ECONOMETRICS II, FALL 2016

Homework 2. Due Wednesday September 14.

1. Using the program I posted, simulate and estimate MA models.

- Run the "Moving Average Maximum Likelihood" program, that I posted, 10 times. What is the mean estimated MA-parameter and what is the empirical standard deviation. Compare to the estimated standard deviation.
- Try and set the initial value for the MA value to 2.0. Run the program five times and describe what happens to the estimates. (You can also try other "crazy" values, the more you play around with the computer exercises, the better "feel" for the material you will acquire.)
- Change the model to an MA(2) process and estimate the parameters (try a few times if it won't converge).

Note: The purpose of this exercise is partly to highlight that maximum likelihood in principle maximizes the likelihood of a vector of observations and not a sum of marginal likelihoods, even if that is what you most often see. Also, knowing about the "optmum" procedure (and similar procedures in other languages) is very useful. Optmum can maximize any concave differentiable function, which you may want to uses also in settings that have nothing to with statistics.

4. Davidson and MacKinnon 10.9. (This shows how the Hessian looks in the linear case. I have always remembered formulas by thinking of how the linear case looks.)