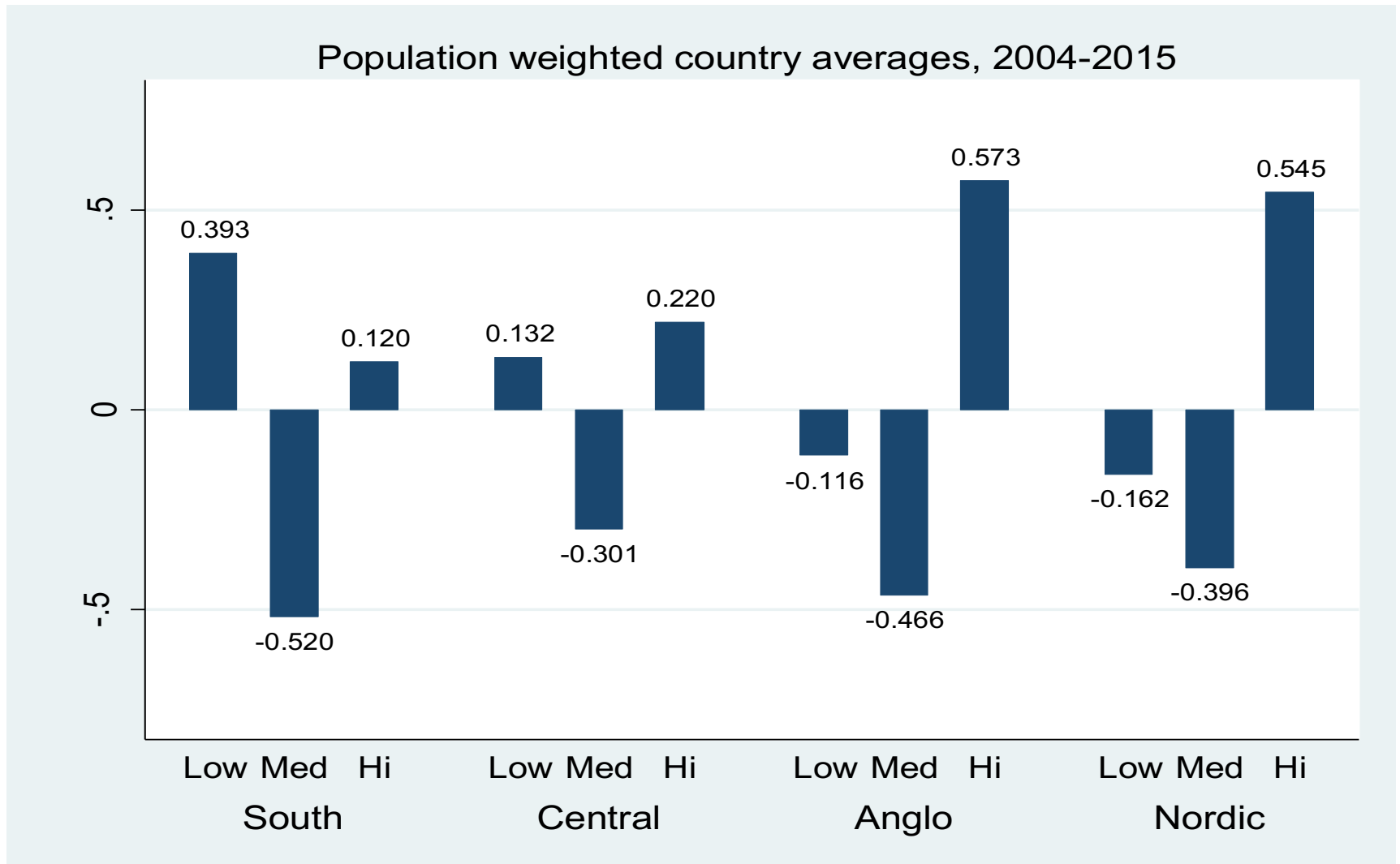
R-sq.= 0.506



● Relative Quality - - - - - Fitted Values

R-sq.= 0.233

Patterns of job polarisation



US: a “great reversal”?

- Growth of employment in cognitive tasks reversed in ~2000
- Earnings premium for college-only stopped growing in 2010
- Explanation: combination of
 - Shift away from middle-skilled occupations
 - Generalised reduced demand for advanced cognitive skills (even within high-skilled occupations): "the great reversal" (Beaudry et al. 2016), since ~2000
- whose next?

In brief:

- Prevalence of graduate jobs varies a lot
- Variation correlates with the relative 'quality' of graduates
- They have grown more prevalent everywhere, but much more, in Anglo and Nordic countries, than elsewhere
- Some occupations can switch between graduate and non-graduate
- But future growth is in doubt

Trends in Underemployment

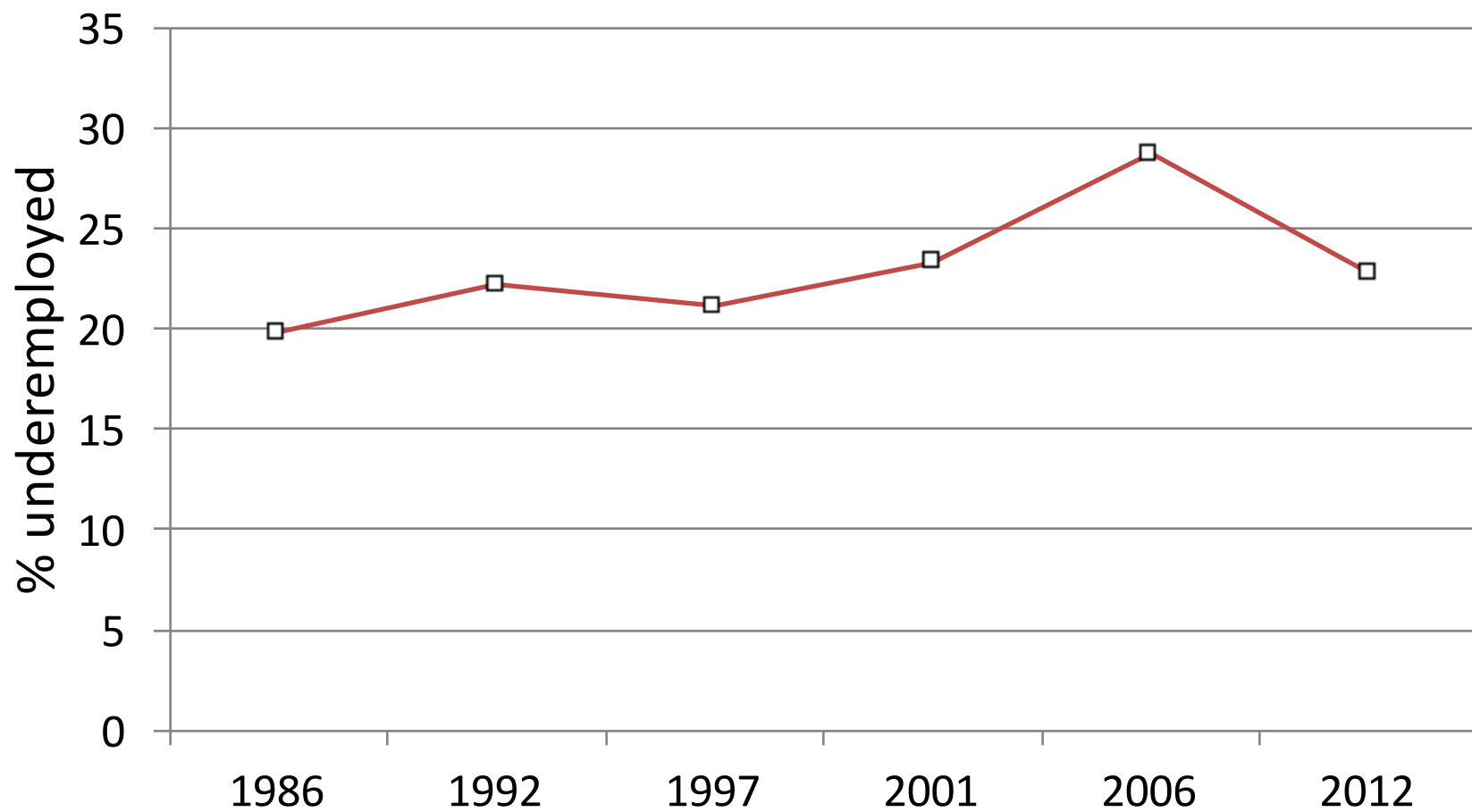
Barrister or barista?

The notion of graduate underemployment.

- "a graduate working in a non-graduate occupation"
- commonest: book-keepers, care workers, and sales/retail assistants, low-level administrators, PAs etc.

- do graduates of different countries experience underemployment to a similar extent?
- is there a similar pattern of change?

Graduate underemployment in Britain 1986-2012



Change in Britain: 97/01 to 06-12

– Graduate jobs as % of employment:

31%

41%



– Graduates as % of employment:

30%

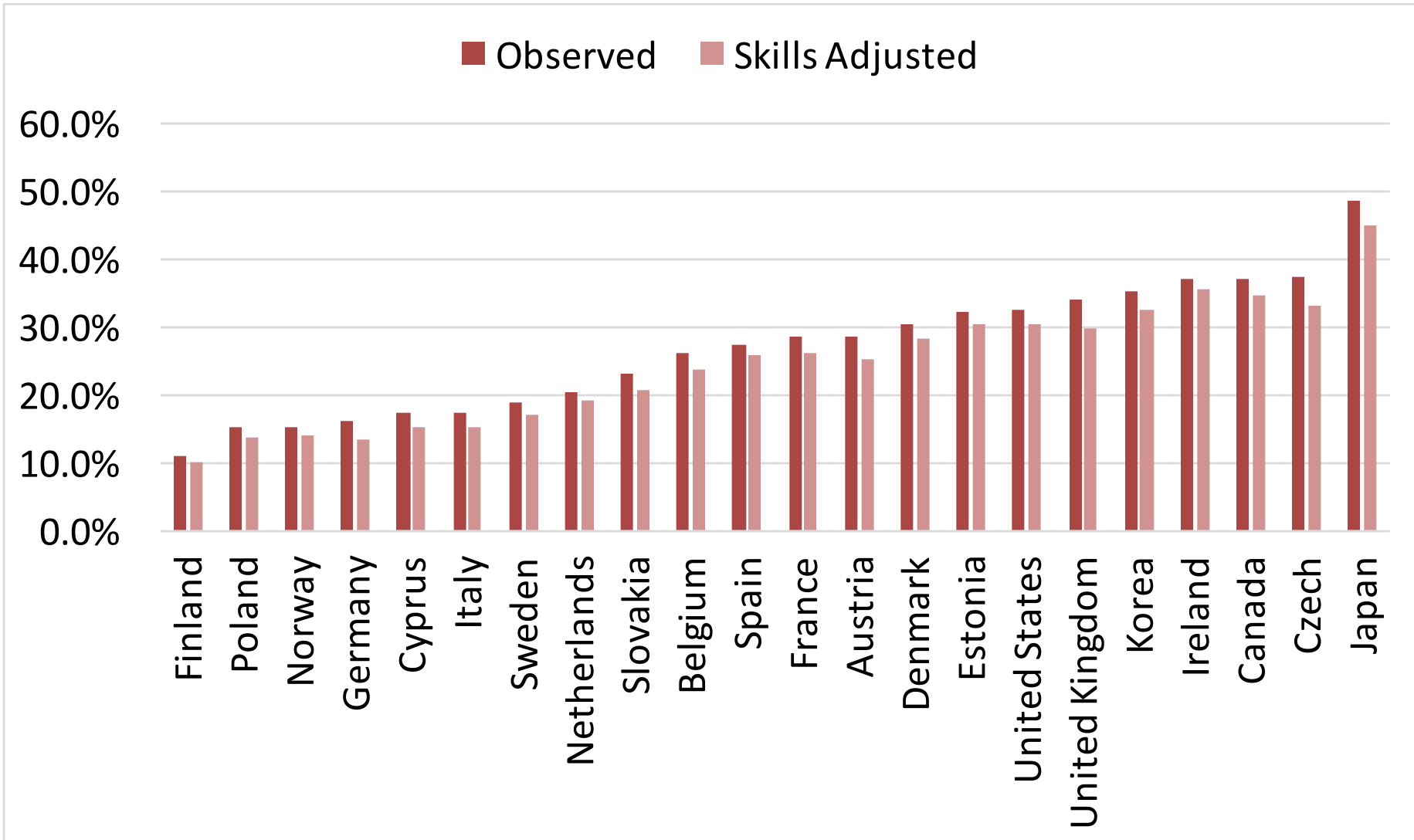
42%

– Graduates doing non-graduate jobs:

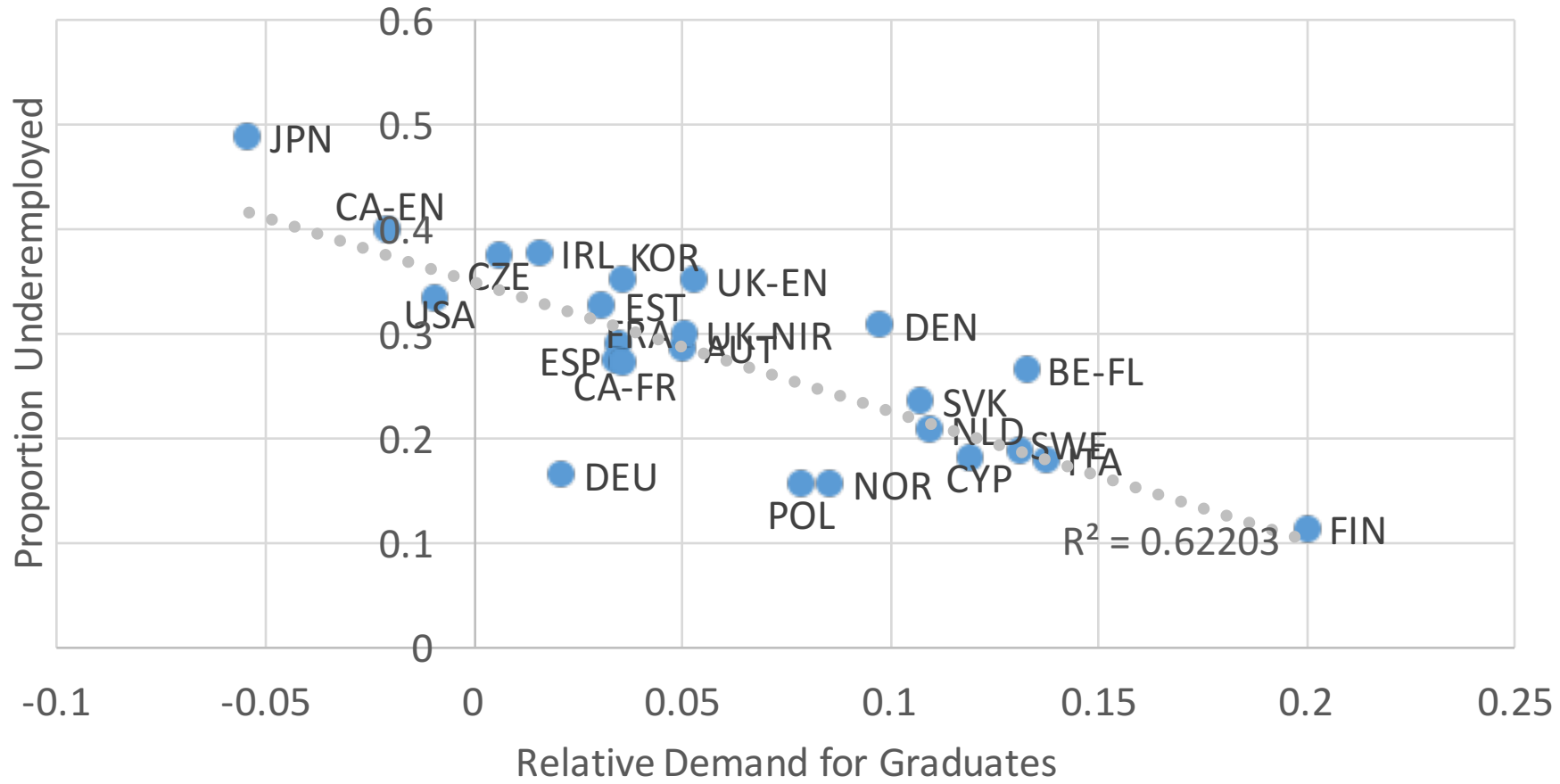
29%

31%

Under-employment of graduates across OECD



Relative demand and underemployment

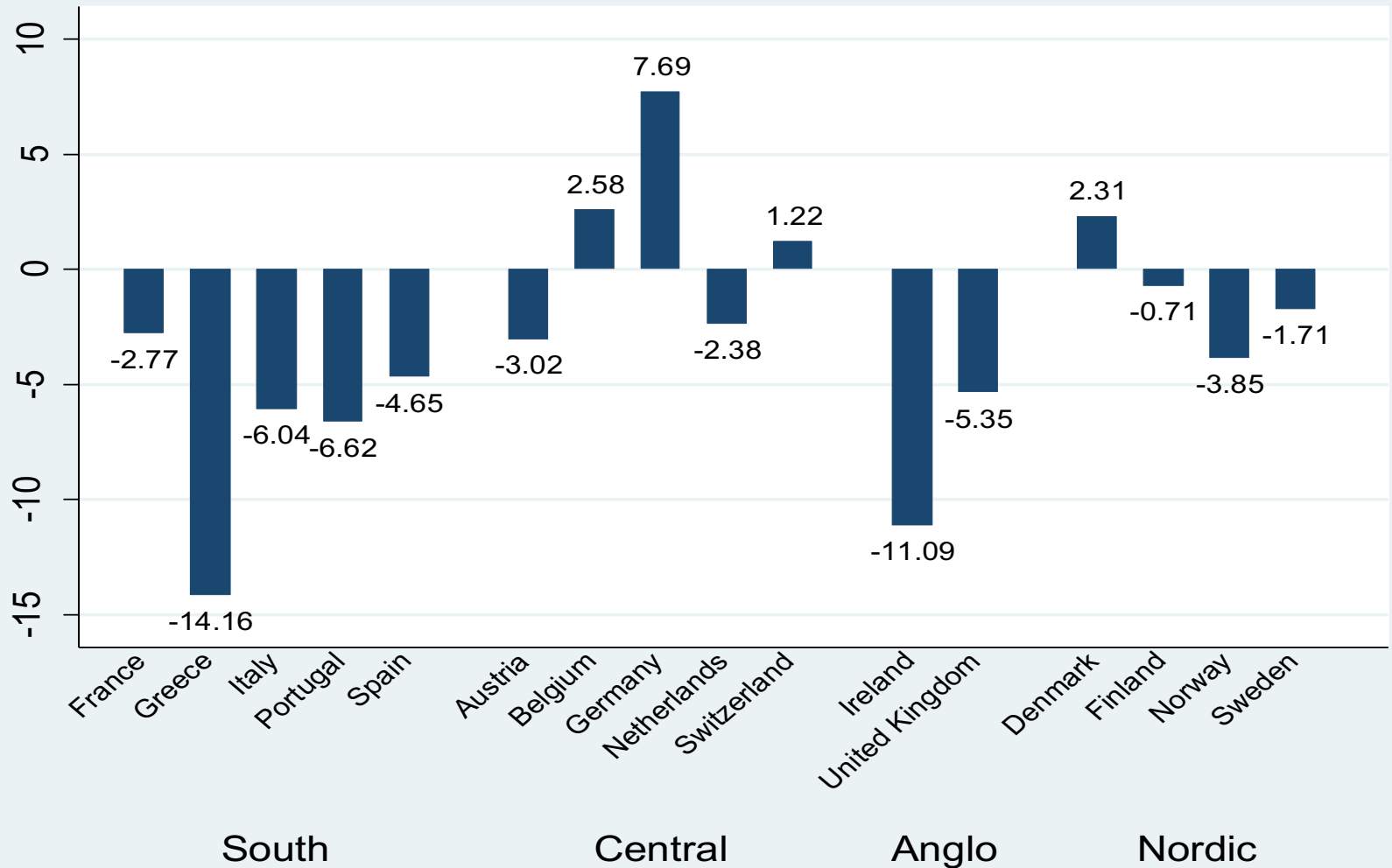


Existing evidence on the trends (outside UK) of graduate underemployment only patchy:

Among all workers:

- Germany: steep rise 17% to 34% between 1991/2 to 1998/9
- Poland: increasing from 8% in 1988 to 19% in 1994. Main increase among the young.
- Sweden: overeducation rising between 1974 and 2000

Changing high-skill employment among graduates (25-64 years), 2003-2013

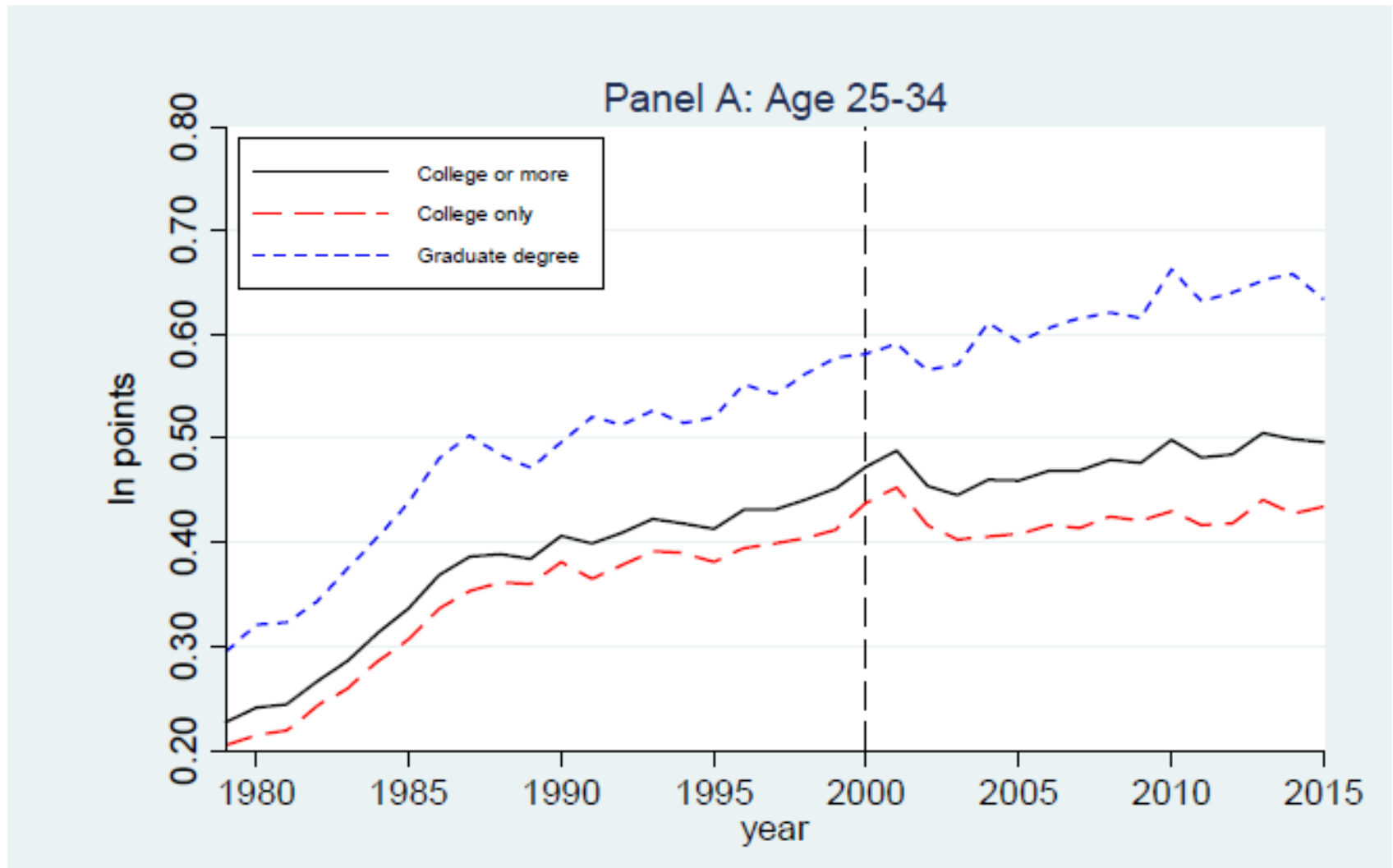


In brief:

- Graduate underemployment varies considerably across countries
- Its prevalence is correlated with a low proportion of graduate jobs relative to the supply of graduates
- Graduate underemployment is increasing in the majority, but not all countries

Graduate Wage Trends & Dispersions

Higher Education Earnings Premium, US, age 25-34



- Average earnings premium holding up everywhere?
- Premium dispersion: is it growing?

Dispersion Types

Categories:

- socio-economic group: social class, gender etc.
- HE
 - level of achievement (undergrad/postgrad, degree class)
 - subject
 - institution

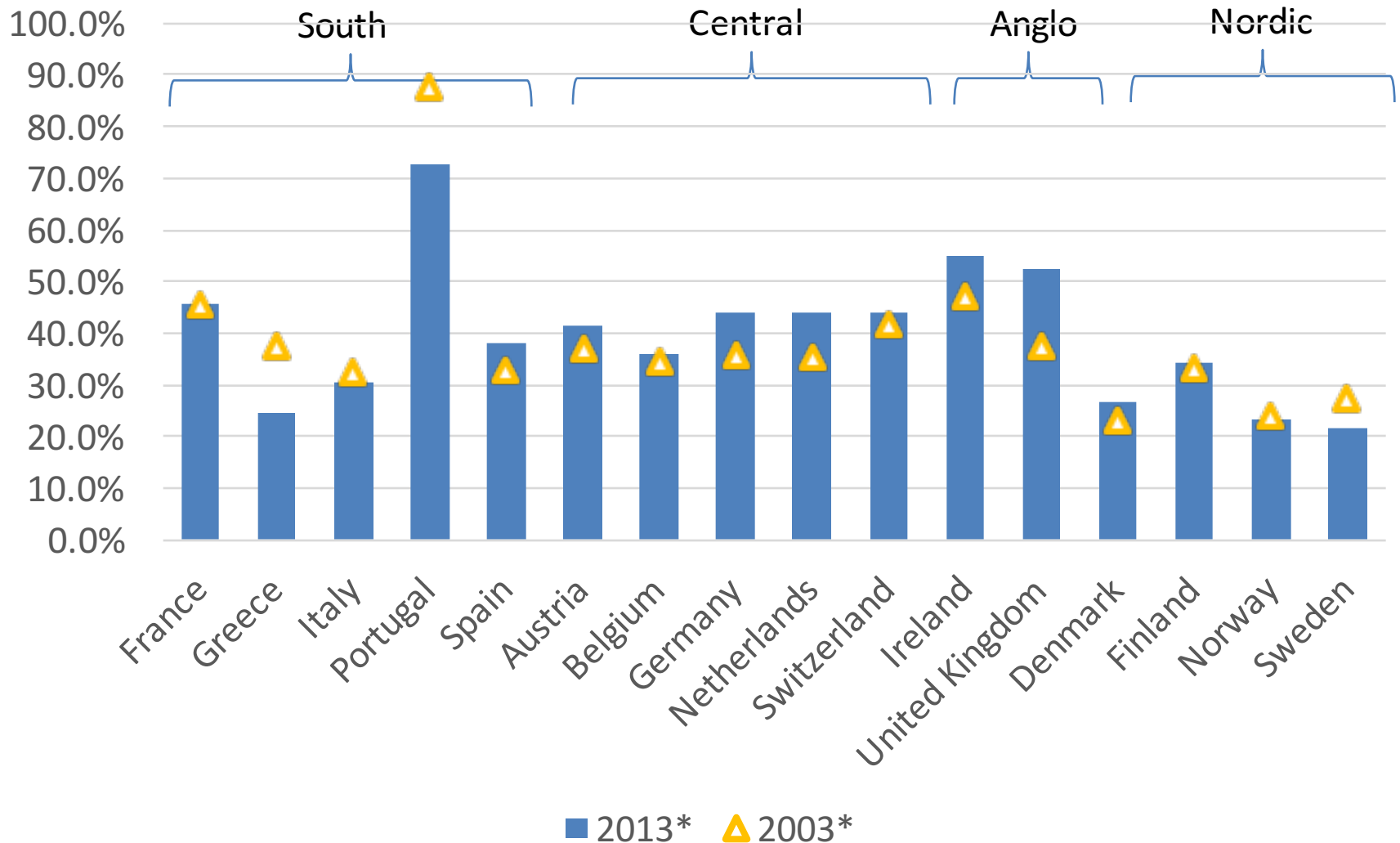
Outcomes:

- employment, occupation (graduate/non-graduate job)
- earnings

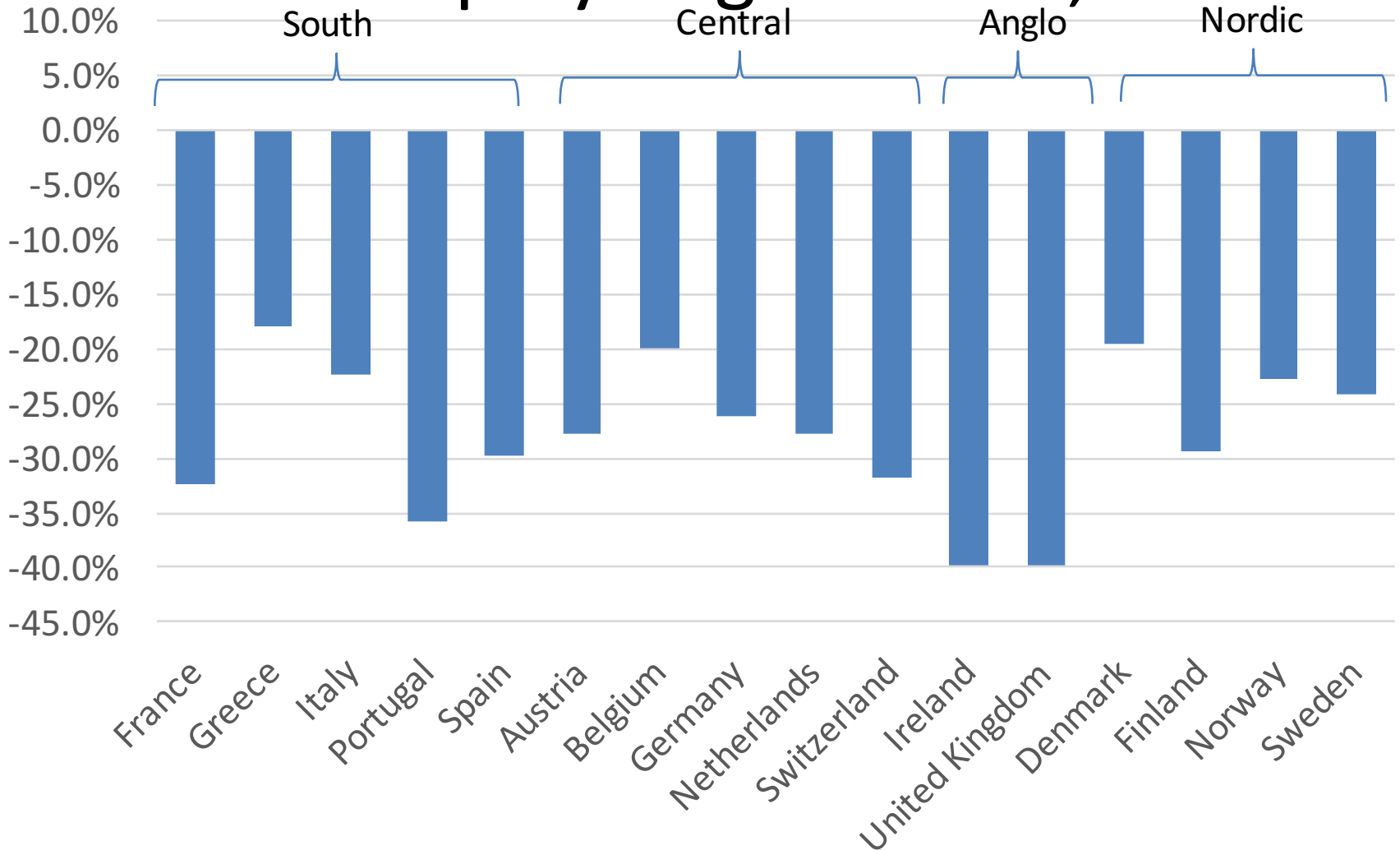
Methodological issues

- Selection biases
 - selection into higher education generally
 - selection into subject, type of institution etc.
- Data issues: self-employed; transnational mobility;

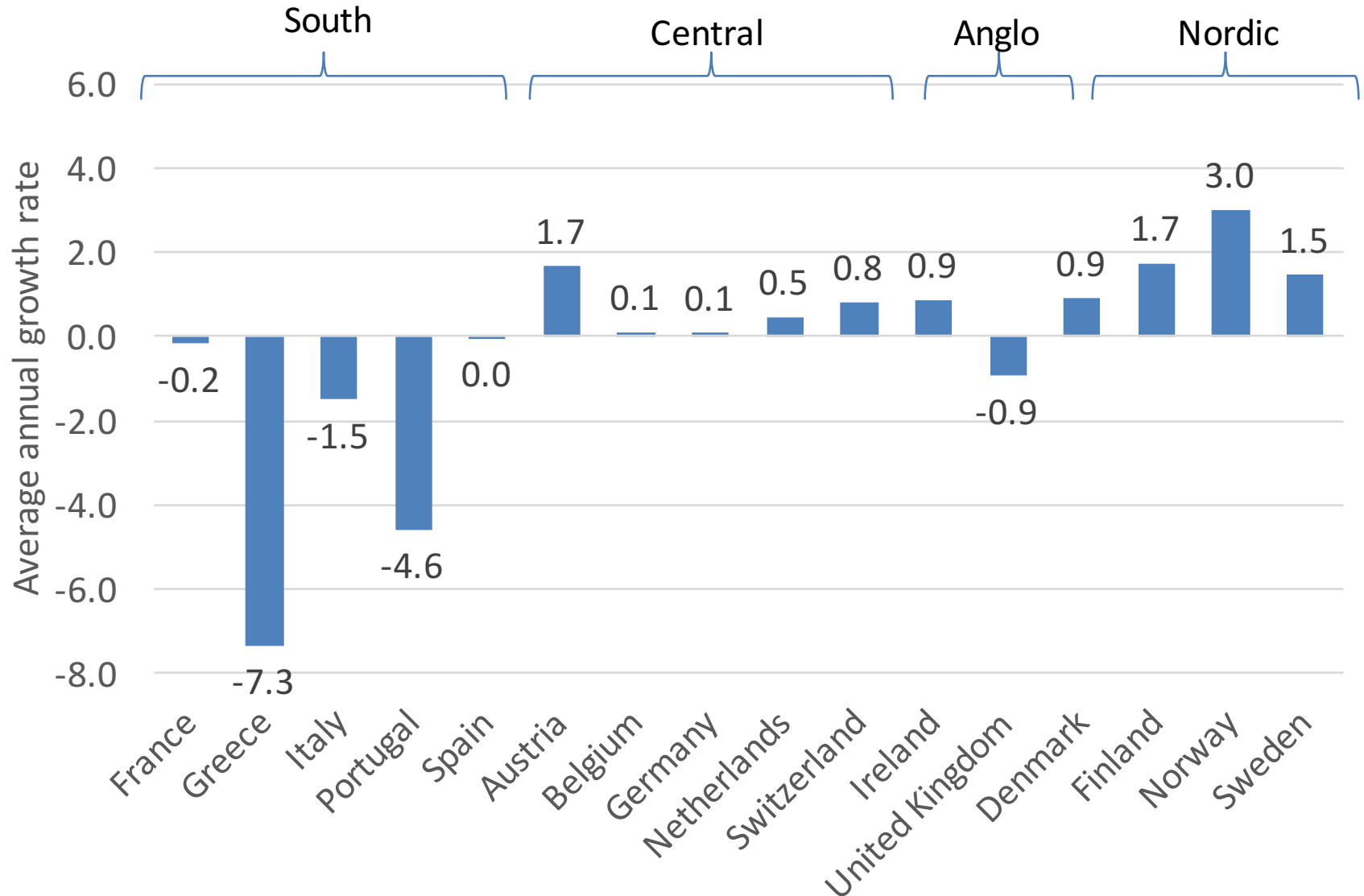
Wage differential between tertiary and (upper-) secondary education, 2003 and 2013



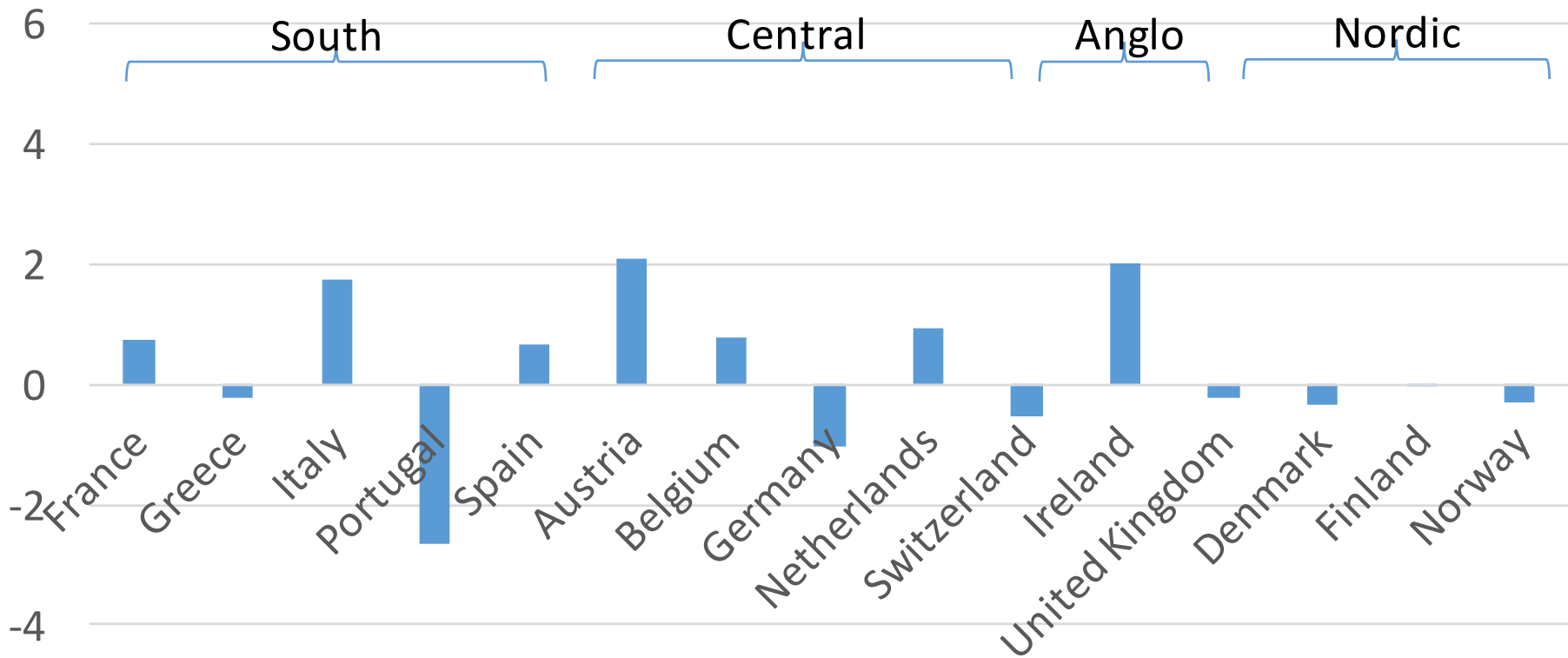
Wage gap between matched and underemployed graduates, 2013



Growth of real gross earnings of graduates in high-skills employment, 2003-2013



Growing heterogeneity? Trends in the graduate underemployment wage penalty 2004-2013



In brief:

Over 2003-2014:

- Graduate earnings premium stationary in Europe
- Real graduates' earnings declined in some "Southern", rose in Nordic countries
- The wage penalty for graduate underemployment is ubiquitous
- Patchy evidence of rising dispersions in the wage premium
- But the wage penalty for underemployment grew in only a few countries: Italy, Austria and Ireland

Implications & ongoing research

- joint work with Dr. Golo Henseke (UCL)

Graduate Employment Clouds?

- Demand uncertainty:
 - maturity of existing ICT?
 - new-wave automation ... or skills-intensive innovation?
 - little evidence (yet) of other sources of growing graduate demand, but...
- Ongoing rise in supply of graduates
 - young-old achievement gap ubiquitous
- In the UK:
 - Brexit-induced uncertainties

Would growing graduate underemployment be a problem?

- Private
 - persistence is high
 - potential disillusion and dissatisfaction
 - financial risks
- Public
 - Exchequer costs
 - Social benefits of HE still evident

Our work here at CGHE (project 2.3)

- studying dispersion in the economic and social returns to HE across many developed countries (mainly in Europe)
 - recognising methodological issues of selection bias, etc. where possible
- considering the role of economic and institutional factors in explaining the patterns of differentiation
- looking for explanation within the labour market, and/or within HE systems

Acknowledgement.

- ‘The research for this article was supported by the Economic and Social Research Council and the Higher Education Funding Council for England (ESRC grant reference ES/M010082/1) via the Centre for Global Higher Education. We are grateful to the ESRC and HEFCE for their financial support.’

Appendix Slides

- Additional slides. These contain some additional findings in the literature and other material that I will not have time to cover in the lecture.

Green, F. and G. Henseke (2016a) "[Should governments of OECD countries worry about graduate underemployment?](#)" Oxford Review of Economic Policy.

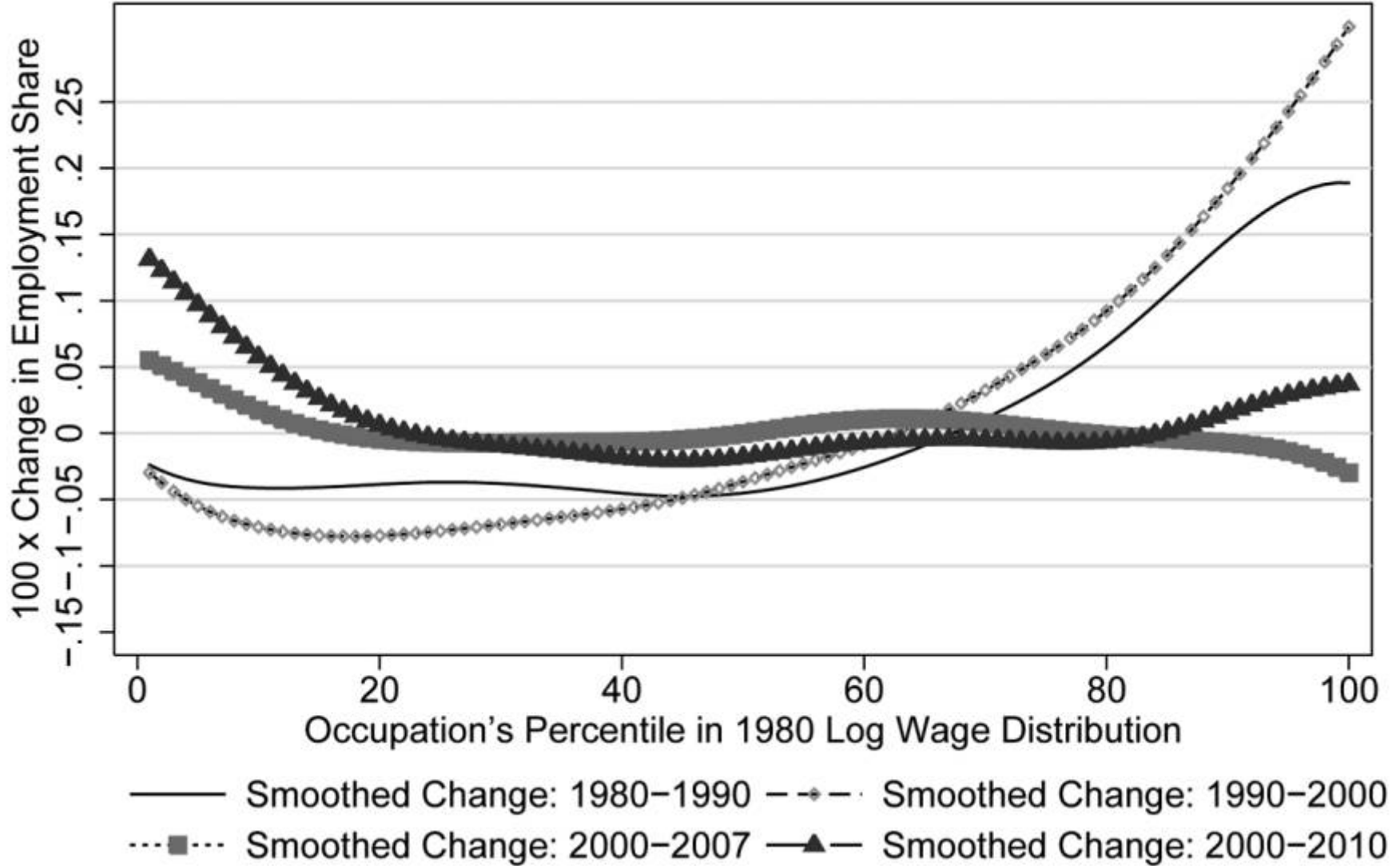
(Open access).

Green, F. and G. Henseke (2016b). "[The Changing Graduate Labour Market: Analysis Using a New Indicator of Graduate Jobs](#)". IZA Journal of Labor Policy, 5:14.

(Open access).

Green, F. (2016). [Skills Demand, Training and Skills Mismatch: A Review of Key Concepts, Theory and Evidence](#), Foresight, Government Office for Science, Future of Skills & Lifelong Learning: Evidence Review.

Re the “great reversal” in the US



Defining and measuring a graduate job

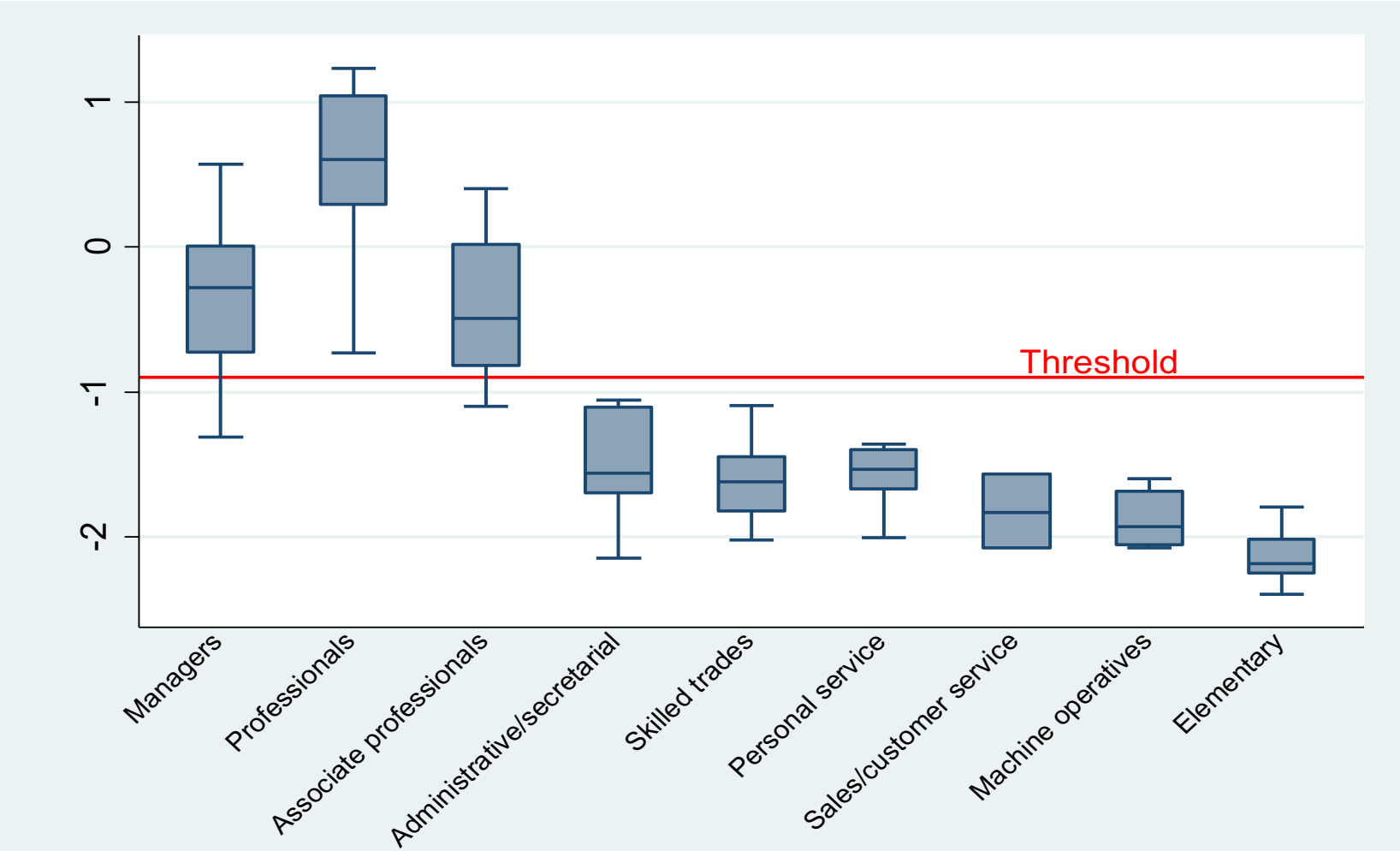
Concept:

- "a substantial portion of the skills used are normally acquired in the course of higher education, including many of the activities surrounding it, and of its aftermath"
- Source: Green, F. and G. Henseke (2016 online). "The Changing Graduate Labour Market: Analysis Using a New Indicator of Graduate Jobs." *IZA Journal of Labor Policy* 5(14).

Statistical measurement method

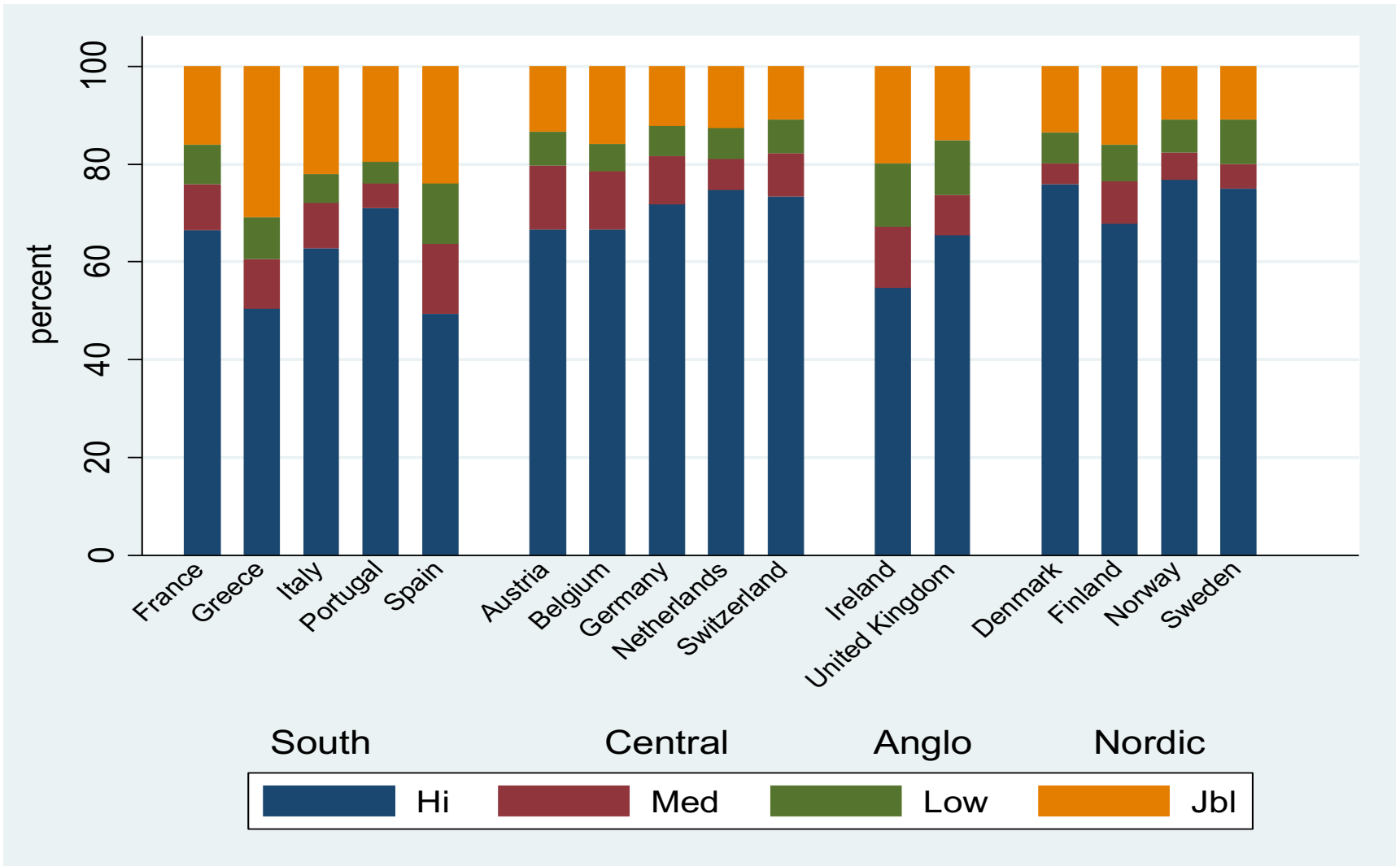
- Step 1: use task-based analysis of education requirements by occupation, to calculate a latent “Graduate Skills Requirement” index
- Step 2: Average across each occupation
- Step 3: Use statistical clustering methods to divide occupations between graduate and non-graduate.

GRADUATE SKILLS REQUIREMENTS INDEX BY MAJOR GROUPS

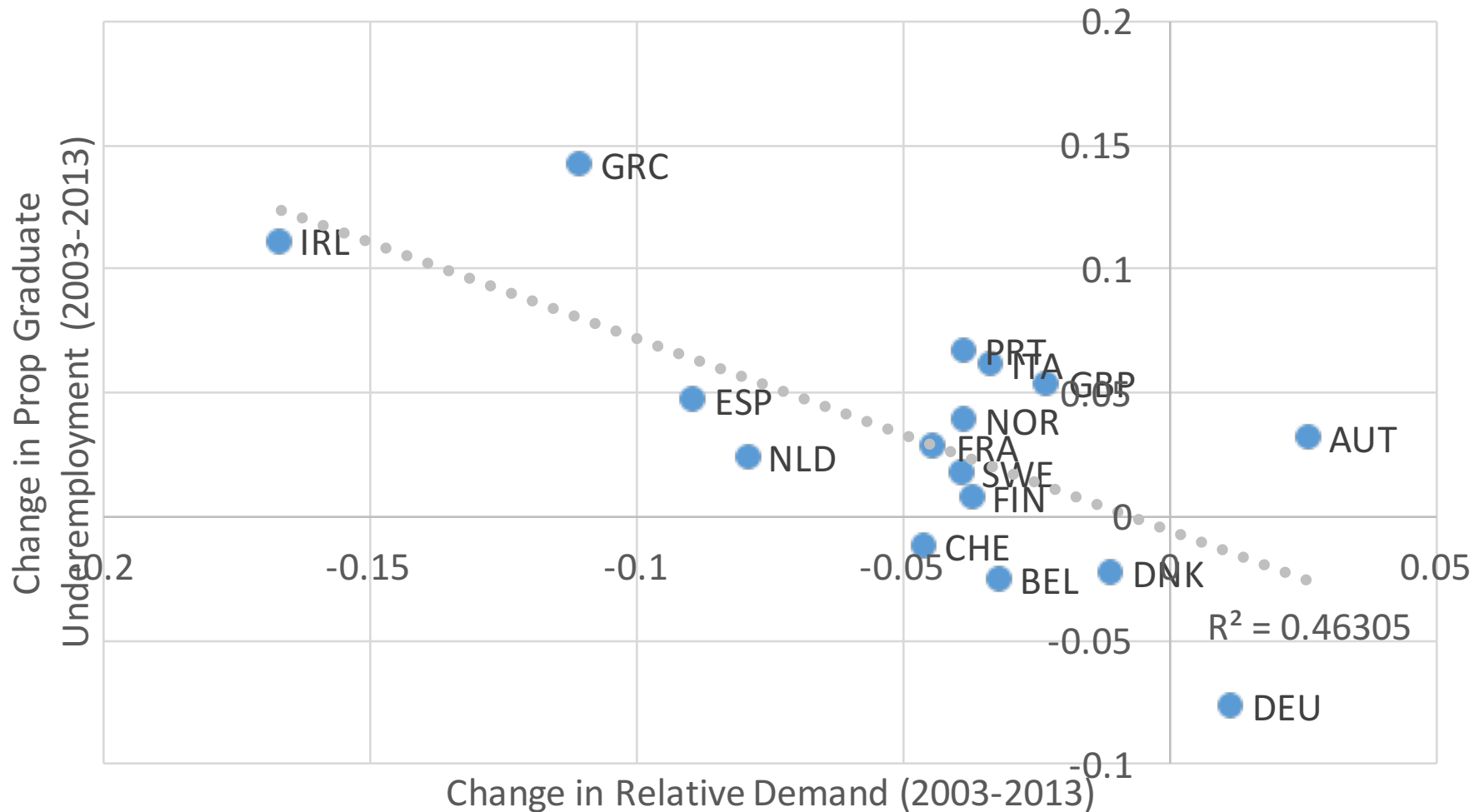


More on under-employment.

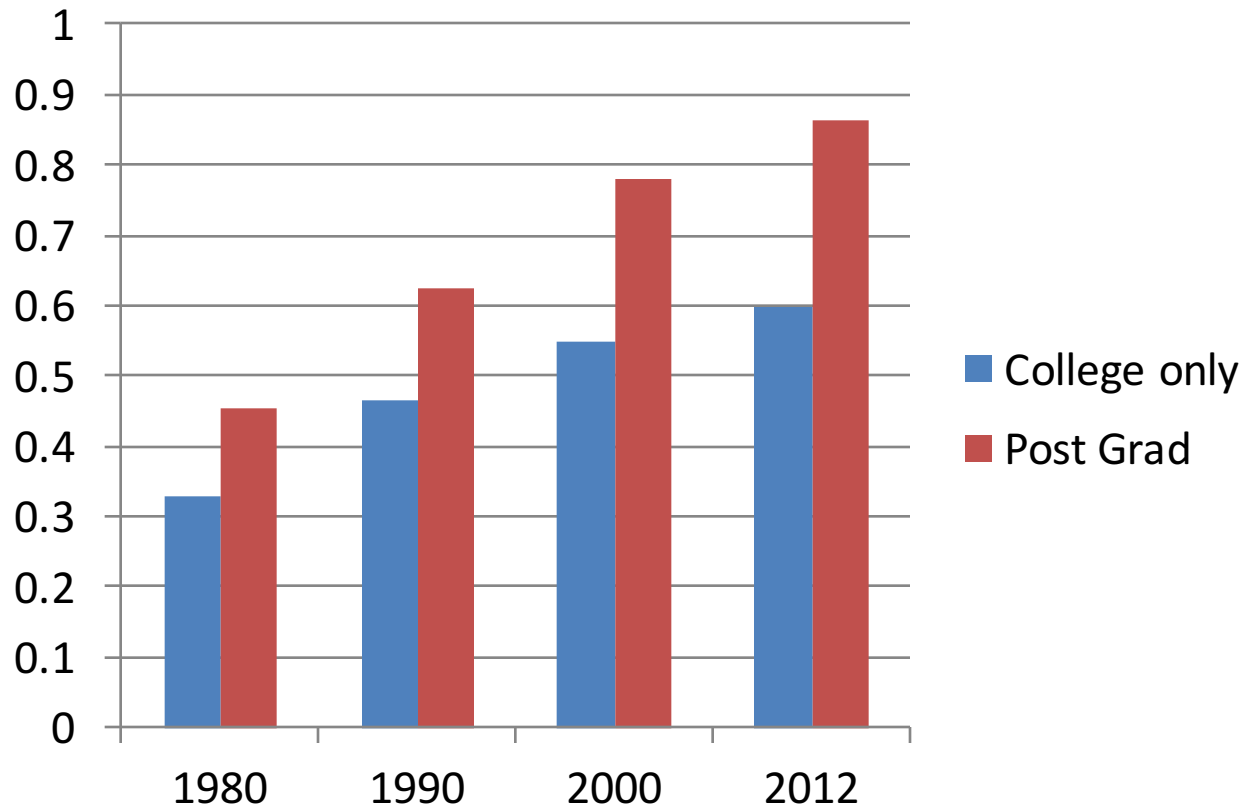
Labour market position of tertiary graduates (25-64 years), 2013



Changing relative demand and changing underemployment

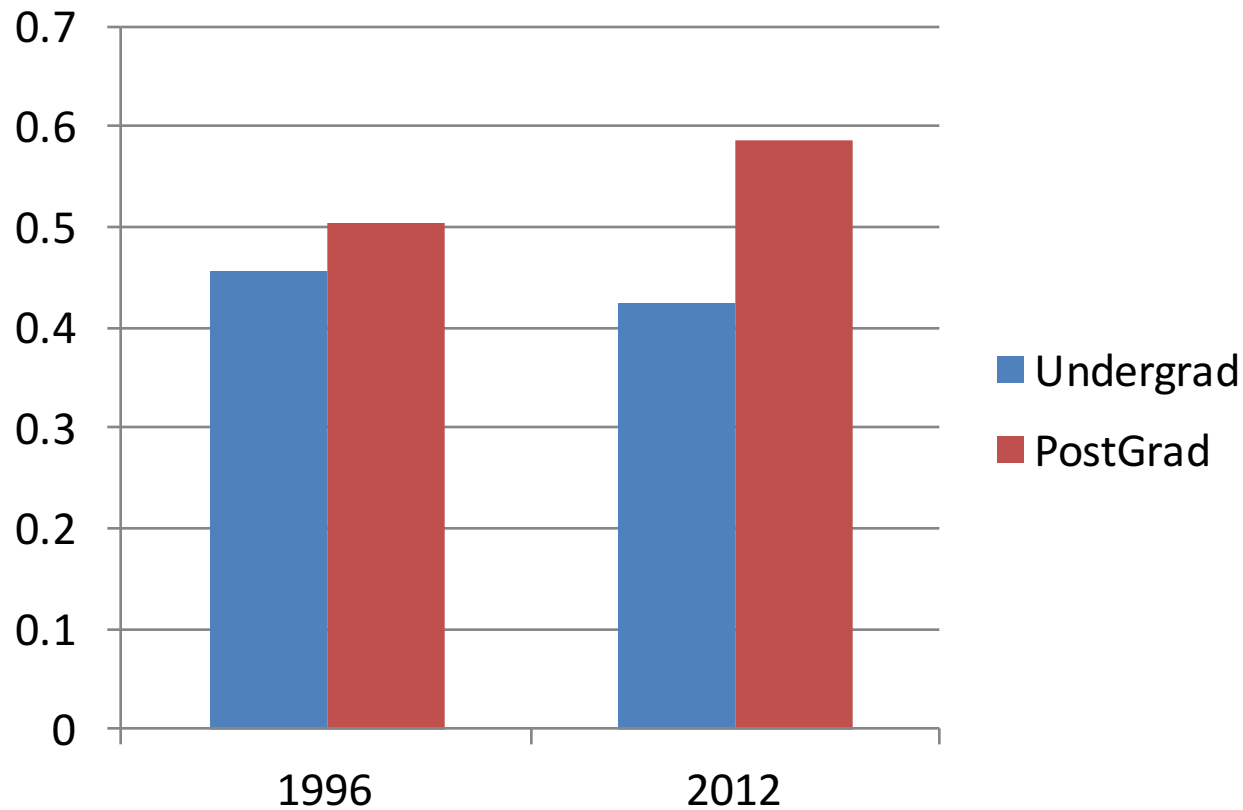


More on forms of earnings dispersion. Post-grad and College Earnings Premiums, US 1980-2012



Source: Lindley and Machin (2016)

Post-grad and College Earnings Premiums, UK 1996-2012



Source: Lindley and Machin (2016) Appendix C.

Rising premium for higher grades?

Premium for 'good' (1st/upper 2nd)

- ~ 4% in early 20s, ~ 7% in early 30s, 9% in late 30s
- some rise during the 1990s in the premium for 1st class degrees

Source: Naylor, Smith & Telhaj (2016)

Increasing subject differentiation?

Substantial range: Britton et al. (2016)

Partly due to selection: Walker and Zhu (2017)

BUT: little evidence on trends in subject differentiation.

- US: the lifetime premium for college education: Arts & Social Sciences catching up with STEM and Business between the 1955-1964 and 1975-1984 cohorts.

Log wage penalty for underemployed graduates in Britain

