GDP growth and investment

## Regression preparetion

1. Firstly, We generate the variables that we need for running Cobb-Douglas production function.

# 1 read CobbDouglas.dta

cobbdata <- read.dta13("/Users/Takuma/Google Drive/GitHub/GDP-Growth-and-Investment/CobbDouglas.dta")

# 2 generate explanatory variables

class(cobbdata)

## [1] "data.frame"

head(cobbdata)

## state st\_abb yr hwy water util pc gsp emp unemp  
## 1 ALABAMA AL 1970 7325.80 1655.68 6051.20 35793.80 28418 1010.5 4.7  
## 2 ALABAMA AL 1971 7525.94 1721.02 6254.98 37299.91 29375 1021.9 5.2  
## 3 ALABAMA AL 1972 7765.42 1764.75 6442.23 38670.30 31303 1072.3 4.7  
## 4 ALABAMA AL 1973 7907.66 1742.41 6756.19 40084.01 33430 1135.5 3.9  
## 5 ALABAMA AL 1974 8025.52 1734.85 7002.29 42057.31 33749 1169.8 5.5  
## 6 ALABAMA AL 1975 8158.23 1752.27 7405.76 43971.71 33604 1155.4 7.7

logY <- log(cobbdata["gsp"])  
logK1 <- log(cobbdata["hwy"] + cobbdata["water"] + cobbdata["util"])  
logK2 <- log(cobbdata["pc"])  
logL <- log(cobbdata["emp"])  
unemp <- cobbdata["unemp"]

## Estimating pooled OLS