to undergo audit. Historical premium should also be adjusted for actual or expected distributional changes. This is referred to as premium trend. One-step and two-step trending are discussed in detail in this section.

Current Rate Level

To illustrate the need for a current rate level adjustment, consider the simple scenario in which all policies were written at a rate of $200 during the historical period. After the historical period, there was a 5% rate increase so the current rate in effect is $210. Assume the "true" indicated rate for the future ratemaking time period is $220. If the practitioner fails to consider the 5% increase already implemented and compares the historical rate (i.e., $200) to the indicated rate (i.e., $220), the practitioner will conclude that rates need to be increased by 10%. Implementing this indicated rate change will result in a new rate of $231 (= $210 x 1.10), which is excessive. If instead, the practitioner restates the historical premium to the present rate level of $210 and compares that to the indicated rate, the practitioner will correctly deduce that rates only need to be increased 4.8% (= $220 / 210 - 1.00).

This section discusses two methods for adjusting premium to the current rate level: extension of exposures and the parallelogram method.

Simple Example

Before describing the two methods for adjusting premium to current rate level, the details underlying a simple rate change example will be summarized and later used to illustrate the mechanics of each method.

In this simple example, assume that all policies have annual terms and premium is calculated according to the following rating algorithm:

$$\text{Premium} = \text{Exposure} \times \text{Rate per Exposure} \times \text{Class Factor} + \text{Policy Fee}.$$

The class factor has three values, or levels (X, Y, and Z), each with a distinct rate differential.

The following three rate changes occurred during or after the historical experience period.

- July 1, 2010: the base rate was increased and this resulted in an overall average rate level increase of 5%.[13]
- January 1, 2011: the base rate and policy fee were adjusted resulting in an overall average rate level increase of 10%.
- April 1, 2012: the policy fee and class Y and Z rate relativities were changed resulting in an overall average rate level decrease of -1%.

The details of each rate level are as follows:

[13] The reader may be confused by the overall average rate changes provided in this example [e.g., how a 5.6% (=950/900-1.00) change in rate per exposure results in an overall average rate change of 5.0%]. The overall average rate change considers the average change in the total premium per policy, which is a function of the rate per exposure, the number of exposures per policy, the applicable class factors, and the policy fee. These detailed inputs have not been provided; the overall average rate change should be taken as a given for the purpose of illustrating premium at current rate level techniques.