8.3.3 Triangle-Based Techniques   🕐 5m

Triangle-based techniques can also be used to estimate unpaid ULAE. There are three primary techniques, which we will summarize below.

Triangle-Based Development Techniques

Because actual ULAE by accident year is not directly observed, actuaries have to rely on assumptions and payment patterns to create paid ULAE triangles. In this method, actuaries allocate paid ULAE in previous calendar years to accident years. Note that this approach will be inaccurate if the allocations are incorrect or alter over time.

Slifka's Method (Time-and-Motion Study Approach)

The Slifka approach for estimating ULAE analyzes how ULAE is distributed across accident years within a calendar year. This assumption is used to estimate unpaid ULAE by projecting calendar year ULAE.

The Slifka method recommends employing a time-and-motion study to understand how resources are allocated between managing the current accident year's claims and the prior accident year's claims. For example, assume that a time a motion study suggests that, typically, at the end of a CY:

- 50% of the current AY's ULAE remains unpaid,

- 10% of the prior AY's ULAE remains unpaid, and

- 5% of the second prior AY's ULAE remains unpaid.

So, the total unpaid ULAE estimate is 50% + 10% + 5% = 65% of a typical CY's ULAE payment.

This resource allocation relationship helps forecast future payment activities. Also, note that while this method initially assumes a steady state, it can be adjusted to account for changes in volume and the impact of inflation.

Paid ULAE Triangles Based on Time and Motion Studies

This method uses time-and-motion studies to determine paid ULAE triangles. For example, assume that these studies suggest that 50% of ULAE is paid when a claim is reported, with the remaining 50% paid in proportion to claim payments. Actuaries can allocate historical ULAE to

accident year-calendar year groups accordingly, with 50% linked to the distribution of reported claims across accident years and 50% following the distribution of paid claims based on an appropriate accident year claims payment pattern. This creates a ULAE triangle, and traditional development techniques can then be applied to estimate ultimate ULAE and indicated unpaid ULAE.