

# Homework 2

Eco 5316 Time Series Econometrics

Spring 2018

Due: Tuesday, January 30, 11.55pm

## Problem 1

Take “[Reporting with R Markdown](#)” course on datacamp.com.

## Problem 2

Do Chapter 3 called “Reporting” in the “[Working with the RStudio IDE \(Part 2\)](#)” course on datacamp.com.

## Problem 3

Download [slides.zip](#) containing an Rmd file for a beamer presentation. Knit the `slides.Rmd` file to obtain a pdf file, and save it with name `slides_incomplete.pdf`.

Modify the `slides.Rmd` file it based on the following instructions:

- change presentation `title` to “Correlation vs Causation”
- change the `subtitle` to something appropriate or remove it (or leave it empty)
- change the `author` to your name
- change `theme` and `colortheme`
- delete first two slides, “Lists” and “Formating Text”
- add a new slide with title “Example 1” after slide “Figures” containing a link to <http://tylervigen.com/spurious-correlations> and one of the charts downloaded from that website
- modify the first slide “Example 2” by adding the following to the bullet point “consider time series ...”:

$$x_t = x_{t-1} + \varepsilon_{x,t}$$

$$y_t = y_{t-1} + \varepsilon_{y,t}$$

where  $\varepsilon_{x,t} \sim N(0, \sigma_x^2)$ ,  $\varepsilon_{y,t} \sim N(0, \sigma_y^2)$

- modify the first slide “Example 2” by adding a bullet point with following text:  $\{x_t\}$  and  $\{y_t\}$  are thus unrelated between bullet points “consider time series...” and “it can be shown...”
- add `message=FALSE`, `warning=FALSE` options to the R chunk that contains `library(zoo)`
- add `echo=FALSE` option to the R chunk that produces the time series plot and the scatter plot
- modify slide with the scatter plot - add “Correlation coefficient between  $\{x_t\}$  and  $\{y_t\}$  is  $\rho_{y,x} = XX$ ” but in place of XX include an inline R code chunk that calculates and reports the correlation coefficient

Knit the modified Rmd file and save the output with name `slides_complete.pdf`. Compare it with `slides_incomplete.pdf` to see the differences.