Financial Data et Systemic risk

ECTS : 3

Description du contenu de l'enseignement :

The course will equip students with the necessary knowledge to be able to undertake econometric analysis of the type commonly associated with modern financial econometrics research. Substantial emphasis will be placed on the development of programming skills in Python (or in MATLAB, especially for financial contagion and multivariate analysis).

Course outline:

1. Data collection (CRSP-Compustat, Yahoo-Finance, ECB data warehouse)
2. Market Risk Measurement (Value-at-Risk, Expected Shortfall) – ARCH/GARCH models – univariate time series
3. Backtesting tests for market-risk measurement (independence test, unconditional coverage test, conditional coverage test, super exception)
4. Systemic Risk and Macroprudential regulation (SIFIs identification, MES, SRISK, ?CoVaR) – multivariate time series
5. Principal Component Analysis (absorption ratio computation)
6. Contagion models (direct and indirect effects decomposition)

Compétence à acquérir :

The course provides a deep knowledge of the advanced time series techniques and their application to systemic risk. A technical presentation of these models will be given, before studying applications of these models to systemic risk.

Mode de contrôle des connaissances :

Individual homework assignment.

Bibliographie, lectures recommandées :

Benoit, S., Colliard, J.-E., Hurlin, C. and C. Pérignon (2017) Where the Risks Lie: A Survey on Systemic Risk, Review of Finance, 21(1), 109-152.

Benoit, S., Hurlin, C. and C. Pérignon (2019) Pitfalls in Systemic-Risk Scoring, Journal of Financial Intermediation, 38, 19-44.

Campbell, S. D. (2004) A Review of Backtesting and Backtesting Procedures, Working paper, Federal Reserve Board.

Christofferson, P. and Pelletier, D. (2004) Backtesting Value-at-Risk: A Duration-Based Approach, Journal of Financial Econometrics, 2(1), 84-108.

Du, Z. and J. C. Escanciano (2015) Backtesting Expected Shortfall: Accounting for Tail Risk, Management Science.

Diebold, F.X. and K. Yılmaz (2009) Measuring Financial Asset Returns and Volatility Spillovers, with Application to Global Equity Markets. The Economic Journal, 119(1), 158-171.

Diebold, F.X. and K. Yılmaz (2012) Better to Give than to Receive: Predictive Directional Measurement of Volatility Spillovers, International Journal of Forecasting, 28(1), 57-66.