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1. We don't know the "true" function $E(Y|X)$ (non-parametric approximation)
2. We have to approximate the true function at a specific point (effective obs)

$$Y_i = 1(X_i > 0)\beta + X_i\mu_1 + X_i \times 1(X_i > 0)\mu_2 + \epsilon_i$$

The above model is the “simple” version of RD

1. If we take β, we make a strong assumption about the functional form
2. If we use the p-value from this, we assume all N “count”

Our views on RD plots capture the uncertainty on the function

We fear extrapolation

Modern RD SEs account for this