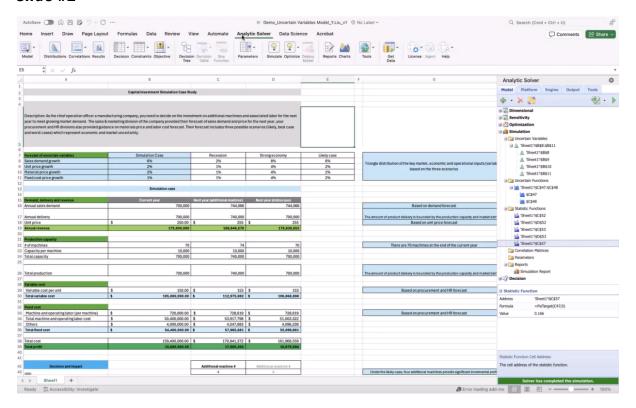# M8L3b. Uncertain Variables

Slide #1

Now we are going to use Analytic Solver to build a simulation model with uncertain variables.

Slide #2

Open Analytic Solver. Click the Analytic Solver tab in the ribbon.

Define the simulation case for sales demand growth.

Select the cell B8, Simulation Case of Sales Demand Growth.

Click Distributions.

When the Distributions dialog box appears, choose Triangular under Common, then adjust the Parameters option in the next dialog box.

Min: C8. Likely: E8. Max: D8.

Define distributions for other variables.

For the distributions of unit price growth, material price growth, and fixed cost price growth, repeat step 3 for each variable, adjusting the cells accordingly.

Through the output menu under the results icon, we identify the outcome variables, namely incremental profit and ROI.

For profit change, select cell C47.

Go to the results tab in the ribbon.

Choose output and then select in cell.

Repeat the steps above for ROI.

Define simulation outputs.

For mean profit change, select cell C48.

Go to the result tab in the ribbon.

Choose statistics and then select mean.

Enter the cell you'd like to place this statistic, which is C52.

Repeat the above steps for mean ROI, adjusting the cells accordingly.

Define standard deviation outputs.

For standard deviation profit change, select cell C48, go to the result tab in the ribbon, choose statistics, and then select standard deviation.

Enter the cell you'd like to place this statistic, which is D52.

Repeat the above steps for standard deviation ROI, adjusting the cells accordingly.

Run the simulation.

Once all model variables and result displays are configured, run the simulation with 1000 trials.

Choose the simulate tab in the ribbon.

View results.

The resulting probability versus value for each designated outcome variable, profit, and ROI will be illustrated in a bar chart.

By following these steps, you will successfully build and run a simulation model to analyze uncertain market situations using Analytic Solver.