2.5 Summary

10m

This section covers methods for incorporating loss adjustment and underwriting expenses, as well as determining underwriting profit provisions in ratemaking. It includes approaches for handling allocated and unallocated loss adjustment expenses, various expense allocation methods, and calculations to set underwriting profit goals that account for investment income and target return on premium.

Loss Adjustment Expenses

ALAE

Allocated loss adjustment expenses (ALAE) can be incorporated in ratemaking using one of the following methods:

- Include ALAE with losses.
- Study development and trend patterns for ALAE separately from losses.

ULAE

Unallocated loss adjustment expenses (ULAE) can be incorporated in ratemaking by assuming that ULAE tracks with loss and ALAE dollars consistently over time. The steps for this approach are:

1. Calculate the ratios of calendar year paid ULAE to calendar year paid loss plus ALAE over several years.
2. Select a ratio to use.
3. Apply the ratio to each year's reported loss plus ALAE.

Other methods for incorporating ULAE are:

- Using count-based allocation methods.
- Studying how claim adjusters spend their time.

Underwriting Expenses

The historical expense ratios for each category of underwriting expense typically use the following data:

Expense	Data Used	Divided By
General Expense	Countrywide	Earned Premium (or Exposure/Policy Counts)
Other Acquisition	Countrywide	Written Premium (or Exposure/Policy Counts)
Commissions and Brokerage	Countrywide/State	Written Premium (or Exposure/Policy Counts)
Taxes, Licenses, and Fees	State	Written Premium (or Exposure/Policy Counts)

Fixed expenses are divided by exposures (or policy counts) under the Exposure/Policy-based Projection Method. Otherwise, expenses are divided by premium.

ALL VARIABLE EXPENSE METHOD

Under this method, all underwriting expenses are treated as variable to premium, i.e., as a constant percentage of premium. The steps for this method are:

1. Derive the expense ratio for each year and category.
2. Select a ratio for each expense type.
3. Sum the selections for each expense category to find the total underwriting expense provision.

If any expenses are constant or almost constant for each risk, this method will undercharge risks with below-average premium and overcharge risks with above-average premium.

PREMIUM-BASED PROJECTION METHOD

Under this method, fixed and variable expenses are handled separately, although they are both related to premium data. The steps for this method are:

1. Derive the expense ratio for each year and category.
2. Select a ratio for each expense type.
3. Divide each selected expense ratio into fixed and variable ratios.

4. Sum the fixed expense ratio selections for each expense category to find the total fixed expense provision. Repeat for variable expenses.

If needed, find the fixed expense per exposure as

$$\text{Fixed Expense Per Exposure} = \text{Fixed Expense Ratio} \times \text{Projected Avg Premium}$$

This method will result in distorted fixed expense ratios if historical and projected premium levels differ materially.

EXPOSURE/POLICY-BASED PROJECTION METHOD

Under this method, variable expenses are related to premium data, while fixed expenses are related to exposure or policy count data. The steps for this method are:

1. Split each expense into fixed and variable components.
2. Derive the expense ratio for each year and category. Divide by exposures (or policy counts) for fixed expenses and premium for variable expenses. Trend the fixed expense ratios if needed.
3. Select a ratio for each expense type.
4. Sum the fixed expense ratio selections for each expense category to find the total fixed expense provision. Repeat for variable expenses.

If needed, find the fixed expense ratio as

$$\text{Projected Fixed Expense Ratio} = \frac{\text{Avg Projected Fixed Expense Per Exposure}}{\text{Projected Avg Premium}}$$

This method could be enhanced by:

- improving the method for splitting expenses into fixed and variable portions
- collecting data at a finer level (other than countrywide) for multi-state insurers
- updating the allocation of fixed expenses that vary by certain characteristics (such as new vs. renewal business)
- incorporating the impact of economies of scale on expenses

Underwriting Profit Provision

$$\text{Total Profit} = \text{Investment Income} + \text{UW Profit}$$

Investment income is income earned from capital funds or policyholder-supplied funds (i.e., unearned premium reserves and loss reserves).

Underwriting profit is the sum of profits generated from individual policies. It is typically set in order to achieve the target total rate of return after investment income has been considered.

The variable permissible loss ratio (VPLR) is the percentage of each premium dollar that is intended to pay for projected losses and LAE and projected fixed expenses.

$$\text{VPLR} = 1 - V - Q_{\text{T}}$$

The total permissible loss ratio (PLR) is the percentage of each premium dollar that is intended to pay for projected losses and LAE.

$$\text{PLR} = 1 - F - V - Q_{\text{T}}$$