

Skill Mismatches, Concepts, Measurement and Policy Approaches

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Powering the European
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Presentation structure

- Measures of Skills Mismatch and some stylised facts
- The link between the evidence and policy?
- Overeducation and supply-side policies
- Are we ignoring any potential drivers of mismatch?
- Summary and conclusion

What is skill mismatch?

- **Vertical mismatch:** Overeducation/undereducation and overskilling/underskilling which are typically measured using data from labour force or employee surveys
- **Skill gaps and skill shortages:** Also forms of vertical mismatch typically measured using employer surveys
- **Horizontal mismatch:** Worker is matched in level of education or skill but mismatched in field of study
- **Skill obsolescence:** Can be typically either technical or economic

Why is skills mismatch a concern for policy?

- In theory, all of the various forms of skills mismatch can have very serious implications for firms, individuals and the economy more generally
- Skills gaps and skills shortages are thought to increase labour costs, lower firm-level productivity and slow economic growth
- Vertical mismatch is known to lower the earnings of individuals and could result in an economy that is operating below its potential
- There is much less debate about the impact of horizontal mismatch but, again, this has been shown to have negative implications for earnings, productivity and job satisfaction as well as increasing turnover

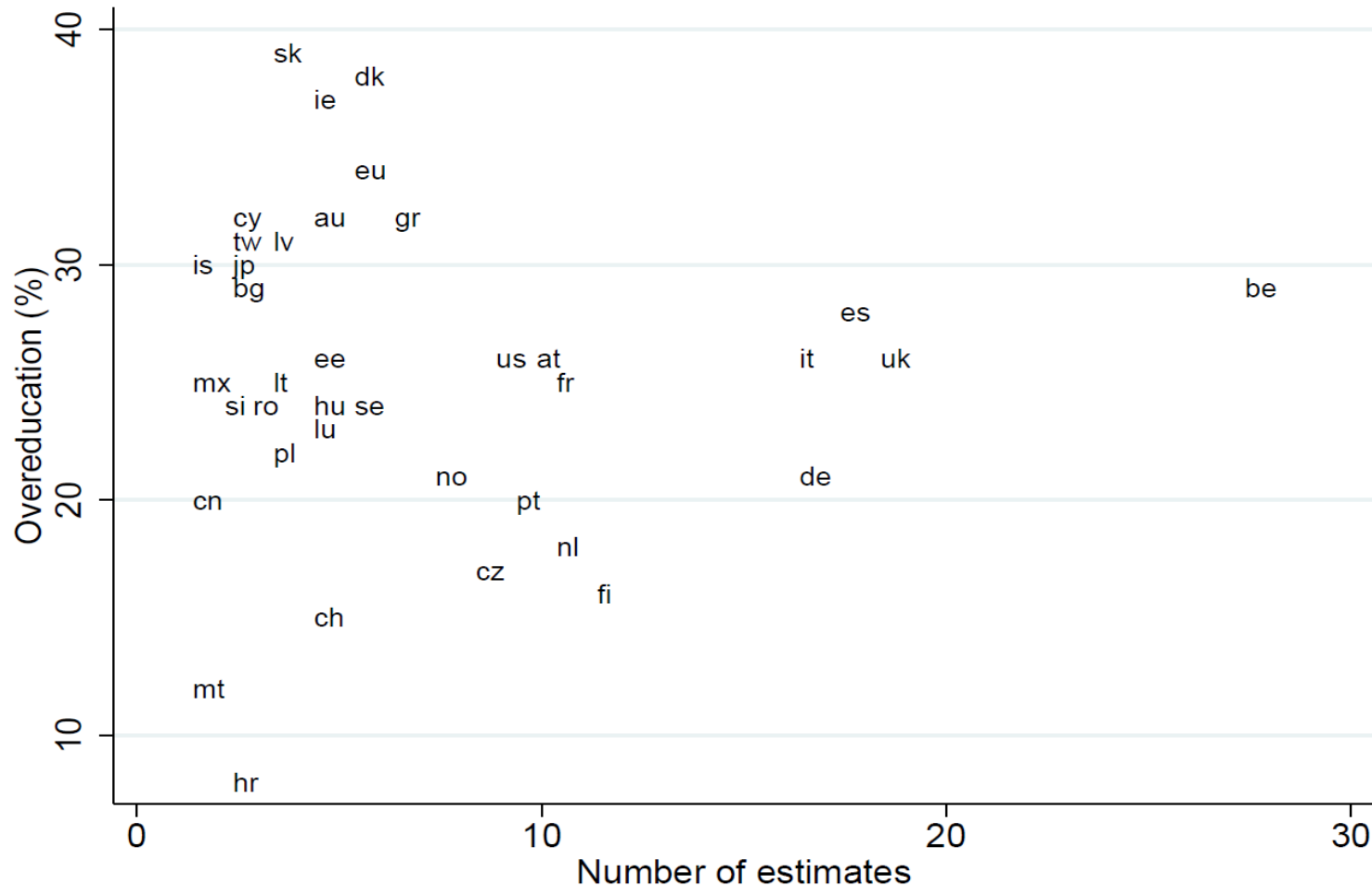
What is the evidence?

(based on a review of published research 2006-2016)

Type of mismatch	Number of studies
Overeducation	86
Undereducation	24
Overskilling	21
Underskilling	3
Horizontal mismatch	10
Skill shortages	11
Skill gaps	6
Skill obsolescence	5

Source: McGuinness, Pouliakas & Redmond (2017)

Relationship between the evidence base and the scale of the problem?



What stylised facts emerge from the review? - I

- **Overeducation:** Average incidence of 25% (based on 241 estimates from 37 countries) with an average wage penalty of 13.5% (based on 61 estimates)
- **Undereducation:** Average incidence of 16% (based on 47 estimates from 18 countries). Evidence w.r.t. earnings is mixed ranging from zero impact to a small premium
- **Overskilling:** Average incidence of 21% (based on 21 studies, 9 of which relate to Australia). Average wage penalty of 7.5%
- **Underskilling:** Average incidence of 25.5% (based on 3 studies covering multiple countries) with no consistent evidence of an impact on earnings

What stylised facts emerge from the review? - II

- **Horizontal mismatch:** Average incidence of 37.3% (based on 27 estimates). No consistent evidence of a wage impact
- **Skill Shortages:** Difficult to get a single figure due to differing measurement approaches (difficult to fill, hard to fill, unfilled) and a thin evidence base (11 studies)
 - 47% of firms recruiting HE graduates reported recruitment difficulties in a 2010 Eurobarometer survey
 - However, Cedefop highlights that about 40-60% of those responses reflect an 'apparent skill shortage', since employers simultaneously reported difficulties offering a competitive starting salary or some HRM inefficiency
 - Only 12% could not find right skills independently of other employer practices
 - Only a small number of studies provide evidence that skill shortages negatively impact firm-level productivity

What stylised facts emerge from the review? - III

- **Skill gaps:** Little consistent international evidence in terms of either incidence or impacts on firm-level performance
- **Skill obsolescence:** Little consistent international evidence in terms of either incidence or impacts on earnings or productivity

Where is policy focused? - I

- There appears to be a misalignment between the focus of the evidence base on skills mismatch and the direction of skills and labour market policy
- To illustrate this we analysed the 2016 CSRs issued by the Council of the European Union and the 2016 National Reform Programme (NRP) publications
- In the vast majority of cases, country specific policy recommendations primarily relate to skill shortages. Even if referring to skill mismatches, the policy response inferred typically relates to either skill shortages or skill gaps
- Specific reference was made to skill shortages in the CSRs for Lithuania, Germany, Belgium, Estonia and the UK and the NRPs for Ireland, Greece, Malta, Bulgaria, Cyprus and Hungary

The Paradox?

- The term skills mismatch is very broad, and can refer to a variety of concepts including vertical mismatch, horizontal mismatch, skill gaps, skill shortages and skill obsolescence
- Whilst an abundance of evidence exists on the costs associated with surplus human capital, as measured by overeducation and overskilling, much less is known on the effects of skill gaps, skill obsolescence and skill shortages
- The phenomenon of overeducation and the observed negative impact on earnings and job satisfaction is observed consistently in both developed and developing labour markets
- However, policy appears to focus on precisely the areas for which the least evidence exists, namely skill shortages

Why the disconnect between policy and evidence?

- Political challenges associated with implementing policies that question long-held assumptions around the benefits of the continued educational expansion may be a factor along with the challenges of addressing enhanced skills utilisation in enterprises
- It may be assumed that policies targeted towards one form of mismatch will have a generic impact on all forms of mismatch
 - To some extent this will be true, for instance, strengthening apprenticeships will help address the issue of skill gaps and may also reduce overskilling by ensuring more workers are equipped with skills demanded by employers. However, the extent of policy spillovers will be limited in many cases (see paper).
- Moreover, it may also be the case that policy makers do not view overeducation or overskilling as being overly problematic
 - viewing it simply as a short-run phenomenon despite some convincing evidence for the contrary.
- Strength of employers lobby

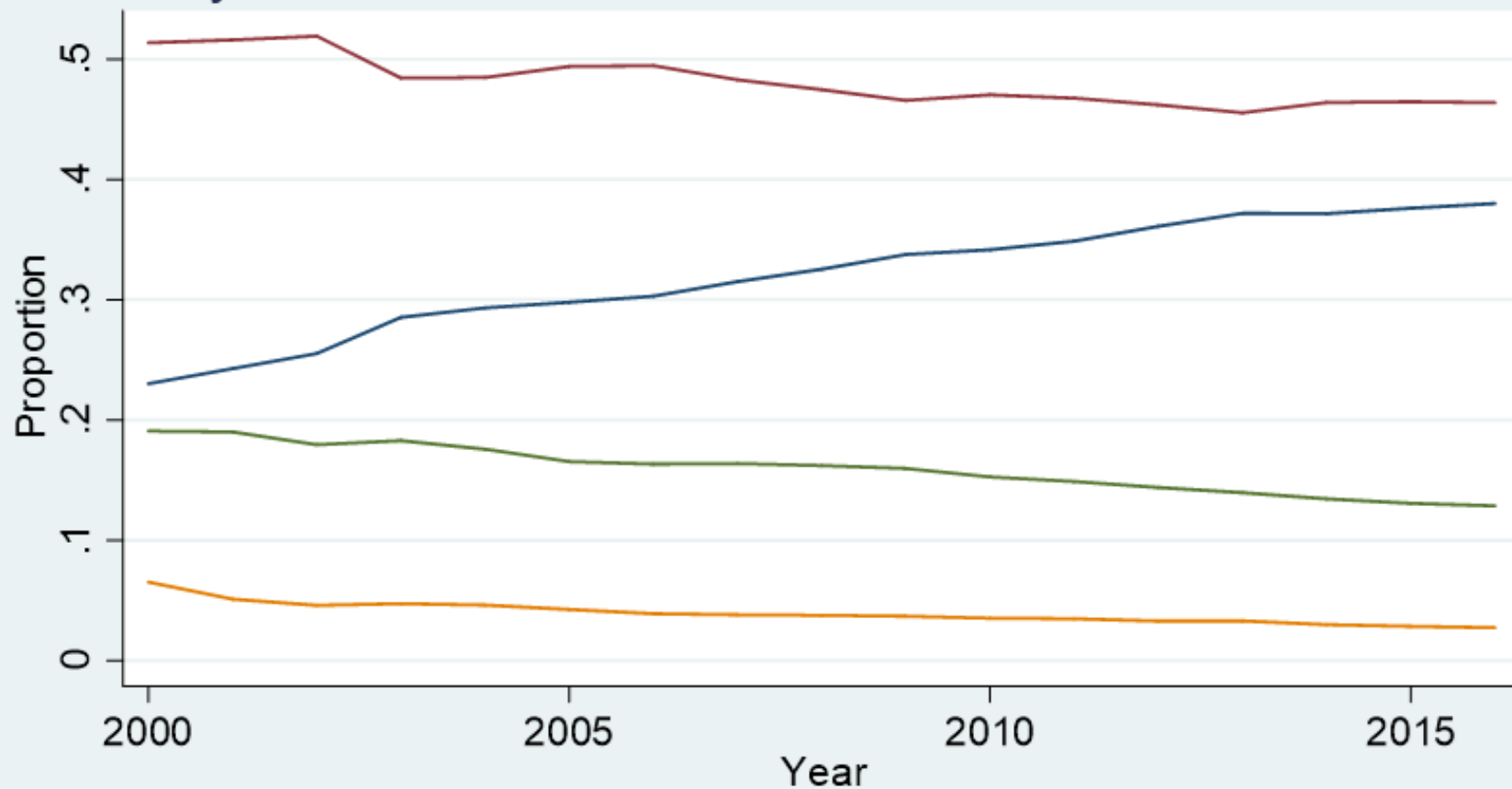
Is surplus HC a driven by over-supply?

- While we cannot assess the question w.r.t. overskilling, the evidence suggests that overeducation is not highly correlated with increases in third-level supply
- Despite the fact that education has expanded rapidly in almost all EU countries since the start of the century, it is not the case that overeducation (total or youth) is rising universally
- Over the period 2000-2011 overeducation was rising in 13 of 27 EU countries, it was either static or falling in 14
- In our most recent paper, using causal econometric methods, we found a negative relationship between third-level expansion and graduate overeducation

Key Characteristics of Overeducation Rates

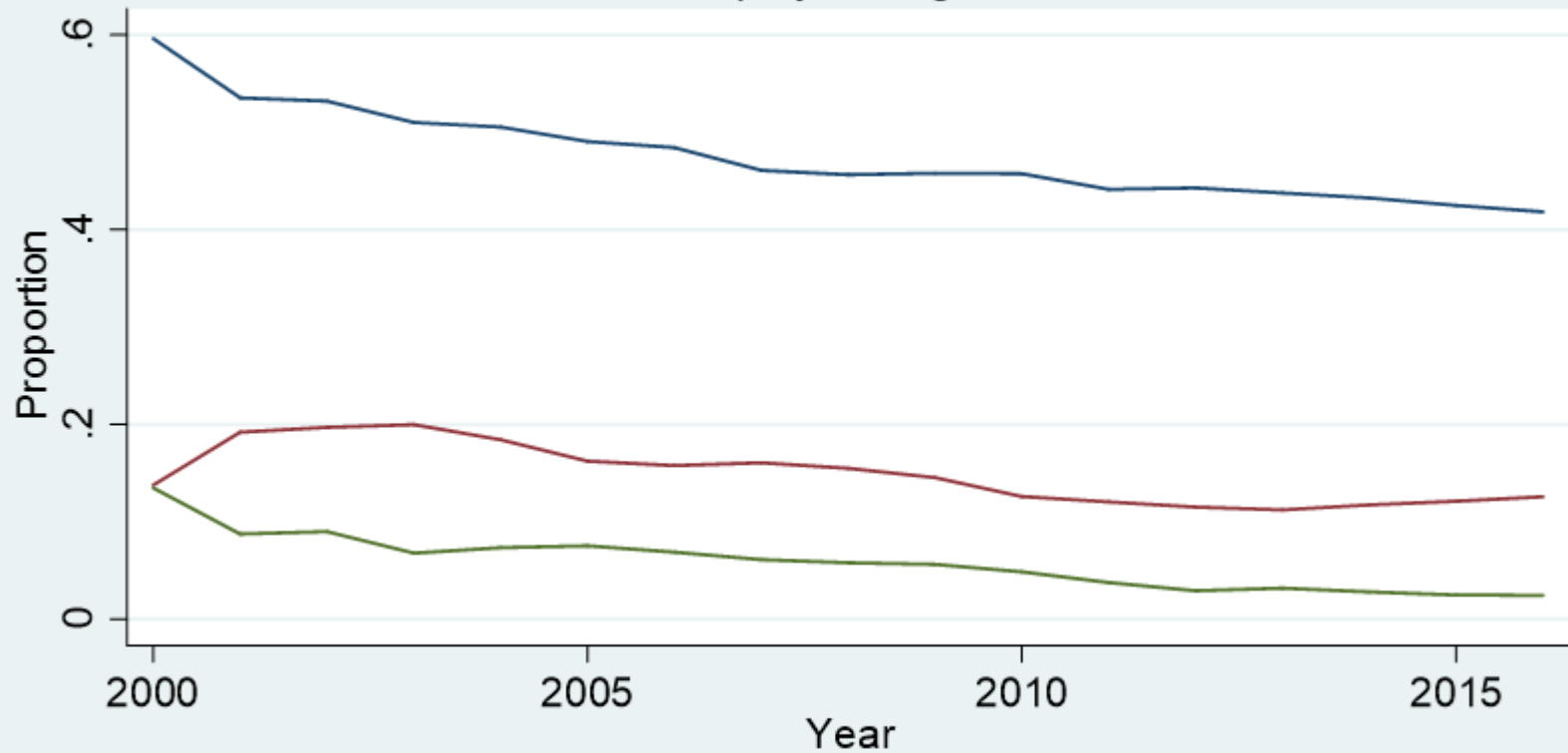
	Youth Rate > Adult Rate	Youth Rate < Adult Rate	Positive Trend	Negative Trend	No Trend
Austria		X			X
Belgium	X				X
Bulgaria		X			X
Cyprus	X			X	
Czech Republic		X	X		
Germany		X			X
Denmark		X			X
Estonia		X			X
Spain	X		X		
Finland		X	X		
France	X				X
Greece	X				X
Croatia		X		X	
Hungary		X	X		
Ireland	X				X
Iceland		X			X
Italy	X		X		
Lithuania		X		X	
Luxembourg		X			X
Latvia		X		X	
Netherlands		X			X
Norway		X	X		
Poland	X		X		
Portugal	X		X		
Romania		X	X		
Sweden		X	X		
Slovenia		X	X		
Slovak Rep.		X	X		
UK		X	X		

Share of individuals aged 25-29
by level of educational attainment, 2000-2016, EU+



Overeducation by level of educational attainment, 2000-2016, EU+

Full-time employees aged 15 to 29



Supply-side policies: I) Job search

- Skill mismatches will persist even when demand and supply levels are perfectly in sync as a consequence of information asymmetries between employers and workers
- How people search for their job (and employers search for workers) is a fundamental factor in determining mismatch
- Having good labour market institutions that help smooth out information asymmetries and match employers to workers is a hugely important factor in eradicating skill mismatches, particularly for graduates
- Our research has found that higher education work placements, the provision of higher education job placement or where the university helped the student directly to find employment have very substantial impacts in reducing the incidence of graduate overeducation

Supply-side policies : I) Job search

- On the other hand some other routes into the labour market substantially increase the risk of mismatch such as through **private recruitment agencies** or **through family and friends** substantially increase the risk of mismatch
- So good matching mechanism and strong relationships between universities and employers are very important
- Training in appropriate job-search methods among final year should also be considered as a mandatory element of degree training

Supply-side policies : II) Course content and workplace learning

- Using REFLEX data we found that the higher the practical content of degrees (**research projects, work placements, emphasis on facts and knowledge, problem based learning**) the lower the probability of mismatch
- The impacts were there for both vocational and academic degrees but were found to be larger for academic fields of study
- In a forthcoming chapter we use the ESJS and find that, **after controlling for field of study**, individuals on vocational degrees (**self-classified as vocational and containing an element of work based learning**) had lower (higher) likelihoods of overskilling and overeducation (job satisfaction)

What is missing?

- Research is entirely lacking on the impact of demand side factors in determining various forms of mismatch
 - The organisation of labour with firms
 - How has job quality been evolving?
 - Contractual arrangements and job stability
 - Recruitment policies and HR practices
 - Flexible working arrangements and childcare entitlements
 - Managerial skills and competencies
 - Training intensity
 - What are the implications for various forms of mismatch for firm-level productivity?
- To a large extent this is due to data constraints and we really need linked employer-employee datasets to get a firmer grasp on this questions

The Way Forward? - I

- A more transparent and consistent approach to the issue of skills mismatches that takes account of the existing evidence should form the basis of future policy debate
- The situation whereby 1 in 4 employees are operating below their productive capacity should be a major concern for policy, particularly given the weight of evidence on earnings which suggests that such forms of mismatch lower worker productivity

The Way Forward? - II

- There are a range of supply side policies that should be adopted to ease the issue of overeducation
 - **The development of institutions that match employers with graduates including more effective careers services or consistent industry links**
 - **The inclusion of practical (work relevant) content in degree programmes, particularly those in academic fields**
 - **The mandatory use of work-based learning elements in all third level courses**
- We need to develop a better understanding of the role of demand side factors in driving various forms of mismatch and develop a better understanding of the costs of such mismatches so that proportionate policies can be developed
 - We need much better data linking workers and firms to do this. Ideally we need to see the development on an EU-level of a linked employer-employee dataset that should, ideally, contain a panel element

Summary

- The concept of skills mismatch is complex and multi-dimensional
- The evidence base is data driven and there is actually very little data on some key forms of skills mismatch (skill shortages and skills gaps) and their implications for firm-level or macroeconomic performance
- However, policy formulation can be detached from the evidence base and focused on exactly the areas where the evidence is thinnest, while seeming to ignore the large body of research that points to substantial penalties for pay and, by extension, productivity
- Educational expansion is not a driver of overeducation (and possibly overskilling) but there are supply-side policies that can alleviate these issues
- We need to develop a better understanding regarding the link between various forms of mismatch and demand side factors, however, we need much better data if we are going to achieve this