Investment Strategies and Asset Management

WS 2022/23

Prof. Alex Weissensteiner

Contents and aims

This course covers several main concepts underlying modern active portfolio management. Specifically, based on recently published articles in this field, three different main topics are covered. First, we develop models to analyze and forecast the risk premia. This predictability can then be exploited for out-of-sample back-tests. Second, we investigate new techniques to estimate the input parameters and to construct optimal portfolios (also dynamically). Third, we develop instruments to assess the activity and the performance of active fund managers.

The course "Investment Strategies and Asset Management" aims at the practical aspects of asset management.

Learning outcomes

Students who have successfully completed this class will understand the role and possibility of active portfolio management within the framework of modern capital market theory.

After completing this class students will:
- be able to distinguish different approaches in active portfolio management
- know about return and risk from historical records and their implications for forecasts
- appreciate the interplay between risk aversion and optimal capital allocation
- know how to construct optimal risky portfolios
- associate primary theories of return drivers and asset pricing models with different asset classes.

Moreover, this course will contribute to the students' ability to
- analyze and solve complex portfolio problems individually and as a member of a group and to develop solutions by functioning as a valuable and cooperative team member
- summarize and professionally present solutions in class
- adequately communicate and participate in discussions
- solve and present a case study in small groups (up to 4 members).

After completing this class students will also
- be able to find the necessary literature and data to solve complex portfolio problems using (e.g., the Internet, Datastream, Quandl)
- master reasonably complex problems in R, such as using matrix formulas to solve linear programming and regression tasks
- employ optimization packages in R
- develop an R-based model to incorporate consensus and individual forecasts into a mean-variance optimal portfolio.

Methods

Paper-based preparation of topics, strategy implementation and testing, presentation and discussion

Requirements

Successful completion of the module "Financial Economics and Markets".

Assessment

From the list below, 6-7 papers will be finally chosen (one by each group). Groups should consist of 4 students each. Based on that, assessment will be based both on group assessment and individual assessment:

A) group assessment based on the chosen paper:

- **Intermediate presentation** (each group member is supposed to present part of the work): **20% of points-** 45 minutes of presentation (around 30 slides):
  a) present the paper in detail (core idea, solution technique, data, main findings)
  b) relate the paper to other existing papers in this field
  c) present ideas on how to replicate the main results, test the strategy on own data, discuss potential robustness checks
  d) 5-10 minutes of general discussion

Mykola Oleksandra Berna Lily

- **Final presentation** (each group member is supposed to present part of the work): **60% of points** - 60 minutes of presentation (around 30 slides):
  a) present the replication of existing results
  b) main findings on own data set and/or other time-frame
  c) results of the robustness checks
  d) give explanations and relate the results to the existing literature
  e) present and discuss also the own R-Code with the data. The R-code and the data should be uploaded / made available to all groups. The R code should be documented (with comments "#" in the code) and well-structured, such that your colleagues can learn from what you did.
  f) 15 minutes of general discussion

B) individual assessment (short written test after the final presentations): **20% of points**

Class hours

see Intranet, **introductory session** and formation of groups: Sept. 16, 2021

Papers to choose from

Ang, A., R.J. Hodrick, Y. Xing, & X. Zhang (2009). High idiosyncratic volatility and low returns: International and further US evidence. Journal of Financial Economics, 91(1), 1-23.

Frazzini, A., & L.H. Pedersen (2014). Betting against beta. Journal of Financial Economics, 111(1), 1-25.

Mitton, T., & K. Vorkink (2010). Why do firms with diversification discounts have higher expected returns?. Journal of Financial and Quantitative Analysis 45(6), 1367-1390.

Christoffersen, Peter, et al. (2021). Option-Based Estimation of the Price of Coskewness and Cokurtosis Risk. Journal of Financial and Quantitative Analysis, 56(1), 65-91.

Jegadeesh, N., & S. Titman (1993). Returns to buying winners and selling losers: Implications for stock market efficiency. The Journal of Finance, 48(1), 65-91.

Fama, E. F., & K.R. French (2010). Luck versus skill in the cross-section of mutual fund returns. The Journal of Finance, 65(5), 1915-1947.

Amaya, D., P. Christoffersen, K. Jacobs, & A. Vasquez (2015). Does realized skewness predict the cross-section of equity returns?. Journal of Financial Economics, 118(1), 135-167.

Daniel, K., & S. Titman (1997). Evidence on the characteristics of cross sectional variation in stock returns. The Journal of Finance 52(1), 1-33.