



Introduction to Simulation for Financial Professionals

The success of traders, portfolio managers, CFOs and corporate strategists is crucially dependent on decisions made today, based on analyses of an uncertain future. Whether you are comparing potential option trades, managing portfolio risk, hedging foreign-currency receivables or evaluating proposed R&D projects, maximizing ROI depends on the choices you make now, even as the future consequences of your decisions are uncertain.

For key decisions you must make today, Introduction to Simulation for Financial Professionals will provide you with a probabilistic framework for forecasting a range of outcomes, determining the most likely results, and understanding the consequences of under-performance or over-performance. In this two-day course, you will learn to create probability distributions for future profits, cash flows, and investment returns, by applying Monte-Carlo simulation methods. You will learn to interpret these distributions, and use them to compute expected values, probabilities of breaking even, and Value at Risk of your trading/investing/hedging/budgeting options. You will acquire these skills while working with Excel software and Oracle's Crystal Ball add-in, and by applying your basic statistical knowledge.

Targeted Audience

Any financial professional who needs to understand the future implications of economic decisions they make today. For example: Traders needing a probabilistic framework for quickly determining which positions to place and/or exit. Investment managers needing to balance risk, return, and correlation. Finance executives needing to compare the value-at-risk (VAR) of hedged and unhedged foreign currency receivables. Financial executives managing long-term cash-flow matching programs, such as defined benefit retirement plans. Financial planners needing to determine the probability that a client will run out of cash before they die. Management executives helping to decide which products to market, which R&D projects to fund, where to locate new facilities or whether to fund any other corporate investment. Senior executives comparing the strategic options of organic growth vs. acquisition/merger within a highly dynamic and uncertain industry landscape.

Special Offer

Clients who register for this course will receive a complimentary 4-month subscription to FT.com. The Financial Times is the world's most respected financial newspaper, providing a broad assessment on finance, business and the industrial sector. The move to the electronic

version follows an ongoing review of our environmental responsibilities as a global business and as part of the Pearson group. FT.com also has features that are not available in hard copy, such as: Special Reports, Alphaville, editor blogs, education sections and much more! Subscriptions will start within 6-8 weeks of the start of class and are limited to one subscription per client. (Please note: as of May 1, 2011, the electronic subscription replaces the hard-copy 3-month Financial Times subscription.)

Advance Preparation

NYIF will provide a time-limited copy of Crystal Ball to students prior to the first class. It is the student's responsibility to install Crystal Ball on their laptop, and to verify its proper operation prior to the first class meeting.

Prerequisites

A one-semester college-level course in probability and statistics, or equivalent; Proficiency with Excel; Working knowledge of corporate finance, investment management, or financial planning; A laptop running Crystal Ball which must be brought to each class. NYIF will provide a time-limited copy of Crystal Ball to students prior to the first class. It is the student's responsibility to install Crystal Ball on their laptop, and to verify its proper operation prior to the first class meeting.

Learning Objectives

Students will be able to:

- . Understand how probabilistic forecasts are traditionally made for straightforward financial quantities, such as the future return of an equity-portfolio
- . Understand how Monte-Carlo simulation can be used to duplicate these classically-obtained results.
- . Use Oracle's Crystal Ball software to create simple Monte-Carlo simulations in an Excel spreadsheet.
- . Create probabilistic forecasts with Crystal Ball and Excel to understand a variety of more complicated, realistic problems drawn from the fields of investment management, corporate finance and financial planning. For example, students will learn how to forecast a histogram of returns for a stocks+options portfolio, and how to approximate a probability distribution from this histogram.
- . Analyze, interpret and act on the information in their forecasted distributions. This will include determining whether their forecasts make sense, interpreting the shape of their distributions, and obtaining key statistics from their distributions, such as expected values,

standard deviations, downside risks, Sharpe ratios, VAR, and breakeven probabilities.

. Create risk-policies for forecasted quantities, and optimize financial outcomes by applying their policies to their forecasts.

Follow-Up Courses

High Yield Debt: Valuation & Risk Assessment - Evening

Portfolio Management Program

Level: Intermediate

CPE Credits: 14.0

Instructional Method: Group-Live

Detailed Outline

Day One

Morning

- . Review of traditional, probabilistic forecasting:
 - . - Identifying random variables
 - . - Estimating probability distributions
 - . - Extracting forecasts: expected values, VAR, Sharpe Ratio, Pareto Ratio
- . Using Monte Carlo simulation to duplicate the above analyses
- . Introduction to Monte Carlo forecasting with Crystal Ball and Excel
- . Examples:
 - . - Equity, stock + put portfolio returns

Afternoon

- . Benefits and drawbacks of simulation
- . Establishing probabilistic risk/reward measures and policies
- . Case study example:
 - . - Currency hedging at Pfizer

Day Two

Morning

- . Distributions review:
 - . - Normal, truncated normal, lognormal, uniform, Bernoulli, scenarios
- . Simulation-based capital budgeting (project valuation)
- . Case study example:
 - . - Consolidating plants at Standard Motor Products (SMP)

Afternoon

- . Simulation-based evaluation of high-yield bonds
- . Simulation-based DCF valuation of equities
- . Case study examples:
 - . - Rite Aid's high-yield bonds
 - . - DCF valuation of JA Solar's equity

- . - Value at Risk (VaR)
 - . In-class project:
 - . - Simulation-based hedging of foreign-currency (FX) receivables with currency options
 - . Simulation-based financial plans for high-net-worth individuals
 - . Case study example:
 - . - How much must investor X save now to ensure her net assets outlive her?
 - . Course review and wrap-up
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For more information regarding administrative policies such as complaints and refunds, please contact our offices at 212-641-6616.