Advanced Programming in Quantitative Economics

Introduction, structure, and advanced programming techniques

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Tutorial Day 4 - Morning

10.30P Estimating a duration model
- ▸ Setting up a class
- ▸ Moving the likelihood

12.00 Lunch

14.15 [Seminar Prof. David Hendry, University of Oxford]

16.00L Added capabilities
- ▸ Graphics packages
- ▸ SsfPack/Arfima and others

17.00 End

Duration: Working in a class

Target: Estimate your duration model using a class
Possible starting point: lists/class/ols.ox,
lists/class/olsclass.ox
Possible steps:

1. Adapt your data generating program, such that it saves a
   .in7 file. Check manual, one option is

   ```
   savemat("data/durgen.in7", vY~mX, {"Y", "X1", "X2"});
   ```

2. Prepare include/durclass.ox, with an almost empty class
   deriving from Modelbase

3. Prepare durmain.ox, including
   #include <include/durclass.ox>, and declare a new
   package. Do you get the correct package name on the output?

4. Read the data into the class, select X and Y variables (see
   lists/class/ols.ox)

Duration: Class II

5. Check if you can print the data from the class, in an almost empty DoEstimation(vP)

6. Maybe add the InitPar member, for finding initial parameters. Place them using SetPar(vP) (which sets the parameter count as well)

7. Prepare a GetParNames(), which should return an array of strings with the parameter names

8. Add a member AvgLnLiklDur(...), see if you can call it once

9. Use MaxBFGS from DoEstimation, put the results in place

10. Add the Covar member, computing the covariance matrix of the parameters

11. Remember setting the loglikelihood value m_dLogLik in place