

INTRODUCTION TO EMPIRICAL FINANCE

ECON 876

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Course Description

This course is intended for PhD students in finance and related fields. It is designed to teach students how to conduct empirical research in asset pricing. The goal is that students become familiar with the issues at stake in empirical asset pricing, the methodologies used, and be able to analyze and evaluate new research effectively.

Prerequisites are: ECON 770, 771 and BUSI 880. This means students must have basic knowledge of financial economics and econometrics at the level of first year PhD courses. Knowledge of the material in ECON 871 (Time Series) is beneficial.

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Part I: Generalized Method of Moments

Part II: Hansen-Jagannathan Bounds and Distances

Part III: Machine Learning with Regularized Regressions

Part IV: High-dimensional Linear and Regularized GMM

Part V: Simulation-based Estimation

Part VI: Deep Learning

Part VII: An Adversarial Approach to Structural Estimation

Part VIII: Univariate ARCH Models

Part IX: Multivariate ARCH Models

Part X: State Space Models and Kalman Filter Markov Chain Monte Carlo Estimation and Filtering

Part XI: Principal Components Analysis and Estimation of High-dimensional Covariance Matrices

Assignments

Students taking the class for credit will have to write a research report based on each of the papers listed below. The research report should include either a theoretical extension, or an empirical implementation (or both). The first report is due February 22 by 5 pm and based on:

Antoine, B., Proulx, K., & Renault, E. (2020). Pseudo-true SDFs in conditional asset pricing models. Journal of Financial Econometrics, 18(4), 656-714.

The second report is due March 22 by 5 pm and based on:

Ghysels, E., Plazzi, A., Valkanov, R., Rubia, A., & Dossani, A. (2019). Direct versus iterated multiperiod volatility forecasts. Annual Review of Financial Economics, 11, 173-195.

The third and final report is due April 26 and based on:

Gu, S., Kelly, B., & Xiu, D. (2020). Empirical asset pricing via machine learning. The Review of Financial Studies, 33(5), 2223-2273.