

Sensitivity Analysis: A Practical Guide

What is Sensitivity Analysis?

Sensitivity Analysis is a financial modelling technique used to predict the outcome of a decision given a certain range of variables. It helps assess how different values of an input (like price, cost, or market growth rate) will impact a specific outcome (such as profit, NPV, or ROI).

Why is it Useful?

1. Informs decision-making under uncertainty
2. Highlights the most influential variables in your model
3. Helps prepare for best-case and worst-case scenarios
4. Supports strategic planning and risk management
5. Builds investor confidence by demonstrating robustness

When Should You Use Sensitivity Analysis?

Use it when you're making decisions based on financial forecasts, investment choices, or strategic scenarios where variables can fluctuate.

Key Components of a Sensitivity Analysis Model

1. Base Case: The original model with your best-guess inputs
2. Variables: Inputs that could change (e.g., price, volume, cost)
3. Outputs: What you're measuring (e.g., revenue, profit, ROI)
4. Scenarios: Adjustments like $\pm 10\%$, $\pm 20\%$, etc., to key inputs

How to Use the Attached Sensitivity Analysis Excel Tool

1. Open the Excel file: 'Sensitivity_Analysis_Interactive_CF.xlsx'
2. Identify the yellow cells: These are your input assumptions (editable)
3. Adjust key variables one at a time or simultaneously to test their impact
4. Review the output table and the chart, which will automatically update
5. Use the chart to visualise which variable has the biggest effect on outcomes

Example Scenario

Imagine you're launching a new online course and want to estimate profitability. You input values for expected number of students, course price, and delivery cost. By increasing or decreasing these values, sensitivity analysis shows how profit changes, revealing which variable has the biggest effect.

Tips for Interpreting Sensitivity Analysis

- ✓ Focus on the variables with the greatest impact
- ✓ Use realistic ranges for scenarios

- ✓ Combine sensitivity analysis with scenario planning
- ✓ Present your findings visually using data tables and charts