

Public Health Implications of a Sweetened Beverage Tax in Philadelphia

Background:

- Jan. 2017: Philadelphia implements a 1.5¢/oz tax on sweetened beverage
- Applies to all artificially sweetened beverages, including diet beverages
- Goal: improve population health by reducing consumption of sugary beverages, and raise revenue to fund pre-k
- Pigouvian tax
- Locations typically see a 0–3% reduction in obesity after implementing a soft drink tax
- Two years after implementation: 68% price pass through, 50% decline in sales in Philadelphia, while sales in border areas increased 16%. (Petimar, Gibson et. al 2022)
- This study aims to fill a gap in literature by looking at the public health impacts

Research Topic:

What was the effect of Philadelphia's excise tax on sweetened beverages on diabetes and obesity rates?

Data:

- The City of Philadelphia is coterminous with Philadelphia County
- CDC County Level Diabetes Surveillance Data from 2004–2021
- County Health Indicators data for synthetic control
- Created basket of major urban eastern United States Counties as a control (primarily Greater NY, Baltimore, Boston)

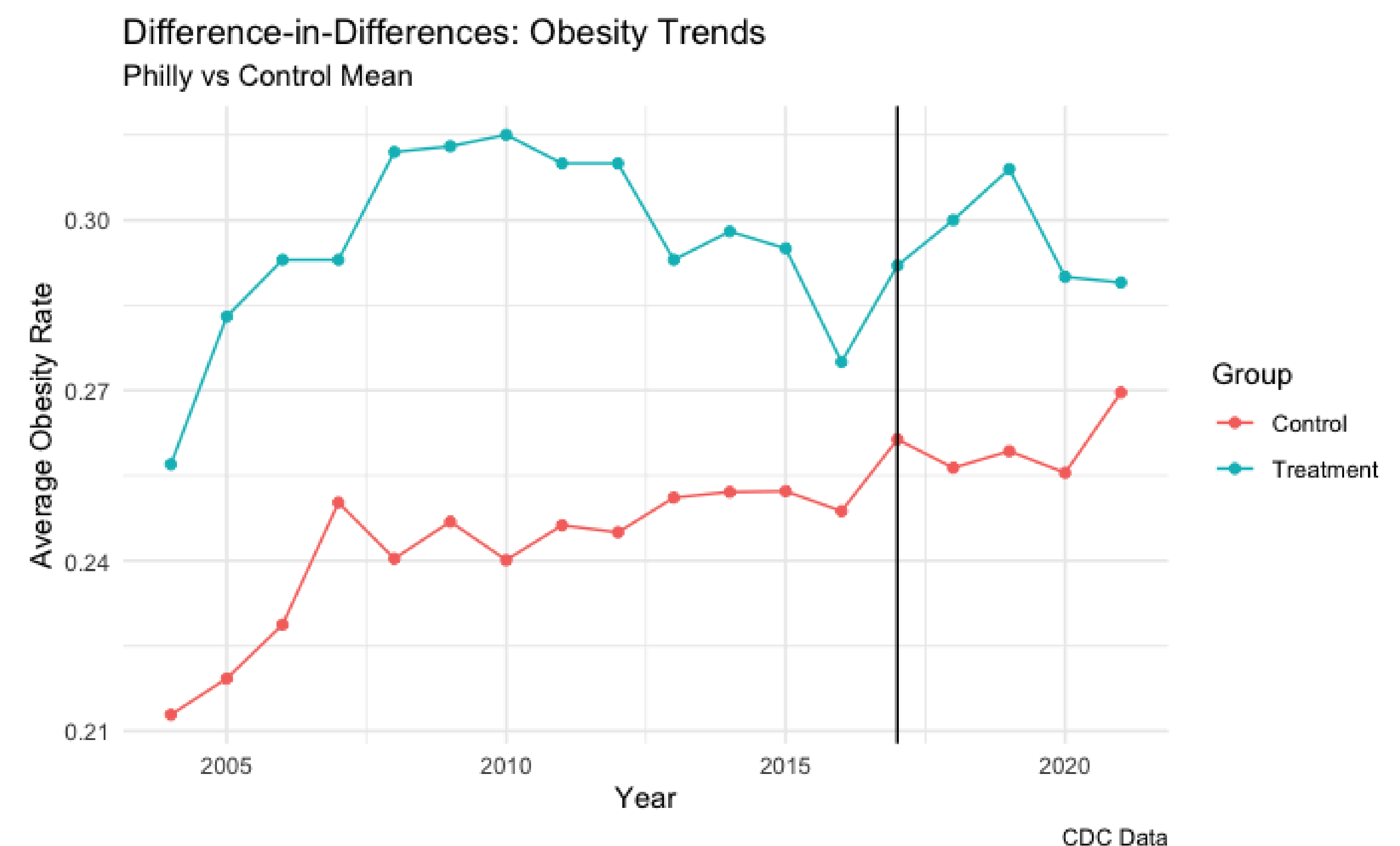
Methods:

- Difference in Differences
- Synthetic Control
 - Controlled using age, median income, population health indicator

DiD:

- Robust 2 p.p. decline in Obesity in Chicago relative to other cities
 - Using Location and Time Fixed Effects
 - Parallel pretrends may not hold
- Diabetes not significant

DiD:

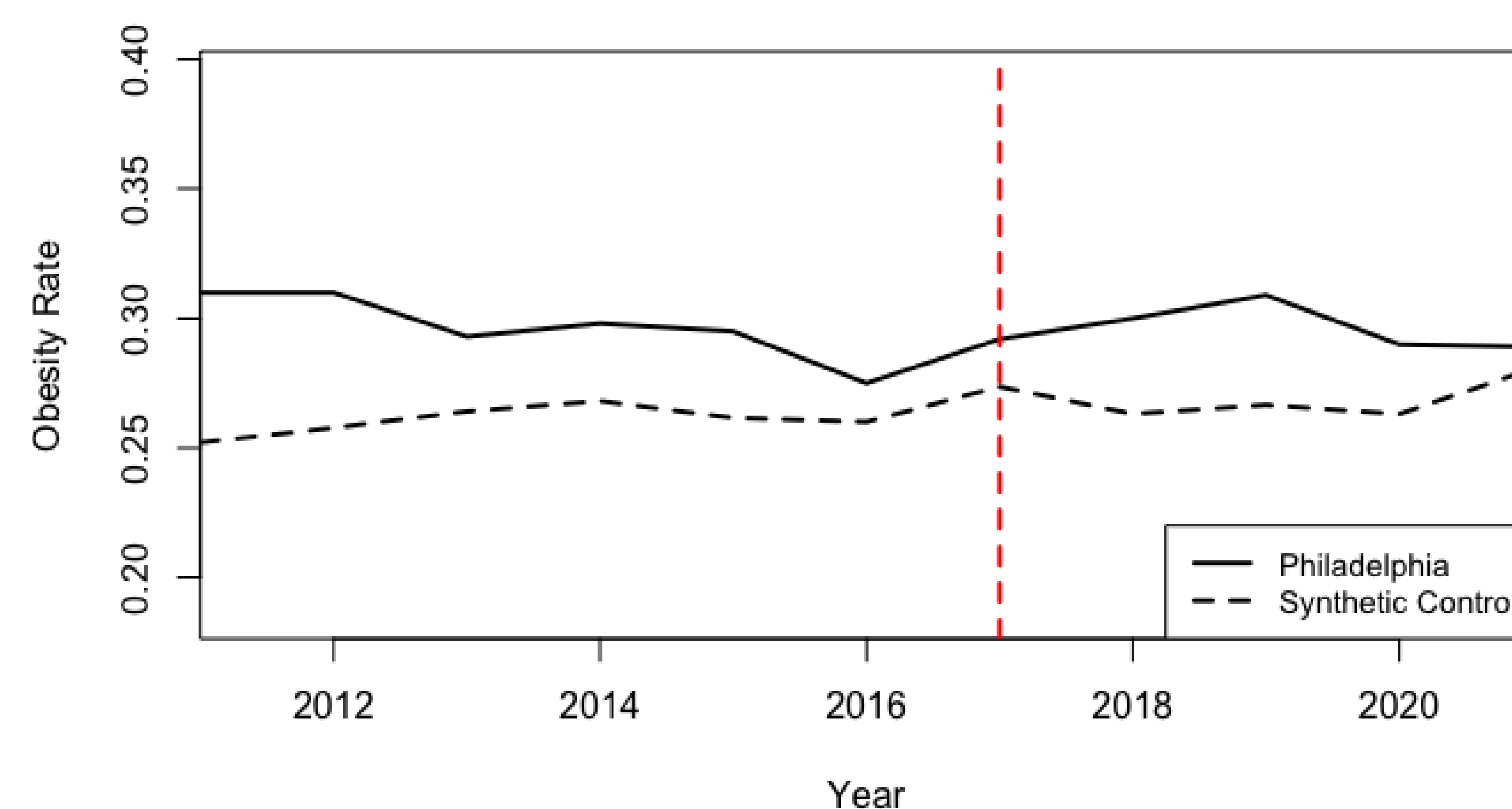


Discussion:

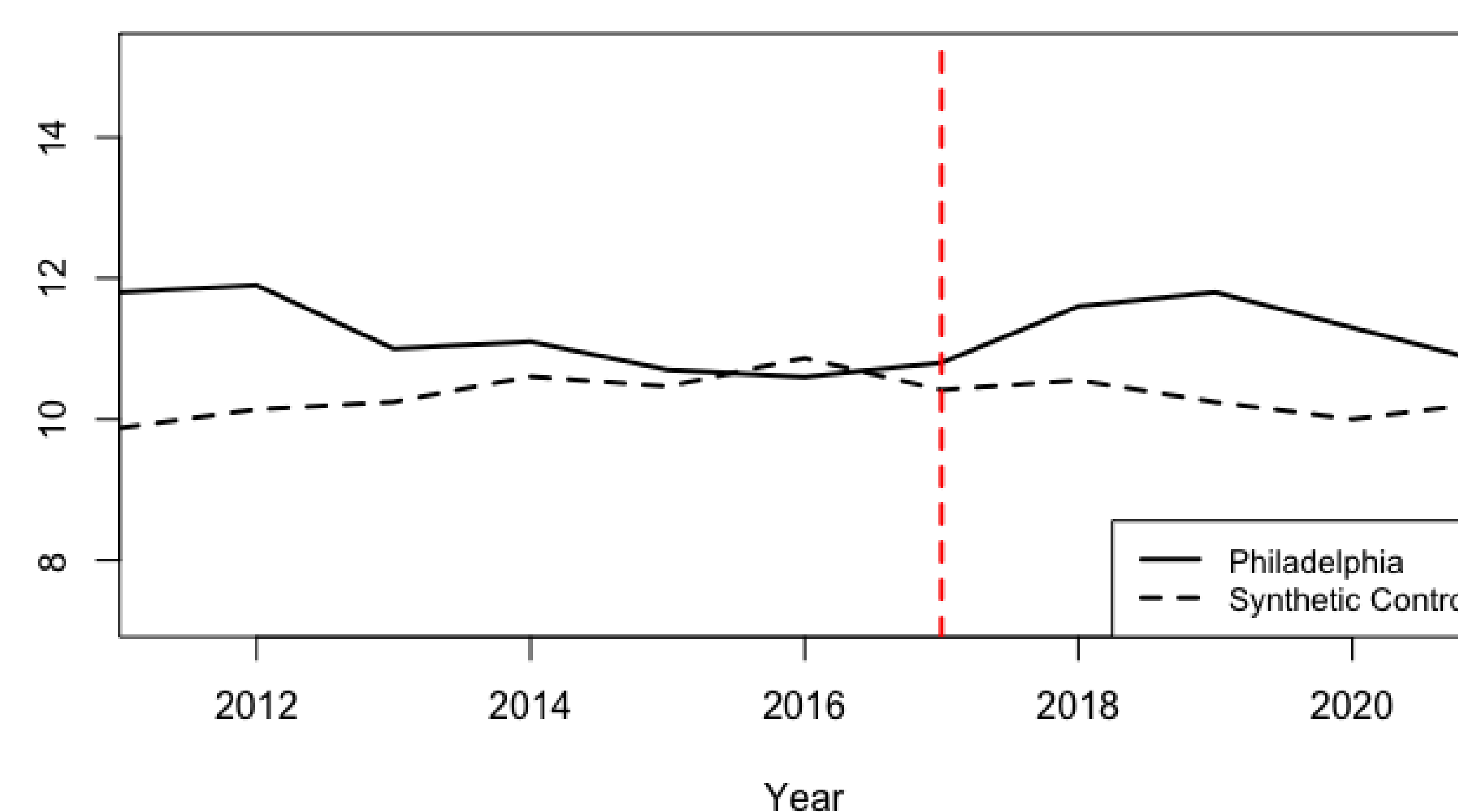
- No measurable improvement in population health in Philadelphia relative to controls
 - Health effects might be present in a demographic subset
 - Limitations due to data (Adult, high level data)
 - Health effects may be lagged
- A 1.5¢ sugar tax does not present a silver bullet for preventing obesity and diabetes
 - Health outcomes are complicated and influenced by many factors

Synthetic Control:

Obesity in Philadelphia vs Control Cities



Diabetes in Philadelphia vs Control Cities



References:

- CDC Diabetes Surveillance Tracker
- CDC Obesity Data
- BRFSS Data
- Petimar J, Gibson LA, Yan J, Bleich SN, Mitra N, Trego ML, Lawman HG, Roberto CA. Sustained Impact of the Philadelphia Beverage Tax on Beverage Prices and Sales Over 2 Years. Am J Prev Med. 2022 Jun;62(6):921–929.