

Frequently Used Formulas

Perpetuity Formula

$$\text{Perpetuity} = \frac{\text{Cash Flow}_{t+1}}{(\text{Cost of Capital} - \text{Growth Rate})}$$

Discounting (PV) of a Cash Flow

$$\text{DCF} = \frac{\text{Cash Flow}_t}{(1 + i)^{\text{period } t}}$$

Cost of Equity

$$\text{Cost (K)}_{\text{Equity}} = R_f + \beta(\text{Risk Premium}_{\text{Market}})$$

Weighted Average Cost of Capital

$$\text{WACC} = K_{\text{Debt}} * (1 - \text{Tax Rate}) * \frac{D}{D + E} + K_{\text{Equity}} * \frac{E}{D + E}$$

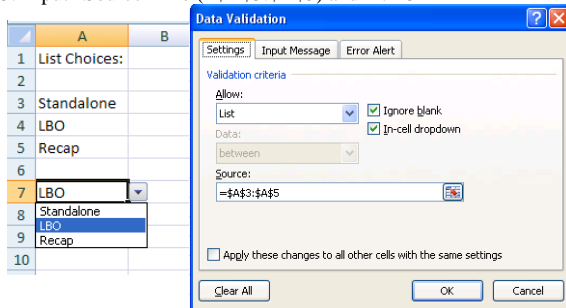
Compound Annual Growth Rate (CAGR)

$$\text{CAGR} = \frac{\text{Ending Value}}{\text{Beginning Value}}^{(1/\text{No. of Periods})} - 1$$

Data Validation

Example: Create a list

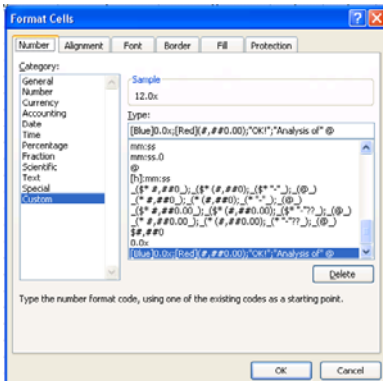
1. Enter data to be in list (A3:A5)
2. Go to cell to be validated (A7)
3. Click Data Tab > Data Validation
4. Click the Settings tab to specify "List"
5. Input "Source" info (=A\$3:A\$5) and hit "OK"



Customizing a Number Format

Custom formatting defines the format for positive numbers, negative numbers, zero values, and text, in that order: <Positive>;<Negative>;<Zero>;<Text>

Example: [Blue]0.0x;[Red](#,##0.00);"OK!";"Analysis of" @

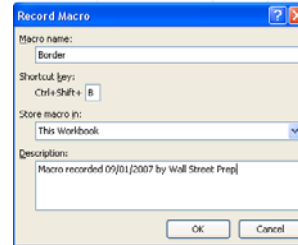


Enter or Result:	Values:	Displayed:	Application:
12	If positive, then...	12.0x	Showing multiples
-1000	If negative, then...	(1,000.00)	Expenses
0	If zero, then...	OK!	Balance Sheet Check
Colgate	If typed text, then...	Analysis of Colgate	Model Heading

Recording a Macro

Example: Create a macro to insert borders at the bottom of cells

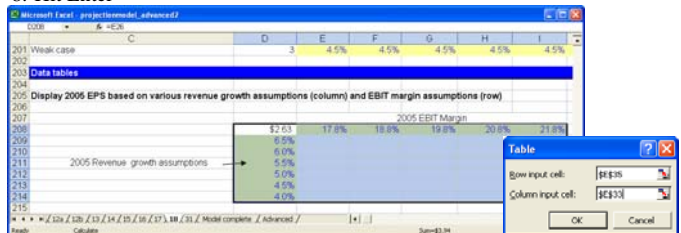
1. Place the cursor in the desired cell.
2. Hit **Alt w m r** (View → Macros → Record Macro)
3. Input macro name ('Border') and shortcut key (Ctrl Shift B). As soon as you hit 'OK', you are starting to record this macro.
4. When finished inserting a bottom border (using **Ctrl 1**) in the desired cell, hit **Alt w m r** to 'Stop Recording' the macro.
5. Try going to any cell or a range of cells and hitting **Ctrl Shift B**



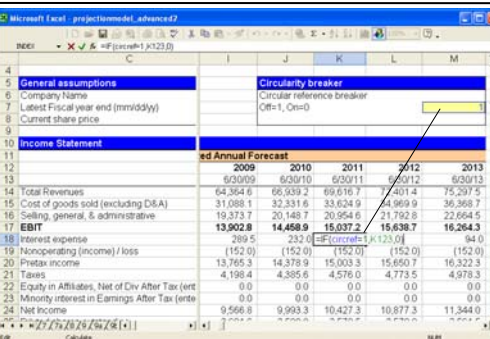
Data Table

Example: Create a data table that will output 2005 EPS based on a range of 2005 revenue growth and EBIT margin assumptions

1. Input a range of revenue growth rates in a column (as pictured)
2. Input a range of EBIT margins in a row (as pictured)
3. Reference 2005 EPS (the output variable) from model into the cell between the input row and input column as illustrated below
4. Highlight the matrix
5. Type **Alt a w t** (Data → What-if analysis → Data Table)
6. Reference the row input variable from the model (2005 EBIT margin is the row input variable)
7. Reference the column input variable from the model (2005 revenue growth is the column input variable)
8. Hit Enter



Iterations and Circularity



Example: Inserting a circularity breaker toggle in a model; Insert an IF statement to modify the interest expense formula to incorporate the circularity breaker, such that if it is turned on, the interest expense becomes zero, breaking the circularity

Go to: Office Button > Excel Options (Alt t o) > Formulas tab
Ensure the 'Iteration' box is checked for 100 iterations as illustrated.

