

**Distribution decompositions**

1. Extend the model from the session on distribution decompositions. Include the international socio-economic index (`isei`) as well as the number of children in the household (`children`). Decompose the private–public gap in the D9/D1, the D9/D5 and the D5/D1 ratio. Use the approaches based on JMP, conditional quantiles and distribution regressions and compare the results. The decompositions should be such that the covariate distribution of the private sector is adjusted to the covariate distribution of the public sector (i.e. use the wage structure from the private sector as the reference wage structure).
2. How do results change if you adjust the covariates of people in the public to those of people in the private sector (i.e. if you use the wage structure from the public sector as the reference wage structure)?
3. Optional: Compare your results to results from analogous decompositions using reweighting (e.g. compare the results from the distribution regression decomposition to results from decompositions based on IPW or entropy balancing). Can you reduce the difference between results by fine-tuning the models used in the various decompositions?