

Nodes are the most fundamental part of any DynRisk analysis. They represent the variables in the risk model. A variable can either be a simple input quantity or it can be a function of various other model variables.

If we compare a DynRisk model to a spreadsheet model, the nodes correspond to the (numerical valued) cells in the spreadsheet. A cell can either contain a number or a formula, possibly combining values from other cells. The same holds for the nodes in a DynRisk model.

There is, however, one important difference between spreadsheet cells and nodes. Unless you change something in a spreadsheet, the values of the cells are calculated once and for all.

In a DynRisk model, however, the nodes typically represent uncertain quantities, so instead of specifying fixed numbers for these, we assess probability distributions describing our uncertainties. This implies that it no longer makes sense to calculate the risk model just once. Instead we run a simulation on the model. That is, we sample random numbers from the specified distributions and calculates the corresponding node values. This is repeated many times. As a result we obtain ranges of values for each of the nodes.

Now, if each node was completely unrelated to all the others, the simulated ranges would eventually reflect the distributions we assessed. Thus, we would not learn anything that we did not already know before running the simulation.

If, however, one of the nodes was a function of the others, it could be much more difficult to calculate its distribution directly from the model specifications. This is where the simulation method comes in handy.

In order to learn how to build DynRisk models, it is essential to understand how to configure the nodes to serve your specific needs.