Assignment 5 Question 2

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(a)

i) Estimating college enrollment.

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

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

(b)

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

ii) Voting percentage is the forcing variable, and because voting percentage is continuous and can simulate an random assignment of treatment and control the cutoff of 51%.

iii) Total Suspended Particles(TSP's). The amount of pollution in the air is a continuous variable which simulates random around the cutoff it does work well as an RD variable.

(c)

i) Financial aid because students above the cutoff on the PSAT score are more likely to get financial aid, and financial aid is likely to give a large incentive for students to go to college, it is a treatment variable. There is a well defined cut off so this is a sharp RDD design.

ii) Unionization because companies above the cutoff are unionized and unions lead to higher bargaining power of workers. There is a well defined cut off so this is a sharp RDD design.

iii) Federally regulated pollution because counties above the cutoff of TSP are regulated according to their emissions which impacts housing prices, it is the treatment variable. The treatment variable can be affected so this is a fuzzy RDD design and we need IV to correct the bias.

(d)

i) Because financial aid is such an important factor in college enrollment, we want to measure its specific effect. The effects should be continuous as students scoring above and below the cutoff close to the cutoff should be pretty similar in ability IQ and motivation. 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 a distinct cutoff and other effects should be continuous between different companies. Therefore we should use RDD instead of SLR.

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