SIdE PhD Courses 2020 - 31th edition

Financial Time Series and High frequency Econometrics

Bertinoro, 15 - 20 June 2020

Coordinators:
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Lecturers
Alessandra Amendola, University of Salerno
Vincenzo Candila, Sapienza University of Rome
Massimiliano Caporin, University of Padua
Walter Distaso, Imperial College London and University of Messina

Requirements
Intermediate knowledge of statistical inference and econometrics.

Course outline*:*
Models for daily returns (based on EOD information):
- Modelling and forecasting the conditional mean of returns (level): ARMA and ARIMA models;
- Modelling and forecasting conditional variance of returns (volatility): GARCH models and their variants;
- Modelling and forecasting conditional covariances and correlations: Multivariate GARCH models.

High frequency econometrics:
- Features of intra-daily data;
- Volatility estimation with Jumps and microstructure noise;
- Volatility modeling and forecasting using high frequency data;
- GARCH type models using realized information (Realized GARCH, HEAVY);
- Dynamic models for realized measures (HAR, MEM);
- Localized (high frequency) regressions;
- Realized covariances and correlations: estimation challenges and dynamic models.

Portfolio construction and optimization:
- Predicting time-varying expected returns; the problem of persistent regressors;
- Estimating and predicting covariance matrices;
- Factor models: linear observable factors specification and estimation;
- Estimating risk premia in cross-section, Fama-McBeth regressions;
- Portfolio optimization.

Risk management:
- Backtesting and Evaluation of volatility forecast;
- Risk measures: VaR, Expected Shortfall; parametric and semiparametric approaches; conditional quantiles and expectiles.

Reference textbooks and suggested readings:
Aït-Sahalia Y., Jacod J. (2014) High-frequency Financial Econometrics, Princeton University Press.
Bauwens L., Hafner C., Laurent S. (2012) Handbook of Volatility Models and Their Applications, Wiley.
Christoffersen P. (2016) Elements of Financial Risk Management, Academic Press.
Francq C., Zakoian J.M. (2010) GARCH Models: Structure, Statistical Inference and Financial Applications, Wiley.
Hautsch N. (2012) Econometrics of Financial High-Frequency Data, Springer.
Linton O. (2019) Financial Econometrics: Models and Methods, Cambridge University Press.

Turan G. Bali, Robert F. Engle, Scott Murray (2016) Empirical Asset Pricing: The Cross Section of Stock Returns, Wiley.

Handouts, further readings and material will be provided before the beginning of the course and during the lectures.

Tutorials
Theoretical lectures are associated with working sessions; during them you will receive the suggestions needed to use an econometric software and to run your own empirical analysis. Data-sets and programming files to make applied econometrics will be provided during the lectures in Bertinoro.
For the practical tutorials and applications participants will use the softwares R and Matlab, which will have to be installed on their own laptops.

Venue and timetables
The Module will last one week and will be held in the University Residential Centre, Via Frangipane 6, 47032 Bertinoro (FC). Participants will be hosted in the Centre guest quarters.
Lectures and tutorials will be in English, with the following schedule:
Monday to Friday: lectures 9:00-13:00, 15:00-17:00; tutorials and individual hands-on sessions: 17:00-19:00.
Saturday: lectures 9:00-13:00.

Fees and Enrollment

- Students, new graduated students, PhD students and temporary university staff: 690€
- University staff: 800€
- Others: 2300€

Fee includes: accommodation (usually in double room with breakfast and lunch starting from Sunday evening.

Participants who wish to attend two or three Courses, are allowed the following reduced fees per Course

- Students, new graduated students, PhD students and temporary university staff: 590€ per Course
- University staff: 700€ per Course
- Others: 2000€ per Course

Application Deadline: April 18th, 2020

Deadline for Fee Payment is May 16th 2020

Contacts

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