

## Econ 313, Winter 2024

HW #3 due March 8

For this assignment, you will estimate a vector autoregression. [Here](#) is the Stata manual's section on VARS.

1. Pick a system of variables to estimate. Make sure that they are the same frequency and for just one country. Note that monthly data, for example, can easily be converted to quarterly but not vice-versa. Pick any series you want, but here are some ideas:

a. Does a change in the debt/GDP ratio affect GDP growth?

b. Does changing interest rates, controlling for unemployment and other macroeconomic variables, affect inflation?

c. How do changing economic conditions affect something random: dog ownership, concert attendance, law school attendance, etc.

Explain why you chose this set of variables and what results (*e.g.* IRFs or a forecast) are of potential interest.

2. Using an appropriate combination of formal statistical tests (*e.g.* Dickey-Fuller), intuition, or related work, explain which, if any variables, will be transformed to ensure stationarity.

3. Will you need to log any of your variables?

4. Choose the appropriate number of lags to include in your VAR. Explain how you reached this decision.

5. Run your VAR. Explain why you chose the ordering that you did.

6. Derive a set of IRFs. Present the most interesting one and tell me why I should care.

7. Calculate a forecast and present it.

8. Provide a brief status update on your final paper. One to three paragraphs should suffice.