

Section Week 9

The datafile Birthweight_Smoking is from the 1989 linked National Natality-Mortality Detail files, which contains a census of infant births and deaths. The data in birthweight_smoking.wf1 are for births in Pennsylvania in 1989. These data were provided by Professor Douglas Almond, Kenneth Chay, and David Lee and are a subset of the data used in their paper “The Costs of Low Birth Weight”, Quarterly Journal of Economics, August 2005, 120(3): 1031-1083. This exercise was adapted from Empirical Exercise 6.1 in Stock and Watson.

The file contains 3,000 observations on the variables described below

	Variable	Description
Birthweight and Smoking		
1	birthweight	birth weight of infant (in grams)
2	smoker	indicator equal to one if the mother smoked during pregnancy and zero, otherwise.
Mothers Attributes		
3	age	age
4	educ	years of educational attainment (more than 16 years coded as 17)
5	unmarried	indicator =1 if mother is unmarried
This Pregnancy		
6	alcohol	indicator=1 if mother drank alcohol during pregnancy
7	drinks	number of drinks per week
8	tripre1	indicator=1 if 1st prenatal care visit in 1st trimester
9	tripre2	indicator=1 if 1st prenatal care visit in 2nd trimester
10	tripre3	indicator=1 if 1st prenatal care visit in 2nd trimester
11	tripre0	indicator=1 if no prenatal visits
12	nprevist	total number of prenatal visits

1. Regress Birthweight on a constant and educ. Interpret the estimated effect of a year of education on birth weight.
2. Does the coefficient of educ measure the causal effect of a year of education on birth weight?
3. Does the omission of the smoking variable lead to the coefficient on education to be positively or negatively biased? Assume education and smoking are negatively correlated and smoking and birth weight are negatively correlated.
4. Now, regress Birthweight on a constant, educ, and smoker. Interpret the estimated effect of a year of education on birth weight.
5. You ask them if the coefficient of the treatment measures the causal effect of the treatment on the outcome.