FINM3123 Introduction to Econometrics

Chapter 03

Class exercises

Multiple Choice Questions

1. In the equation, $y=\beta_0+\beta_1 x_1+\beta_2 x_2+u$, β_2 is a(n) _____.
   a. independent variable
   b. dependent variable
   c. slope parameter
   d. intercept parameter

2. If an independent variable in a multiple linear regression model is an exact linear combination of other independent variables, the model suffers from the problem of _____.
   a. perfect collinearity
   b. homoskedasticity
   c. heteroskedasticty
   d. omitted variable bias

3. Exclusion of a relevant variable from a multiple linear regression model leads to the problem of _____.
   a. misspecification of the model
   b. multicollinearity
   c. perfect collinearity
   d. homoskedasticity

4. Suppose the variable x_2 has been omitted from the following regression equation, $y=\beta_0+\beta_1 x_1+\beta_2 x_2+u$. $\widetilde{\beta}_1$ is the estimator obtained when x_2 is omitted from the equation. The bias in $\widetilde{\beta}_1$ is positive if _____.
   a. $\beta_2 >0$ and x_1 and x_2 are positively correlated
   b. $\beta_2 <0$ and x_1 and x_2 are positively correlated
   c. $\beta_2 >0$ and x_1 and x_2 are negatively correlated
   d. $\beta_2 = 0$ and x_1 and x_2 are negatively correlated

5. Find the degrees of freedom in a regression model that has 10 observations and 7

independent variables.

a. 17

b. 2

c. 3

d. 4

True or False

6. The term “linear” in a multiple linear regression model means that the equation is linear in parameters.
7. A larger error variance makes it difficult to estimate the partial effect of any of the independent variables on the dependent variable.