

Lecture 14:
Regression discontinuity I

PPHA 34600
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An example: effects of Head Start

Policy issue:

- Large disparities in skills before starting school
- We spend billions on early childhood education
- ...but does it work?
- ...and if yes, do benefits persist?

Approach:

- Look at impacts of differences in funding across counties
 - Getting the funding isn't random
 - ...but is determined by a policy rule:
 - The 300 poorest counties could get funding
- Use a RD model to estimate treatment effects

Estimating the effects of Head Start

They run a version of:

$$Y_i = \tau D_i + f(X_i) + \varepsilon_i \text{ for } c - h \leq X_i \leq c + h$$

where

Y_i : mortality of child i

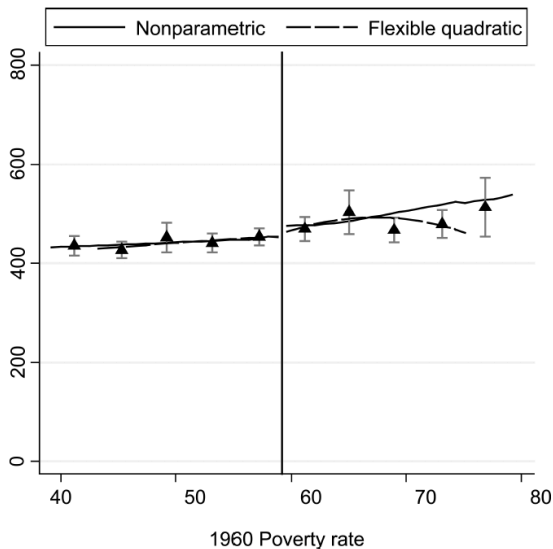
$D_i = \mathbf{1}[X_i \leq c]$ is the treatment indicator

c is county poverty rank

$f(X_i)$ is a flexible function of the running variable, X_i

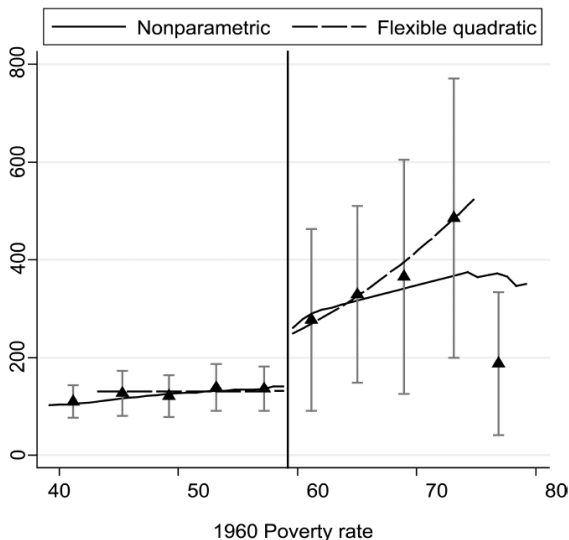
ε_i is an error term

Checking the identifying assumption



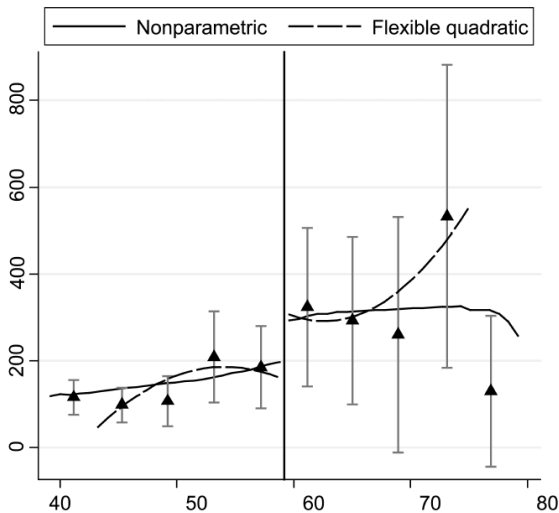
Treatment assignment

Panel A: 1968 Head Start funding per 4 year old

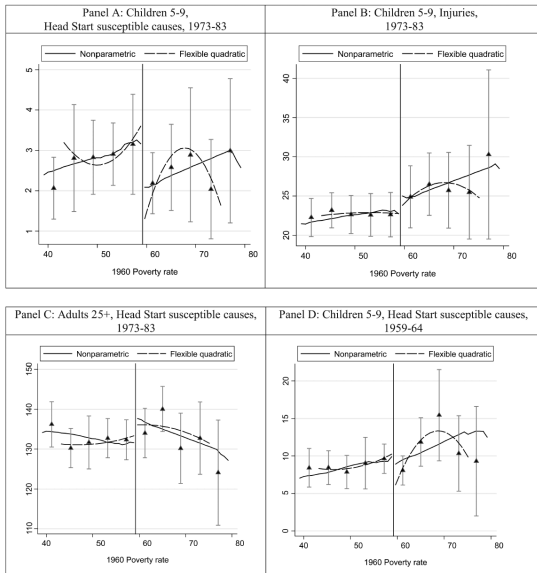


Treatment assignment

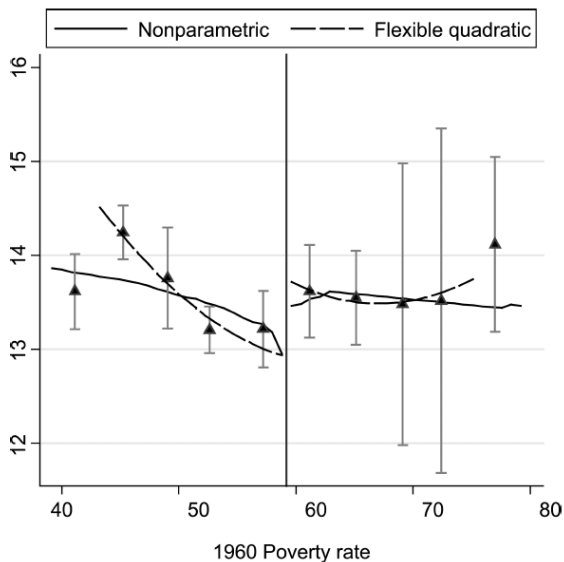
Panel B: 1972 Head Start funding per 4 year old



Main results



Main results: Years of schooling



Main results: High school completion

