

Differences in educational mismatches across countries and labour market segments: What are the underlying mechanisms?

Dieter Verhaest

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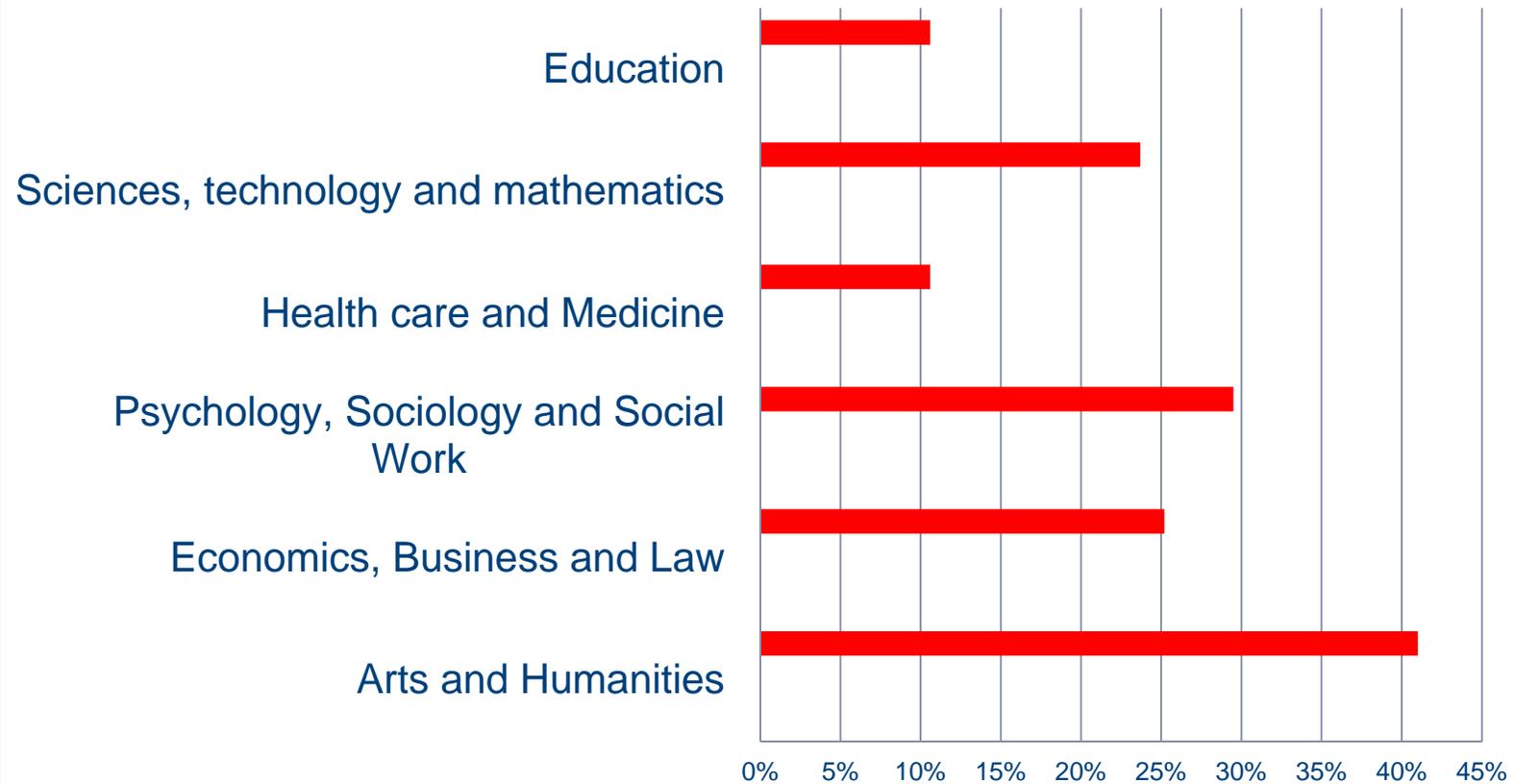
Educational and skill mismatch

- Literature on educational mismatch
 - Prior work focusses on **vertical mismatch**: ‘overeducation’ (and ‘undereducation’)
 - Recent work also focusses on **horizontal mismatch**: ‘field-of-study mismatch’
- Educational versus skill mismatch
 - **Educational mismatch**: mismatch between one’s educational qualifications and the qualification most appropriate *to do* one’s job
 - **Skill mismatch**: mismatch between one’s skills and the skills most appropriate *to do* one’s job
 - Research reported in this presentation focusses on educational mismatch
 - Educational mismatch is assumed to be a source of skill mismatch

Major findings in the literature

- Mismatches may be harmful for wages, job satisfaction, training opportunities, job duration,...
- Large differences in incidence across
 - Individuals (**micro level**)
 - Human capital endowments
 - Males versus females
 - Migrants versus natives
 - Social background
 - ...
 - Field-of-study segments (**meso level**): Humanities and Social Sciences versus Medicine and STEM

Subjective overeducation (%) in first job after graduation in Flanders (Belgium)



Data Source: SONAR data, cohorts born in 1916, 1978 & 1980, own calculations

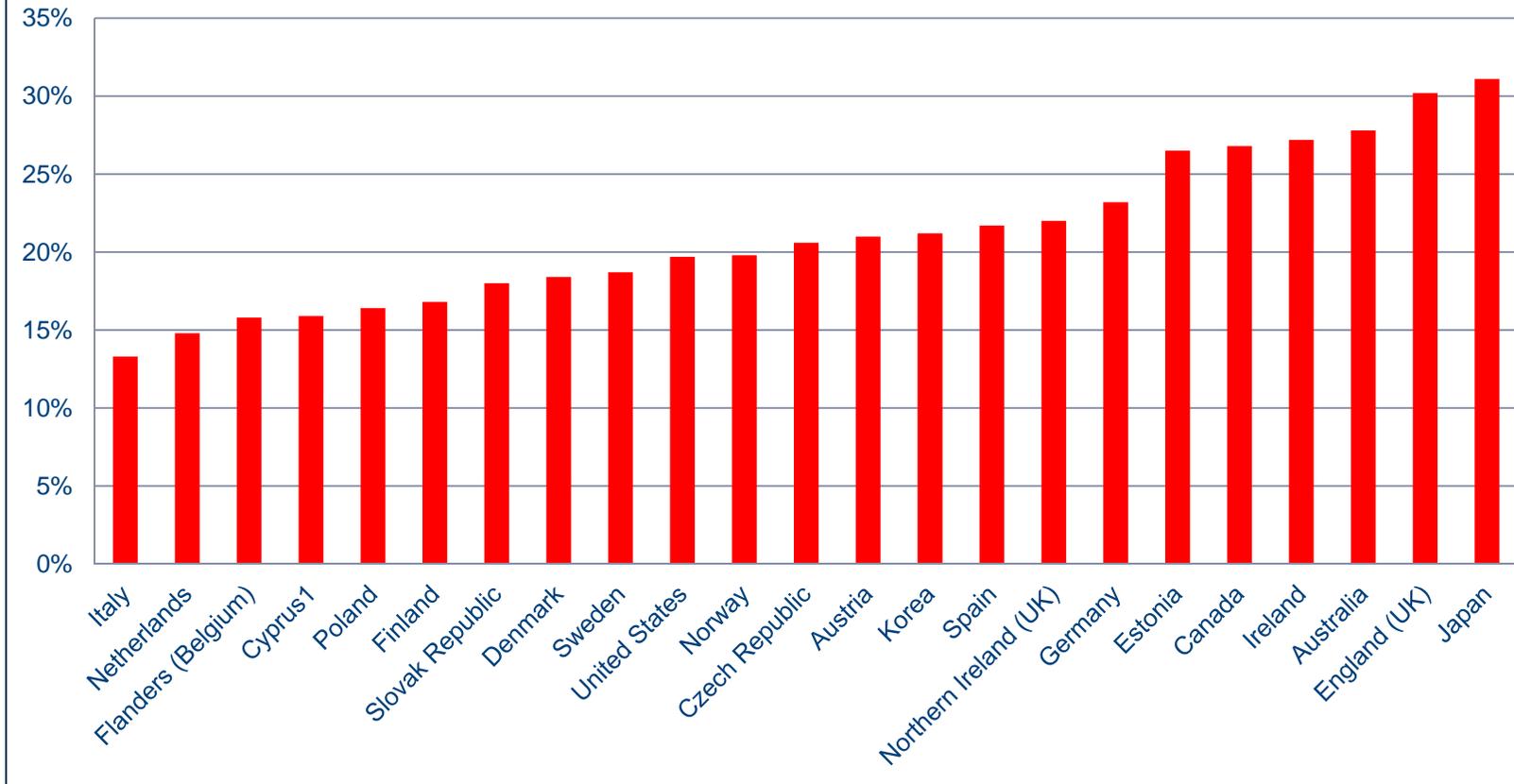
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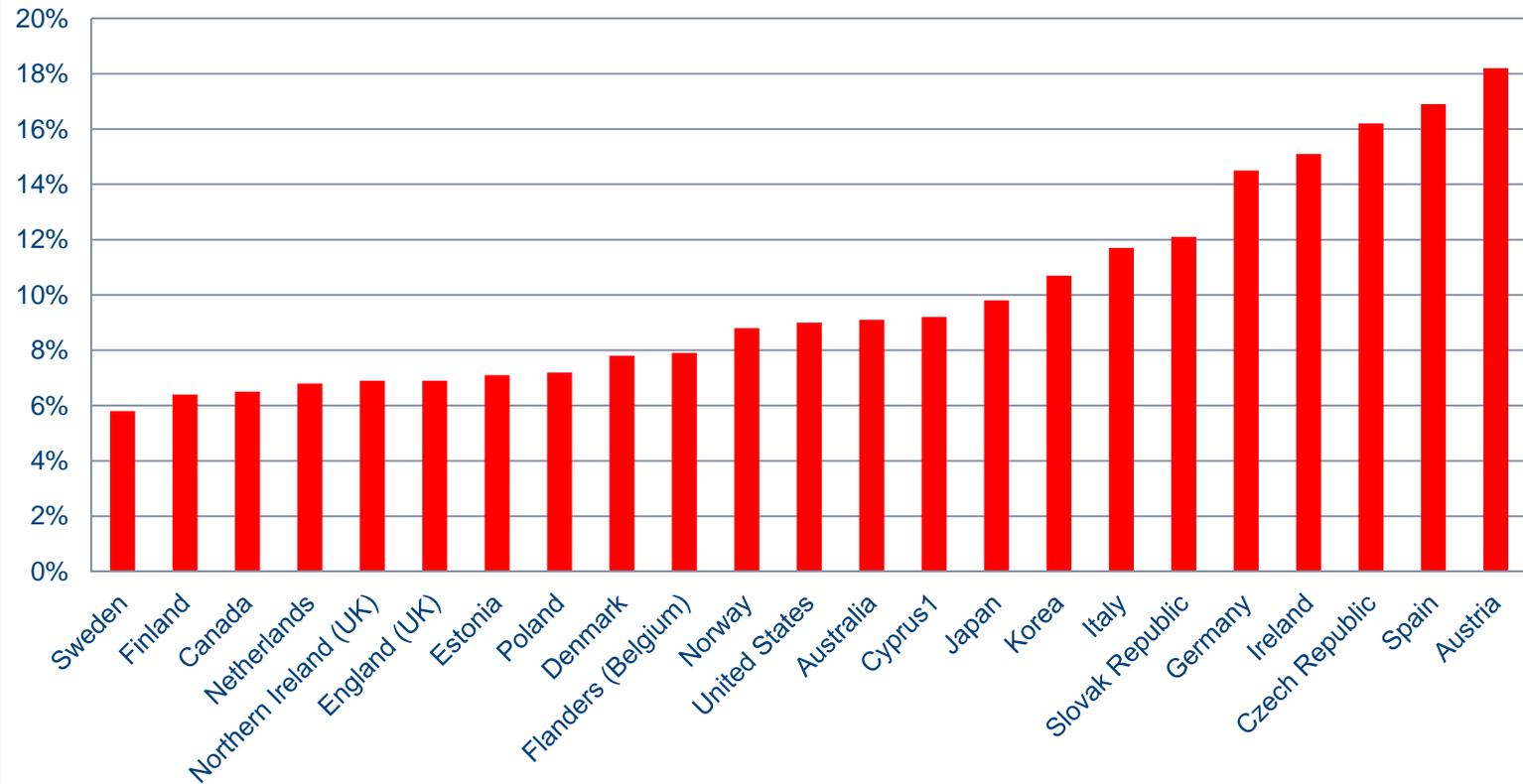
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 - Field-of-study segments (**meso level**): Humanities and Social Sciences versus Medicine and STEM
 - Countries (**macro level**)

Overqualification (educational level higher than the level required to get the job) among the working population (PIAAC)



Data Source: OECD (2013), *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD Publishing, Table A4.25, p358, <http://dx.doi.org/10.1787/9789264204256-en>

Numeracy overskilling among the working population (PIAAC)



Data Source: OECD (2013), *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD Publishing, Table A4.25, p358, <http://dx.doi.org/10.1787/9789264204256-en>

Mechanisms explaining mismatch

- Individual level:
 - Combination of factors seems responsible
 - Poor quality of human capital
 - Job search constraints
 - Discrimination
 - ...
- More aggregate levels:
 - Often suggested cause: imbalances between demand and supply?
 - **Meso level:** too many humanities graduates and too few graduates in health care and STEM?
 - **Macro level:** general 'over' investments in education?
 - But: evidence remains scant

Differences in educational mismatches across countries: prior evidence

- Groot and Maassen van den Brink (2000)
 - Higher labour force growth results in more overeducation
- Di Pietro (2002)
 - Educational composition of the labour force
 - Employment protection legislation
 - Level of R&D investments
- Croce and Ghignoni (2012)
 - Structural imbalances (demand and supply of skilled labour)
 - Cyclical imbalances (business cycle)
- Davia, McGuinness and O'Connell (2010)
 - Structural imbalances
 - Selectivity of the educational system
 - Union-density rate

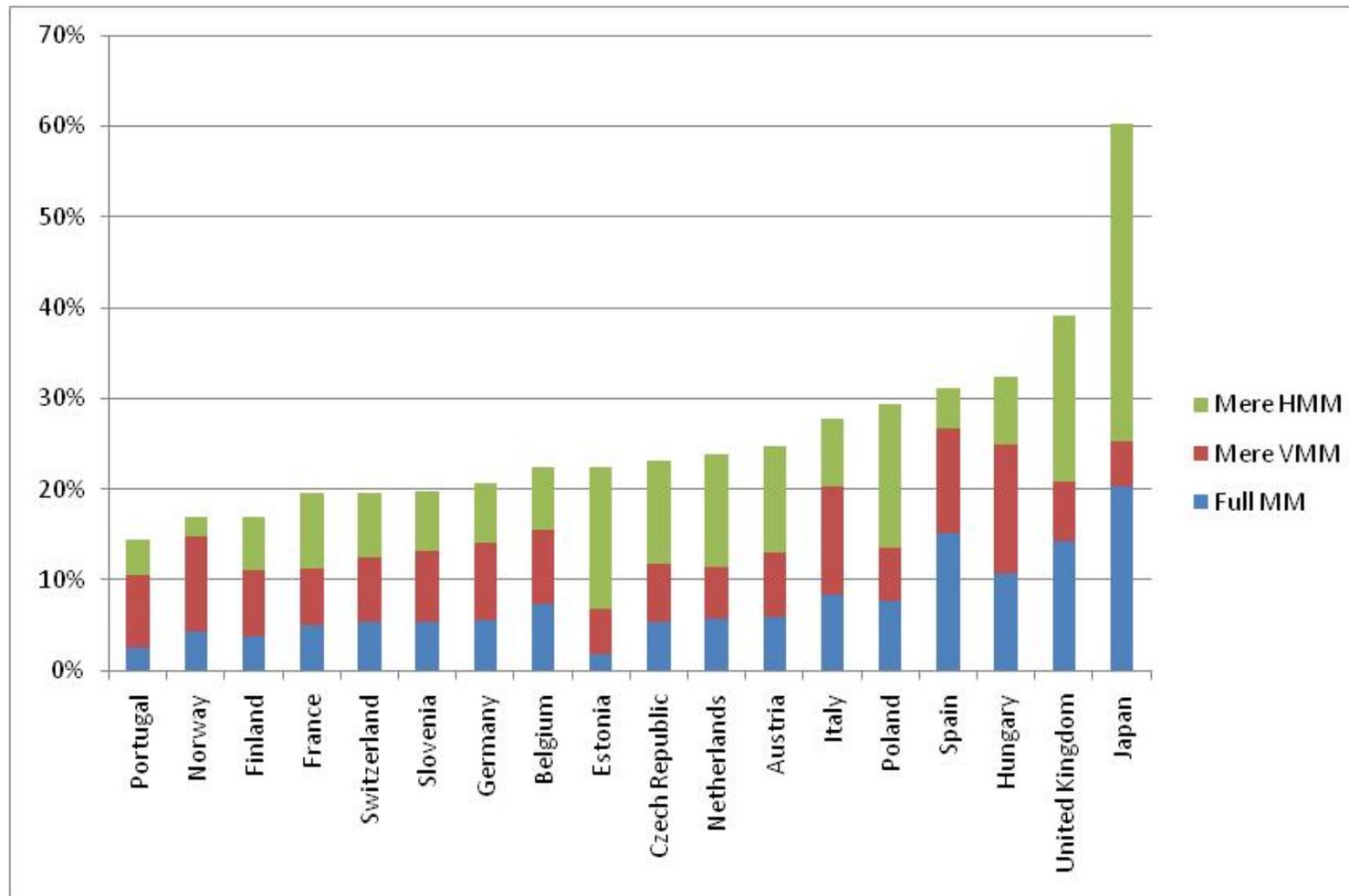
Research for European graduates

- What explains differences in educational mismatches among graduates across countries and fields of study?
- Research findings reported in:
 - Verhaest and van der Velden (2013)
 - Verhaest, Sellami and van der Velden (2013)
- Research based on the Reflex and Hegesco survey data
 - Representative samples of individuals graduating in 2000 (Reflex) or 2003 (Hegesco)
 - Survey in 2005 (REFLEX) or 2008 (HEGESCO)
 - 17 European Countries and Japan
 - Focus on first job and job five years after graduation
- Statistical approach: multi-level analysis

Measurement of educational mismatches

- Vertical educational mismatch
 - Survey question: ‘What type of education do you feel was most appropriate for this work?’
 - Overeducated if educational level exceeds the appropriate level
- Horizontal educational mismatch
 - Survey question: ‘What field of study do you feel was most appropriate for this work?’
 - Possible answers: (1) exclusively own field, (2) own or related field, (3) a completely different field, or (4) no particular field
 - When (3) or (4): horizontal mismatch
- Four categories: Pure match, mere vertical mismatch (VMM), mere horizontal mismatch (HMM), pure mismatch

Educational mismatch five years after graduation



Source: Verhaest et al., 2013, based on Reflex and HEGESCO

Investigated mechanisms: macro level

- Demand and supply context
 - Structural imbalance demand and supply of skilled workers
 - Business cycle
- Educational institutions
 - Quality and Selectivity of educational system
 - Degree of general (as opposed to vocational) orientation of the educational system
- Labour market institutions
 - Employment protection legislation
 - Generosity of Unemployment benefits (measured by replacement ratio)
 - Collective bargaining coverage

Investigated mechanisms: meso level

- Meso level: field of study within a country
- Differences in mismatches between fields of study may result from
 - Differences in average study program characteristics
 - Average quality and selectivity
 - Average degree of general (as opposed to vocational) orientation
 - Pure quantitative imbalances in demand for and supply of graduates within each field of study

Results country level: Demand and supply context

- Structural imbalance between demand and supply of skilled workers
 - Countries with high investments in higher education do not necessarily face more mismatches, but
 - But, a relative imbalance between demand and supply is associated with higher incidence of overeducation
- Business cycle
 - Business cycle at labour market entry affects both incidence of overeducation
 - in the first job
 - five years after graduation
 - No evidence on impact of business cycle five years after graduation

Results country level: Demand and supply context

- Interpretation: a structural or cyclical oversupply of highly educated workers
 - Reduce job opportunities and increase one's willingness to accept jobs at lower job levels
 - Result in more stringent selection criteria by employers in terms of the level of one's qualification

Results country level: Educational Institutions

- Quality and selectivity of educational system
 - The higher the quality and selectivity of the educational system, the lower the incidence of mere HMM and pure MM in a country five years after graduation
 - Interpretation: A lower quality and selectivity
 - reduces the value of formal education as selection criterion
 - induces employers to rely more on additional training rather than formal education

Results country level: Educational Institutions

- Orientation (general versus vocational) of the educational system
 - Countries with a general system face more overeducation among graduates in their first job
 - But: general systems are associated with lower overeducation persistence
 - But: incidence of pure MM remains higher in countries with a general system five years after graduation
- Interpretation: Vocationally educated individuals
 - become immediately productive after graduation
 - are less employable in jobs that not fit with their qualification

Results country level: Labour Market Institutions

- Employment Protection Legislation
 - Mixed evidence: some results suggest more employment protection to be associated with less educational mismatches
 - Interpretation: hiring mismatched individuals may be perceived to be more risky when firing costs are high
- Unemployment benefits
 - Higher benefits are associated with less mere HMM five years after graduation
 - Interpretation: allows job seekers to be more selective

Results country level: Labour Market Institutions

- **Collective Bargaining Coverage**
 - A higher degree of collective bargaining coverage seems to be associated with a higher incidence of full mismatches
 - Interpretation:
 - Wage compression reduces the opportunity cost of employment at lower job levels
 - Rigid wages impede labour market clearing, resulting in more mismatches

Results field-of-study level

- Within countries, fields of study with, on average,
 - More **qualitative and selective study programs** are associated with lower mismatch incidences
 - More **general educational programs** are associated with more merely horizontal mismatch incidences
- Holding the quality and orientation of the study program constant
 - Graduates with a **humanities degree** are more likely to have any type of mismatch
 - Graduates with a **technical degree** are less likely to have a field-of-study mismatch, but more likely to have a mere vertical mismatch

Discussion and conclusions

- Differences in mismatches across countries and fields of study are driven by broad range of mechanisms
- Challenge for policy makers: a combination of economic, education, and labor market policies may be needed to reduce mismatches among young workers
- Some policies may be rather uncontroversial
 - Improving the quality of the study programs
 - Providing study-choice guidance
 - Supporting R&D investments

Discussion and conclusions

- Other policy measures may conflict with other priorities
 - Unemployment benefits and employment protection: trade-off between reducing unemployment and reducing mismatches
 - Wage formation: trade-off between reducing unemployment and mismatches and reducing wage inequality
 - Participation in higher education
 - Reducing overeducation versus reducing inequality of opportunity
 - Short run versus long run

Discussion and conclusions

- Shortages of STEM graduates seem concentrated rather at intermediate and undergraduate levels, not at the master level
- Business cycle at labour market entry determines mismatch five years after graduation
 - Persistent effects of the recent global crisis?
 - Importance of early intervention

Thank you for your attention

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