Statistical

Model

Is the model picking up the relevant features correctly?
For example, with chain ladder, what are the impacts of any external influences or process changes? Or does it allow adequately for the variation of development pattern by origin year?

Questions to consider:
- Why have you selected this model?
- What alternatives are there?
- Is this the most appropriate model?
- What are the limitations of the model?
- Is the level of segmentation and granularity (eg annual/quarterly/monthly) appropriate?
- What action(s) have been taken to mitigate any limitations of the model?

Random

Random error or process risk relates to the fundamental uncertainty (insurable risk) that is insured by the policyholder. The sources of process risk arise as a result of the inherent uncertainty in statistical estimation.

- A small dataset will generally be more susceptible to random error than a larger book

Parameter

Parameter risk relates to the uncertainty associated with whether the estimated parameters are appropriate for what we are attempting to model.

The following can lead to parameter uncertainty:
- Poor raw data - inconsistency, incompleteness or unrepresentative
- Changes to data storage protocols, for example gross or net of RI, include or exclude claims handling cost
- Impact of outsourcing claims handling function on data
- Case reserving philosophy, change in senior personnel
- Large claims definitions, threshold changes, management decisions, loading for large claims when there are no large claims
- Overreacting to latest diagonal
- Fitting distribution when lacking tail data
- Certain claim events, such as those related to global weather patterns may change at a pace rendering historical data inappropriate
- Inflation assumptions
- Different expense profile of different distribution channels
- Change in the mix of business

We have chosen to describe what we mean by each element very simply - by just listing examples of the kinds of uncertainty that may be encountered. This is not intended to be an exhaustive list and ***we actively discourage use of the framework as a checklist***.