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RDD and Flexible Functional Forms - Quiz

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Question 1

1.0 point possible (graded)

When running an RD, what problem might you run into if you try to impose a linear form on the data?

- ☐ a. There maybe omitted variables
- ☒ b. Non-linearities may disguise themselves as discontinuities ✓
- ☐ c. Treatment does not affect the outcome variable
- ☐ d. There might be other variables that are correlated with the regressor.

Explanation

If you impose a linear functional form, you might mistake nonlinearities for discontinuities. (Like in the example from Mastering Metrics, Prof. Duflo showed in class) Omitted variables should not be a problem if the assumptions associated with regression discontinuity are true. If treatment does not affect the outcome variable, then regression discontinuity should correctly estimate no effect.

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✓ Correct (1/1 point)

Question 2

1/1 point (graded)

What else could you do to strengthen the credibility of your estimates from your RD? (Select all that apply)

- ☒ a. Look at whether other variables vary discontinuously at the threshold.
- ☒ b. Decreasing the bandwidth
- ☐ c. Increase the bandwidth
- ☒ d. Estimate polynomial functions of the running variables on both sides of the threshold
- ☐ e. Use a kernel regression

**Explanation**

Regressions, and Omitted Variable Bias

Practical Issues in Running

Regressions

due Dec 5, 2016 05:00 IST



Omitted Variable Bias

due Dec 5, 2016 05:00 IST



Module 10: Homework

due Nov 28, 2016 05:00 IST



In a parametric RD you center your variables and fit polynomial functions of your running variable on both sides of the cutoff to help distinguish discontinuities from nonlinearities. You can even allow for the coefficients to be different on both sides of the cutoff. These are things you can do in the simple parametric RD framework. To justify your assumption, you can look at whether other variables vary discontinuously at the thresh-hold. In nonparametric RDs, usually local linear regression is used.

You can also run a nonparametric RD, which exploits the fact that the problem of distinguishing jumps from nonlinear trends is probably less bad as we zero in on points close to the cutoff. The drawback of this, is that by restricting your observations to a narrow window, you lose a lot of observations. So your promise in an RD is to decrease your bandwidth as the number of observations increases (remember, there is the bias vs. variance tradeoff!)

There is no reason for you to use a kernel regression, since local linear regression performs better at the boundaries.

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Discussion

Topic: Module 10 / RDD and Flexible Functional Forms - Quiz

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