

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

Ellu Saar, Eve-Liis Roosmaa, Liisa Martma

Institute of International Social Studies, Tallinn University, Estonia

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Aims of the paper

To analyse the extent of overeducation and undereducation among different occupational groups within European countries

- analyse the factors explaining the country-level variance



Previous research

The majority of existing work focuses on mismatches in individual countries or country groups, on specific groups (e.g. tertiary graduates) or measuring the mismatch effect on wage, job satisfaction etc.

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 (see McGuinness, Bergin & Whelan, 2017).



Data

We analyse the data of EU-LFS **2009** (during the recession) and **2014** (after the recession).



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Measuring over/undereducation

Most commonly used measures:

- Workers' self-assessment (subjective)
- Realized matches (objective)
- Job analysis (objective)

No subjective questions in the EU-LFS:

- We use the **RM** approach, which is indicated to **adjust** to skills upgrading due to **technological change** or **new formal qualification requirements**, what might ease comparisons across cohorts, time points or countries (Capsada-Munsech, 2019)
- Critics: the potential impact on the results of the supply side of the market. **Potential underestimation** of the level of overeducation (Muñoz de Bustillo et al., 2018).



Calculating over/undereducation

We calculate the **modal level** of education (using **four** ISCED categories of <2, 3, 4, 5-8) for each **two-digit occupation group** in each country.

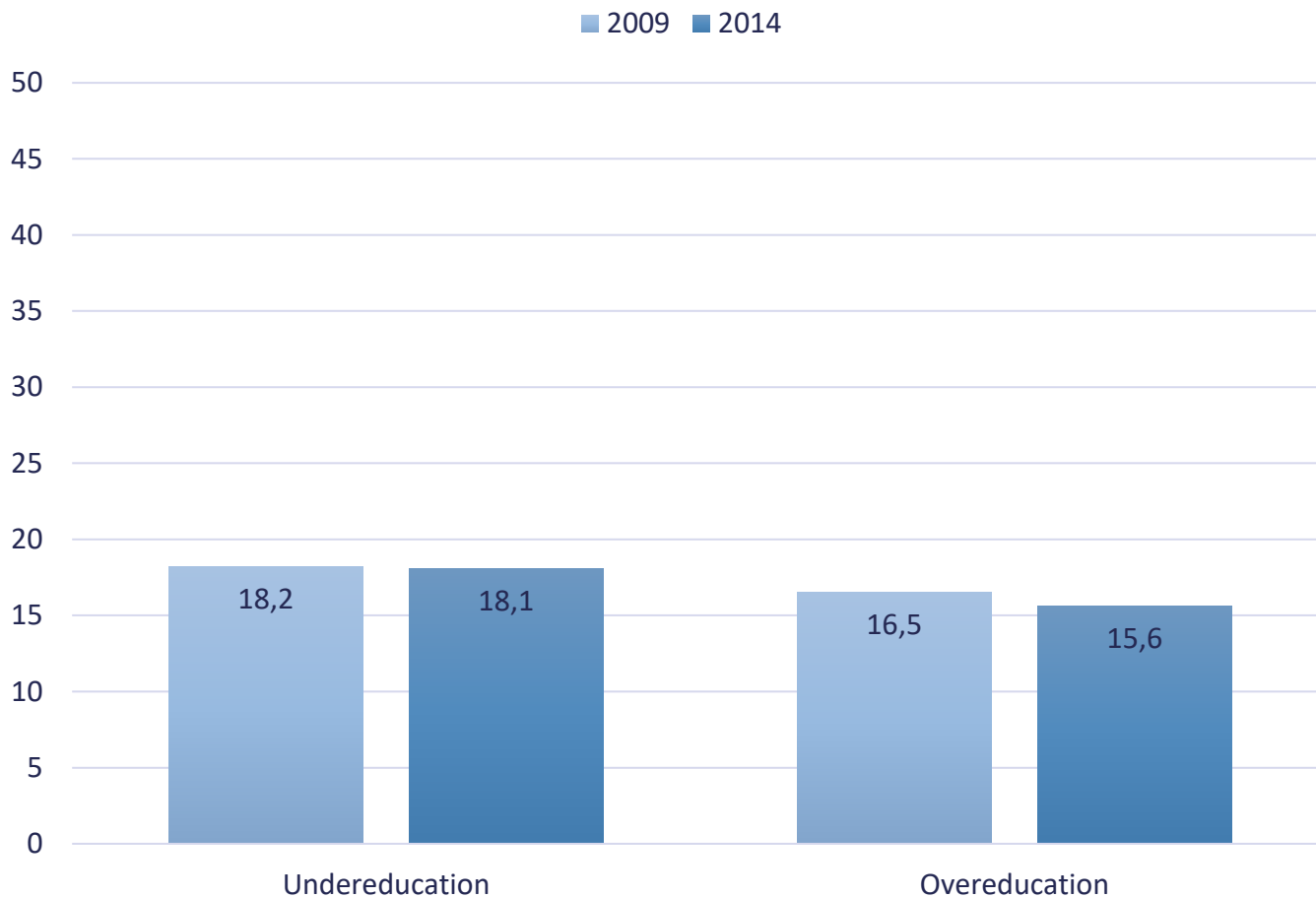
The sample for the study is restricted to individuals who are working **full-time**.

Example:

- if the modal level of schooling in a particular two-digit occupation in a country is **ISCED 3**:
 - individuals having **ISCED levels $4 \geq$** are **overeducated** and having **\leq ISCED level 2** are **undereducated**



Under- and overeducation rate in 2009 and 2014



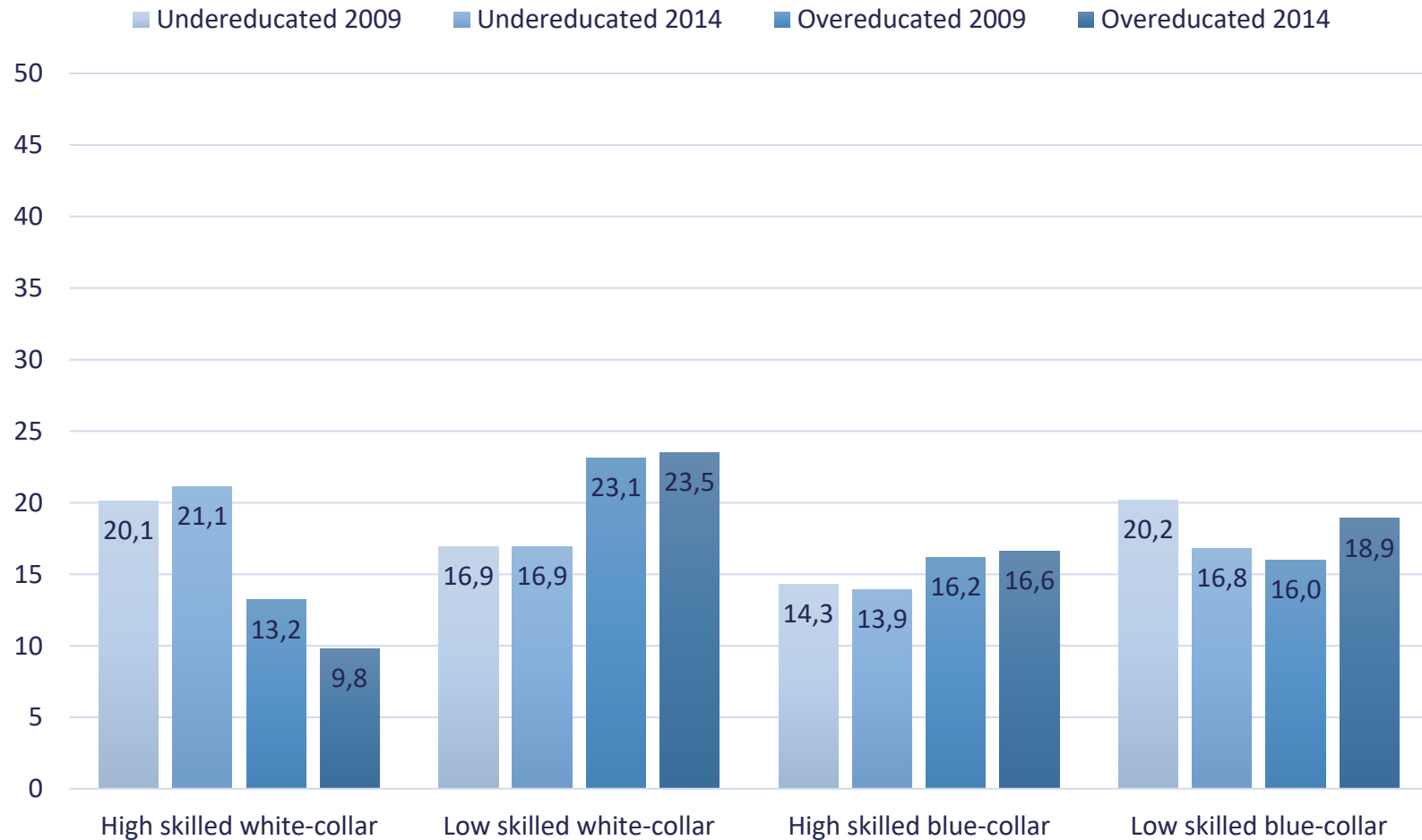
Source: Authors' calculations based on EU-LFS 2009, 2014; RM approach, sample restricted to full-time workers



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Under- and overeducation rates by occupational groups in 2009 and 2014



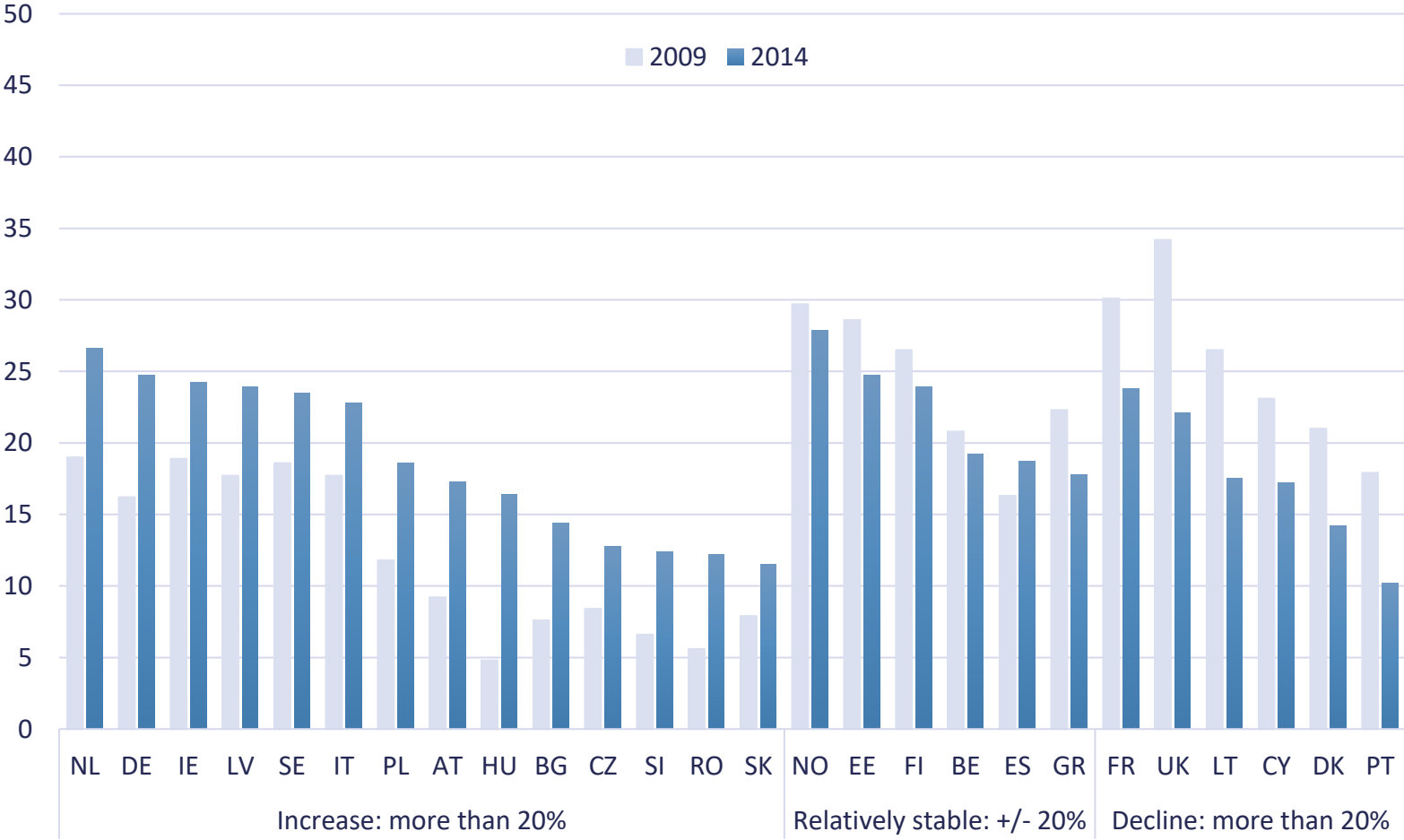
Source: Authors' calculations based on EU-LFS 2009, 2014; RM approach, sample restricted to full-time workers



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High skilled white-collar, undereducated rate by countries in 2009 and 2014



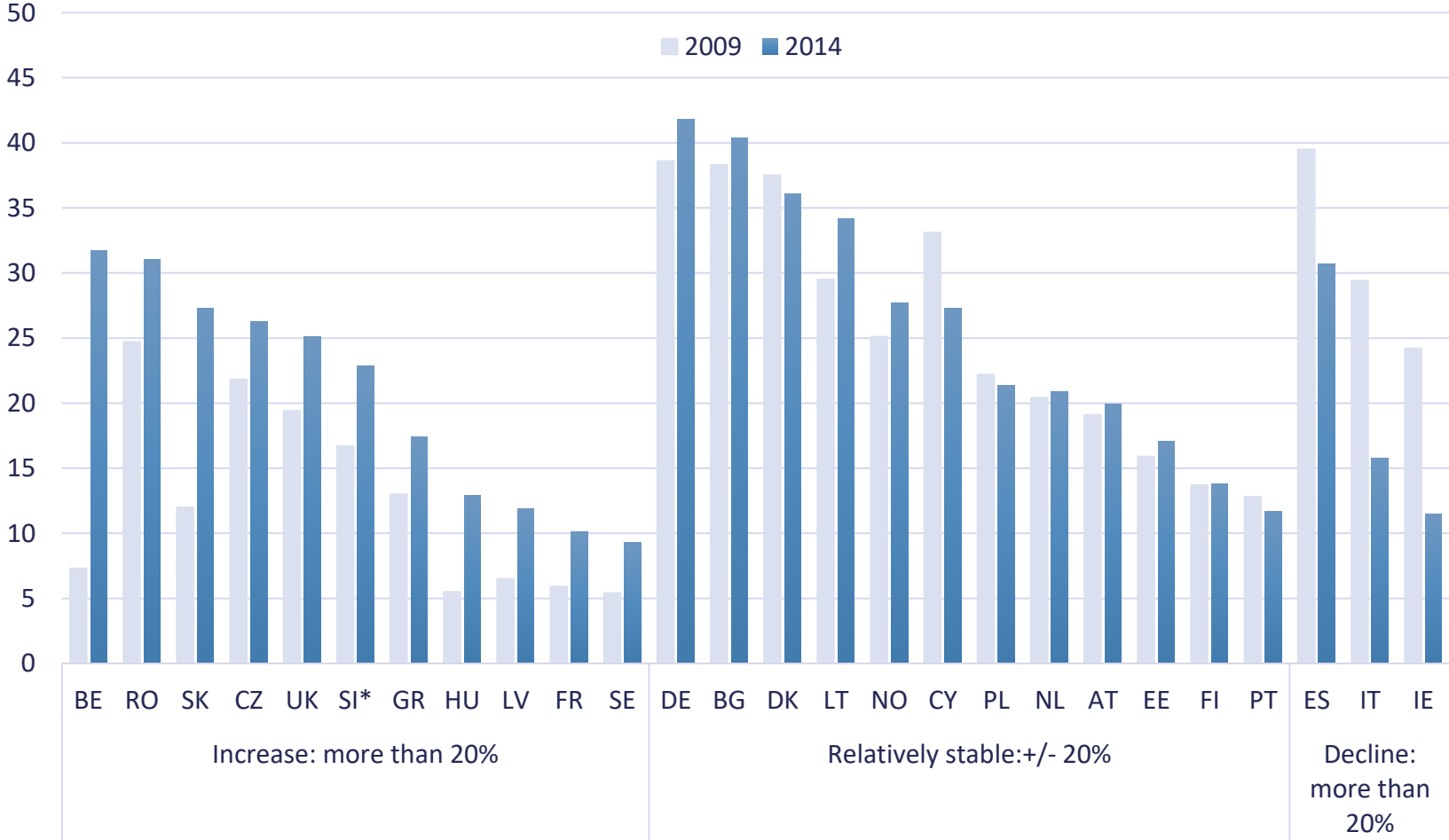
Source: Authors' calculations based on EU-LFS 2009, 2014; sample restricted to full-time workers



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Low skilled white-collar, overeducated rate by countries in 2009 and 2014



Source: Authors' calculations based on EU-LFS 2009, 2014; sample restricted to full-time workers

Note: * small sample size



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Explanatory variables: individual and workplace characteristics

Individual level characteristics: gender, age group, job tenure

Workplace characteristics: Industry, size of the firm



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Explanatory variables: Macro-level

The chosen variables are reflecting the potential **demand** and **supply-side** factors that may have an effect on over/undereducation

Business cycle effects (Verhaest & Van der Velden, 2012; McGuinness et al., 2017)

- **unemployment rate** -> employers **inflate recruitment criteria** to filter best candidates or hire deliberately individuals with higher educational level (Bulmahn and Krakel, 2002).

Innovation index: higher innovation index -> lower probability of being overeducated

Overeducation could arise due to the supply of educated labor outrunning the demand (Davia et al., 2007; McGuinness et al., 2017)

- **% of tertiary educated among working-age population**



Logistic regression, macro-level variables

	Undereducation ¹		Overeducation ²	
	2009	2014	2009	2014
Unemployment rate	-.026***	-.027***	.103***	.020***
Innovation index	.742***	.022***	-.038	.016***
Tertiary educated % among 20-64	.061***	.011***	.019***	.029***

¹Undereducation is measured among high skilled white collar occupational groups (ISCO-08 codes 1-3).

² Overeducation is measured among low skilled white collar occupational groups (ISCO-08 codes 4-5)

*** p ≤ .001; ** p ≤ .01; * p ≤ .05

Notes: Models include gender, age groups, job tenure, industry, firm size. Macro-level variables were added separately to each model. Sample is restricted to full-time workers.

Source: Own calculations based on EU LFS 2009 and 2014.



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Next step of the paper

Assess whether the relations **between income, educational attainment, undereducation and overeducation** differ for lower, middle and upper-middle class occupations



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