Empirical Macro I

Third homework

(This homework is due, via email, at the latest, by midnight of Sunday, May 21.
Please send me a MATLAB code implementing your solution.)

Based on the data in the spreadsheet DatasetHomeworkIII.xls, please estimate, for the period January 1985-February 2012, a VAR with 6 lags for

- the log-differences of industrial production; stock prices; the personal consumption expenditures (PCE) deflator; and commercial and industrial loans at all commercial banks;
- and the levels of the unemployment rate; the vacancy rate; the Federal Funds rate; and the excess bond premium (EBP), a measure of the price of credit.

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

- within the month, it only impacts upon the EBP (obviously), the Federal Funds rate, stock prices, and loans, whereas it does not have any impact o any other variable; and
- the impact at t=0 on the EBP is positive, whereas the impacts on the Federal Funds rate, stock prices, and loans are all negative.

Set, as we did in class:

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MaxNumberTry=2000; % Maximum number of randomly drawn
matrices
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Then,

(1) please compute and plot IRFs and fractions of forecast error variance.
(2) Please perform and plot a counterfactual simulation in which you re-run history by 'killing off' the identified credit shocks.
(3) What is the probability that, 12 months after a credit shock, the IRFs of industrial production and the vacancy rate are both negative, and the IRF of the unemployment rate is positive?
(4) What is the probability that, 10 years ahead, credit shocks explain at least 10 per cent of the forecast error variance of both the unemployment rate, and the vacancy rate?