Education-Specific Labor Force Projections: Painting the Global Picture

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Session “Beyond projections by age and sex”
Outline

• Motivation: Why education as additional labor force dimension?

• Data situation: past and present

• Projection methods

• Issues with open-ended age-groups

• Conclusion
Motivation

- Global picture: population growth and population aging
- Both developments are directly connected to developments of labor supply
- Labor force projections by age and sex common
- Presented education-specific labor force projections for Europe at last workshop in Rome (2013)
- Why education?
  - Differentials in labor force participation (LFP) by education
  - Populations’ changing education composition
  - Cohort aspect (educational expansion)
  - Productivity and education
  - Role of education in explaining past changes in participation rates
Status quo: past and present LF data

- ILO: most comprehensive data bases (ILOSTAT, KILM). Several labor market indicators include education information

- Caveat: simultaneous disaggregation by age, sex AND education
  - ILOSTAT: LFP by sex and age; LFP by sex and education (rates)
  - ILOSTAT: LF and working-age population by age, sex and education (abs. numbers) -> calculation of LFP rate by age, sex and education for ca. 80 countries

- Issues with global data on education-specific LFP
  - Microdata available for large number of countries
  - Coverage (census, survey,...)
  - National and harmonized education levels
  - Age-groups: not consistent
Example profiles of LFP by age, sex and highest level of educational attainment

Source: ILOSTAT, working-age population and labour force by age, sex and education; own calculations.
Example profiles of LFP by age, sex and highest level of educational attainment

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Status quo: projection methods

• In general, same methods can be applied that have been used for projections by age and sex (Houriet-Segard and Pasteels 2011; ILO 2013)
  
  • Time-series extrapolation
  • Regression analyses
  • Qualitative/target approach
  • Cohort analysis
  
• Potential issues
  • Choice of education categories constrained by country-specific education distributions
  • Additional breaks in series
  • Fewer data points than for LFP rates by age and sex

• Population projections by age, sex and highest level of educational attainment for 195 countries, 1970 to 2100 (Wittgenstein Centre for Demography and Global Human Capital; Lutz, Butz and KC, 2014)
Issue with open-ended age-groups

- Sometimes vague usage of "(total) labor force participation rate"

- This is a particular issue when the population composition is shifting towards higher age-groups

- Changes in age-specific participation rates are confounded with changes in populations’ age-composition

- Change in total LFP rate over time (% of population 15+):
  - Interpretation as share of adult population that is economically active is no problem
  - Problem: interpretation of decline in total LFP as decline in underlying (age-specific) participation rates
Open-ended age-groups: the case of Japan

LFP rates men

LFP rates women

Changes in participation rates

<table>
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<th>age-groups</th>
<th>men</th>
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<th>2014</th>
<th>women</th>
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Changes in age-composition

Changes in participation rates

Changes in age-composition
Conclusion

• Adding education to projections of labor supply is a promising endeavor

• Challenges and caveats in compilation of past and baseline data

• Having a solid database about past and present LFP by age, sex and education would also be useful for detailed labor force analyses

• Interpretation of LFP rates for open-ended age-groups pose a particular problem in aging populations

• For labor force projections, having closed-ended data for as high ages as possible is crucial
Thank you!

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