

## Financial Econometrics

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**Objectives:** The main goal of the course is to familiarize students with modeling, estimating and forecasting financial time series models.

**Course outline:** During the 10 weeks of lectures, we will cover different topics.

- Stylized Facts of Asset Returns
- Univariate Volatility Models
- Financial Risk Management: Value-at-Risk, Expected Shortfall, and Systemic Risk Models
- Predictability of Asset Returns
- Dynamic Term Structure of Interest Rates
- Factor Models
- High Frequency Data
- Multivariate Volatility Models
- Machine Learning Methods for Asset Returns Predictability

### Bibliography

Campbell, J. Y., A. Lo and A. C. MacKinlay, *The Econometrics of Financial Markets*, Princeton University Press, 1997.

Christoffersen, P. F., *Elements of Financial Risk Management*, Academic Press, 2003.

Cochrane, J., *Asset Pricing*, Princeton University Press, 2001.

Gourieroux, C. and J. Jasiak, *Financial Econometrics: Problems, Models, and Methods*, Princeton University Press, 2001.

Singleton, K. J., *Empirical Dynamic Asset Pricing: Model Specification and Econometric Assessment*, Princeton University Press, 2006.

Taylor, S. J., *Asset Price Dynamics, Volatility, and Prediction*, Princeton University Press, 2005.

Tsay, R. S., *Analysis of Financial Time Series*, Wiley, 2002.

### Grading Policy

Two home-works (30% each) and a final exam (40%).