FOREIGN EXCHANGE

BASICS OF FOREIGN EXCHANGE TRADING

Learning Outcome Statements

- Gain a firm knowledge base of the workings of the forex market.
- Introduce the background and operation of forex trading, and the basic forex market mechanics
- Introduce the essential forex trading terminology
- Look at sample forex trades, and dive into specifics of technical and fundamental analysis.

Key Contents

- Introduction to Foreign Exchange
  - What is forex
  - Operation
  - Aspects of trading

- How trading works
  - Terminology
  - Mechanism of trading
  - Margin and leveraged training
  - Risk management

- A Sample Trade
  - The set up
  - Opening two positions
  - Initial changes
  - The following day

- Exchange rates and supply and demand

- Central banks and interest rates

- Fundamental analysis

- Technical analysis

- Risk management- creating a trading methodology

FOREIGN EXCHANGE OPTIONS

Learning Outcome Statements

- The pricing, risk characteristics, and the dynamic behaviour of FX options in the context of the management of a portfolio of options
- To construct pricing an valuation models for currency option
- The use of FX options in a variety of directional and non-directional strategies
- Different hedging and trading applications for FX options

Key Contents

- FX Option Valuation – Principles and Option Pricing Models
  - Fundamental properties of currency options
  - Market conventions, terminology, price quotation basis (base Vs. quoted)
  - Black-Scholes framework for currency option modeling
  - Rationalising distortions to the BSM framework
  - Problems with fitting the volatility smile dynamically
  - Alternative model implementation methods:
  - Numerical methods: Binomial lattice models
  - Arbitrage-free derivation of a generalised binomial model
  - Modelling spot and forward processes
  - American and other path dependent options
  - Volatility and time parameters in the binomial model; value determinants, price sensitivities
  - Accounting and modeling for stochastic volatility
    - Vanna-Volga approach to constructing volatility surfaces
    - Sticky strike and sticky delta approaches
    - Quantifying the value of Volga, Vanna risks
  - Local volatility modeling (Dupire et al)

- Volatility
  - Understanding volatility; the role of volatility in option pricing;
  - Volatility as an 'asset class'

  - Historic, implied and realised volatility measures
  - Volatility estimation: analysis of data samples; sample sizes; weighting sample data
  - Volatility surfaces
    - Volatility smiles, skews
    - Volatility term structure effects
  - Volatility surfaces for FX options
  - Volatility properties
  - Volatility analysis
    - Volatility relative value analysis (Implied Vs. realized)
    - Smiles and Risk Reversals
  - Volatility trading strategies

- Option Risks; Hedging and Risk Management of Option Positions
  - First order price risks: Delta, vega, theta, rho, phi
  - Delta hedging and risk analysis
  - PIN risk
  - 'Sticky strike' effects
  - Expiration effects
  - Discontinuities; corrections
  - Greeks
  - Active management of portfolio delta, gamma and vega risks
  - Higher order risks
  - Limitations of option 'Greeks'

FOREIGN EXCHANGE OPTIONS

Key Contents

- Basic Option Strategies
  - Simple option strategies and their key characteristics
  - Naked long and short call/puts
  - Risk asymmetry: limited risk versus unlimited risk strategies
  - Option spreads
  - Call spreads and put spreads
  - Tailoring limited risk strategies using option spreads
  - Covered option strategies
  - Covered calls and puts
  - Rationale for using covered calls and puts – monetizing client views and 'indifference'

- Applications of Vanilla FX Options in Currency Risk Exposure Management
  - Risk reduction (hedging) strategies with options
  - Using options in corporate FX risk exposure management
  - Simple hedging strategies
    - Vanilla call/put hedges
    - Costs and benefits of options versus outright forward hedges
  - Structuring tailored hedges with options
  - Rationale for using non-linear (options) vs. linear hedges
- Non-Directional (Volatility/time decay) Trading Strategies

FOREIGN EXCHANGE EXOTICS AND STRUCTURED PRODUCTS

Learning Outcome Statements

- Understand the dynamic interaction between option price determinants,
- Impact on portfolio risk of higher order risk properties of exotic options (e.g. Vanna, Volga) and their pricing and risk management
- Understand higher order volatility risks & their management within portfolios of vanilla & exotic option types.

Key Contents

Exotic Option
- Exotic option classification
- Pay-off structure
- Motivations and applications of exotic options
- Pricing and valuation issues:
- Black-Scholes, analytical models;
- Numerical methods (Binomial, Trinomial lattice models, Monte Carlo simulation)
- Modelling considerations for exotic option pay-offs
- Skew effects

Exotic Options – Barrier Options
- Overview of types (knock-ins and knock-outs; reverse knock-in/out
  - DOWN and OUT/IN
  - UP and OUT/IN
- Pricing and valuation of Barrier options
  - Analytic solutions
  - Parity relationships
  - Numerical methods of Barrier option pricing
  - Pricing double barrier options and other variants
  - Impact of varying barrier parameters
- Hedging Barrier options
  - Risk sensitivities and their characteristics
- Applications of Barrier Options
  - Trading and hedging applications
  - Trading optionality with barrier options
  - Structured Barrier option strategies

Digital and One Touch Options
- CASH or NOTHING Calls/Puts
- 'One Touch' digitals and rebates
- Contingent premium 'pay later' options
- Pricing of digital options

- Hedging and risk management of digital option
  - Delta hedging; risk management problems

  - Disappearing Greeks
  - Pricing using a volatility surface
  - Gamma, Vega, theta behavior
  - Replication using spreads, risk reversals)

Quanto (Quantity Adjusted) Options
- Quanto derivatives
- Pricing quanto derivatives
  - Replication approach
  - Analytical approach
  - Pricing parameters –
  - correlation and volatility inputs
- Hedging quanto derivatives
- Applications of Quanto options

Average Rate (Asian) Options
- Mechanics of average rate options
- Pricing and risk management characteristics
- Motivations and rationale for the use of Asian options
- Hedging with Asian options

Second Generation Exotic Options
- Exotic Barrier options
- Multi-asset options

Structured FX Products
- Structured FX hedge instruments
  - Barrier structures (forward plus)
  - Knock-in cylinders
  - Knock-out forwards
  - Fader and accumulator forwards
- Currency linked notes
  - Dual currency deposits
  - Reverse dual currency notes
  - Power Reverse Dual Currency Notes (PRDCs)
- Range accruals
- FX hybrids

FOREIGN EXCHANGE FORWARDS AND SWAPS

Learning Outcome Statements

- To understand how corporate treasuries can use FX derivatives to manage FX risk

Key Contents

- FX Risk and the Derivatives Universe
  - A holistic view of FX exposure – the nature of risks and identifying main sources of risk
  - Explaining the consequences of transaction and translation risk
  - The nature of the derivatives market – a review of the choices, pros, cons and costs of the products that are available.

- FX forwards
  - Review of spot market conventions (assumed knowledge for the most part) before moving onto forward contracts.
  - Why use forwards? Some motivators for corporate to use forward contracts
  - Calculating a forward FX rate using time value of money concepts
  - Defining the terms premium and discount in relation to forward foreign exchange
  - Interpreting a variety of forward FX quotations (outright rates vs. forward points)

- Variants of FX forwards
  - Explaining the rationale for non-deliverable forwards (NDFs) and calculating the settlement amount in a typical transaction
  - Option-dated forwards – managing FX flows with uncertain timing (option dated forwards)
  - Determining the price of an option-dated forward contract given the term structure of forward contracts

- FX Swaps
  - Identify the main features and applications of FX swaps in corporate context
  - Explain how swaps are priced and the advantages
  How to treat a swap as a 'rollover' and the cash flow implications

FOREIGN EXCHANGE BOURSE GAME

Learning Outcome Statements

- Identify the best bid and offer rates
- Make a market in any pair of currencies in the spot market
- Open, manage and close spot foreign exchange positions
- Calculate the PNL & average rate
- Quote a currency pair to customer
- Interact with broker to buy or sell
- Interpret & analyze the economic impact of news items
- Broadly understand the market factor sensitivity & VaR
- Interact with various counterparties

Key Contents

- Introduction to FX Market
  - What is FX
  - Currency value
  - Price & exchange rate
  - Dealing in FX market
  - Future of FX market

- History
  - Past
  - Now - International scenario

- Role of Central Ban

- Characteristics of FX market
  - Round the clock
  - Two-way market
  - Types of market
  - Different time zones
  - Types of counterparties
  - Regulations

- Spot market
  - Working of spot market
  - Delivery

- Market practice
  - Bid/Offer
  - Market conventions
  - Direct/Indirect quote
  - Notation
  - Value date
  - Lot size
  - Dealing etiquette
  - Cross rate