



Active Portfolio Management Construction

Program Description: While Modern Portfolio Theory (MPT) is well known for its passive and factor recommendations, information on the active portfolio construction methodologies is less available and scattered. This course provides an overview of the methods proposed since the early work of Markowitz and Sharpe to build and manage active portfolios based on private alpha information subject to forecast risk. This program is suitable for junior and advanced investment professionals as well as non-technical stakeholders in the investment process who require a top-down overview. Formulas and models will be presented in a summarized form, but the spirit of this course is application-oriented, leaving room for discussions and participant questions.

Target Audience: junior up to advanced investment professionals, risk managers, investment analysts, investment committee members, senior management, relationships and sales professionals.

Materials: Participants will receive the slides presented, spreadsheets containing example calculations for all models and concepts discussed and important papers in PDF format. Some of the spreadsheets will make use of ApaLibNET, our commercial analytics Excel add-in (see www.andreassteiner.net/apalibnet). Course participants will be given a 1-year subscription for free.

The course can be delivered **in-person** or online (MS Teams). For **online** delivery, we prefer 1-4 sessions (4h) distributed over at least 4 days.

Price for this course is 750 CHF per participant. If more than one member of the same company participates, a discount of 10% is given on the total course fee.

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. **More information** available on www.andreassteiner.net/consulting

Day One

Welcome and Introduction

Review of "Passive" MPT Portfolio Construction

- Markowitz Optimization: Problems Type I, II and III
- Sharpe Portfolio Construction: Equilibrium, Market-Cap Weighted Market Portfolio, Two-Fund Separation, Diagonal Model
- Efficient Set Mathematics: Merton, Roll Parametrization of Problem Type II
- Moving Beyond the CAPM: Fama's Multifactor Equilibrium and Multifactor Portfolio Construction
- What Means "Active" Portfolio Management?



Treynor/Black: Implementing Non-Zero Alpha Information

- Alpha as an Intercept: Return without Risk?
- Analytical T/B Solution Assuming that Residuals are Uncorrelated
- T/B Solution for Correlated Residuals
- The Portfolio Factory: Implementing Alpha Expectations Consistently Across Client Investment Portfolios and the Product Portfolio
- Why Treynor/Black is Ignored by Practitioners for the Right and Wrong Reasons

Treynor, Roll, Grindold/Kahn: Taking Into Account Alpha Forecast Risk

- Alpha Estimation Using Scores, IC and Residual Risk
- Scoring Approaches to Forecasting
- IC and Shrinkage
- Targeting the Information Ratio: Benchmark-Relative Optimization as Long/Short Optimization

Day Two

The Roll and Jorion Critique: Why Relative Active Managers Should Not Lose Sight of Absolute Risk and Return

- IR Frontier in Mean-Variance Space: Excessive Risk Taking
- Solutions: TE, Volatility and/or Beta Restrictions, Bringing Back Risk Aversion (Roll, Jorion and Bertrand's Suggestions)
- Targeting Absolute and Risk Goals Simultaneously: Two-Covariance Matrix Optimization (Wang)
- Dual Linear Goals: Building Portfolios which Target Both Financial and Sustainability Goals

Black/Litterman, Part I: Bayesian Approach to Forecasting

- The Origin of Black/Litterman: Theil/Goldberger Estimator for Combining Data and Non-Data Information
- General Introduction to Bayesian Models: Aggregating Two Sources of Information by Taking Into Account Their Credibility
- Implied Returns: Assumed MV Efficiency in Order to Derive Tilted Portfolios Relative to a Benchmark Independent of Market Efficiency

Black/Litterman, Part II: Implementing Absolute, Relative and Basket Forecasts Across Portfolio Constituents and Segments

- View Portfolios: Modelling absolute, relative & basket views
- Forecasts as Payoff of Portfolios
- Forecast Risk: Volatility of View Payoffs
- Combining Top-Down and Bottom-Up Forecasts (Sefton et.al.)
- The Joint Hypothesis Problem When Backtesting Black/Litterman



What's Next?

- Summary
- Plenum Discussion
- Latest and Creative Applications in Research and the Industry
- AI, ML, Data Sciences?
- Alpha-Ignorant Solutions: Equal-Weighting, Risk Parity & Risk Budgeting?