Evaluation of Labour Policy

Replication: Minimum Wage in the Fast-Food Industry

Topic: Difference in Differences (DiD)

Reading: David Card and Alan Krueger (1994). Minimum wages and employment: A case study of the fast-food industry in New Jersey and Pennsylvania. *American Economic Review*, 84 (4): 772-793.

Data description:

We use the data from Card & Krueger on the impact of minimum wage on employment. The PDF file "Codebook" contains a detailed description of each variable in the data set. Note that the data may be slightly different from the one used in the original paper, and you might not be able to replicate the exact results of Card & Krueger.

Deadline:

The solutions must be submitted by March 26, 2023 (23.59h).

You have to submit two files:

- One PDF file with your answers.
- One R source file with your coding

or one Output (html or PDF) from an RMarkdown including your code, output, and interpretations.

QUESTIONS:

Q1: Implementation of the minimum wage.

On April 1, 1992, New Jersey's minimum wage rose from $4.25 to $5.05 per hour. The data set contains establishment-level information on 410 fast-food restaurants in both New Jersey and Pennsylvania.

a) Produce one figure showing the distribution of starting wage rates by state before the MW increase (February 1992).

b) Produce one figure showing the distribution of starting wage rates by state after the MW increase (November 1992). Clearly indicate the new MW.

c) Does it look like the MW increase was implemented successfully?

[Hint: compare your results with figure 1 in the paper]

Q2: Descriptive statistics.

The first step is to analyze the key variables from a descriptive perspective. For this question, focus exclusively on the following four variables: FTE employment, starting wage, price of full meal, and hours open.

a) Consider the first wave only (before the MW increase). Prepare a table with mean values of the four variables by state. Perform a test of equality of means between the two states.

b) Repeat part a) for the second wave.

c) Which variables are statistically different (5% level) between the two states in wave 1? And in wave 2? Discuss whether these differences are a threat to validity in the DiD framework.

[Hint: some of the studied variables need to be created first]

[Hint: compare your results with table 2 in the paper]

Q3: DiD estimation.

a) Estimate a DiD model in the spirit of those we saw in class. For simplicity, do not include additional covariates in the model. What is the effect of the MW increase on FTE?

b) What is the estimated elasticity of employment with respect to the MW increase? Is this elasticity economically significant or not?

Q4: Discussion of the identification strategy.

Discuss, in 2-3 sentences, the validity of the identification strategy of Card & Krueger. What do you think are the threats to internal validity?