Difference - in - differences (DID)

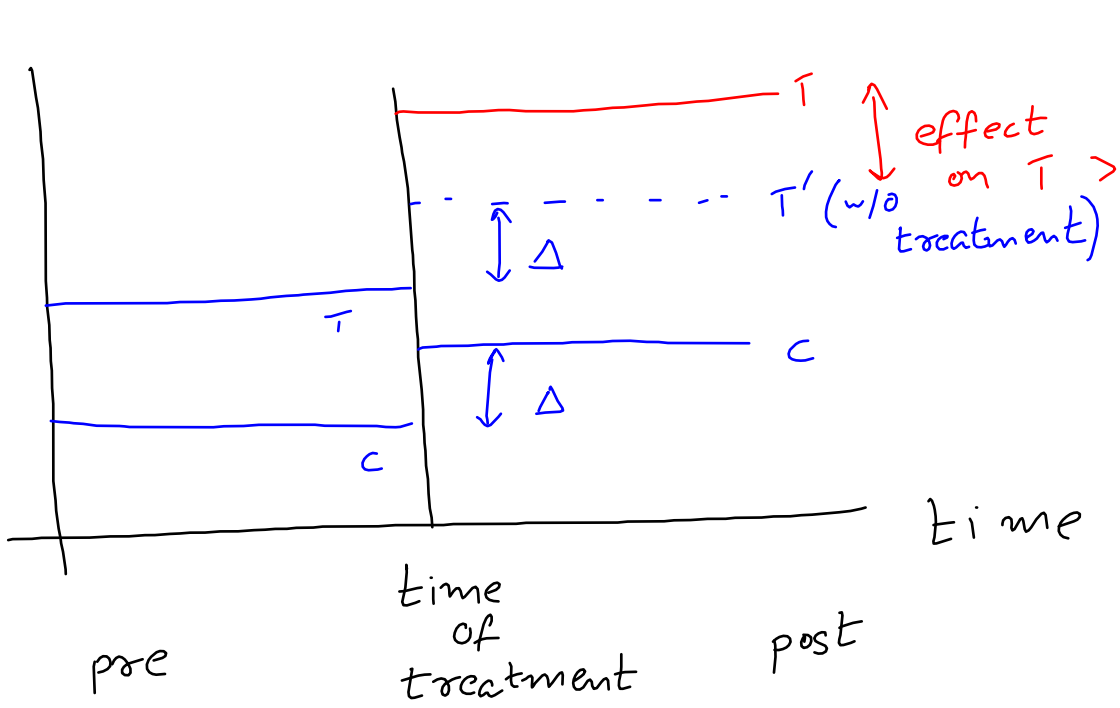
2 groups → treatment (T) and control (C)

2 pds. → pre- treatment and post- treatment

Y → profits

T : firms w/ emp. training

C : " w/o



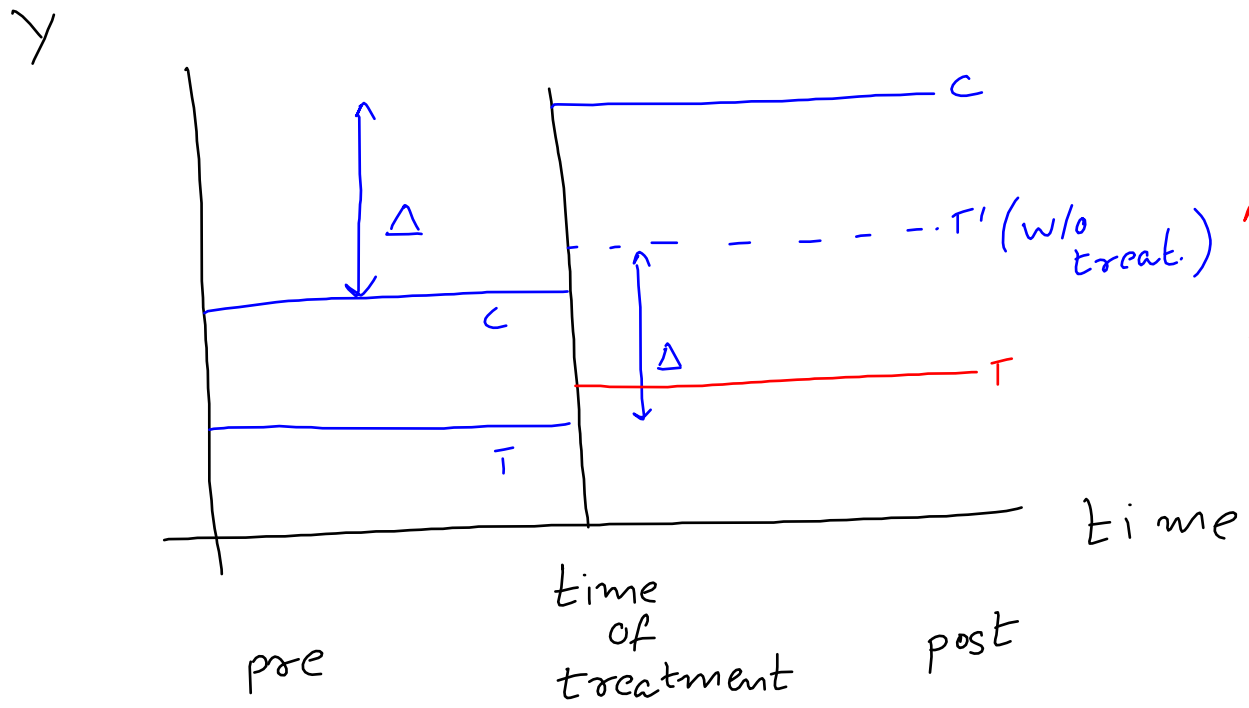
DID : diff. in T

- diff. in C

Difference - in - differences (DID)

2 groups → treatment (T) and control (C)

2 pds. → pre- treatment and post- treatment



e.g.

Y : property value

T : houses close to inc.

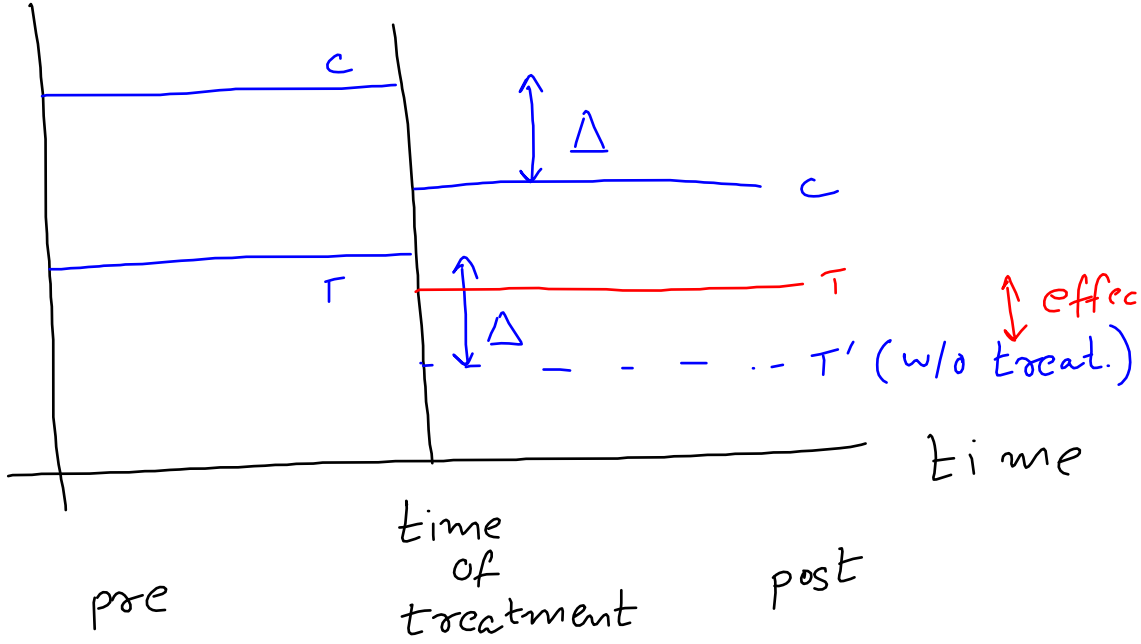
C : houses away

DID : diff. in T - diff. in C

Difference - in - differences (DID)

2 groups → treatment (T) and control (C)

2 pds. → pre- treatment and post- treatment



Y: employment (fast food)

T: min. wage ↑ (N_i)

C: " " same (PA)

DID: diff. in T − diff. in C

DID estimates often obtained from linear regression models:

$$y = \beta_0 + \delta_0 \, post + \beta_1 \, treat + \delta_1 \, treat \times post + u$$

$\delta_0 \, post$: dummy post = 1 for post treatment pd. & 0 o.w.

$\beta_1 \, treat$: dummy treat = 1 for T & 0 o.w.

	Pre	Post	Post − Pre
C	β_0	$\beta_0 + \delta_0$	δ_0
T	$\beta_0 + \beta_1$	$\beta_0 + \beta_1 + \delta_0 + \delta_1$	$\delta_0 + \delta_1$
T − C	β_1	$\beta_1 + \delta_1$	δ_1