Assignment 5 Question 2

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(a)

i) Estimating college enrollment.

ii) Estimate the impact of unionization on business survival, employment, output, productivity, and wages.

iii) Estimating housing prices as a measure for willingness to pay for clean air.

(b)

i) PSAT score is the running variable. Because it is continuous and can be assumed to be random at the cutoff it works well as a running variable for RD.

ii) Voting percentage is the running variable, and because voting percentage is continuous and can be assumed to be random at the cutoff of 51% it works well as a running variable for RD.

iii) Total Suspended Particles(TSP's) are the running variable. Because amount of pollution in the air is a continuous variable which is quasi-random around the cutoff it works well as a RD variable.

(c)

i) Financial aid is the treatment variable. Because students above the cutoff on the PSAT score are more likely to get financial aid, and financial aid is likely to encourage students to go to college, it is a treatment variable. This is a sharp RDD because there is a well defined cutoff which students cannot influence.

ii) Unionization is the treatment variable. Because companies above the cutoff of 51% are unionized and unions lead to higher bargaining power of workers, unionization is chosen as the treatment variable. This is a sharp RDD because there is a cutoff that union workers cannot influence.

iii) Federally regulated pollution measure are the treatment variable. Because counties above the cutoff of TSP are regulated according to their emissions which impacts housing prices, it is the treatment variable. This is a fuzzy RDD because this variable can be influenced, hence the need to use the IV.

(d)

i) Because financial aid is such an important factor in college enrollment, we want to measure its specific effect. Effects should be continuous as students are similar and the unobservables should be continuously related to PSAT score. Therefore because we expect such a difference to be attributable to this cutoff we want to use RDD instead of SLR.

ii) Because unionization has this strong cutoff and other effects should be continuous between different companies, we should use RDD instead of SLR.

iii) Total Suspended Particles(TSP's) are the running variable. Because amount of pollution in the air is a continuous variable which is quasirandom around the cutoff it works well as a RD variable.