



The Rimcon Credit Model

The Rimcon credit model is designed to estimate expected losses in a portfolio of bonds. The model uses a Monte Carlo process to simulate the ending credit rating for each asset in the portfolio over a large number of scenarios using a combination of an excel workbook and a dll (dynamic link library). Microsoft excel is for the front end (inputs and outputs) because virtually everyone in the financial services sector is familiar with it. A C++ dll is used for the simulation calculations because of its significant speed advantage over excel and excel's visual basic macro language. The simulation consists of the following steps:

1. Read the asset portfolio data, list of issuers, sector correlation matrix, rating transition matrix and market spread table
2. Generate a random number for each issuer. The random numbers are correlated in accordance with the sector correlation matrix.
3. Use the random numbers and the rating transition matrix to determine the ending rating for each issuer.
4. Generate a random number and, using the spread volatility figures, determine an ending set of market spreads.
5. Use the ending ratings and market spreads to determine the gain or loss on each asset in the portfolio.
6. Determine the percentile level loss for the portfolio. For example, if the percentile level is 1% and there are 100,000 scenarios, select the loss on the 1,000th scenario from the bottom.
7. Determine the marginal risk for each asset by removing that asset from the portfolio and repeating the whole process.
8. Write the results to the excel workbook.

Steps 2 through 7 are carried out in the dll in order to improve run times.

The demo version of the model consists of two parts: a spreadsheet and a dll. The spreadsheet can be stored anywhere and renamed, if desired. But the dll should be stored in C:\Rimcon; that's where the spreadsheet will look for it. It should not be renamed.