Empirical Macro I

Fourth homework

Based on the data in the spreadsheet DatasetHomeworkIV.xls, please estimate, for the period 1953Q2-2008Q3, a VAR with 4 lags for

- the <u>log-difference</u> of real gross domestic product;
- and the <u>levels</u> of the unemployment rate; the 3-month treasury bill rate; GDP deflator inflation; and the spread between the 10-year rate and the 3-month treasury bill rate.

Estimate a Bayesian reduced-form VAR as we did in class, based on 2,000 draws. Then, please identify

- a permanent GDP shock, based on the restriction that it is the only shock having a long-run impact on GDP; and
- four transitory GDP shocks, which ought to be sorted out from one another based on the sign restrictions on their impacts at $t=0$ on GDP, inflation, the unemployment rate and the Treasury bill rate you find in the spreadsheet.

Set, as we did in class:

```
MaxNumberTry=2000; % Maximum number of randomly drawn
matrices
```

Then,

(1) please compute and plot IRFs and fractions of forecast error variance.
(2) Please perform and plot counterfactual simulations in which you re-run history by 'killing off' the identified shocks, one at a time.