Classwork 11: Dynamic Models (Analytical)

EC421

2022-11-08

1) Biased but Consistent

Show why a model with a lagged dependent variable is biased but consistent when u_t is not autocorrelated.

2) Biased and Inconsistent

Show why a model with a lagged dependent variable is biased and inconsistent when u_t **is** autocorrelated.

3) Long-run Effects

Calculate the long-run (total) effect of a one-time, one unit jump in x_t on y for each of these models.

3a) $y_t = .8 + 1.2x_t + .4z_t + u_t$

3b) $y_t = .8 + .6x_t + .2z_t + .2x_{t-1} + u_t$

3c) $y_t = .8 + .6x_t + 1.1z_t + .5y_{t-1} + u_t$