Chapter 2. Econometrics

1. (a) Graph:

(b) The econometric model is: \( L_i = \alpha_0 + \alpha_1 w_i + \epsilon_i, \ i = 1, \ldots, 6. \)
(c) \( \alpha_0 \) is the intercept of the regression line. This is the predicted labor supply of an individual with a wage of zero dollars per hour. \( \alpha_1 \) is the slope of the regression line. This is the predicted change in weekly labor supply (measured in hours) from being paid an additional hour. Given the general upward sloping nature of the data in the graph, \( \alpha_1 \) should be positive (which it is, as shown by the regression line).

2. (a) Wages and age are positively correlated, as individuals with a higher wage also tend to be older. Thus, the two variables tend to move in the same direction.
(b) The expanded data set makes it clear that individuals earning higher wages and that are older tend to work more. Since wages and age are positively correlated, failure to control for age in the univariate model will cause one to overestimate the effect of a higher wage on an individual’s labor supply. Thus, one would expect \( \alpha_1 > \alpha_0 \).