

ECON 280 Part2:
Replication of Cheng and Hoekstra (2013)

Jie Liao

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1 Summary

Cheng and Hoekstra (2013) raised the question of whether self-defense laws, such as the “Castle Doctrine Law” in the United States, deter crime or actually escalate it. The authors collected state-level data ranging from 2000 to 2010 and used it to examine whether the Castle Doctrine Law reduces crimes such as burglary, robbery, and aggravated assault, while potentially leading to an increase in homicides, including murder and nonnegligent manslaughter. The main contribution of this paper is the application of the difference-in-differences method to identify and estimate the causal effects of these laws on crime outcomes. The authors found that the additional self-defense provisions do not deter crime but instead increase homicides by about 8 percent, providing significant policy implications for legislation permitting the use of lethal force.

2 Empirical Methodology

The main empirical methodology for identification is the difference-in-differences approach. Specifically, Cheng and Hoekstra (2013) rely on within-state variation in the timing and duration of Castle Doctrine Law adoption—measured as the fraction of each calendar year in which the law is in effect—to compare outcomes before and after adoption. By comparing within-state changes in states that adopted self-defense laws with those in states that did not, over the same time periods, the authors identify the causal effects of the law on crime outcomes. The critical identification assumption, commonly known as the parallel trends assumption in the panel data literature, assumes that in the absence of the law, the potential path of crime outcomes in adopting states would have followed similar trends to those in non-adopting states.

3 Data

Cheng and Hoekstra (2013) exploit a panel dataset covering the period from 2000 to 2010, which includes basic demographic information such as region and population composition, crime outcomes, social welfare situations, and four measures assessing self-defense laws across 51 states. The dataset also contains additional covariates, including both state-invariant and time-invariant variables. One of the main variables of interest is CDL, a continuous

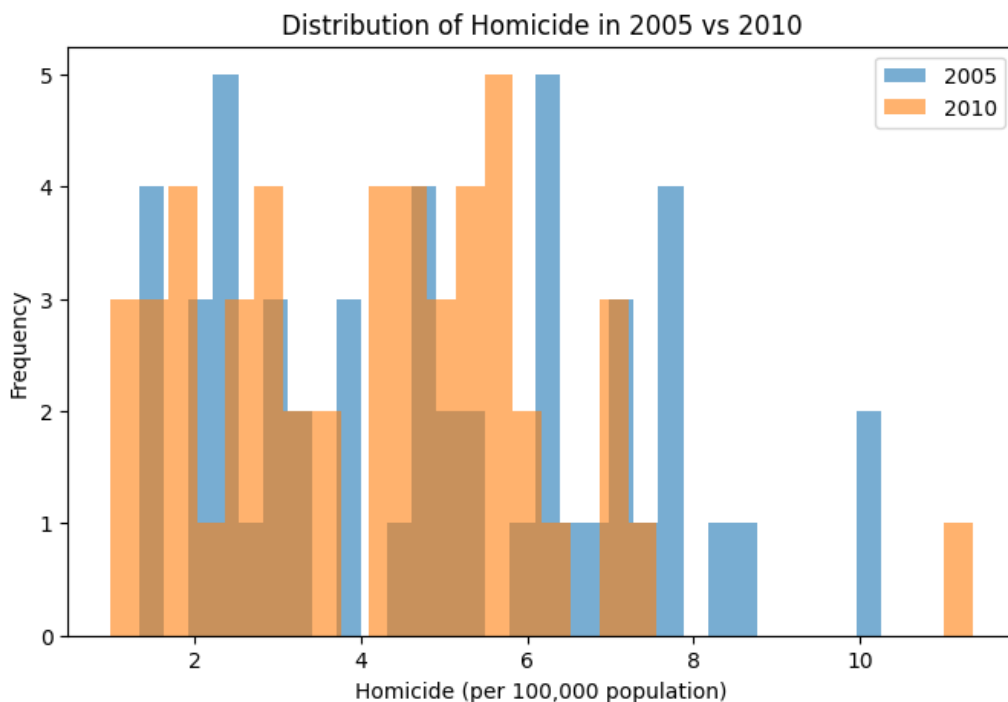


Figure 1: Homicide per 100,000 population across states in 2005 and 2010

measure ranging from 0 to 1, representing the fraction of each calendar year during which the Castle Doctrine Law is in effect. The primary crime outcome variables—homicide, burglary, robbery, and aggravated assault—are continuous variables measured per 100,000 population. Figure 1 plotted the histogram for homicide per 100,000 population in 2005 and 2010 across states.

References

Cheng, C. and Hoekstra, M. (2013). Does strengthening self-defense law deter crime or escalate violence?: Evidence from expansions to castle doctrine. *Journal of Human Resources*, 48(3):821–854.