Day 14

Saturday, January 6, 2024 8:34 AM

$$y_i = b_0 + b_1 h_i + b_2 Sex_i + u_i \quad (Sex: M = 1, F = 0)$$

$$E(y|h+1, S=1) - E(y|h, S=1) = b_1$$

$$E(y|h+1, S=0) - E(y|h, S=0) = b_1$$

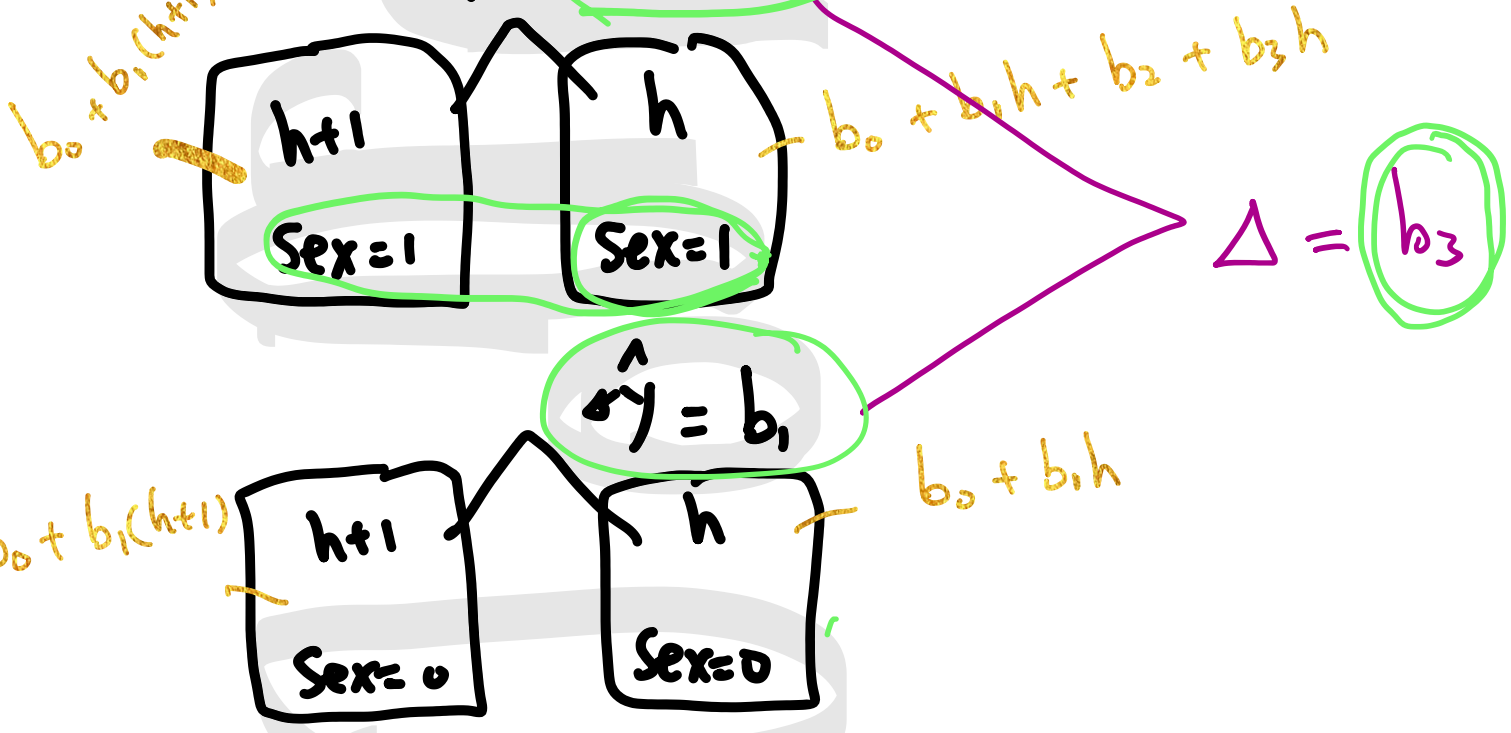
$$E(y|Sex=1, h_{11}) - E(y|Sex=0, h_{11}) = b_2$$

$$y_i = b_0 + b_1 h_i + b_2 Sex_i + b_3 h_i * sex_i + u_i$$

interaction term

diff-in-diff effect

$\hat{\Delta y} = b_1 + b_3$



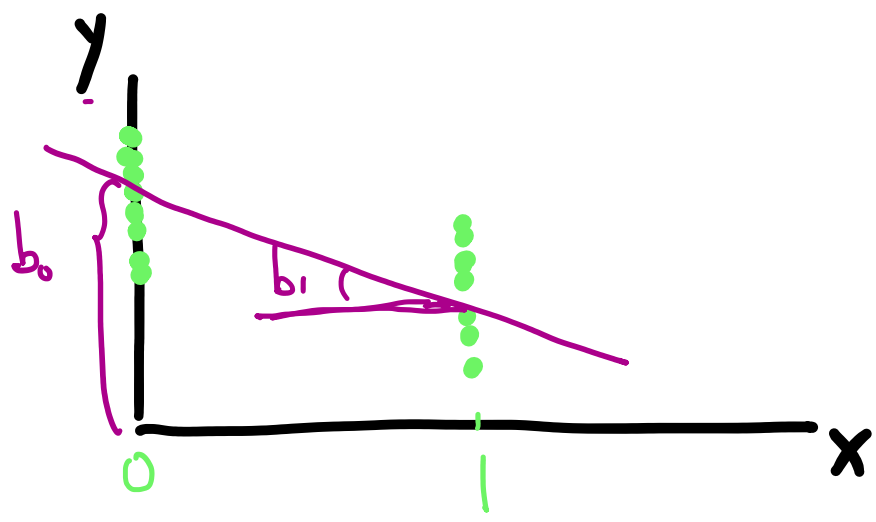
$$y_i = b_0 + b_1 Smoker_i + u_i$$

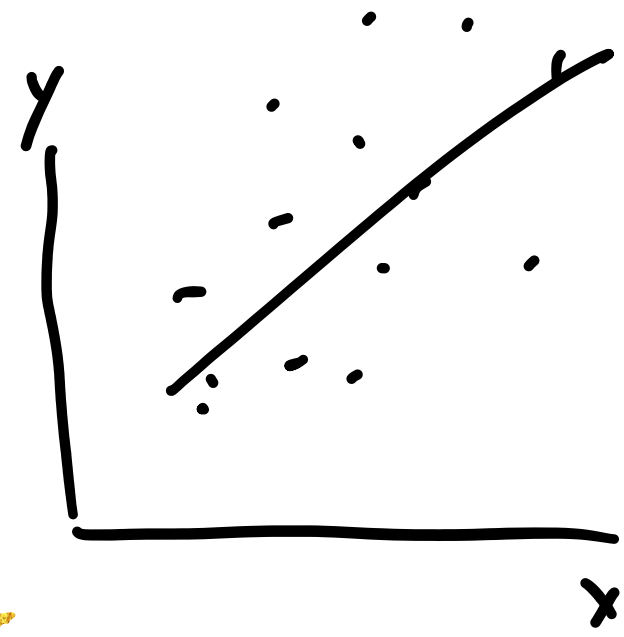
b_0: Δ, b_1: Δ

bw

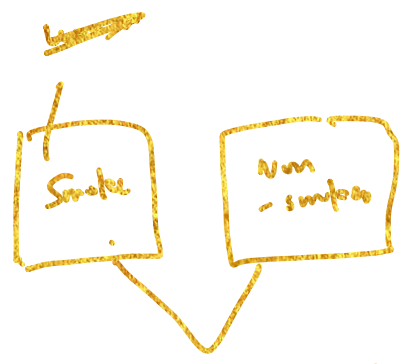
Smoker: 1 = Smoke, 0 = No smoke

y_i	x_i
y_1	0
y_2	1
⋮	0
⋮	1
⋮	0
⋮	0
⋮	1





$$y_i = b_0 + b_1 X + u_i$$



$\Delta y = -252$

$$E(y|X=1) - E(y|X=0)$$

$$= b_1 + E(u_i|X=1) - E(u_i|X=0)$$

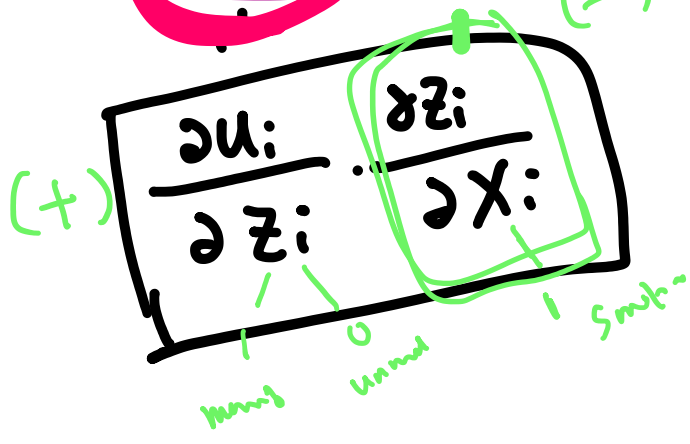
$b_1 = -173$

-252 grams

as if

$$-252 = \frac{\partial y_i}{\partial x_i} = b_1 + \frac{\partial u_i}{\partial x_i}$$

$b_1 = -173$, $\frac{\partial u_i}{\partial x_i} = 0$



$-252 = -173 - (\quad)$