Econ 6818: Econometric Methods and Applications

Quiz 3

Quiz 3 is a take-home quiz.

Assume

\[ y_i = \alpha + \beta x_i + \varepsilon_i \quad i = 1,2,\ldots,10 \]

where \( \varepsilon_i \sim N(0, \sigma^2_i) \).

Assume a specific value for \( \sigma^2_i \). Assume specific values for \( x_i \), \( i = 1,2,\ldots,10 \). 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 \( \alpha \) and \( \beta \) (\( \hat{\alpha} \) and \( \hat{\beta} \)) that minimizes

\[
\sum_{i=1}^{10} (y_i - (\alpha + \beta x_i))^2.
\]

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