Discussion 11

Week of 04.13

UVA Batten

Agenda

- Quiz Review
- Fixed Effects Example

Announcements

- Quiz 9 due Tuesday, April 14 @ 9PM
- Homework 6 due Tuesday, April 14 @ 9PM
- Homework 7 due Saturday, April 18 (no late penalty until April 22)
- All discussion on April 27 and 28 will become extra office hours

Quiz Review

Question 1

A researcher uses an RD design to estimate the effect of a small business tax surcharge on local employment. Firms with annual revenues just above $500,000 are subject to the surcharge while those just below are exempt. If there were a large spike in the density of firms reporting revenues just below the $500,000 threshold. What problem does this most likely indicate?

( ) The bandwidth around the $500,000 cutoff is too narrow for precise estimates

( ) The employment effect of the surcharge is heterogeneous across firm sizes

( ) Firms may be manipulating their reported revenues to fall just below the threshold and avoid the surcharge

( ) The tax surcharge has no effect on employment because firms simply pass the cost on to consumers

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Question 2

What can the researcher do to account for this hypothesized density spike?

( ) Use a wider bandwidth so that the density spike makes up a smaller share of the sample

( ) Exclude observations in a narrow range around the threshold and estimate the RD using only firms farther from the cutoff

( ) Control for firm size as a covariate in the regression to absorb the manipulation

( ) Re-center the running variable around the mean rather than the threshold

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Question 3

The researcher finds a negative effect of the surcharge on employment among firms just above the $500,000 threshold. A colleague points out that the local economy experienced a region-wide minimum wage increase that took effect on the same date the surcharge was introduced. What assumption does this most directly threaten?

( ) The continuity assumption, since the minimum wage increase creates a second discontinuity at the threshold that confounds the estimated employment effect

( ) The monotonicity assumption, since some firms may increase employment despite the surcharge

( ) External validity, since the LATE estimated at the cutoff cannot be generalized to larger firms

( ) None of the above

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Question 4

The researcher estimates the RD using a linear functional form on both sides of the threshold. A research assistant plots the raw data and notices that the relationship between firm revenue and employment appears to curve upward as revenues approach the threshold from below, but flattens out above it. What problem does this raise?

( ) The running variable is endogenous and the researcher should add an interaction term

( ) The nonlinearity in the revenue-employment relationship may be mistaken for a treatment effect at the threshold, biasing the estimate

( ) The treatment effect is negative and cannot be estimated with a single RD

( ) The density of the running variable is non-uniform, violating the continuity assumption

Question 4

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Fixed Effects in Stata