

Homework Assignment 4

Deadline: April 6, midnight

Source: Stock and Watson, 4th Edition, Exercise 6.1

Data description: You can find the data description [here](#).

Questions

- Regress (i) `birthweight` on `smoker` and (ii) `birthweight` on `smoker`, `alcohol`, and `nprevist`. Compare the estimated coefficient on `smoker` in (i) and (ii). Does the regression suffer from omitted variable bias? Briefly discuss the potential endogeneity program.
- Predict the birthweight for a child whose mother smoked during the pregnancy, did not drink alcohol, and had 8 prenatal care visits.
- Compare the R-squared and adjusted R-squared from (ii), why are they so similar?

Header for the R script

Start a new R script, copy/paste the header below and save it to `Dropbox\EC282\Assignment4` or a similar path that you created for this homework assignment. Run the R script and make sure that you have the data `df1` in your environment. Conduct the analysis below the header.

```
#####
# list the packages we need and loads them, installs them automatically if we don't have them
# add any package that you need to the list
need <- c('glue', 'dplyr', 'readxl', 'ggplot2', 'tidyr', 'AER', 'scales', 'mvtnorm',
          'stargazer', 'httr', 'repmis')

have <- need %in% rownames(installed.packages())
if(any(!have)) install.packages(need[!have])
invisible(lapply(need, library, character.only=T))

# Save the R script to the assignment 1 folder before this
# To set up the working directory
getwd()
setwd(getwd()) #change getwd() here is you need to set a different working directory

#this clears the workspace
rm(list = ls())
#this sets the random number generator seed to my birthday for replication

options(scipen=999)
#####
#get the data url
df1.url <- 'https://www.dropbox.com/s/z8r6hc0r4ytt4f8/birthweight_smoking.xlsx?dl=1'
#download the data
GET(df1.url, write_disk(tdf <- tempfile(fileext = ".xlsx")))
#check if it worked
df1 <- read_excel(tdf) %>%
  mutate(birthweight = birthweight + rnorm(length(birthweight)) * 50)
```

```
head(df1)
```

```
#CONDUCT THE ANALYSIS BELOW
```