

Remember Acme Manufacturing and the new CNC machine. The revenues and associated probabilities are given below, and also now the expenses have been given probabilities

Revenue	Probability
\$35,000	0.1
\$44,000	0.3
\$50,000	0.4
\$60,000	0.2

Expenses	Probability
\$6,000	0.1
\$8,000	0.4
\$11,000	0.3
\$14,000	0.2

Using the RAND() function in Excel, and following the probabilities on the previous slide, we generated 1000 revenue and expense values (each using a separate random number for independence), and found the resulting PW for Acme. We found the following useful information (we could discuss a lot more). Not a good deal!

1. The average PW was -\$20,670
2. The number of positive PW values, out of the 1000 simulated, was 216.

Monte Carlo simulation is very flexible

- The example used a discrete distribution, but there is a way to use any discrete or continuous distribution. If Excel is used, it has several special functions that generate random variates (e.g., NORMINV to generate normal random variates and BETAINV for beta random variates.)
- There are many ways to look at the performance of an alternative using Monte Carlo simulation (we examined only two in the previous example). Graphs can be especially valuable.
- Generate lots of data, through many trials. When average values converge to a fairly constant amount, you probably have enough data.