

Forecasting and Predictive Analytics

Homework 3

Due December 19, 2017

FORECASTING U.S. GAS CONSUMPTION

This project aims to produce multivariate forecasts for the U.S. gas consumption.

You are a Senior Analyst in a Utility company that sells oil, gas and electricity. You are in charge of the forecasting of the monthly natural gas consumption in the USA for the next 6 months (that is 6 data points).

To this end, you have monthly gas consumption data until June 2017 as well as information on monthly temperatures until October 2017. They can be used as temperature forecasts, however you can also forecast yourself temperatures with an appropriate statistical method such as exponential smoothing, ARIMA,...). Additional data drawn from Google Searches is available, but you can complement it by any such data as you wish.

Using the multivariate methods studied in the course, find a forecasting model for (the logarithm of) gas consumption and produce monthly forecasts until October 2017. Please use R to do statistical estimations and put the scripts in the appendices. The temperature data is incomplete but you can download any series you see fit using the link.

This homework should take you about as much time as Homework 1, no more. The point is to produce a multivariate forecast and assess it.

The Homework is due December 19, 2017.