

P. 12 *The 1940 NCCI Multi-Split Plan:*

Each loss was divided into \$500 increments.

The first increment was considered all primary.

The second increment was considered $2/3$ primary.

The third increment was considered $(2/3)^2$ primary, etc.

P. 29, Sol. 1.19: Letting E be the size, this becomes: $\Delta(Z/E) / \Delta E$ should be **negative**.

f_2 does satisfy the third requirement.

Size	Z	Z/E	Delta(Z/E)/Delta(E)
1	0.42	0.420	
2	0.60	0.300	-0.120
3	0.76	0.253	-0.047
4	0.89	0.223	-0.031
5	1.00	0.200	-0.022

f_3 does not satisfy the third requirement.

Size	Z	Z/E	Delta(Z/E)/Delta(E)
1	0.04	0.040	
2	0.16	0.080	0.040
3	0.36	0.120	0.040
4	0.64	0.160	0.040
5	1.00	0.200	0.040

Under f_2 for example:

<u>Expected Losses</u>	<u>Z</u>	<u>Actual Losses</u>	<u>Experience Modification</u>
100,000	0.42	100,000	$(0.42)(100/100) + (1 - 0.42) = 1.00$.
100,000	0.42	150,000	$(0.42)(150/100) + (1 - 0.42) = 1.21$.
200,000	0.60	100,000	$(0.60)(100/200) + (1 - 0.60) = 0.70$.
200,000	0.60	150,000	$(0.60)(150/200) + (1 - 0.60) = 0.85$.

An extra \$50,000 in reported losses increases the experience modification by 0.21 for the smaller risk and 0.15 for the larger risk, satisfying the third requirement.

P. 809, line 1: $C = r_G + \phi(r_G) - \{r_H + \phi(r_H)\}$

P. 869: The contribution from the Exponential for the mixed distribution to the layer from **1** to **2** is:

$$(0.95)(0.8)(28.650\% - 8.208\%) = 0.1554.$$

The mixed distribution has losses in the layer from **1** to **2** of:

$$(0.96)(39.098\% - 19.705\%) = 0.1862 = 0.0308 + 0.1554.$$

P. 889: V follows a Pareto Distribution, with $F(v) = 1 - \{10/(v + 10)\}^4$.

p. 1298, sol. 21.7: The average claim cost for Hazard Group for Minor P.P. plus T.T. is 8140 rather than 7955. Therefore, Minor/T.T. Entry Ratio: $500,000/8140 = 61.425$.

p. 1316: Then the estimate of W for this class is:

$$0.7\% + (0.02)(1\% - 0.5\%) + (0.04)(2\% - 0.7\%) + (0.07)(10\% - 9\%) + (0.03)(30\% - 35\%) = \mathbf{0.682\%}.$$

For permanent total, the estimated relativity of this class to the hazard group is:

$$0.682\% / 0.7\% = 0.974.$$

Thus if for example for this class the frequency of Temporary Total Claims were estimated as 50 per \$100 million of payroll, then for this class the estimated frequency of Permanent Totals is: $(0.682\%)(50) = 0.341$ per \$100 million of payroll.

P. 1446, Sol . 23.21: $\lambda / (1 - e^{-\lambda}) = 0.0952 / (1 - e^{-0.0952}) = 1.0484$. Final solution is OK.

P. 1487: Rosenberg's Example B: Anti-selection does not affect increased limits factors

at cutoffs of	Average Indemnity severity resulting from purchasers of:	
	<u>Policy Limit \$50,000</u>	<u>Policy Limit \$100,000</u>
\$ 25,000	\$ 5,000	\$ 6,000

P. 1623, sol. 24.101: The actual CV is 4. We mistakenly use a CV of 5.

Using a CV of 5, we **overestimate** the p.p.; the error is: $\$2600 - \$2130 = \mathbf{\$470}$.

P. 1763, sol. 25.4: Statements #2 and #3 are true.

P. 1835: The exposure factor for the reinsured layer is: $1.00 - \mathbf{0.66} = \mathbf{0.34}$.

In other words, for an insured value of \$175,000, the reinsurer will pay 34% of expected losses.

P. 1867: For ceded losses between 10% and 30% of subject premium, the average retro

P. 1885, last sentence of 4th paragraph: $(110\%)(15/40) = \mathbf{41.25\%}$.

P. 1886, first exercise: $(110\%)(\mathbf{23}/40)(5/12)(\$3 \text{ million}) = \mathbf{\$790,625}$.

P. 1893, Q. 26.10: Limit should be 173,913 not 179,913

P. 1897, 26.18: change the first direct premium to \$19M rather than \$18M.

P. 1925, sol. 26.6b: If the ALAE is **included with treaty**

P. 1931, sol. 26.16: fourth line should not have "free" after "for the one full loss"

P. 1952, sol. 26.67: These losses are all from one occurrence and total \$4,700,000.

P. 2035, comment to solution 27.47:

Assuming that unlike as specified in the question, at most one event can occur per year, one can compute the occurrence exceedance probability curve, as per Table 2.1 in Grossi and Kunreuther (as corrected in the errata from the CAS.)

<u>Event</u>	<u>Size (\$million)</u>	<u>Probability</u>	<u>Exceedance Probability</u>
1	40	0.0125	0
2	20	0.025	0.0125
3	10	0.05	$0.0125 + 0.025 = 0.0375$
4	5	0.1	$0.0375 + 0.05 = 0.0875$
	0		$0.0875 + 0.1 = 0.1875$

Exceedance Prob.

