Readme

These files can be used to replicate the small-scale DSGE simulation results of Andrews and Mikusheva (2014), "Maximum Likelihood Inference in Weakly Identified DSGE Models." The files make use of code from Dynare (http://www.dynare.org/), specifically version 4.1.1, and the e4 package for Matlab (http://www.ucm.es/info/icae/e4/). The main files are:

- dynare_estimation_1

  - A slightly modified version of a core Dynare file, this file should be copied to Dynare's \matlab folder. The modified file uses the option modecompute==2 to calculate the requested LM test statistics.

- kalman_filter

  - A slightly modified version of Dynare's kalman_filter file, this should be copied to Dynare's \matlab\kalman\likelihood folder. The only modification of this file is the creation of global variable lik, which allows easy access to the output of the kalman filter.

- Test_comparison (in the Test Comparisons folder)

  - This file (and the others in the Test Comparisons folder) should be kept in the same directory. All of the results in the power simulation section of Andrews Mikusheva (2014) can be generated by selecting the correct options in this file. See the file for further explanation of the various options. The simulation results on the size of the LM_o, LM_e, and other robust tests were also generated using this file.

- Classical_stat_simulator (in the Classical Statistics folder)

  - This file (and the others in the Classical Statistics folder) should be kept in the same directory. This file simulates the behavior of non-robust test statistics (in particular Wald tests) and the observed information matrices.

- CI_compute (in the Confidence Interval Calculation folder)

  - This file (and the others in the Confidence Interval Calculation folder) should be kept in the same directory. This file can be used to calculate confidence sets based on the LM statistics, as discussed in the paper.

Notes

- For Dynare to run correctly all the appropriate Dynare directories need to be in the Matlab path. While this can be done manually, the simplest way to ensure that everything works is to run some dynare .mod file before running power simulations (or to simply call a non-existent .mod file, for example typing "dyanre notarealfile").

- The naming of parameters in the code differs slightly from that in the paper. In particular, the parameter which is called "b" in the paper is called "beta" in the code, while the parameter called "λ" in the paper is called "alpha" in the code. Further, the code labels $rr_t^* = \rho \Delta a_t$ as a separate variable.