Questions and responses: PHA421: Applied Econometrics II

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fx 1. When estimate SRD using local linear regression, is alpha the intercept at min[x] or at x=c-h? 2. Can we use higher-order control function approach for FRD? 3. W

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1	**Class**	**Questions from students**	**Prof. Ito's responses**
58	5	For the fridge replacement example, why didn't they just remove the outlier to let the graph of probability of treatment vs running variable look more clear-cut and authentic?When should we retain or remove the outliers around the cutoff?	I would not interpret them as outliers. These are important observations because it impiles that there are non-compliers of D variable. Almost always, there is unlikely to be justification to drop "outliers" around the RD cutoff.
59	5	For the higher-order control, the regression form in slides is Y_i = \alpha+\tau D_i + m(X_i)D_i + u_i. However if D=0 then Y = \alpha + u_i a local constant, which seems not right? Is the correct regression should plus a term m(X_i)?	You are right. This is a typo. It should include m(X). Will fix it and announce in class.
60	5	A silly question, when talking about control for covariate to estimate RD, by "control" do you mean include that covariate in the regression model?	Yes
61	5	Q1: How to normalize X_i to make cutoff c=0? Q2: How do we get the expression of local linear regression of FRD in 2SLS form?	Suppose we have X_original. Then, make X = X_original - c. It will be 2SLS with D, a linear variable X, and its interaction with D (i.e. D*X). Then we use an instrument Z for D.
62	5	Questions: 1. Why do we emphasize the jump in level at the discontinuity in an RD design? Does comparing the difference in slopes have any valuable meaning? 2. Can you talk more about cross validation? I'm curious about how exactly this is done.	1. No in RD (but yes in the regression kink design). 2. Happy to talk in class.