

Econ 6818: Econometric Methods and Applications

Quiz 3

Quiz 3 is a take-home quiz.

Assume

$$y_i = \mathbf{a} + \mathbf{b}_i + \mathbf{e}_i \quad i = 1, 2, \dots, 10$$

where $\mathbf{e}_i \sim N(0, \mathbf{s}_e^2)$.

Assume a specific value for \mathbf{s}_e^2 . Assume specific values for x_i , $i = 1, 2, \dots, 10$. Create random sample with 10 observations on (y_i, x_i) . Report your sample and summary statistics for your sample. Use Mathematica to find the values of \mathbf{a} and \mathbf{b} ($\hat{\mathbf{a}}$ and $\hat{\mathbf{b}}$) that minimizes

$$\sum_{i=1}^{10} (y_i - (\mathbf{a} + \mathbf{b}x_i))^2.$$

Provide your program and output. Now do the same with EVIEW.