The extent of educational mismatch of different occupational groups, comparison of European countries

Prof. Ellu Saar, Eve-Liis Roosmaa, Liisa Martma, Tallinn University, Institute of International Social Studies

Educational mismatch in Europe is widespread, but it varies widely between the countries. For example, the overeducation rates are indicated to be highest in the geographically peripheral countries (e.g. Greece, Spain) and lowest in the Eastern European countries (McGuiness et al., 2017). Automation has a strong impact on the labour market, transforming work and employment (Gregory et al., 2019; Frey & Osborne, 2016). Considering the further automation processes and developments in new technologies, the incidence of mismatch is likely to increase in the future even more (European Commission, 2013).

The focus of existing studies is largely on overeducation of tertiary graduates in selected countries or country groups. In this article, we are interested in the extent of overeducation and undereducation among lower, middle and upper-middle class occupations in Europe. Previous findings indicate cyclical changes in overeducation rates, i.e. increase somewhat following the onset of the great recession in 2008 and decrease thereafter in 2010 (McGuiness et al., 2017; Verhaest & Van der Velden, 2013; Croce & Ghignoni, 2012). Therefore, we analyse three time periods using the European Labour Force Survey (EU-LFS) data for all available European countries: 2007 (before the recession), 2009 (during the recession) and 2014 (after the recession).

Most commonly used measures for the analysis of overeducation and undereducation are workers' self-assessment, realized matches and job analysis approach (Flisi et al., 2014). We use the realized matches approach, that compares individual levels of schooling with the modal or mean level of schooling. We calculate the modal level of education for full-time workers for each ISCO two-digit occupation group in each country for the three years (2007, 2009 and 2014). We selected this approach because it is indicated to adjust to skills upgrading due to technological change or new formal qualification requirements, what might ease the comparisons across cohorts, time points and/or countries (Capsada-Munsech, 2019). Still, the critics point out that the overall increase in educational attainment in a country without structural employment change might lead to a supply driven increase in the modal educational level of many jobs. In such cases, the use of the realized matches approach will interpret such increase as an increase in terms of the requirements, even if

the jobs actually have not changed and have roughly the same requirements than before and will potentially underestimate the level of overeducation (Muñoz de Bustillo et al., 2018).

The aim of the article is to analyse the variation in both the levels and trends in over/undereducation and the factors explaining the country-level variance. We include to the analysis different individual (e.g. gender, age group, job tenure), workplace (industry, economic sector, size of the firm) and macro-level characteristics (e.g. percentage of tertiary educated among working-age population, unemployment rate, ratio of high to low skilled workers) that reflect the potential demand- and supply-side factors which may have an effect on the over/undereducation. The percentage of tertiary educated among working-age population could have an effect on the rate of overeducation because the supply of educated labour can outrun the demand (Davia et al., 2017; McGuiness et al., 2017). Bulmahn and Kräkel (2002) have indicated that in weak labour markets with high unemployment rates employers may raise the recruitment criteria to filter the best candidates, or they will deliberately hire individuals with higher education to prevent greater economic uncertainty (Bulmahn and Kräkel, 2002). However, there is also evidence that educational expansion could have a negative effect on overeducation in case of tertiary and post-secondary graduates (Delaney et al., 2020).

Based on the previous literature we can formulate the following (preliminary/first) hypothesis:

- Due to economic cycles and associated changes in the unemployment rates overeducation should be highest in 2009 as compared to 2007 and 2014.
- Educational mismatch should be higher in countries with higher percentage of tertiary educated in the population. Alternatively, educational expansion could have inverse relation with overeducation.

The preliminary analysis based on the EU-LFS 2014 data, confirms the findings of McGuiness et al. (2017), that overeducation rates are the highest (~25%) in the geographically peripheral EU countries like Greece, Spain and Ireland. The overeducation rates of the Central European countries like Germany, Netherlands, France are ~15% and the Eastern European countries have the lowest overeducation rates of about 10% in Poland, Slovenia and the Czech Republic. When analysing the extent of overeducation between four occupational groups which are distinguished based on the skills intensity of the occupations (high skilled white-collar, low skilled white-collar, high skilled blue-collar and low skilled blue-collar), then the results show that in low skilled white-

collar occupational groups the overeducation rate is the highest, as 24% of the employees' education exceed the modal level of the respective occupational group. Overeducation rate is the lowest in the high skilled white-collar occupation group (13%).

References

Bulmahn, G., Kräkel, M. (2002). Overeducated workers as an insurance device. *Labour*, *16*(2), 383–402.

Capsada-Munsech, Q. (2019). Measuring Overeducation: Incidence, Correlation and Overlaps Across Indicators and Countries. *Soc Indic Res, 145*, 279–301.

Cedefop. (2010). *The skill matching challenge: Analysing skill mismatch and policy implications.* Luxembourg: Publications Office of the European Union. Retrieved from https://www.cedefop.europa.eu/files/3056_en.pdf

Davia, M. A., McGuinness, S. & O'Connell, P. (2017). Determinants of regional differences in rates of overeducation in Europe. *Social Science Research*, *63*, 67–80.

Delaney, J., McGuinnessa, S., Pouliakasc, K., & Redmond, P. (2020). Educational expansion and overeducation of young graduates: A comparative analysis of 30 European countries. *Oxford Review of Education*, *46*, 10–29.

Gregory, T., Salomons, A., & Zierahn, U. (2019). *Racing With or Against the Machine? Evidence from Europe.* Bonn: IZA.

Croce, G., & Ghignoni, E. (2012). Demand and supply of skilled labour and overeducation in Europe: A country-level analysis. *Comparative Economic Studies*, *54*(2), 413–439.

Flisi, S., Goglio, V., Meroni, E., Rodrigues, M., & Vera-Toscano, E. (2014). *Occupational mismatch in Europe: Understanding overeducation and overskilling for policy making.* Luxembourg: Publications Office of the European Union.

Frey, C., & Osborne, M. (2016). The Future of Employment: How Susceptible are Jobs to Computerisation? *Technological Forecasting and Social Change, 114*, 254–280.

McGuiness, S., Bergin, A. & Whelan, A. (2017). Overeducation in Europe: Trends, Convergence and Drivers. *Oxford Economic Papers*, *70*(4), 994–1015.

Muñoz de Bustillo Llorente, R., Sarkar, S., Sebastian, R., Antón, J.-I. (2018). Educational mismatch in Europe at the turn of the century Measurement, intensity and evolution, *International Journal of Manpower*, *39*(8), 977–995.

Verhaest, D. & Van der Velden, R. (2013). Cross-country differences in graduate overeducation, *European Sociological Review*, *29*(3), 642–653.