Expenses and Profit 5M

Expenses

In addition to losses, expenses need to be accounted for in the ratemaking process. There are two main categories of expenses to consider: ***loss adjustment expenses*** and ***other expenses***.

Loss adjustment expenses, E_L, also known as LAE, are costs that are incurred during the claim settlement process. They are typically accounted for as part of incurred losses. Loss adjustment expenses can be further separated into ***allocated loss adjustment expenses (ALAE)*** and ***unallocated loss adjustment expenses (ULAE)***.

- ALAE are expenses that are associated with a particular claim, e.g. lawyer's fees.
- ULAE are expenses that are not associated with a particular claim, e.g. salary of the claims department manager.

To improve consistency in reporting expenses, the U.S. insurance industry introduced another categorization. For reporting, loss adjustment expenses can be categorized as either ***defense and cost containment (DCC) expenses*** or ***adjusting and other (AAO) expenses***.

- DCC consist of all costs that are associated with providing claim defense.
- AAO consist of all other expenses incurred during the claim settlement process.

In general, DCC expenses are treated as ALAE, while AAO expenses are treated as ULAE.

In addition to loss adjustment expenses, writing insurance policies incurs expenses for things like commissions, brokerage, taxes, and licenses. These expenses need to be accounted for in determining the premium of an insurance policy so that the insurer is able to pay for them.

These expenses can be categorized as either ***variable expenses*** and ***fixed expenses***. Variable expenses are expenses that vary with the gross premium; they are defined as a percentage of the premium. Fixed expenses do not vary with premium and are the same for each risk (exposure unit). Commissions and taxes are examples of variable expenses, while salaries of employees not in the claims department are examples of fixed expenses.

Let E_V and E_F be the variable and fixed expenses, respectively, for a specific time period. The ***variable expense ratio*** and the ***fixed expense ratio*** are:

$$V = \frac{E_V}{P} \qquad F = \frac{E_F}{P}$$

where P is the amount of premium for the same time period.

Then, because LAE are accounted for as part of incurred losses, the amount of expenses for the ratemaking process is:

$$\begin{aligned} \text{Expenses} &= E_V + E_F \\ &= V \cdot P + E_F \end{aligned}$$

Profit

Profit can be included in the ratemaking calculation either implicitly or explicitly.

- Under the implicit method, actuaries simply make conservative estimates for each component, i.e. for loss, premium, and expenses. The conservative estimates will, on average, result in better actual experience than expected experience, resulting in profit for the company.

- Under the explicit method, actuaries do not make conservative estimates but instead add a percentage of the premium to the premium calculation as profit.

Denote Q_T as the target profit percentage of premium. Then, the amount of profit for the ratemaking process is:

$$\text{Profit} = Q_T \cdot P$$

where P is the premium. From this, we get the ***permissible loss ratio (PLR)***, which is the target loss ratio to cover variable expenses and to meet profitability goals.

$$\text{PLR} = 1 - V - Q_T \qquad \text{(S5.2.4.1)}$$

Note that fixed expenses are accounted for elsewhere, which will be explained later.