



Excel for Investment Analysis

Program Description: Learn how to perform typical calculations in investment analysis and portfolio management with Microsoft Excel in an effective manner. Participants will be introduced to some very useful built-in functions that even advanced users are not aware of. The calculations discussed in the course are typical examples encountered in performance measurement, risk management and portfolio management. The focus of the course is to deliver practical value for working professionals: four group exercises will be solved on each day.

Target Audience: quantitative analyst, reporting specialists, financial analysts, application developers

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

Welcome and Introduction

Background

- The origins of Microsoft Excel (help to understand some of its current features)
- Application versions
- Specifications and limitations
- Basic configuration after installation

Overview Basic Functions

- Cell formulas
- Array formulas
- Goal Seeker versus Solver: numerical search problems
- Pivot Table for data management
- Regression analysis
- Conditional formatting
- Charting
- Recording macros
- Introduction to Visual Basic for Applications (VBA)



Investment Return Calculations

- Discrete and continuous compounded returns
- Chain-Linking and annualizing returns
- Money-weighted return calculations
- Benchmark-relative statistics: alpha, beta and more

Investment Risk Calculations

- Ex post volatility, annualized volatility
- Covariance matrix
- Ex ante and ex post contributions to volatility and tracking error
- Tail and downside dependency: conditional correlation
- Historical VaR and CVaR
- Maximum drawdown, underwater chart

Day Two

Simulation Methods

- Normally distributed returns
- Normally distributed correlated returns
- Non-normal returns
- Random portfolios
- Bootstrapping

Portfolio Construction

- Mean-variance portfolio optimization with realistic constraints
- Risk parity portfolio construction
- Non-optimized portfolio construction methodologies: deriving allocations from scores
- Expected returns using the Black/Litterman methodology

Advanced Risk Measurement

- Resampling, Bootstrapping
- Historical Scenarios
- Confidence intervals for skewness and kurtosis
- Factor analysis of a portfolio: contributions of factors to portfolio risk and return

Summary & Conclusions