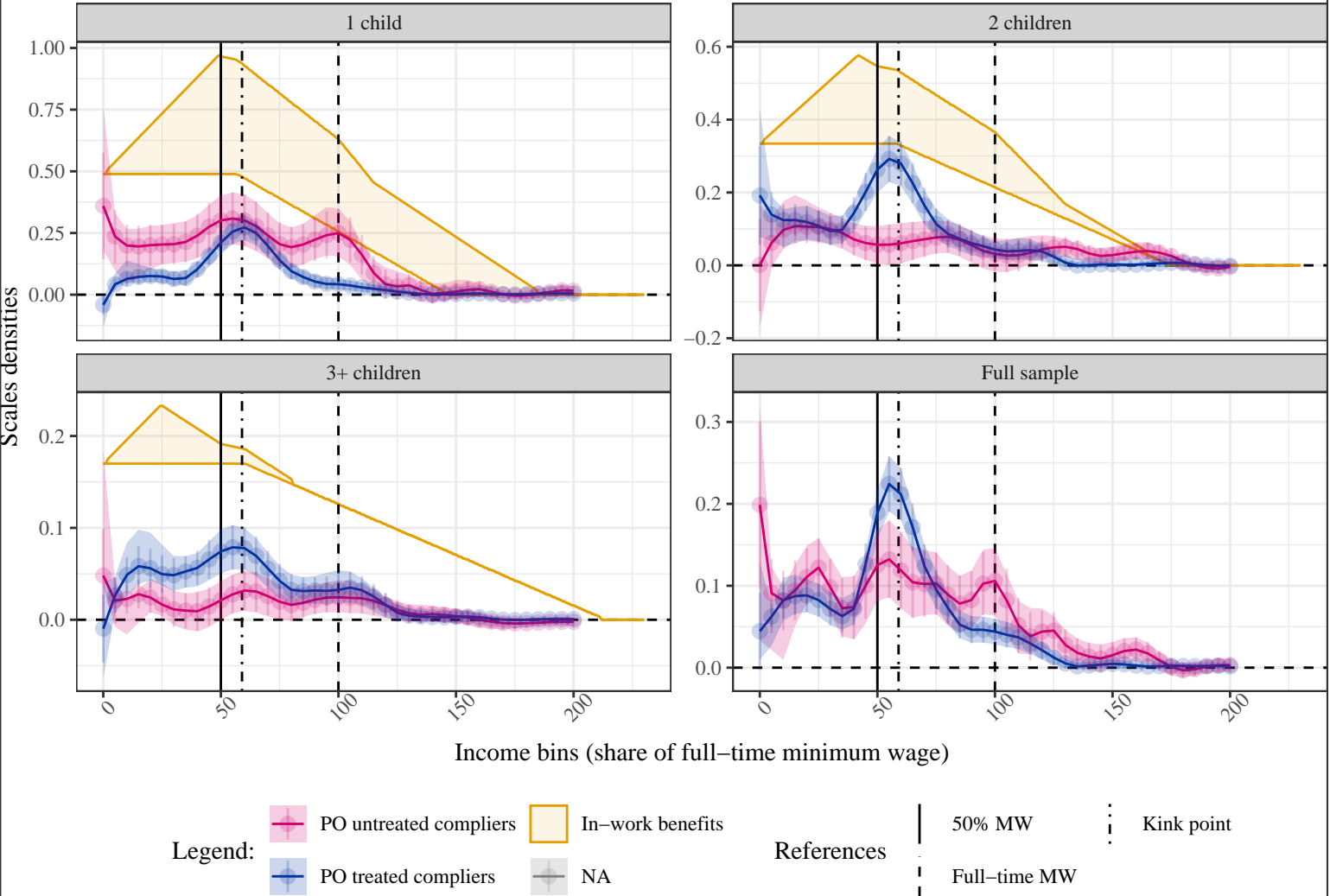# Distribution of potential individual's labour incomes of treated and untreated compliers

Non−parametric data driven estimation of compliers' counterfactual densities

Weighted local regression distribution estimates, Kappa weighting

Sources: ALLSTAT, observations from 18 to 30 months since random assignment.
The dependent variable is the individual's labour income as share of full−time minimum wage.
The shaded area above the estimates is the scaled amount of in−work benefits with housing benefits adjusting.
These data are simulated using EDIFIS and rescaled for each panel using the width of the density support.
Notes: Estimations of the potential density functions for compliers following Cattaneo et al. (2021), using the R package 'lpdensity'.
Bandwidth chosen using regularised integrated MSE−optimal and the Epanechnikov kernel function.
Instrument propensity scores estimated by probit of encouragement on block fixed effects to smooth support.
Densities use local polynomial regressions of order 3, simultaneous 95% confidence intervals use polynomial of order 4,
 1 degree higher for biais correction.
Densities are scaled over the support of potential income with positive values. The counterfactual probability of
reporting 0 income is estimated by TSLS with block fixed effects using T x 1(Y<.000001) as outcome and d instrumented by
the re−centred instrument and block fixed effect, with T = D for Y(1) and T=(1−D) for Y(0).

$$\text{Weights are computed for each sub−group separately: } \kappa_0 = \frac{1}{1-D_i} \frac{1 - Z_i - (1 - \hat{q}_b)}{\hat{q}_b(1 - \hat{q}_b)} \quad \kappa_1 = \frac{1}{D_i} \frac{Z_i - \hat{q}_b}{\hat{q}_b(1 - \hat{q}_b)}$$