

ETW3420

Principles of Forecasting and Applications

Topic 5 Post-Tutorial Activity Part 2

Instructions

- Perform and complete the following tasks before answering the Quiz questions on Moodle.
- For this activity, use the quarterly beer production in Australia data ranging from 1956Q1 to 2010Q2. (Dataset: **ausbeer**)

Question 1

For the purpose of this question, create a subset from the **ausbeer** data that starts from 1975Q1. Name this data set as **beer**.

- Produce a plot of the data. Consider if a Box-Cox transformation is needed
- Divide the data set into a training set (1975Q1 to 2007Q2) and test set (2007Q3: 2010Q2).
- Using the training set data, produce forecasts for the test-set period using an ETS model chosen for the data. For the purpose of this question, DO NOT apply a Box-Cox transformation on the data. Note your answers to the following:
 - the ETS model chosen;
 - the number of parameters estimated in the model.
- Determine if there is autocorrelation in the model residuals up to the 24th lag. Note the p-value of the Ljung-Box test.
- Assess the forecasting performance of the ETS model.