

Problem Set #2 – ECON 4115/5115

Due Date: Friday, October 6 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. Make sure to attach your commented R script to the end of the assignment.

Use R and the COVID-19 data on our website to answer the questions below.

- 1) (5 pts) Provide regular time series and seasonal subseries plots for total and daily COVID-19 deaths for the U.S. and one other country.
- 2) (5 pts) Provide a table of descriptive statistics.
- 3) (5 pts) Provide a decomposition of the four time series into their components. Calculate the ACF to analyze the remainder component and comment on the results.
- 4) (5 pts) Use either the average, naïve or regression method to calculate the in-sample forecasts, $\hat{y}_{t|t-1}$, one-period ahead forecast, $\hat{y}_{T+1|T}$, and analyze the in-sample residuals to see if they are mean zero and white noise. Comment on the results.
- 5) (Answer this question only if you're taking the class for graduate credit.) Use the Box-Cox transformation to transform total deaths for the two countries and then answer parts (3) and (4) again using the transformed data.