Guide to replication files for "Measuring Price-Level Uncertainty and Instability in the US, 1850-2012" by Timothy Cogley and Thomas J. Sargent.

1. Data

Section 2 of our paper defines variables and describes data sources.

The Warren-Pearson data can be found in excel spread sheet Cc113-124, cells B45:B138. Documentation is provided in Cc113-124_documentation.html.

Hanes's data can be found in excel spread sheet Cc125-137, cells B3:B84 and B86:B129. Documentation is provided in Cc125-137_documentation.html.

The BLS HSUS data are in excel spread sheet Cc66-83, cells B2:B109, with documentation in Cc66-83_documentation.html.

The BLS FRED data are in excel spread sheet PPI_ACO_FRED_July_16_2013,cells B13:B1218. These data were downloaded on July 16, 2013. Documentation can be found on the FRED archive at the St. Louis Fed.

The code for transforming data into the version used for analysis can be found in the main Matlab file SWplus_wpi_AR1.m, lines 63-135.

2. Programs

Our programs are written in MATLAB 7.8.0 and were run on a Dell Precision T7400 workstation with 8 cores. The operating system is Microsoft Windows XP Professional X64 edition, 5.2.3790 Service Pack 2, Build 3790.

MCMC algorithm:

The main file for simulating the posterior is SWplus_wpi_AR1.m. This file calls a bunch of subroutines that execute particular blocks in our Metropolis-within-Gibbs algorithm.

* The files kf_SWR.m and GIBBS1_SWR.m execute Carter and Kohn's forward filter and backward sampler, respectively.

* The file bivariate_svmh.m encodes a bivariate version of Jacquier, Polson, and Rossi's single-move stochastic volatility sampler. The files bivariate_svmh0.m and bivariate_svmhT.m do the same for the first and last observations, respectively.

* The file ig2.m draws from an inverse-gamma density.

The MCMC output files are too large to store here. Replicators can generate them by running SWplus_wpi_AR1.m.

3. Figures and Tables:

Figures 5-7 are produced by the file figures.m.

Figures 8-9 and tables 2-3 are produced by the file smoothed_volatilities_cum_inflation.m. This calls a subroutine entitled conditional_2nd_moment_cum_inflation_sw.m, which calculates smoothed conditional volatilities and crms statistics.

Figure 10 and table 4 are produced by the file deflation_probabilities.m. This calls a subroutine entitled posterior_predictive_distribution.m, which evaluates the integral in equation 10.