Time Series Analysis

Lecture 2

Regression With Time Series, An Introduction to Exploratory Time Series Data Analysis and Time Series Smoothing

datascience@berkeley

Goodness of Fit Measures (for Time Series Models)

Goodness of Fit Measure: AIC, AICc, BIC

Akaike's Information Criterion (AIC)

$$\text{AIC} = \log \widehat{\sigma}_k^2 + \frac{n + 2k}{n} \qquad \widehat{\sigma}_k^2 = \frac{SSE_k}{n} \qquad SSE = \sum_{t=1}^{n} (x_t - \widehat{\boldsymbol{\beta}}' \boldsymbol{z}_t)^2$$

where **k** is the number of parameters in the model and **n** denotes the sample size.

Biased-Corrected Akaike's Information Criterion (AICc)

$$\text{AICc} = \log \widehat{\sigma}_k^2 + \frac{n + k}{n - k - 2}$$

Bayesian's Information Criterion (BIC)

$$\text{BIC} = \log \widehat{\sigma}_k^2 + \frac{k \log n}{n}$$

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