Doctoral School in Finance and Economics

Course ID   Topics in Cross-Sectional Asset Pricing

1.   Course details

Semester:	1
Credit rating:	1ects
Pre-requisite(s):	
Lecturer(s):	Professor Svetlana Bryzgalova E-mail: sbryzgalova@london.edu
Administrator:	Roswitha Glorieux
Tutor(s):	
Seminar times and rooms:	
Tutorial times and rooms:	None
Communications	**It is important that students should regularly read their University e-mails, as important information will normally be communicated this way.**
Mode of assessment:	Grading: final project (100%)
Examination Periods:	
Course WebPage:	Moodle.uni.lu

2. Aims and objectives

Aims
The objective of this empirical asset pricing class is to teach you a set of tools for measuring and explaining risk premiums in financial markets. Thinking about risk premiums necessarily involves modeling the pricing kernel and the sources of risk. This course has a particular emphasis on the recent advances in cross-sectional asset pricing, re-evaluation of the prior empirical results, changes in the methodology and challenges going forward. It will provide an overview of the recent approaches to asset pricing and outline a few directions of further research.
Learning Objectives
1. Understanding of the limitations of the classical approaches to cross-sectional asset pricing 2. Being able to read and apply new methods to estimate the risk premia or asses the impact of a characteristic on the asset returns 3. Developing new tools for evaluating asset pricing models by combining existing techniques in various applications

3. Plan of semester

2 and 3 May 2019

4. Course details (by topics)

1. Multiple testing in asset pricing

This section of the course provides the overview of the existing empirical evidence on the problem of multiple testing in p-hacking and asset pricing. It also introduces existing tools for evaluation of the trading strategies, mutual fund managers and risk factor evaluation from both the frequentist and Bayesian point of view.

2. Dimension reduction: factors and characteristics

A multitude of independent risk factors generally implies an unrealistically high Sharpe ratio available from the combination of portfolios, following these strategies. As a result, much of the recent effort has been dedicated to the dimension reduction in the space of the proposed factors and characteristics. We will cover all the main methods regarding model selection and shrinkage, with a particular emphasis on the interpretation of the results, and the origin of the model sparsity.

3. Latent factors in asset pricing

Based on the APT insights, many classical papers tried to apply simple latent factor models to describe a cross-section of stocks, however, with little success. This section introduced the basic tools behind the latent factor approach, and demonstrates how these methods have been adapted to accommodate structural advances in empirical asset pricing. A particular focus of this section is how to merge the list of time-varying firm characteristics that seem to be relevant for predicting asset returns with the unobservable factor approach and inherent dimension reduction.

4. Identification and inference in linear factor models

The last section of the course will review recent developments in the econometrics of cross-sectional asset pricing. In particular, we will discuss the role of sorting as a nonparametric estimator of the expected return on a stock, and tension between relying on portfolios or individual stocks when evaluating model performance, and, finally, the problem of identifying the risk premia in the cross-section of stocks, and the consequences of model misspecification.

5. Reference list/ Bibliography

1. Multiple testing in asset pricing:

   Caluzzo, P, Moneta, F., and Topaloglu, S. (2018) "When Anomalies Are Publicized Broadly, Do Institutions Trade Accordingly?", Management Science, forthcoming.

   Chordia, T., Goyal, A., and Saretto, A. (2017) "p-hacking: Evidence from Two Million Trading Strategies", Swiss Finance Institute Research Paper No. 17-37. Available at SSRN: https://ssrn.com/abstract=3017677

   Groenborg, N., Lunde, A., Timmermann, A., and Wermers, R. R., (2017) "Picking Funds with Confidence", CEPR Discussion Paper No. DP11896. Available at SSRN: https://ssrn.com/abstract=2934208

   Hansen, P. R., Lunde, A., and Nason, J.M. (2011) "The Model Confidence Set", Econometrica, 79 (2), 453-497

   Harvey, C. R., Yan, L., and Zhu, H. (2016) "… and the Cross-section of Expected Returns", Review of Financial Studies, 29, 5-72.

   McLean, D., and Pontiff, J. (2016) "Does Academic Research Destroy Stock Return Predictability?", Journal of Finance, 71(1), 5-32

   Sullivan, R., Timmermann, A., and White, H. (1999), "Data-Snooping, Technical Trading Rules, and the Bootstrap," Journal of Finance, 54, 1647–1692.

2. Dimension reduction: factors and characteristics

   Freyberger, J. and Neuhierl, A., and Weber, M. (2018) "Dissecting Characteristics Nonparametrically", CESifo Working Paper Series No. 7187. Available at SSRN: https://ssrn.com/abstract=3254246

   Giglio, S., Feng, G., and Xiu, D. (2017) "Taming the Factor Zoo", Chicago Booth Research Paper No. 17-04. Available at SSRN: https://ssrn.com/abstract=2934020

   Kozak, S., Nagel, S., and Santosh, S. (2018) "Shrinking the Cross-Section", Journal of Financial Economics, forthcoming

   Kozak, S., Nagel, S., and Santosh, S. (2018) "Interpreting Factor Models", The Journal of Finance, 73(3), 1183-1223.

3. Latent factors in asset pricing

Fan, J., Liao, Y., and Wang, W. (2016) "Projected principal component analysis in factor models" Annals of Statistics, 44 (1), 219-254. Available at: https://projecteuclid.org/euclid.aos/1449755962

Kelly, B., Pruitt, S., and Su, Y. (2018) "Characteristics are Covariances: a Unified Model of Risk and Return", Journal of Financial Economics, forthcoming.

Lettau, M., and Pelger, M. (2018): "Factors that Fit the Time-Series and Cross-Section of Stock Returns", working paper.

4. Identification and inference in linear factor models

Ang, A., Liu, J. and Schwarz, K. (2018) "Using Stocks or Portfolios in Tests of Factor Models", AFA 2009 San Francisco Meetings Paper. Available at SSRN: https://ssrn.com/abstract=1106463

Cattaneo, M. D., Crump, R. K. Farrell, M. and Schaumburg, E. (2018) "Characteristic-Sorted Portfolios: Estimation and Inference". FRB of NY Staff Report No. 788. Available at SSRN: https://ssrn.com/abstract=2822686

Gagliardini, P., Ossola, E., and Scaillet, O. (2016) "Time-varying risk premium in large cross-sectional equity datasets", Econometrica, 84 (3), 985-1046.

Giglio, S. and Xiu, D., (2018) "Asset Pricing with Omitted Factors", Chicago Booth Research Paper No. 16-21. Available at SSRN: https://ssrn.com/abstract=2865922

Gospodinov, N., Kan, R., and Robotti, C. (2014) "Misspecification-Robust Inference in Linear Asset-Pricing Models with Irrelevant Risk Factors", 27 (7), 2139–2170

6. Further information about assessment

Examination(s)	1
Weighting:	100%
Date:	Research proposal/essay
Length:	30 min presentation
Structure:	Presentation of a research project