The compressed folder **KWREV98_1.zip** contains programs that solve linear systems of difference equations. They have been provided by Robert King. The reference for the solution method implemented is

> Robert G. King and Mark W. Watson (2002) 'System Reduction and Solution Algorithms for Singular Linear Difference Systems under Rational Expectations' *Computational Economics* Volume 20 , Issue 1-2 (October 2002) : 57 - 86

The programs provided here reproduce some of the examples in

> Khan, Aubhik, Robert G. King and Alexander L. Wolman (2003) 'Optimal Monetary Policy' *The Review of Economic Studies* (**70**), October: 825-860.

To use these programs, uncompress kkwmatlab.zip. The folders calibrations and KWREV98_1 must be subdirectories of KKWmatlab and KWREV98_1 must be added to the MATLAB path.

To solve the optimal policy problem, run DynamicNew.m and enter sept16short or sept16long for the input file. The same input files may be used to solve competitive equilibria using dynamiceCE.m.

Additional information for solving new steady states is contained below.

Solving a Steady State (Steadydriver.m)

Steadydriver.m solves steady states based on parameter files stored in the \Calibrations subdirectory. For example, run steadydriver and enter august16 for an input file. The result will be saved in the \Calibrations directory.

It is important to first run august16 as it creates a file titled guess.mat which other parameter files use as an initial condition. Now try september16.m, this is the model calibration. It contains both the long sample and the short sample. Just remark out the short sample to see the long one solved as a steady state.

Solving the Dynamical System (DynamicNew.m)

To solve the dynamical system use the solution file obtained by the steady state solution program discussed above. For example, type dynamicnew and enter sept16short for an input file. Choosing to save the dynamic solution appends the King and Watson solution to the mat file. For subsequent use, simply re-enter the input filename, it will recognize an existing solution.

Additional Remarks

1. The real test arises when you want to solve a new steady state. Here use august16.m to generate the guess.mat file. Note that any future steady state is always resaved, for use later as an initial condition, in guess.mat. As a result, any other input file loads guess.mat. Thus you can change parameter values gradually, solving the steady state with each such change, with each solution recorded in guess.mat. This makes is relatively simple to compute distinct models.

2. The file system0.m contains the system of equations that is the core of both the steady state program and the dynamical system solution program. System0ce.m is the corresponding file for competitive equilibria.

3. Finally, all files ending in CE do about the same, but for a competitive equilibrium defined by a constant inflation rate.

Important Note

1. checklocation in line 50 of DynamicNew.m must find the location of KW98REV_1 (see http://people.bu.edu/rking/Research.htm). Use the path to add the directory if necessary.

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