Oaxaca-Binder Estimator for Treatment Effect:

Patrick Kline - Oaxaca-Blinder as a Reweighting Estimator (2011)

1. Run regression on Untreated units to get $\hat{\beta}^0$

$$Y_i = X_i\beta + \varepsilon_i$$

2. Predict counterfactual outcomes for Treated units

$$\hat{Y}_i^0 = X_i\hat{\beta}^0$$

3. Treatment Effect is:

$$\hat{\tau}_i = Y_i^1 - \hat{Y}_i^0 = Y_i^1 - X_i\hat{\beta}^0$$

   Can then aggregate to average treatment effect on treated

Advantages to Oaxaca-Blinder:

- Don't assume effects of covariates are the same after treatment, i.e. $\beta^1 = \beta^0$. This allows treatment effect heterogeneity based on X_i's.

  You can explore heterogeneity in treatment effect

- Equivalent to Propensity score reweighting with linear probability model, so doubly-robust estimator.