

## **Problem Set #1 – ECON 4115/5115**

Due Date: Tuesday, September 15 at 11:59 pm

(20 pts) This assignment should be typed and submitted via WyoCourses. Tables should be formatted according to standard academic journal format. I will email examples of some tables.

Download three different time series with a minimum of 20 observations per time series. The three time series should be at three different frequencies (e.g., annual, quarterly, monthly, weekly, daily, etc.). Each time series should be a different type (e.g., macro, finance, natural resources, education, sports, etc.). Then answer the following questions.

- 1) (5 pts) Clearly document the definition of each time series, the source, units of measurement, and any other relevant information. The idea is that you should provide sufficient information that I can find the data, download it, and replicate your analysis.
- 2) (5 pts) Discuss who could use your forecasts, for what purpose, and the likely forecasting horizon.
- 3) (5 pts) Use *R* to provide a time series graph for each time series. Write a paragraph that describes the notable patterns (e.g., trends, cycles, persistence, etc.) of each time series with an eye to building a forecasting model.
- 4) (5 pts) Use *R* to calculate the descriptive statistics for each of the three time series and then create a table of descriptive statistics. Make sure to format the tables appropriately.
- 5) (Answer this question only if you're taking the class for graduate credit.) De-trend each time series and then graph the ACF for each de-trended series. Comment on the results and what it might mean for your forecasting model.