

Eco 461/561

Assignment 10

1. Consider an MA(1) process: $y_t = \epsilon_t + 0.95\epsilon_{t-1}$ where $\epsilon_t \stackrel{iid}{\sim} N(0, 1)$. Calculate the population autocorrelations and partial autocorrelations of this process at the first 15 displacements. Plot your results in a graph (with population autocorrelations in the top panel and partial autocorrelations in the bottom panel).
2. Simulate a series from the above process with $T = 1500$ realizations. Plot the series in a graph. In a separate graph plot the sample autocorrelations and partial autocorrelations at the first 15 displacements of your generated series (with sample autocorrelations in the top panel and sample partial autocorrelations in the bottom panel). If T goes to infinity, will there still be any differences between the sample autocorrelations and partial autocorrelations you plot in question 2 and their population counterparts shown in question 1? Why or why not?