



# Advanced Financial Modelling in Excel

In the ever-changing business environment, being able to accurately model and forecast the volatile economic inputs is a critical skill for business professionals. Build on your existing modelling skills and apply new techniques to better analyse financial data, predict revenues and cost and assess risks to justify business decision in the most time-efficient and effective way.

Following the course, each participant receives 4 weeks of support on questions & issues regarding the material that was covered during the course.

## Prerequisites

The course material includes extensive use of Excel and participants will gain the maximum benefit from this course if they are already competent spreadsheet users. It is designed for users who do use Excel on a regular basis, and are comfortable with using its tools and functions.

At minimum, it is assumed that participants will know how to:

- Navigate confidently in Excel
- Use absolute cell references (e.g. =\$A\$1)
- Create and use Excel functions on a regular basis

**This course builds on students' advanced knowledge of Excel tools and functions and incorporates these into complex and dynamic financial models.**

## Software used

Public courses are run in a computer laboratory and workstations are provided. Course materials are written with both Excel 2007 and 2003 instructions. The course is demonstrated mostly using Microsoft Excel 2007 and participants can choose which version of Excel they prefer. If participants are more comfortable using their own laptops, they are most welcome to bring their own equipment. PCs are used during this course, so Apple Macintosh users may prefer to bring their own laptops.



## Learning Objectives

### **Short-cuts and techniques to build a financial model in less time**

Become super-efficient in Excel through intensive use of keyboard shortcuts and best practices to efficiently build an effective and robust model.

### **Experience designing solutions to real-world examples**

Create a financial model based on real-world financial modelling challenges. Incorporate current economic uncertainties into the model in order to take more calculated risks and make more informed business decisions.

### **Analytical thought on fluctuating economic assumptions in financial modelling**

Identify correct economic inputs to model and deal with fluctuations. Quantify uncertainty in forecasting models with stress-testing, what-if analysis and risk analysis techniques.

### **Knowledge on how to deal with uncertainty and risk in financial modelling**

Explore the several different ways to perform scenario and sensitivity analysis in Excel and learn to model in detail the complex but most commonly used methods of showing scenarios using a combination of formulas and drop-down boxes

In addition, you will learn how to:

- Streamline model building by applying best practice functions, tools and techniques
- Apply commonly used formulas in new and different ways
- Deal with risk and uncertainty by creating scenarios and performing sensitivity analysis
- Build stress-tests, what-if and sensitivity analysis into your model by incorporating economic fluctuations
- Minimise manual labour and automate common tasks by building macros into your models
- Measure and interpret the performance of your company using Excel modelling
- Master key steps to get the most out of Excel functionality to improve your financial modelling
- Learn how to expediate and enhance the decision-making process
- Maximise your analytical abilities by learning conventional and new approaches of modelling
- Translate business concepts into logically structured models and formats
- Select which advanced formulas are appropriate in different situations
- Perform various advanced scenario modelling techniques



## Course Content

### Financial Modelling Theory and Best Practice

- Overview of best practice financial modelling techniques
- Model planning structure and steps in building your model
- The technical, design, business and industry knowledge required for financial modelling
- Selecting the formula or tool which is most appropriate for each modelling situation
- Attributes of a good financial model
- How long should a formula be? Deciding when to break a complex formula in several steps to maintain transparency and allowing ease of model auditing

### Advanced Financial Modelling Techniques

- Maintaining model integrity and avoiding Excel errors
- Rebuilding an inherited model
- Building self-balancing error checks
- Correcting and suppressing errors
- Fixing circular references
- Goal seeking to calculate break-even point
- Create a more efficient model with internal links
- Dealing with external links and the potential errors they cause

### Advanced Financial Modelling Tools and Functions

- Pros and cons of using array functions
- Useful functions in financial modelling such as INDEX, MATCH, CHOOSE , OFFSET, LOOKUP and TRANSPOSE
- Nesting formulas
- Using the SUMIF formula and SUMPRODUCT array functions to perform complex conditional calculations
- Learn how to have Excel automate variance analysis using complex conditional formatting
- Automate your financial model for the user with Macros. Recording and modifying VBA code and creating macro buttons
- Pivot tables – summarise, dissect and analyse large amounts of data
- Shortcuts for data manipulation in Excel



## Bullet-proofing Your Model

- Protect your model so that it can be used by anyone with a limited use of Excel
- Locking and protecting cells
- Restriction incorrect data entry with data validations
- Creating error validation messages
- Use of form controls such as spin buttons and combo boxes

## Stress testing to deal with uncertainty and risk in Financial Modelling

- Economic inputs to model and modelling fluctuations in external factors
- Use of stress testing to validate your underlying assumptions and risk calculations
- Advanced What-if analysis
- Importance of assumptions when assessing risk

## Scenarios and sensitivity analysis

Learn different methods of what-if and scenario analysis in Excel using:

- Show multiple scenario outcomes simultaneously with one and two-dimensional Data Tables
- Using the Scenario Manager
- Manual scenario building
  - In-cell drop-down boxes
  - Combo-box drop down boxes

***Practical Exercise: At each step during the course, participants build and practice each formula, tool and technique. Record your own macro with buttons, build a pivot table, and create drop-down boxes.***

## Practical Financial Modelling

Building on the tools and techniques covered, we will learn to apply advanced modelling skills to build complex, yet robust and user-friendly financial models.

### Tiering Tables

One of the more complex and widely used calculations in financial modelling. Application of two different methods of calculations; a simple and progressive table.



## **Pricing Models**

Create a model which calculates profitability and break even points at various prices using Goal Seek.

## **Financial Model Critique**

Participants will be given a financial model to critique and identify why it does not follow financial modelling best practice.

***Practical Exercises: Utilising the tools and techniques covered in the first part of the day, participants will build their own financial model case study, performing stress testing, scenario and sensitivity analysis on their model.***