Empirical Macro I

Second homework

(This homework is due, via email, at the latest, by midnight of Sunday, May 7.
Please send me a MATLAB code implementing your solution.)

Based on the data in the spreadsheet DatasetHomeworkII.xls, please estimate, for the period January 1964-August 2008, a VAR with 6 lags for

- the log-differences of industrial production; stock prices; the personal consumption expenditures (PCE) deflator; and real house prices (computed as the ratio between nominal house prices and the PCE deflator;
- and the levels of the unemployment rate; the vacancy rate; the logarithm of aggregate weekly hours *per capita* (computed as the ratio between aggregate weekly hours and population); the logarithm of housing starts; and the Federal Funds rate.

Please identify a monetary policy shock based on the restriction that, within the month, it only impacts upon

(*i*) the Federal Funds rate (obviously), and
(*ii*) stock prices.

Then,

(1) please characterize uncertainty about the estimated impulse-response functions and fractions of forecast error variance by bootstrapping the VAR as we did in class, based on 2000 bootstrap replications.
(2) What is the probability that the IRF of the unemployment rate is positive 4 years after a monetary policy shock?
(3) What is the probability that the IRF of housing starts is negative 1 year and a half after a monetary policy shock?
(4) Please perform a counterfactual simulation in which you re-run history by 'killing off' monetary policy shocks. *(Hint: It is done in the same way as we did in class in order to compute permanent and transitory GDP based on Blanchard and Quah's VAR with the unemployment rate and the log-difference of GDP. That is: You simply re-run the history of the VAR by putting a zero corresponding to the shock you want to kill off.)*