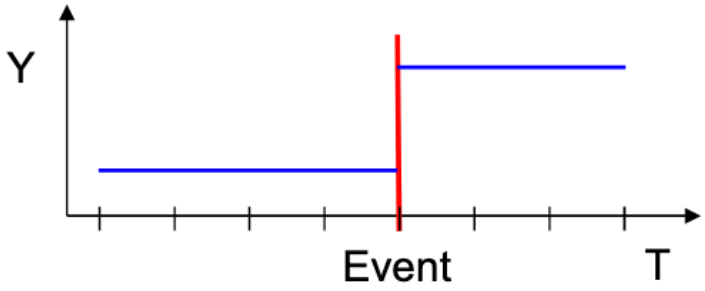
How to Model a Causal Effect?

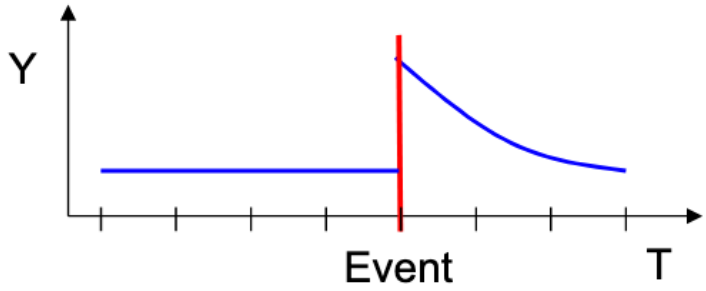
- With panel data we can investigate the time path of a causal effect
  - Termed “impact function” (IF) by Andreß et al. (2013)
  - Different impact functions can be modeled



Step impact function

Immediate and permanent impact

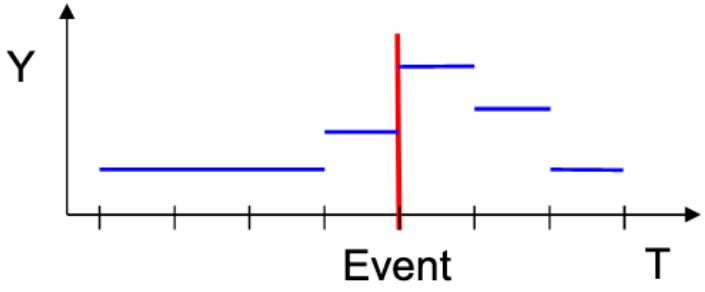
- event dummy (0,0,0,0,**1**,**1**,**1**)



Continuous impact function

Immediate, but transitory impact

- event dummy (0,0,0,0,**1**,**1**,**1**)
- linear event time (0,0,0,0,**0**,**1**,**2**)
- quadratic event time (0,0,0,0,**0**,**1**,**4**)



Dummy impact function

Arbitrary impact (including anticipation effect)

- dummy event time
  - -1 dummy (0,0,0,**1**,0,0,0)
  - 0 dummy (0,0,0,0,**1**,0,0)
  - 1 dummy (0,0,0,0,0,**1**,0)
  - 2 dummy (0,0,0,0,0,0,**1**)