Instrumental Variables

Practice Problems

Edward Rubin

IV + 2SLS

Practice problems

1. Generate a dataset such that (**A**) treatment is correlated with the disturbance and (**B**) there a valid instrument.

2. Estimate the treatment effect using 2SLS—both through `iv_robust()` and through two stages of `lm()`.

3. What does IV recover when the treatment effect is heterogeneous? Show analytically and/or through your numerical example.

4. Set up (or at least outline) a data-generating process with compliers, always takers, never takers, and defiers. Allow τ_i to vary.

5. How much of the information on compliers, always-takers, never-takers, and defiers can you incorporate into a DAG? Explain.