Investment Factors - Models & Applications

Program Description: This course covers the economic and statistical foundations of factor investing, reviews major research insights from the last forty years of factor research and addresses issues in applied factor investing.

Target Audience: quantitative analysist, financial analysts, investment decision makers, model risk specialists

Materials: Participants will receive a binder with the slides presented and access to a spreadsheets containing example calculations.

The content of this program can be combined with content from other programs for customized **inhouse training** purposes. Please contact email@andreassteiner.net for details.

Information relating to **scheduling, course venues and pricing** for the public courses is available on www.andreassteiner.net/consulting

Day One

Background

- Factor investment ideas in context: from the CAPM to Smart Beta ETF products

Statistical Foundations

- Review of the linear regression model: assumptions, limitations and important extensions
    - Handling non-linearity
    - Dummy variables
    - Updating regression parameters: the Kalman Filter
- Factor analysis versus regression analysis
- Links to approaches in Machine Learning, Artificial Intelligence, Big Data
- Cross-section versus time-series regressions

Statistical Factor Models

- Understanding principal component analysis (PCA)
- Limitations of PCA

Exercise: Modelling yield curve dynamics and identifying extreme yields scenarios

Fundamental Factors

- Asset pricing and fundamental factors, factor-mimicking portfolios
- Understanding the Fama/McBeth approach
- Aspects of the Fama/French model for equities
- Fama/French factors in bond market

Exercise: Modelling the equity momentum factor

Day Two

Macroeconomic Factors

- Real and monetary macroeconomic factors
- Leading/lagging indicators
- General approaches to modelling macroeconomic variables

Exercise: Extracting common factors from macroeconomic data

Factor Investing Solutions

- Factor investment ideas for funds: actively managed products, hedge fund strategies and rules-based ETFs
- Factor indices and applications
- Factors in portfolio construction
  - Optimizing factor inputs
  - Factor restrictions

Factor in Performance & Risk Analysis

- Factor-based performance and risk contributions and attribution effects
- Distinguishing true alphas from hidden factor exposures
- Monitoring and budgeting factor tilts
- Ex ante absolute and relative portfolio risk decomposition

Exercise: Factor attribution of absolute and relative portfolio risk

Summary & Conclusions