

Stat 359 - Assignment 5

1. Beef consumption (in pounds per capita) in the United States between 1922 and 1941 are given in the data set `beef.txt`. Other variables of interest are beef price (in cents per pound divided by CPI), income (disposable income per capita in dollars divided by the CPI), and pork consumption (pounds per capita). [CPI= Consumer price index]. Find a model that best describes beef consumption in the United States. Complete a full analysis of the data (initial plots, model selection, residual plots etc.). Discuss your results.
2. It is well known that the concentrations of cholesterol in blood serum increases with age, but it is less clear whether cholesterol level is also associated with body weight. The data set `chol.txt` contains data for 30 women and has measures of serum cholesterol (CHOL) in millimoles per liter, age (years) and body mass index (BMI). Use multiple regression to test whether serum cholesterol is associated with body mass index when age is included in the model. Consider carefully how both variables should be included, include initial plots, residual plots etc. Discuss your results carefully.