The Returns to Personality Traits across the Wage Distribution

Matthias Collischon

FRIEDRICH-ALEXANDER UNIVERSITÄT ERLANGEN-NÜRNBERG
RECHTS- UND WIRTSCHAFTS-WISSENSCHAFTLICHE FAKULTÄT

Motivation

- Non-cognitive skills important for labor market outcomes (Heineck and Anger, 2010)
- No study investigates heterogeneities across the wage distribution

Data

- **Socio-Economic Panel Study (Germany)**
  - pooled waves from 1991-2013; 135,135 observations for 17,349 individuals
  - surveys the big five, locus of control, risk aversion, reciprocity
- Results replicated with UKHLS (UK) and HILDA (Australia)
- All samples are restricted to part- and full-time employees aged 19-65; controls include gender, human capital characteristics, industry (major groups) and occupation (2-digits)

Method

- **Unconditional Quantile Regression (UQR):** Compares men and women in the unconditional wage distribution, controls for covariates (Firpo et al., 2009)

  $\Rightarrow$ thus, it is possible to compare effects for high- vs low-paid employees (in contrast to classical conditional QR)

Theoretical framework

- Wages consist of three parameters:
  - base wages (e.g. by law or collective agreement)
  - productivity bonus
  - bargaining premium
- Non-cognitive skills could affect productivity and bargaining directly and base wages through (self-)selection (which I account for)
- Productivity pay as well as bargaining gain more weight in the wage determination process for high-wage employees, because
  - the distance to the minimum wage increases (which leaves more room for variable pay shares)
  - certainty on productivity decreases with more complex tasks (e.g. fruit pickers vs. managers)

  $\Rightarrow$ more room for wage negotiations

Hypotheses

H1 The importance of personality traits in the wage determination process is larger for high- compared to low-wage employees

H2 The effect of personality traits is larger for high- compared to low-wage employees

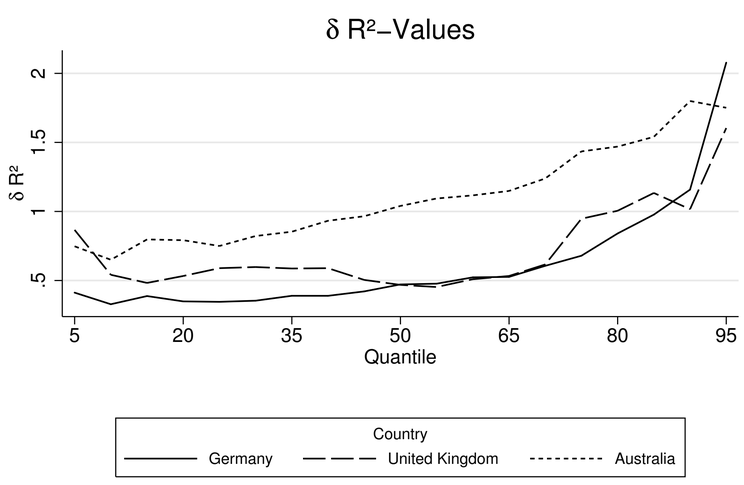
Testing hypotheses

- H1 is tested by using a new statistic:

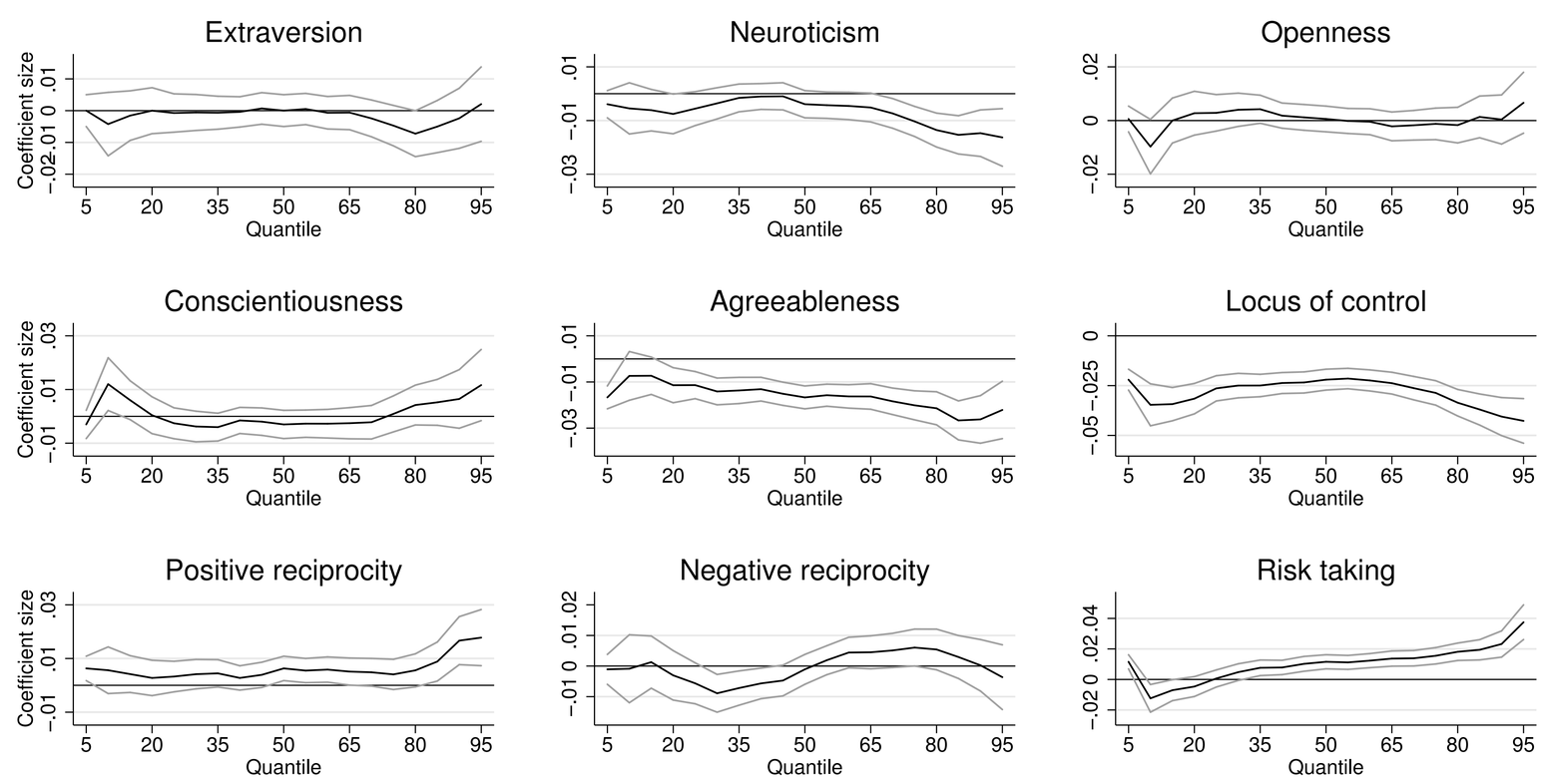
$$\delta R^2(\tau) = \left(\frac{R^2_{unrestricted}(\tau)}{R^2_{restricted}(\tau)} - 1\right) \times 100$$

- δR^2 is the rise in explanatory power through new variables at a statistic of interest (quantile or mean in this case) compared to the restricted estimation; standard errors via bootstrapping

Results: Explanatory Power (H1)



Results: Effect size (H2), SOEP



Source: SOEP v30 1991–2013; Coefficients with 90%–CIs.

Robustness

- Effects hold in the UKHLS and HILDA
- Effects are robust for full-time employees, males and females and various estimation methods (Heckman, RE, EIV)

Conclusion

- Personality traits gain importance in the wage determination process across the distribution of wages (H1)
- The effect size of personality traits increases across the wage distribution (H2, especially neuroticism, agreeableness, risk taking)
- Effects are economically meaningful: an increase of one standard deviation on the locus of control scale at the mean is comparable to one year less of schooling

Matthias Collischon; **Phone:** +49 - 911 - 5302 230, **Email:** matthias.collischon@fau.de