14. (1.5 points)

A policy subject to a balanced retrospective rating plan is written with the following values:

- Expected loss ratio = 70% of standard premium
- Tax multiplier = 1.10
- Expense ratio = 20%
- Loss conversion factor = 1.125
- Maximum retrospective premium = 125% of standard premium
- Minimum retrospective premium = 75% of standard premium

The appropriate values from Table M for the current year are as follows:

- Insurance charge at entry ratio associated with maximum = 0.653
- Insurance savings at entry ratio associated with minimum = 0.031

Calculate the expected retrospective premium as a percentage of standard premium for the policy.

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Question 14:

Model Solution 1

Step 1: Calculate the basic premium factor:

b = [expense in basic] + [converted insurance charge]
b = [e - (c - 1) * E] + [cI]
b = [0.2 - (1.125 - 1) * 0.7] + [1.125 * (0.653 - 0.031) * 0.7]
b = [0.1125] + [0.4898]
b = 0.6023

Step 2: Calculate expected ratable losses

E[L] = E * (1 - charge + savings)
E[L] = 0.7 * (1 - 0.653 + 0.031)
E[L] = 0.2646

Step 3: Calculate the expected retrospective premium:

E[RP] = T * (b + c * E[L])
E[RP] = 1.1 * (0.6023 + 1.125 * 0.2646)
E[RP] = 0.9900

Model Solution 2

The following solution can be used IF AND ONLY IF the candidate stated that it's a balanced plan.

E[RP] = Tax Multiplier * (E[Expense Ratio] + E[Loss Ratio])
E[RP] = 1.1 * (0.20 + 0.70)
E[RP] = 0.99

Examiner's Comments:
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The majority of candidates used model solution one and received full credit for this question. The most common error was made in calculating the expected ratable losses. Of the candidates that made this error, a significant number incorrectly used the expected loss ratio (E) as the expected ratable losses (E[L]).

The other common error was made when calculating the converted insurance charge. The candidates who made this error did not multiply the [charge – savings] by the expected loss ratio (E).
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