

Causality criteria:

1. Event A happens before event B
2. A can cause B
3. No other factors cause B

The conclusion of 2021 Nobel Economic Prize:

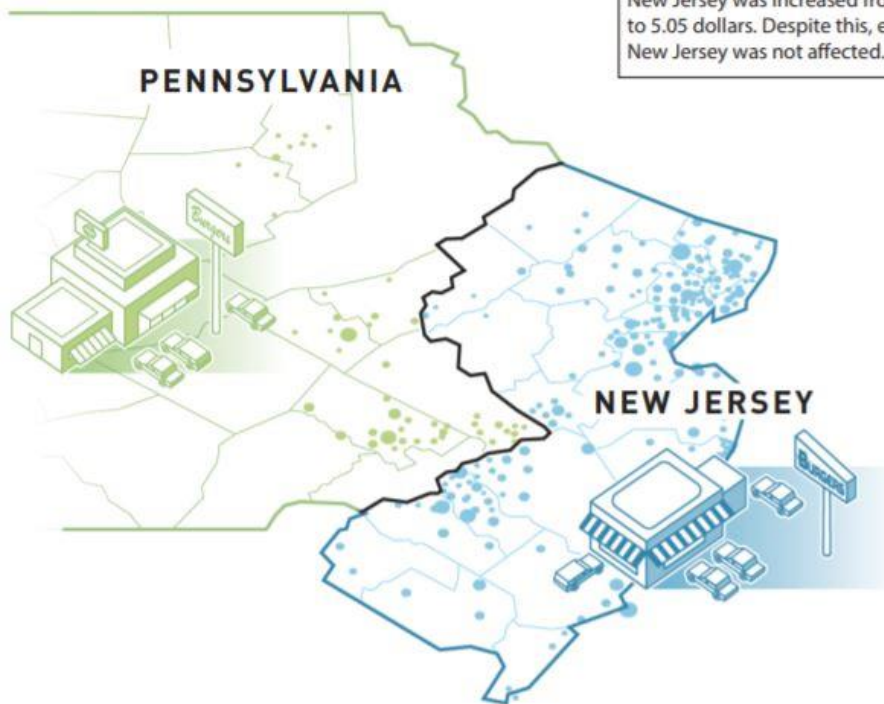
They wanted to demonstrate that increasing the minimum wage can increase employment rate. To minimize the differences, they chose data of New Jersey and Pennsylvania. New Jersey increased minimum wage in April 1992, and the employment rate increased comparing to Pennsylvania.

The effect of increasing the minimum wage

Card and Krueger used a natural experiment to study how increasing the minimum wage affects employment.

The researchers identified a treatment group (restaurants in New Jersey) and a control group (restaurants in eastern Pennsylvania) to measure the effect of increasing the minimum wage.

● CONTROL GROUP ● TREATMENT GROUP



1 April 1992: The hourly minimum wage in New Jersey was increased from 4.25 dollars to 5.05 dollars. Despite this, employment in New Jersey was not affected.

First two requirements of causality are true. But I had some doubts about step 3:

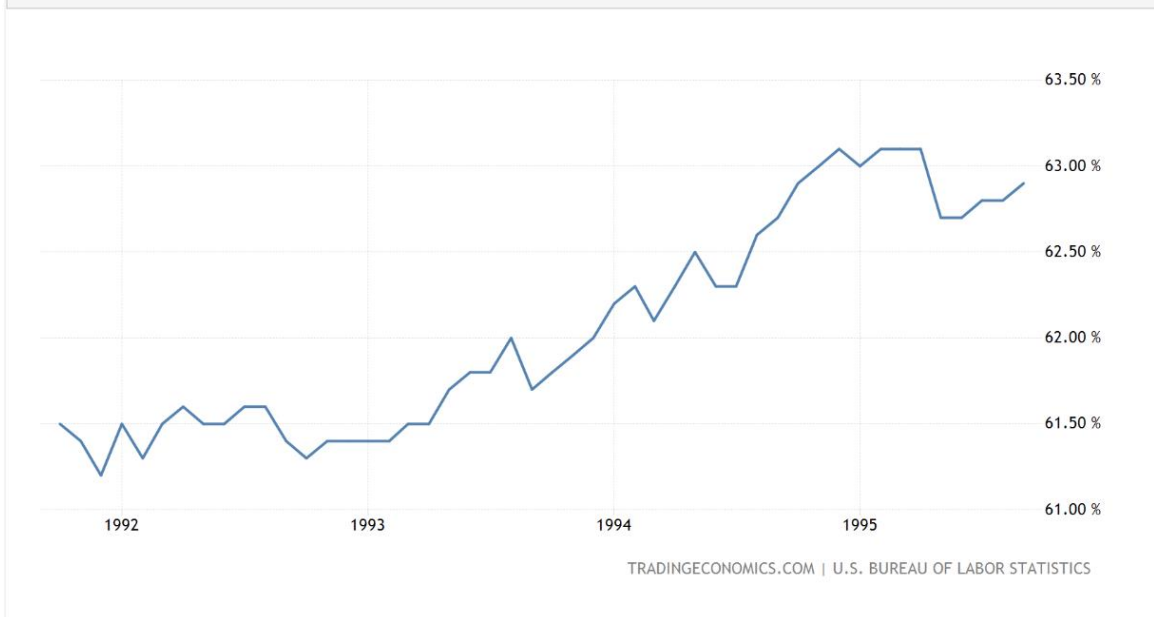
1. From April 1992 to Oct 1995, the employment in the United states increased. Instead of giving the conclusion that increasing minimum wage benefits employment rate, maybe the reason why Pennsylvania's employment rate drops in such a good period deserves more research.

United States Employment Rate

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2. New Jersey published policy to increase the minimum wage, it indicates that the government wants to improve job market, maybe they also enacted other policies. Other policies could be the real factors of the results.

It's hard to find the economic causality because too many factors lead to the result and the 3rd criterion of causality is hard to meet.

If there are 7 positive factors and 3 negative factors, it's easy to find 2 positive factor and 1 negative factor and make logical analysis.

But it's difficult to find all 7 positive factors and 3 negative factors and make the prediction.

Machine learning find the regularity.

-Albert Wang