

ECON 4115/5115 Outline of Lecture Notes

Chapter 1. Getting Started

- Time Series vs. Econometric Models
- Examples of Time Series Forecasting
 - Congressional Budget Office (<https://www.cbo.gov/publication/56442>)
 - Presidential Elections (<https://fairmodel.econ.yale.edu/vote2020/index2.htm>)
 - MBA Summer project for Black Hills Energy Corp.
- Five Steps of Forecasting
 - Problem definition
 - Gather information
 - Preliminary exploratory analysis
 - Choose and fit models
 - Evaluate forecasting model
- Notation
 - $\{y_t\}_{t=1}^T \equiv$ entire time series
 - $y_t \equiv$ random variable at time t
 - $\hat{y}_t \equiv$ forecast of y_t
 - $f(y_t|I_t) \equiv$ probability distribution for y_t conditional on information in I_t
 - $\hat{y}_{t|t-1} \equiv$ forecast of y_t based on all information dated time $t - 1$ and earlier
 - $\hat{y}_{T+h|T} \equiv$ forecast of y_{T+h} based on all information dated time T and earlier
- Preliminary exploratory example using R : U.S. Stock Market Index