Syllabus

[cmcd.economia@fgv.br]

Course Name: Special Topics in Time Series Econometrics - Forecasting
Faculty:
Teaching Assistants:

2025 SECOND SEMESTER

COURSE OUTLINE

The course provides additional topics in time series methods in econometrics covering Forecasting in Linear and Non-Linear Model, Forecasting in Large Data Set and Volatility and Forecasting Climate Change

COURSE PROGRAM

1. Forecasting with Linear Models
2. Automated Model Selection
3. Model Misspecification
4. Forecasting with Dynamic Models
5. Forecasting Evaluation and Combination
6. Forecasting Time Series Models
7. Bayesian VAR Models
8. Forecasting Non-Linear Models
9. Forecasting in Large Data Sets and Volatility
10. Forecasting Climate Change

BIBLIOGRAPHY

Main Reference

1. Ghysels, E. & Marcellino, M. (2018) “Applied Economic Forecasting using Time Series Models”, Oxford University Press.

Additional References – more references will be given in the first lecture

2. Castle, Jennifer L., Jurgen A. Doornik, and David F. Hendry. 2022. "Forecasting Facing Economic Shifts, Climate Change and Evolving Pandemics" *Econometrics* 10, no. 1: 2. https://doi.org/10.3390/econometrics10010002
3. Elliot, G. and Timmermann, A. (2016) “Economic Forecasting”. Princeton University Press.
4. Hamilton (1994) “Time Series Analysis”. Princeton University Press.
5. Harvey, A.C. (1993) “Time Series Models”. MIT Press.
6. Hendry, D.F. and Doornik, J.A. (2014) "Empirical Model Discovery and Theory Evaluation: Automatic Selection Methods in Econometrics", The MIT Press.
7. Lutkerpohl, H. (2005) “A New Introduction to Multiple Time Series Analysis”. Spirnger Verlag.
8. Stock, J.H., and M.W. Watson (2006) “Forecasting with Many Predictors,” ch. 6 in *Handbook of Economic Forecasting*, ed. by Graham Elliott, Clive W.J. Granger, and Allan Timmermann, Elsevier, 515-554.

GRADING

Apart from hand-on exercises in the second part of lectures, students will have to choose a research paper in financial econometrics to present, critically assess and replicate. The in-class presentation should be based on slides prepared by the student and submitted as part of the assessment. Students will also write a referee report on the selected paper. The guidelines for the report will be given in the lectures. Finally, students will have to carry out an empirical application (or simulations) intimately connected to the selected research paper.

Applied Econometric Paper: 40%
Referee Report: 20%
Presentation: 20%
In class participation: 20%

CONTACT