

Lab 4 Assignment

Pstat 174/274

1. Data Import

In this question we keep studying **Task 1 in Lab 4** where we import monthly-australian-wine-sales-th.csv and use ts() command.

- 1) Compare the plots of the series 'wine1' and 'wine' defined below, and state why we use 'frequency=12' in the lab material.

```
wine1 = ts(wine.csv[,2], start = c(1980,1))
```

```
wine = ts(wine.csv[,2], start = c(1980,1), frequency = 12)
```

- 2) If you have a daily data of wine sales, for example from Jan 1, 1981 to Dec 31,1983. What value would you put in 'frequency=' so that the plot shows the correct year index on x-axis?

2. Data Transformation

We introduce the Time Series Data Library (TSDL) created by Professor Rob Hyndman.(<https://rdrr.io/github/FinYang/tsdl/f/vignettes/tsdl.Rmd>)

Run the following code to import quarterly Iowa nonfarm income in R:

```
#install.packages("devtools")
#install.packages("forecast")
#devtools::install_github("FinYang/tsdl")
library(tsdl)
library(forecast)
```

```
meta_tsdl$description[[1]]
iowa.ts <- tsdl[[1]]
```

Plot Box-Cox, log and square root transformed data.