

Assignment 9 (Truncated Regression: Matlab)

Consider the following DGP:

$$y_i^* = \beta x_i + u_i, \quad u_i \sim U[-1, 1]$$

Set $\beta = 1$, and consider $n = 200, 500$. Note that y_i^* is not observable.

$$y_i = y_i^* \text{ if } y_i^* > 0, \text{ otherwise } y_i \text{ is not observable.}$$

Regression

$$y_i = a + \beta x_i + e_i$$

Q1. Set simulation size = 200. Obtain the mean of $\hat{\beta}_{\text{mle}}$ and its variance.
(Monte Carlo Studies)

Q2. Set simulation size = 200. Obtain the mean of Powell's estimator and its variance. Compare the Powell's estimator with MLE.