Reading: ISO.Rating ISO_CalcExpMod (Problem 1)
Model: Source Text
Problem Type: Calculate the experience modification given the CSLC

Given The following policy is being rated using the ISO CGL rating plan.

12/1/2014	Effective Date
Claims-Made (CM)	Policy Type
65%	Expected Loss Ratio (ELR)
8/31/2014	Loss Evaluation Date

	Annual Basic Limit Premium[1]
$75,000	Premises/Operations
$25,000	Products

Policy Year	Sub-line	Annual Basic Limits Company Loss Cost
2012	Prem/Ops	24,938
2012	Products	5,014
2011	Prem/Ops	50,544
2011	Products	21,393
2010	Prem/Ops	48,146
2010	Products	20,076

Effective Date	Policy Type	Indemnity	ALAE
12/1/2012	1st-year Claims-Made	1,000	0
		2,200	0
		4,000	2,000
12/1/2011	Occurrence	0	3,000
		121,000	25,700
		5,000	102,000
12/1/2010	Occurrence	9,500	3,500
		5,500	0
		3,900	1,300
		2,800	0

Find Calculate the experience modification factor. You may use the information provided in the tables below.

Table 15 (exerpt)

	Latest Policy Year	Prior Policy Year	Next Prior Year
Sub-line	(18 Months)	(30 Months)	(42 Months)
Prem/Ops	0.536	0.337	0.183
Products	0.718	0.560	0.425
Sub-line	(21 Months)	(33 Months)	(45 Months)
Prem/Ops	0.483	0.287	0.151
Products	0.675	0.535	0.404

Development is measured from the policy effective date to the loss evaluation date.

Table 16 (exerpt)

CSLC	Credibility	EER	MSL
158,622 – 165,658	0.36	0.887	117,200
165,659 – 172,920	0.37	0.891	119,600
172,921 – 180,417	0.38	0.894	122,100

Solution

Applying our knowledge of the experience period we deduce the policy being rated is a **3rd-year Claims-Made**

Next, the CSLC is the sum of the Annual Basic Limits Company Loss Cost for the experience period.

CSLC = 170,111

We can use Rule 16 (Table 16) to find the credibility, Expected Experience Ratio (EER), and Maximum Single Loss (MSL).
By looking up the row which contains the CSLC of 170,111 we get:

0.37	Credibility (Z)
0.891	EER
119,600	MSL

Now we need to calculate the Actual Experience Ratio (AER). This is the sum of the expected future development and the limited claims history divided by the CSLC.

To calculate the **limited claims history**, notice we're given a list of indemnity and ALAE for the claims on each of the policies in the experience period.

We need calculate the **basic limits** indemnity and then cap the basic limits indemnity plus ALAE at the maximum single loss.

(1) Indemnity	(2) Basic Limits Indemnity	(3) ALAE	(4) Total	(5) Total Limited by MSL
1,000	1,000	0	1,000	1,000
2,200	2,200	0	2,200	2,200
4,000	4,000	2,000	6,000	6,000
0	0	3,000	3,000	3,000
121,000	100,000	25,700	125,700	119,600
5,000	5,000	102,000	107,000	107,000
9,500	9,500	3,500	13,000	13,000
5,500	5,500	0	5,500	5,500
3,900	3,900	1,300	5,200	5,200
2,800	2,800	0	2,800	2,800
				265,300

<= Limited claims history

Notes:
(2) = min((1), $100,000)
(4) = (2) + (3)
(5) = min((4), MSL)

Here, $100,000 is the basic per-occurrence limit.

The **expected future development** by policy type/sub-line is the product of the Annual Basic Limits Company Loss Cost multiplied by the EER and LDF.
We already found the EER and the LDFs are looked up in Rule 15 (Table 15).

Important point: LDFs only apply to occurrence policies!

Policy Year	Policy Type	Sub-line	(6) Annual Basic Limits Company Loss Cost	(7) EER	(8) LDF	(9) Expected Development
2012	1st-yr CM	Prem/Ops	24,938	0.891	0	0
2012	1st-yr CM	Products	5,014	0.891	0	0
2011	Occurrence	Prem/Ops	50,544	0.891	0.287	12,925
2011	Occurrence	Products	21,393	0.891	0.535	10,198
2010	Occurrence	Prem/Ops	48,146	0.891	0.151	6,478
2010	Occurrence	Products	20,076	0.891	0.404	7,227
					Expected Future Loss Development =>	36,828

(9) = (6) * (7) * (8), rounded to nearest dollar

From this, AER = (36,828 + 265,300) / 170,111 = 1.776

Mod = (AER - EER) / EER * Credibility
= (1.776 - 0.891) / 0.891 * 0.37
= 0.368

So the experience modification is a 36.8% debit.
and the experience modification factor equals 1.368