

## **Business and Economics Forecasting**

### **Econ 3342**

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### **Assignment 4**

- Due Monday December 9 (at 3:30 pm).
- You can work in groups of up to three students.
- Send your PDF responses by email and make sure you copy all members when submitting your PDF file.
- Make sure your PDF file shows your work on EViews.

In this assignment you will be working with two variables. There are many very interesting data sets online and I encourage you to use something you find unique and interesting. You are free to use any two variables you want. In case you need an example, we have the following two data sources that we used before:

1) Data from yahoo finance. (<http://finance.yahoo.com/>) You can use the stocks of any public company you may be interested in (there are also bonds, mutual funds, indices, cryptocurrencies). Try typing, for example, Microsoft. Once you obtain the data for that stock just go to 'Historical Data' and follow the instructions to download the period you want as a MS Excel file.

2) Data from Google trends. (<http://www.google.com/trends>) Just type any keyword you think is interesting.

For example, you can match weekly data from Yahoo Finance and Google or use both series from the same data source. You need to obtain at least two series.

1. Describe both of your variables. Why are they interesting?
2. Obtain the time series graph of both of the series. Any insights?
3. Obtain the cross-correlations and interpret.
4. Estimate the most appropriate VAR (selected AIC or BIC).
5. Obtain the impulse response functions. Interpret your findings for at least two of the quadrants.
6. Obtain the out-of-sample forecast for one of your variables. Interpret.
7. Estimate only one of your VAR equations via OLS. Are the error terms White Noise?
8. Assess the stability of your model:
  - a. Recursive residuals, interpret.
  - b. CUSUM, interpret.
  - c. Recursive coefficients, interpret.