Forecasting: principles and practice

Lab Session 7 — 24 September 2014

Before doing any exercises in R, load the **fpp** package using `library(fpp)`.

1. For the `wmurders` data:
   (a) if necessary, find a suitable Box-Cox transformation for the data;
   (b) fit a suitable ARIMA model to the transformed data using `auto.arima()`;
   (c) try some other plausible models by experimenting with the orders chosen;
   (d) choose what you think is the best model and check the residual diagnostics;
   (e) produce forecasts of your fitted model. Do the forecasts look reasonable?
   (f) compare the results with what you would obtain using `ets()` (with no transformation).

2. For the `usgdp` data:
   (a) if necessary, find a suitable Box-Cox transformation for the data;
   (b) fit a suitable ARIMA model to the transformed data using `auto.arima()`;
   (c) try some other plausible models by experimenting with the orders chosen;
   (d) choose what you think is the best model and check the residual diagnostics;
   (e) produce forecasts of your fitted model. Do the forecasts look reasonable?
   (f) compare the results with what you would obtain using `ets()` (with no transformation).

3. For the `mcopper` data:
   (a) if necessary, find a suitable Box-Cox transformation for the data;
   (b) fit a suitable ARIMA model to the transformed data using `auto.arima()`;
   (c) try some other plausible models by experimenting with the orders chosen;
   (d) choose what you think is the best model and check the residual diagnostics;
   (e) produce forecasts of your fitted model. Do the forecasts look reasonable?
   (f) compare the results with what you would obtain using `ets()` (with no transformation).