Scenario & Sensitivity Analysis in Excel

Course Objectives

Understand the difference between scenario and sensitivity analysis

Create a dynamic scenario manager in Excel using formulas and functions

Integrate sensitivity analysis in financial model with both direct and indirect approaches

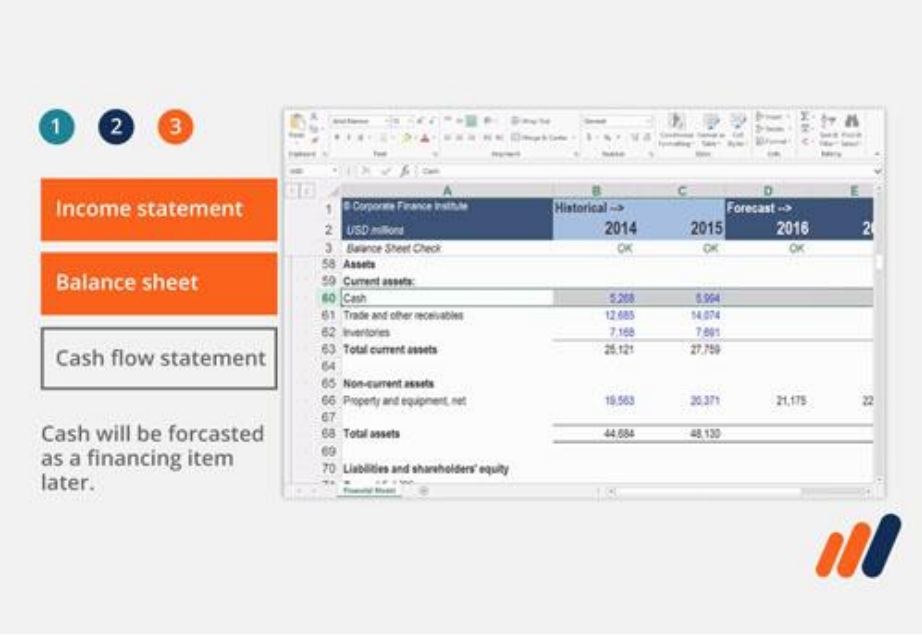
Organize results with a table which automatically sorts the data

Present the results of the analysis with a tornado chart

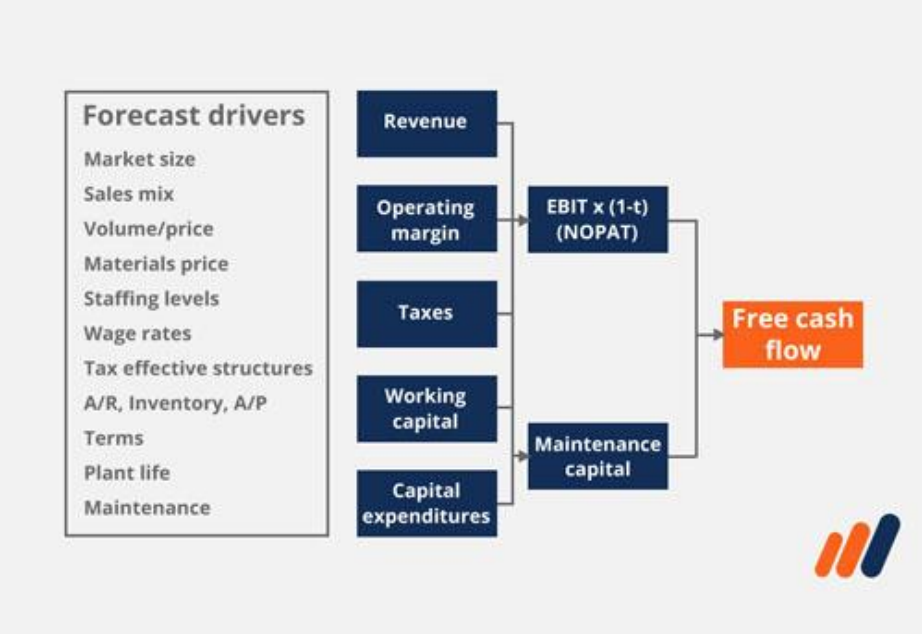
Recommended Prerequisites

You are expected to have either completed the stated prerequisite courses or possess the equivalent knowledge prior to enrolling in this course:

Building a Financial Model in Excel



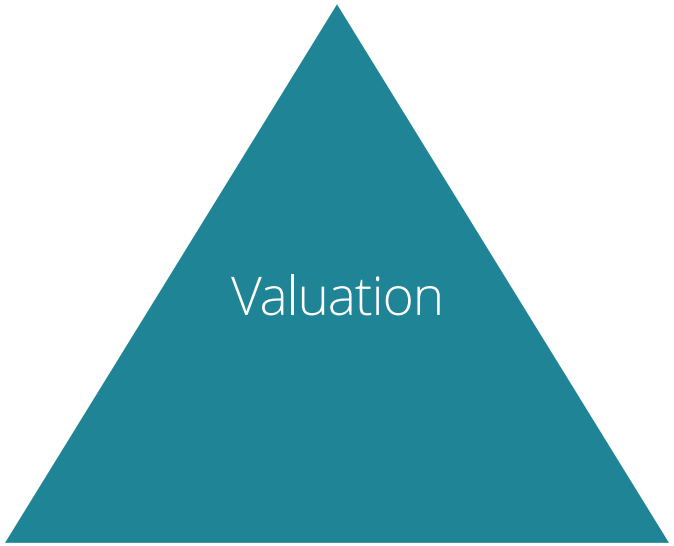
Business Valuation Modeling



Scenario vs Sensitivity Analysis

Scenario Analysis	Sensitivity Analysis
Multiple inputs changed at once	One assumption changed at a time
A story (or “scenario”) about the future	No story about why inputs go up or down
Typically represents several business cases	Used to determine which assumptions matter most
Scenarios will be compared and risks weighted	A form of risk assessment where drivers are compared individually

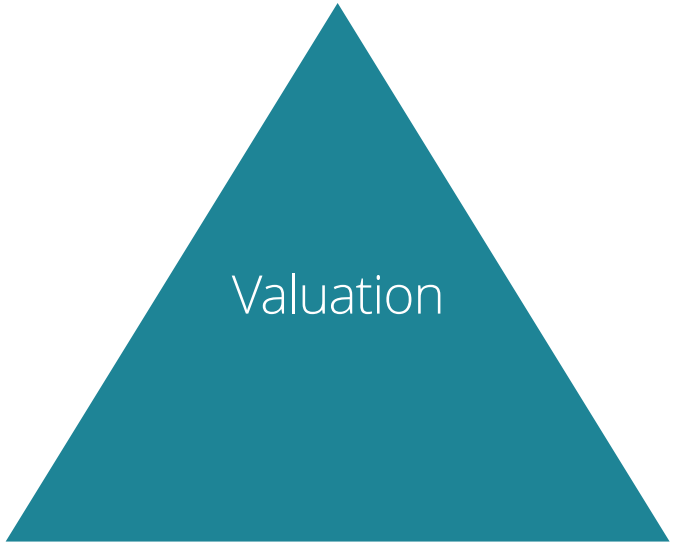
Why Perform Scenario Analysis?



Why Perform Scenario Analysis?

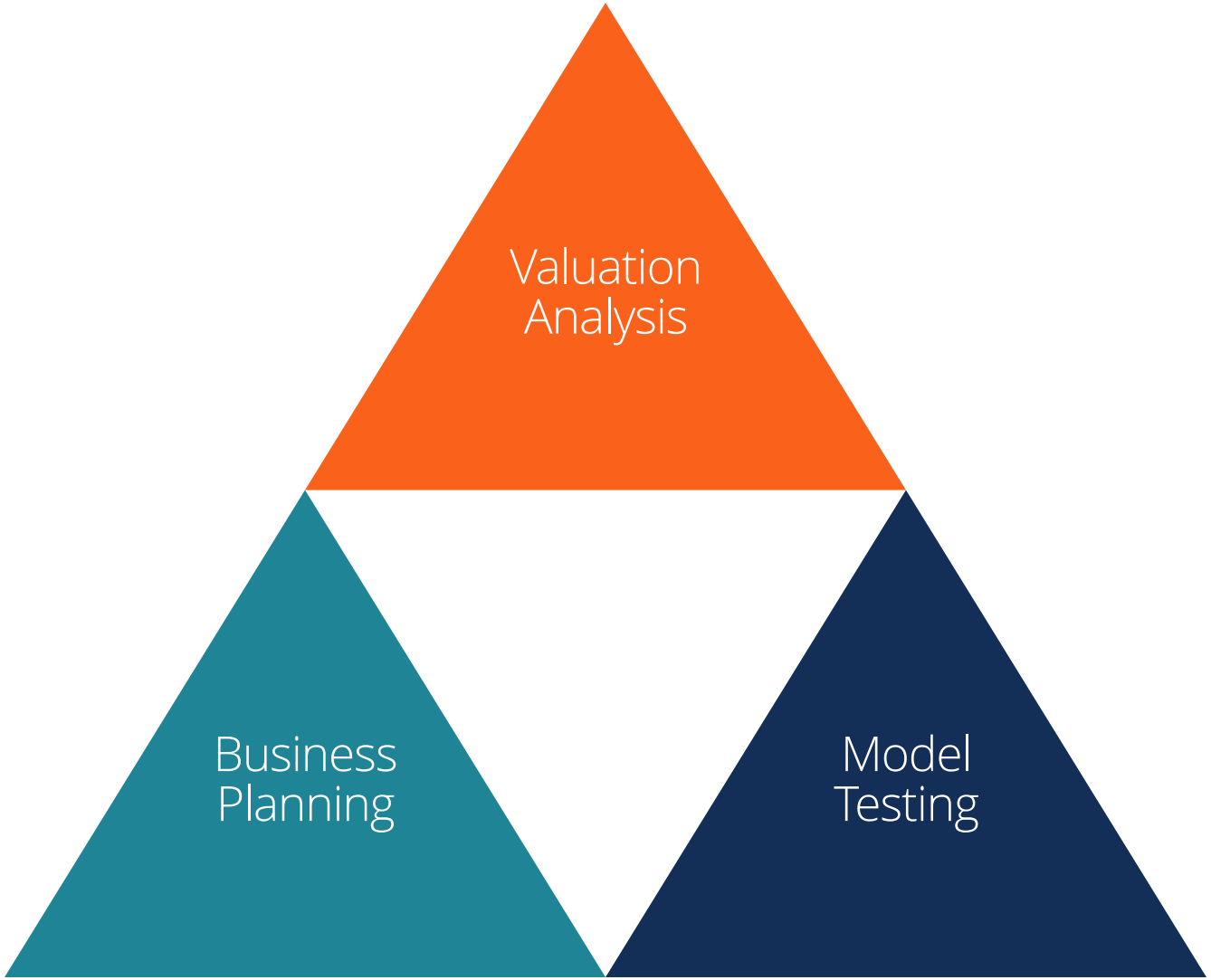
- Operating scenarios for the company
- Planning resources (people, capital, etc)
- Corporate and business strategy

Why Perform Scenario Analysis?

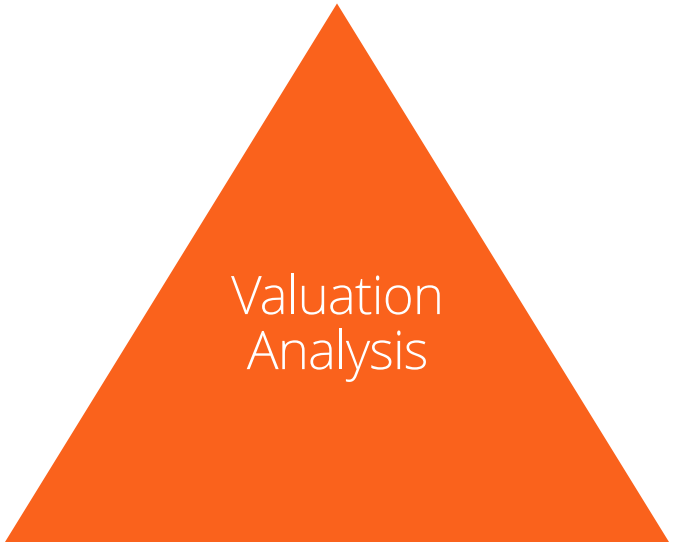


- Modeling different views/opinions
- Different future cases of the world
- Telling a story

Why Perform Sensitivity Analysis?



Why Perform Sensitivity Analysis?

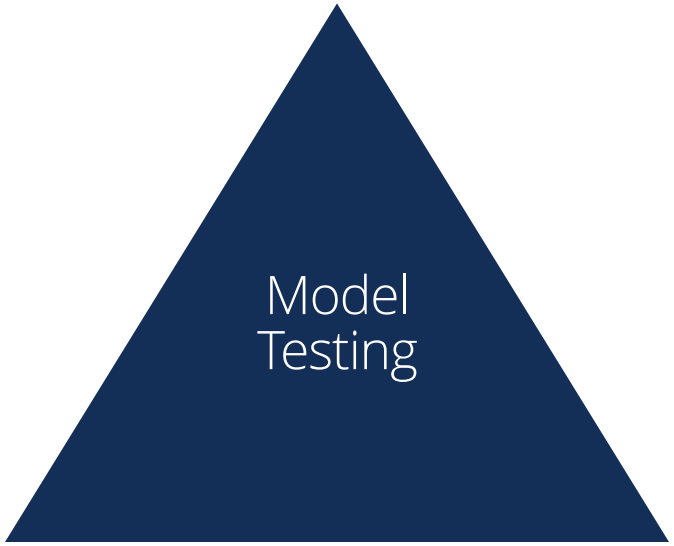


- Assess the impact on valuation as assumptions change
- Macro economic impacts on value of the business
- Range of values for the business under different scenarios

Why Perform Sensitivity Analysis?

- Cash flow / funding requirements
- Hedging and FX strategies
- What-if analysis

Why Perform Sensitivity Analysis?



- Test model functionality
- Ensure drivers / assumptions are working as intended
- Stress test model

Model Integration

1. Build at the end, once model is substantially completed
2. Create in a separate area or on a separate sheet
3. Driver must be on same sheet as the output
4. Think about the formula for each item you want to sensitize (where to link it)

Types of Integration

- Pick an input/driver you want to sensitize
- Pick a range of sensitivity for the input (i.e. +/- 10%)
- Pick the outputs you want to see the impact on
- Link the table

- Pick a formula you want to sensitize
- Create a zero value hardcode cell
- Pick a range of sensitivity for the input (i.e. +/- 10%)
- Pick the outputs you want to see the impact on
- Link the table

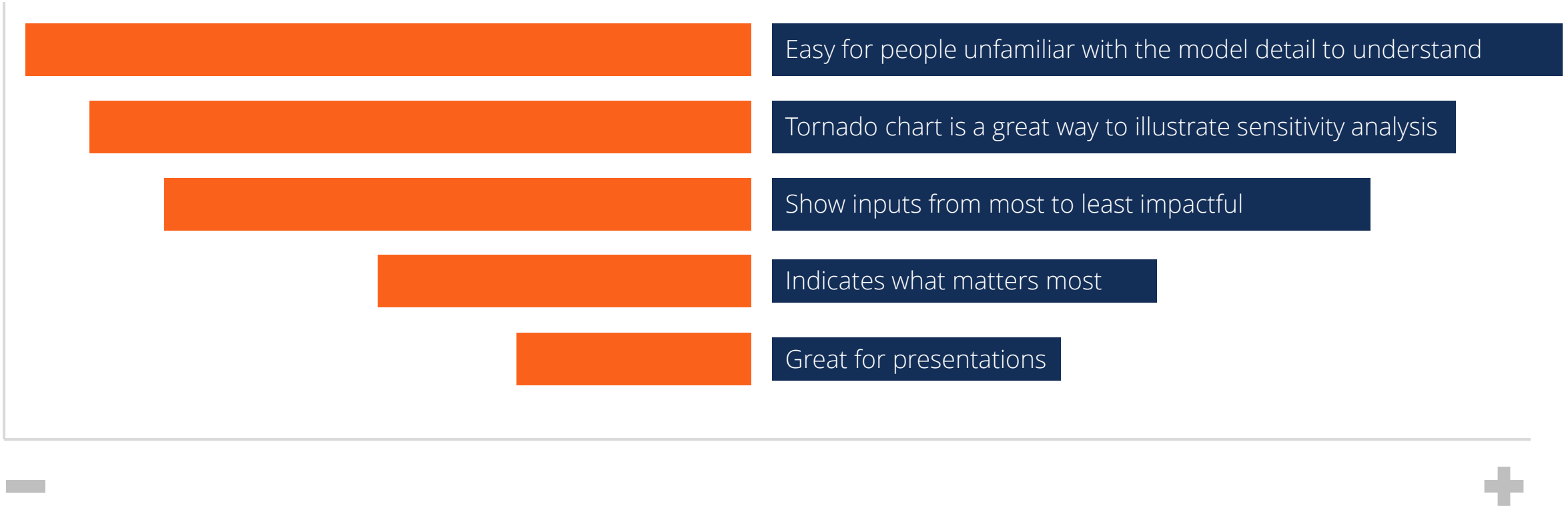
Analyzing Results

Gravity Sort Table

How can you make a table auto sort the sensitivity analysis results?

- Use the Small function in Excel
- Rank results from 1 to n
- Combine Index and Match functions to output the results
- The table will always be sorted in the proper order

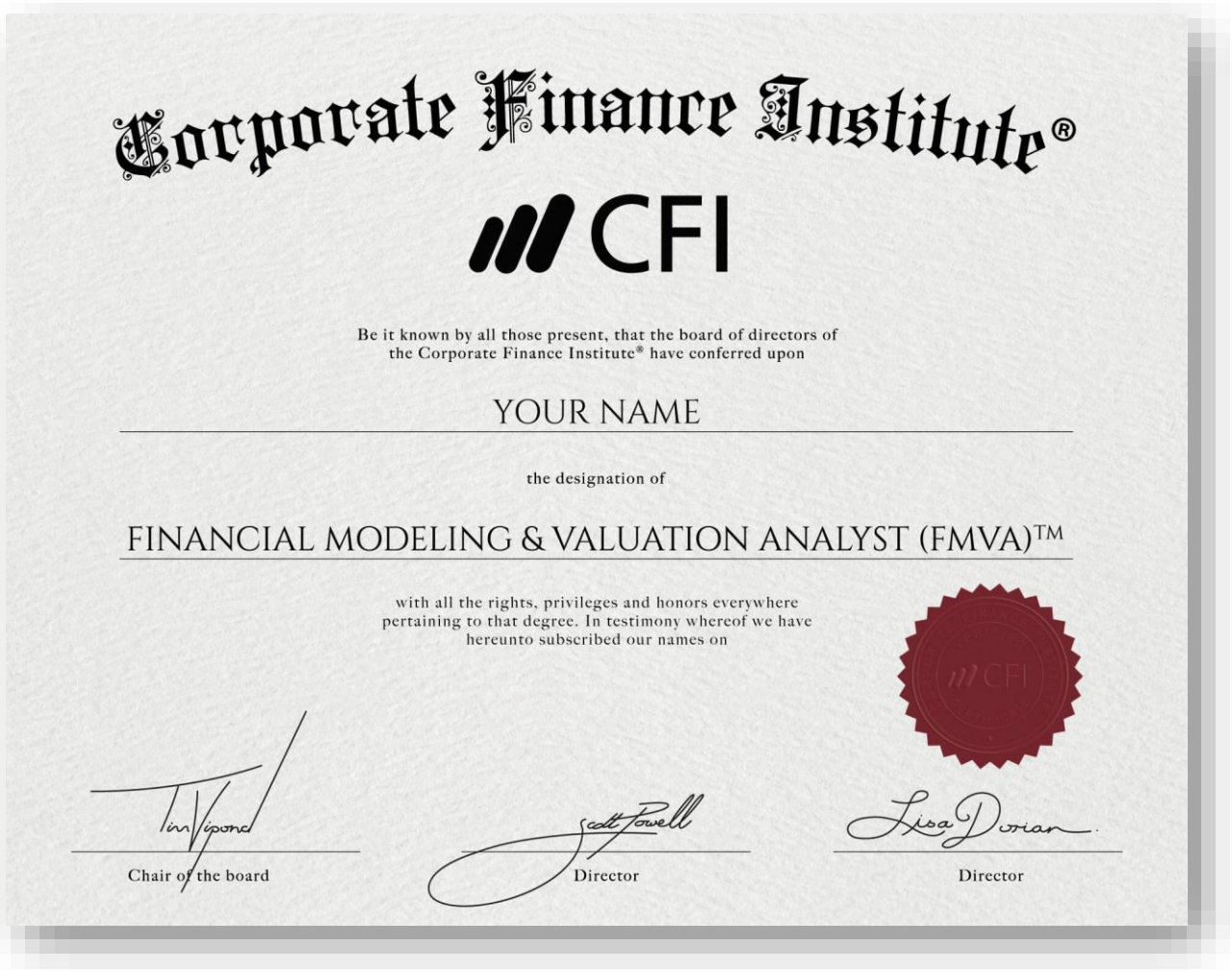
Tornado Chart



Presenting Results

- Clear presentation of results is critical and will set you apart
- Use a combination of tables and charts
- Show a range of values and outcomes
- Discuss the relative variability of different inputs to assess the biggest risks (upside and downside)

FMVA™ Certification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Director

Director

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