Models containing directed cycles

As already stated, there is a data flow from one node to another if there is a “directed path” of edges going from the first node to the second. Moreover, if there is a data flow from, say Node A to Node B, this implies that Node A must be calculated before node 2 in each simulation.

The question then is what happens if there are a data flow from Node A to Node B and also from Node B back to Node A? If so, the influence diagram contains a “directed cycle”. Obviously, it is impossible to calculate Node A before Node B, and at the same time calculate Node B before Node A. Hence, we conclude that the model is not well-defined in this case.

If you try to run a simulation on a cyclic model, i.e., one where the influence diagram contains a directed cycle, DynRisk will not signal that there is an error in your model. Apparently you get results just as you do with a normal model. The results you get, however, are completely unpredictable, and hardly what you really want.

The important message here is that you should never build a model with a directed cycle.