Soving Linear Rational Expectations Models

The files starting linre3a are the paper.

The mfiles directory contains two matlab files, gensys.m and gensysct.m, that analyze linear rational expectations systems and return solutions for their dependence on exogenous disturbances. The systems need not have non-singular lead matrices (coefficients on current variables in discrete time, on derivatives in continuous time) and they need not be well-specified. The program analyzes them to determine whether solutions exist and whether they are unique. It returns a solution even when it is not unique, and it returns a solution that constrains exogenous variable behavior when no solution that does not do so exists.

The continuous time program, unlike the discrete time program, handles only the case of serially uncorrelated exogenous processes.

The files qzdiv.m, qzdivct.m, and qzswitch.m are required by the gensys.m programs. If you try to implement the algorithm in non-Matlab languages, you will need to find or write a routine that does the complex QZ (or generalized Schur) decomposition. Fortran routines that do this are available in the ACM algorithm files.

A newer edition of gensys, with some improvements (though possibly with still an unknown bug or two --- please report any you find --- is available in the R subdirectory. This version of the program is written in R, the open source version of S. It should run directly on any Suse 9.0 linux system and with very minor change (in the line in qz.r giving the location of the liblapack.so library file) on any unix system. It probably will also work on Windows systems where lapack is available as a .dll file, but I haven't tried this.

R is available from http://www.r-project.org/

Chris Sims, 7/22/01

Name	Last modified	Size	Description
LINRE3A.aux	19-Apr-2000 16:05	6.6K	
LINRE3A.bbl	19-Apr-2000 16:05	1.7K	
LINRE3A.blg	19-Apr-2000 16:05	140	
LINRE3A.dvi	17-Apr-2002 20:19	109K	
LINRE3A.pdf	17-Apr-2002 20:19	150K	
LINRE3A.tex	17-Apr-2002 20:19	70K	
Linre3a.ps	19-Apr-2000 16:06	457K	
Rfiles/	27-Apr-2005 22:55	-	
mfiles/	04-Feb-2005 17:08	-	

Apache/2.0.50 (Linux/SUSE) Server at sims.princeton.edu Port 80