THE CUSTOM DISTRIBUTION
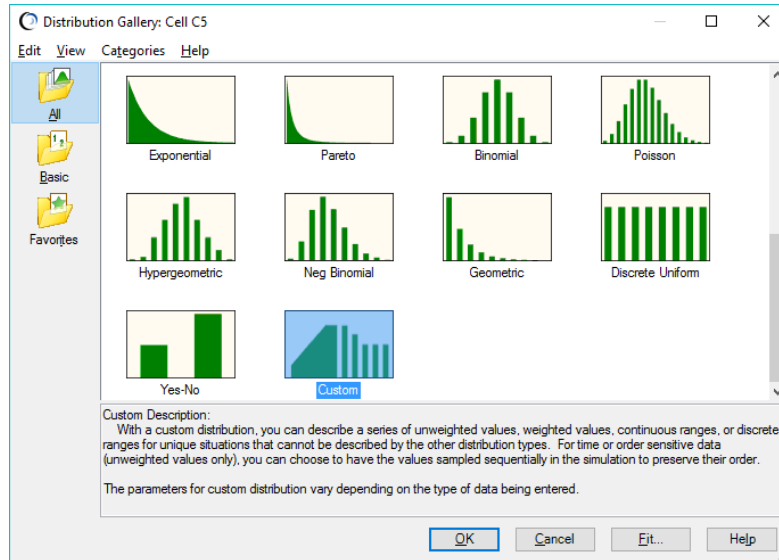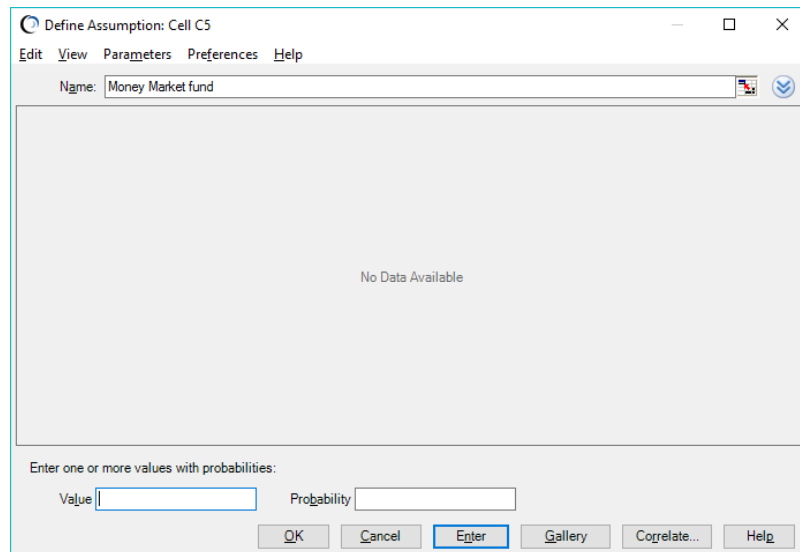
Crystal Ball users can select from 21 predefined continuous and discrete distributions. But what if none of these distributions can adequately describe the uncertainty surrounding a variable in your model?

One solution is to use the custom distribution, which can be shaped to represent a unique situation through a series of single values, continuous ranges, or discrete ranges. To define a custom distribution, you select the custom distribution through the Distribution Gallery.

Because you must define the distribution yourself, you see a blank screen when you first open the distribution.
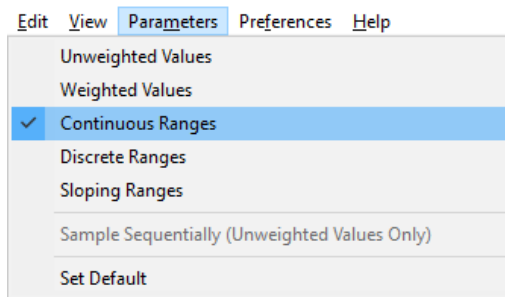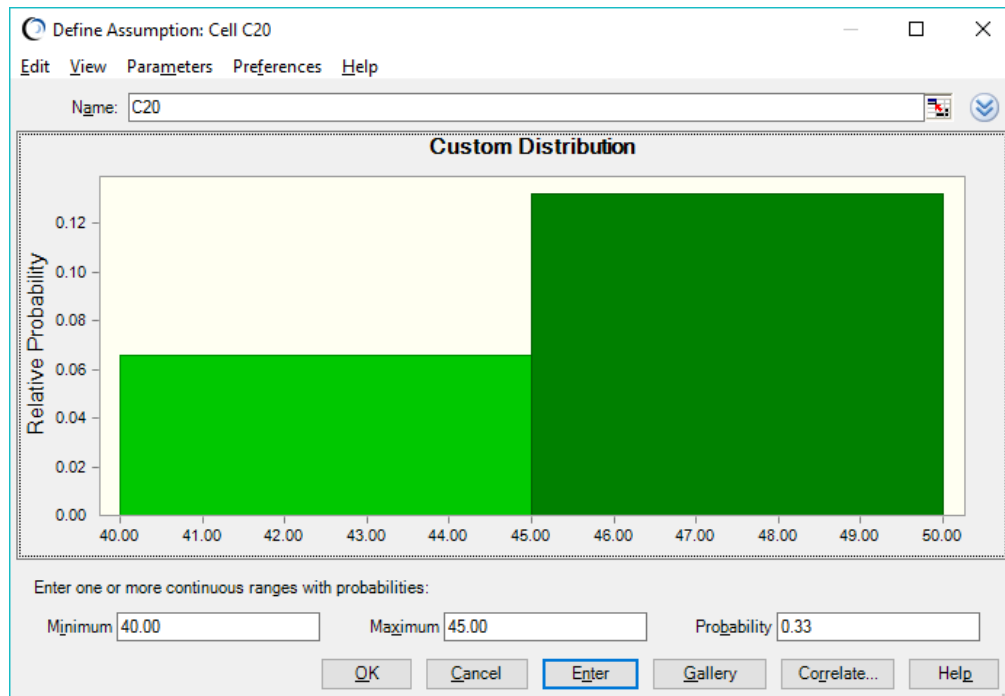
Custom Distribution, continued

DEFINING A CONTINUOUS CUSTOM DISTRIBUTION

To define continuous ranges, first switch the parameters to Continuous Ranges.

Then, simply input a (lower) value in the Minimum field, a second (higher) value in the Maximum field, and a probability in the Probability field. Click on Enter, and the defined range appears in the window.

For a material cost with a 33% probability of being between $40-$45 and a 67% probability of being between $45-$50, you would define each range separately, and the result appears as shown below.
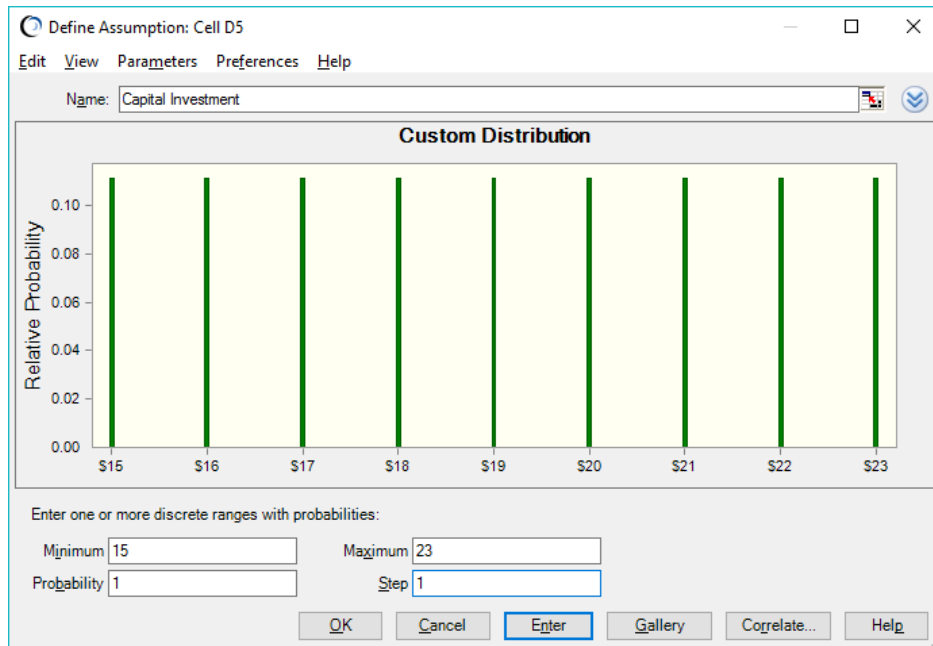

You can view each range's parameters by clicking on its value bar in the chart. The first range, shown in lighter green, is selected above. To deselect a range, click on another range or on Enter.

Custom Distribution, continued

DEFINING A DISCRETE CUSTOM DISTRIBUTION

A discrete custom distribution is just as easy to define. As with a continuous range, change the parameters in the menu and enter the Minimum, Maximum, and Probability parameters. Then enter a step value into the Step field (a step of 1 will produce integer values). Click on Enter, and you can view the resulting discrete distribution.

To model a potential venture capital investment between $15 and $23 million made in $1 million increments, you input the values shown below and then click on Enter.

Each step above in this example has an equal probability. To create steps with unique probabilities, you must define each bar separately.
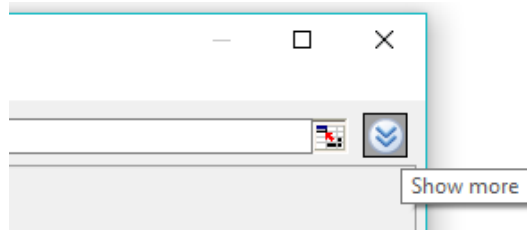
DEFINING A CUSTOM DISTRIBUTION FROM EXISTING DATA

If you already have your own data, you can use that information to define a custom distribution. You first need to enter your parameters into your spreadsheet in a format required by Crystal Ball. A selection of formats are shown below (the headers are not necessary and are provided below as guidance).
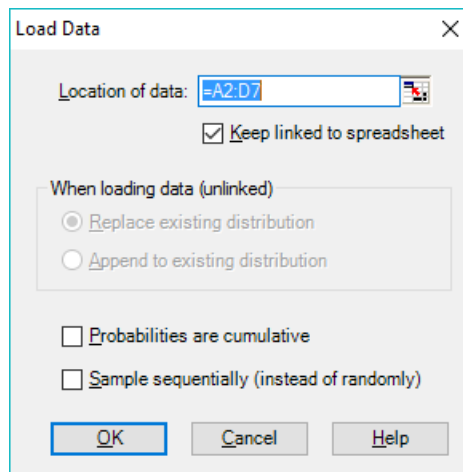
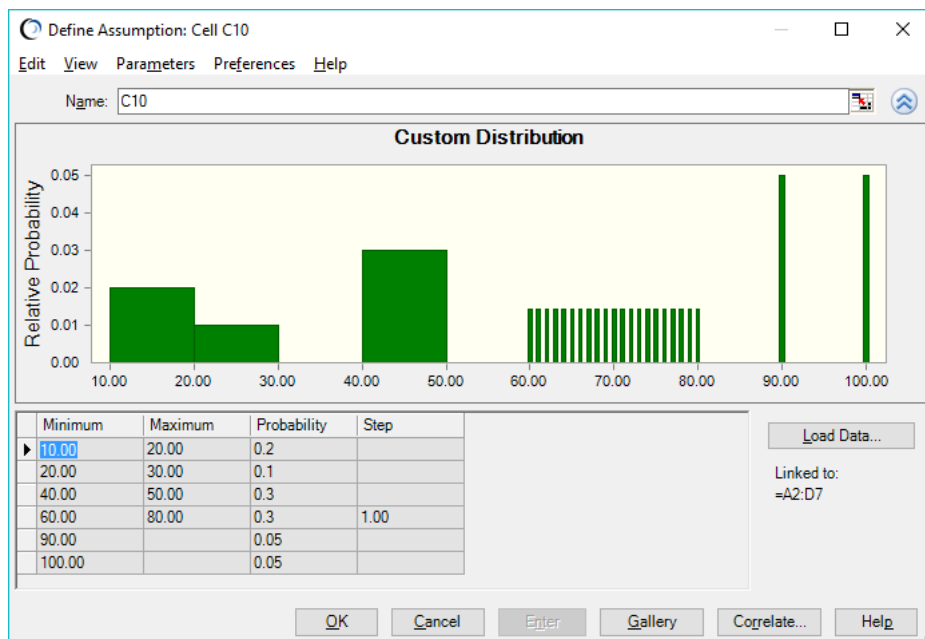|	A	B	C	D	E
1	**Minimum**	**Maximum**	**Probability**	**Step**	**Type**
2	10	20	0.2		Continuous Range
3	20	30	0.1		Continuous Range
4	40	50	0.3		Continuous Range
5	60	80	0.3	1	Discrete Range
6	90		0.05		Single Value
7	100		0.05		Single Value

Custom Distribution, continued

Once you have entered the data, open the Custom Distribution dialog and click the Show More icon in the upper right corner, then click the Load Data button.

This button opens a new dialog (shown below) that requests the cell range for your data.

Enter the cell range and click on OK. The data is loaded and linked to the custom distribution. If the data in the spreadsheet changes, the custom distribution will automatically be updated.

Custom Distribution, continued

ADDITIONAL NOTES ON THE CUSTOM DISTRIBUTION

As you have seen, the custom distribution is extremely flexible. For example, you can delete parts of your custom distribution by selecting the range and entering a Prob. value of 0. The *Crystal Ball User Manual* describes other ways on how to use the custom distribution.

For more information or to contact us, browse to http://www.oracle.com/technetwork/middleware/crystalball/overview/index.html.