Long-tailed business in property insurance

Background So-called IBNR situations are those where the incidents are brought to the attention of the insurance companies long after they have occurred. Neck injuries (wiplash) in automobile insurance is a case in point. It may take up to a couple of decades(!) before the symptoms arrive. Insurance companies are obliged to set aside reserves to cover such claims. Valuation requires a discount, but we shall here simplify these matters and assume $d = 1$.

The most common way of dealing with IBNR situations in the industry is to use the so-called chain ladder method. An alternative, though not much used, is to rely on Poisson/multinomial modelling which leads to an independent sequence of Poisson claims for each year the IBNR lasts.

Objective: Present the chain ladder and the multinomial/Poisson approach to IBNR evaluations and compare them though their results in a specific case.

Material: Section 5 in "Modelling claim frequency", and the note "The chain ladder method" that can be downloaded from the home page.

Main points: The presentation (45 minutes) should cover

- The chain ladder method
- Poisson/multinomial modelling
- Simulate actual losses of a Poisson/multinomial IBNR scheme using a loss model of your choice. You may use the model in Section 5 in "Modelling claim frequency", but make sure that the parameters are different. Let the scheme run up to $L = 20$ years.
- Run chain ladder and Poisson/multinomial evaluations on the simulated data and compare the results
- Try to judge, intuitively or otherwise, the two methods against each other.