

MathFinance Training

Equity Derivatives – Pricing, Hedging, Structuring and Risk Management

Who should attend?

This course is designed for anyone who wishes to understand, price, hedge, structure and risk manage interest rate derivatives, in particular:

- ▲ Trading: Flow, proprietary, arbitrage, structured products
- ▲ Customer trading
- ▲ Interest Rate Derivative Trading
- ▲ Portfolio Management & Strategy
- ▲ Market Risk
- ▲ Alternative Investments
- ▲ Quantitative Analysis and Research
- ▲ Derivatives Research
- ▲ Structuring
- ▲ Risk Analysis and Control
- ▲ Data monitoring & Analysis
- ▲ Model Risk and Model Validation
- ▲ Corporate Treasury

Pricing

Regular: EUR 1750 p.p.*

Group discount (2 or more): EUR 1400 p.p.*

* 19% VAT will be added

The rate includes course material, refreshments and lunch on all days.

Why this course?

Equity derivatives are becoming an increasing commonplace in financial markets. This workshop will develop each participants understanding of the pricing, hedging and risk management of equity derivatives. This will give the necessary mathematical and practical background to deal with all these products in the market.

Learn how the equity derivative market works from an extremely experienced market practitioner, get the market view that you cannot get from a textbook, and benefit from in class case studies and exercises, immediate practice of theory, learn about equity volatility surface parameterization and dividend models, insights into pros and cons of equity derivative models, understanding pricing and structuring well so that you can do it yourself. Understand how to hedge which product, the market price of hedging strategies and the main equity derivative pricing models.

Learning Objectives:

- ▲ Understanding equity volatility surface models and models for dividends with an appreciation for the advantages and disadvantages
- ▲ Appreciate the pricing and risk of vanilla, semi-exotics and exotic equity derivatives
- ▲ Learn about the key types of vanilla, semi exotic and exotic equity derivatives and end investor applications
- ▲ Evaluate the key considerations in managing a trading book of equity derivatives

Your instructor



Rubin Rajendram is a senior finance professional with two decades of investment banking experience across major financial centres (Sydney, Singapore, New York, London, Hong Kong). His subject matter expertise spans market risk management, exotic derivative trading and structuring, and also quantitative research/risk analytics.

Rubin Rajendram's most recent prior position was Global Head, Price and Risk Analytics at the FinTech firm Calypso Technology where he ran derivative research, risk analytics and model validation globally. Prior to this, Rubin Rajendram's previous positions were: European Head of Rates Market Risk at Deutsche Bank, EMEA Head of OTC Clearing Market Risk at JP Morgan, Head of Rates and FX Proprietary Index Trading at the Royal Bank of Scotland, Head of EUR and USD Rates Exotic Derivative Trading at the Royal Bank of Scotland. Prior to this, he was a senior interest rate and FX exotic derivative trader at Credit Suisse First Boston and a senior interest rate exotic/hybrid derivative trader at BNP Paribas. Rubin Rajendram spent the infancy of his banking career in quantitative research/risk analytics at a number of different derivative houses.

Rubin Rajendram holds the following academic qualifications: Master of Arts (Statistics) from Harvard University, Master of Science (Mathematics) from New York University; Master of Commerce (Finance) from University of New South Wales; Bachelor of Economics (Actuarial Science) from Macquarie University.

Rubin Rajendram is an international expert on exotic derivative trading, pricing, analytics and risk management and is frequent speaker at international conferences on these topics.

<http://www.mathfinance.com/trainings>

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DAY 1

Equity Basics

- Equity Market Overview
- Types of Equity Product
- Share Issuing Procedure
- World Stock Markets
- Types and Methods of Order
- ETFs
- Share Buy-Backs

Equity Derivatives Basics

- Introduction to Equity Options
- Option Pricing and Risk Management
- Option Building Blocks and Portfolio Management
- Stock Indices
- Stock Index Futures
- Equity and Dividend Swaps
- Equity Volatility Futures and Options

Introduction to Equity Exotic Derivatives

- Overview of Exotic Equity Options
- Equity Semi-Exotic Derivatives: Path Dependent Options
 - i) ladder options
 - ii) cliquet options
 - iii) shout and whisper options
 - iv) digital or binary options
 - v) contingent options
 - vi) barrier options
 - vii) average strike options
 - viii) asian options
 - ix) time-dependent options
 - x) multivariate options and correlation
 - xi) quanto options
 - xii) And many more..

DAY 2

Modelling of Equity Derivatives

- Models for dividends
- Models for Parameterizing the Equity Volatility Surface
- Local Volatility models
- Stochastic Volatility models
- Local-Stochastic Volatility Models
- Equity Hybrid Derivative Models
- Numerical Techniques: binomial and trinomial trees, solving PDEs, monte-carlo simulation

Equity Exotic Derivatives

- Global equity autocallables: structural variants, business overview, booking models, market risks, risk recycling programs, credit contingent market risk, possible positional stresses
- Equity volatility and variance swaps
- Equity Corridor Variance Swaps
- Covariance Swaps
- Fund Derivatives: nature of the business, models, market risks, risk recycling
- Systematic Trading Strategies as Indices: nature of business and indices, future of the market, derivative overlays, booking models, volatility stabilization schemes, market risks
- Equity Hybrid Derivatives: equity-rate autocallables, dual binary structures, equity-fx correlation swaps, CMS equity-linked hybrid option, Sage Note, Hybrid Basket Options, Mimosa Note, Olive Gearing Note.
- Variable annuities and the application of equity derivatives

Equity Derivatives and Market/Credit Risk Regulatory Capital

- SA-CCR (Standardized Approach to Counterparty Credit Risk)
- SA-MR (Standardized Approach to Market Risk)
- IMM - (Internal Model Method - Advanced Approach to Credit Risk)
- IMA - (Internal Model Approach - Advanced Approach to Market Risk)

Equity Derivatives and XVA

- XVA Modelling
- XVA Systems
- CVA/DVA, FVA, COLVA, MVA, KVA
- Collateralization
- XVA: Key Market Risks
- XVA: Hedging
- XVA: Optimizations
- XVA: Key Challenges Ahead