

Financial Forecasting

M.Sc. in Finance – 2018/19 – 1st Semester

Instructors: 1. Nuno Crato ncrato@iseg.ulisboa.pt
 2. Sara Lopes sblopes@iseg.ulisboa.pt
 Office 105 Quelhas 4, ISEG
 21 392 5846 (ext. 3846)

Office contact: By appointment

Classes: 1. Tuesdays: 18:00-21:00
 2. Thursdays: 19:30-22:30

Textbook: Gloria Gonzalez-Rivera, *Forecasting for Economics and Business*, Pearson, 2013

Complement: A.A. Costa (1998). Notes on pragmatic forecasting procedures and exponential smoothing, CEMAPRE working paper

Software: EViews, ISTM2000, or any other software with time series analysis and forecasting capability

Goals: To introduce the main topics in time series analysis and forecasting with an emphasis in financial applications. To develop essential time series forecasting practical ability.

Evaluation: Group work (30%) and final exam (70%)

| Week | Topic | Text Chapters |
|--------------|--|------------------|
| Sep 18 / 20 | Introduction to time series: trends, cycles, seasonality Forecasting: error and horizon, stationarity, transformations | 1 3.1-2 |
| Sep 25 / 27 | Autocorrelation and partial autocorrelation. Univariate and multivariate data. Forecast horizon. Reference to loss functions | 3.3-3.4 4.1-3 |
| Oct 02 / 04 | Exponential smoothing | Costa 1-3, 5-6 |
| Oct 09 / 11 | WN and MA processes | 6.1, 6.3 |
| Oct 16 / 18 | AR processes | 7.1-2 |
| Oct 23 / 25 | Seasonality and Seasonal ARMA models | 7.3 |
| Oct 30 / tba | Recap and examples – Working groups final constitution | 8.1 |
| Nov 06 / 08 | ARMA model selection | 8.2 |
| Nov 13 / 15 | ARMA forecasting, brief reference to error criteria and measures | 8.3, 9.1-2 |
| Nov 20 / 22 | Deterministic and stochastic trends – unit roots | 10.1-2 |
| Nov 27 / 29 | Forecasting with ARIMA models – Group work submitted | 10.2 |
| Dec 04 / 06 | Volatility – Group work presentations | 13.1-3 |
| Dec 11 / 13 | ARCH and GARCH models – Group work presentations | 13.5, 14.1 |