

**** RISK MODELLING CHAPTER ****

The codes for the risk (MOTAD) modelling chapter are also similar to the codes for the default model except that the mixed-integer risk (MOTAD) programming model was applied (using the function **solveRiskMod**, Line 5598).

Again, the main addition is that to run the model using the Farm Business Survey (FBS) data for the selected three FBS regions in England, their soil type, rainfall, crop yield and crop price were used. Thus, estimation of gross margin and yield penalties were based on the farm yield data from the FBS data. Workable hours were estimated based on representative soil and rainfall data.

To run the model for each of the selected regions using 10000 randomly generated risk aversion parameters, a new function, **varyRisk** (Line 5752) was created in which the **solveRiskMod** function was incorporated.

To be able to compare the model result with observed data another function, **ValStat_RiskMod** (Line 5337) was created (and incorporated into **solveRiskMod**) to estimated statistical indicated such as mean absolute error (MAE) based on which regional representative risk aversion parameters were selected.

The results were generated were store as csv files based on which the absolute risk aversion coefficients were estimated and the E-V frontiers were developed.