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Split Plans for Experience Rating—Stakeholders Meeting

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Contents

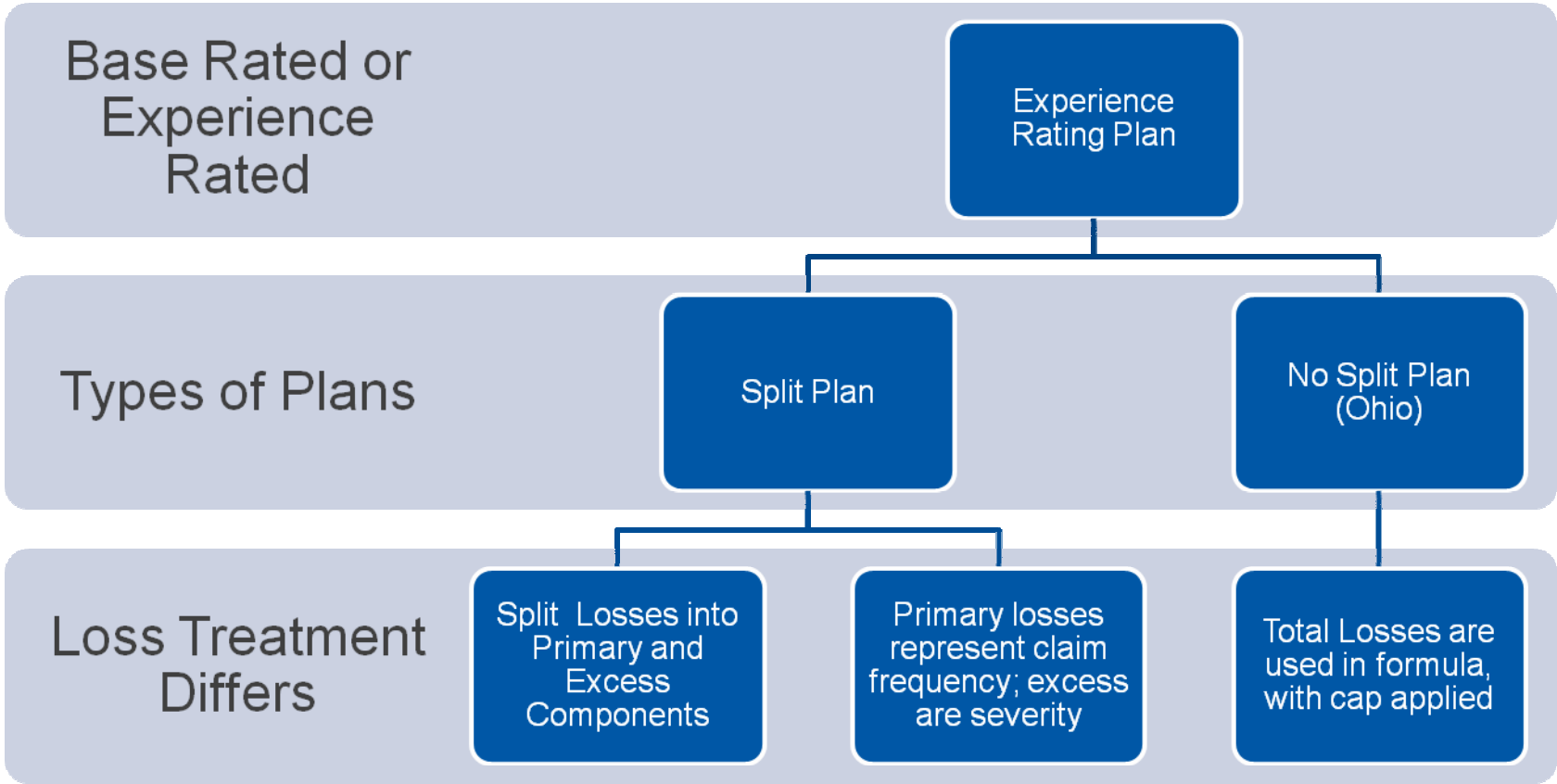
Objectives of this Session

Objectives

- Understand experience rating, mechanics, parameters and performance
- Review the potential impact of adopting a split plan at the mod level
- Prepare for potential changes to experience rating in Ohio

Mechanics of Experience Rating

Mechanics of Experience Rating
Split Plan Defined



Mechanics of Experience Rating
Current Ohio Plan

Ohio BWC Plan

- No Split plan (4 years of experience)
  - Maximum loss varies by expected loss size:
    - As low as $12,500 for small risks
    - As high as $250,000 for large risks
- Minimum expected losses to qualify is $8,000
- Credibility varies by expected loss size:
  - Maximum credibility of 85% at $1 million (as of June 2008)
- Formula (with example):

$$\frac{ActualLosses(\text{lim}) - ExpectedLosses}{ExpectedLosses}(credibility\%) + 1.0 = Modification(EM)$$

Example: $\frac{\$200{,}000 - \$1{,}000{,}000}{\$1{,}000{,}000}(0.85) + 1.0 = 0.32$

$1,000,000 Manual premium pays $320,000 after the Credit Modification

Mechanics of Experience Rating
Current Ohio Plan Example

The current Ohio plan does not distinguish between claim frequency and claim severity, even though claim frequency is more predictive of higher future costs. Note the following two examples, where the claim frequency difference is 10 to 1, however the experience mods are the same because the total losses are equal.

Claims	Example 1	Example 2
1	$25,000	$250,000
2	$25,000	
3	$25,000	
4	$25,000	
5	$25,000	
6	$25,000	
7	$25,000	
8	$25,000	
9	$25,000	
10	$25,000	

Example 1:

$$\frac{(10 * \$25{,}000) - \$200{,}000}{\$200{,}000}(0.34) + 1.0 = 1.085$$

Example 2:

$$\frac{\$250{,}000 - \$200{,}000}{\$200{,}000}(0.34) + 1.0 = 1.085$$

*Use of the LLR table was ignored to simplify the examples

Mechanics of Experience Rating
Split Plan Structure

Split Plan

- Split plan often uses 3 years of experience (4 years is statutory in Ohio)
  - Primary loss defined by split point, such as first $5,000 of a claim
  - Excess is remainder above primary, and below maximum cap
  - Medical only claims limited to 30% of loss
  - Maximum loss capped at state accident limit (i.e. $250,000) per claim, 2 times state accident limit for multiple claimants or catastrophe
- Credibility varies by expected loss size:
  - Maximum credibility of 91% for primary, 57% for excess
- Used in both NCCI and non NCCI states
- Formula:

$$1+(Z_p)\frac{A_p-E_p}{E}+(Z_e)\frac{A_e-E_e}{E}=Modification(EM)$$

- Z_p = Primary Credibility; Z_e = Excess Credibility
- A_p = Actual Primary Loss; A_e = Actual Excess Loss
- E_p = Expected Primary Loss; E_e = Expected Excess Loss
- $E = E_p + E_e$ = Total Expected Loss

Mechanics of Experience Rating
Split Plan Structure-Ohio

Split Plan

- Initial review of split plans that fit Ohio experience are as follows:
  - Minimum expected losses to qualify are $8,000
  - Uses the oldest 4 of the most recent 5 years of experience (statutory)
  - Losses capped at $175,000 for all risks
  - Medical only losses limited to 30%
  - Primary loss split between $10,000 and $20,000

Mechanics of Experience Rating
Split Plan Parameters-Ohio

The State Average Cost per Case (SACC) is a fundamental measure of benefit level that is used to derive many other rating parameters within the split plan formula. An example calculation is shown below using Ohio loss data evaluated as of 12/31/2007.

The losses here are unlimited, undeveloped, and exclude handicap surplus

Policy Year	[1] Claim Count	[2] Total Incurred Losses	[3] Average Cost Per Case
2003/2004	143,763	$ 1,006,865,365	$ 7,004
2004/2005	135,202	$ 896,519,977	6,631
2005/2006	125,620	$ 826,230,543	6,577
Total	404,585	2,729,615,885	6,747

Mechanics of Experience Rating
Split Plan Parameters-Ohio

Using the State Average Cost per Case (SACC), a parameter referred to as the 'G' value is defined as SACC/1000. This relationship, along with the others shown below, were defined by NCCI research on the performance of various experience rating plans, and is used as a cost level surrogate. In all calculations where 'G' is used, one could also simply use a multiple of the SACC.

Examples of other parameters based on 'G' are also displayed in the table below:

Parameter	Formula	Calculation	Result
'G' Value	SACC/1000	$6,747/1000	6.75, selected 7.0
Maximum Single Loss	'G' * $25,000 or SACC*25	7.0 * $25,000	$175,000
State Reference Point	'G' * $250,000 or SACC * $250	7.0 * $250,000	$1,750,000

Mechanics of Experience Rating
Split Plan Parameters-Ohio

The credibility parameters are also a function of the average cost levels, and are determined by the following formulas for primary and excess, where 'E' represents total expected losses. The structure of the formulas is derived from Bayesian statistics, and the formula values were developed by NCCI using empirical testing.

Credibility is still a function of expected losses, as is the current table, and it increases as the size of risk increases.

Parameter	Formula
Primary Credibility (Zp)	Zp = (E + 700G)/(1.10E + 3,270G)
Excess Credibility (Ze)	Ze = (E + 5,100G)/(1.75E + 208,925G)
Total Credibility	(Zp*(primary loss) + Ze*(excess loss))/E

Mechanics of Experience Rating
Split Plan Calculations

Sample calculations of actual primary and actual excess loss with a $250,000 accident limitation (algorithm is different for medical only claims)

- Lost time claim of $275,000
  - Total loss limited to $250,000
  - Primary loss = $5,000
  - Excess loss = $245,000
- Medical only claim of $7,000
  - Primary loss = $5,000 x 30% = $1,500
  - Excess loss = $2,000 x 30% = $600

Mechanics of Experience Rating
Split Plan Formula

Frequency Severity

$$1+(Z_p)\frac{A_p-E_p}{E}+(Z_e)\frac{A_e-E_e}{E}=Modification(EM)$$

$$1+(0.89)\frac{\$50{,}000-\$200{,}000}{\$1{,}000{,}000}+(0.32)\frac{\$150{,}000-\$800{,}000}{\$1{,}000{,}000}=0.66$$

$1,000,000 Manual premium pays $660,000 after the Credit Modification

Mechanics of Experience Rating
Experience Mod Comparisons

Comparison of Plans for a $25,000 expected loss risk; assumes all claims are lost time to simplify process, $175,000 maximum single loss for split plan; $20,000 primary split point; $12,500 maximum single loss for Ohio

Parameters	Total	Primary	Excess
Expected Losses	25,000	7,500	17,500
Credibility No Split[85%]	9%		
Credibility Split Plan		59%	4%

Experience Modification Factors by Plan				
Claim Count	Amount	Ohio 85% No Split	Ohio 60% No Split	Example Split Plan
1	$ 10,000	0.95	0.96	1.03
1	$ 5,000	0.96	0.97	1.15
1	$ 7,500	0.99	0.99	1.33
1	$ 2,500	1.00	1.00	1.39
1	$ 7,500	1.03	1.02	1.57
1	$ 5,000	1.05	1.03	1.68
1	$ 12,500	1.09	1.06	1.98
7	$ 50,000			

Example with only small claims to illustrate the impact of claim frequency

Experience Mods for each plan include the current claim and all prior claims

Mechanics of Experience Rating
Experience Mod Comparisons

Comparison of Plans for a $25,000 expected loss risk; assumes all claims are lost time to simplify process, $175,000 maximum single loss for split plan; $20,000 primary split point; $12,500 maximum single loss for Ohio

Parameters	Total	Primary	Excess
Expected Losses	25,000	7,500	17,500
Credibility No Split[85%]	9%		
Credibility Split Plan		59%	4%

Experience Modification Factors by Plan

Claim Count	Amount	Ohio 85% No Split	Ohio 60% No Split	Example Split Plan
1	$ 1,000	0.91	0.94	0.82
1	$ 1,000	0.92	0.94	0.84
1	$ 150,000	0.96	0.97	1.53
1	$ 2,000	0.97	0.98	1.57
1	$ 2,500	0.98	0.98	1.63
1	$ 1,000	0.98	0.99	1.66
1	$ 5,000	1.00	1.00	1.77
7	$ 162,500			

Example with small and large claims to illustrate the impact of claim frequency with claim severity

Experience Mods for each plan include the current claim and all prior claims

Mechanics of Experience Rating
Experience Mod Comparisons

Comparison of Plans for a $100,000 expected loss risk; assumes all claims are lost time to simplify process, $175,000 maximum single loss for split plan; $20,000 primary split point; $75,000 maximum single loss for Ohio

Parameters	Total	Primary	Excess
Expected Losses	100,000	30,000	70,000
Credibility No Split[85%]	26%		
Credibility Split Plan		0.79	0.08

Experience Modification Factors by Plan				
Claim Count	Amount	Ohio 85% No Split	Ohio 60% No Split	Example Split Plan
6	$ 5,000	0.82	0.87	0.94
2	$ 7,500	0.86	0.90	1.06
4	$ 10,000	0.96	0.97	1.38
1	$ 15,000	1.00	1.00	1.49
2	$ 20,000	1.10	1.07	1.81
1	$ 25,000	1.17	1.12	1.97
1	$ 30,000	1.25	1.17	2.14
17	$ 195,000			

Example with only small claims to illustrate the impact of claim frequency

Experience Mods for each plan include the current claim and all prior claims

Mechanics of Experience Rating
Experience Mod Comparisons

Comparison of Plans for a $100,000 expected loss risk; assumes all claims are lost time to simplify process, $175,000 maximum single loss for split plan; $20,000 primary split point; $75,000 maximum single loss for Ohio

Parameters	Total	Primary	Excess
Expected Losses	100,000	30,000	70,000
Credibility No Split[85%]	26%		
Credibility Split Plan		0.79	0.08

Experience Modification Factors by Plan				
Claim Count	Amount	Ohio 85% No Split	Ohio 60% No Split	Example Split Plan
1	$ 100,000	0.94	0.95	0.93
1	$ 25,000	1.00	1.00	1.09
1	$ 150,000	1.20	1.14	1.36
1	$ 10,000	1.22	1.16	1.44
1	$ 10,000	1.25	1.17	1.51
1	$ 25,000	1.31	1.22	1.68
1	$ 5,000	1.33	1.23	1.72
7	$ 325,000			

Example with small and large claims to illustrate the impact of claim frequency and claim severity

Experience Mods for each plan include the current claim and all prior claims

Mechanics of Experience Rating
Experience Mod Comparisons

Comparison of Plans for a $300,000 expected loss risk; assumes all claims are lost time to simplify process, $175,000 maximum single loss for split plan; $20,000 primary split point; $125,000 maximum single loss for Ohio

Parameters	Total	Primary	Excess
Expected Losses	300,000	90,000	210,000
Credibility No Split[85%]	43%		
Credibility Split Plan		0.86	0.17

Experience Modification Factors by Plan				
Claim Count	Amount	Ohio 85% No Split	Ohio 60% No Split	Example Split Plan
8	$ 5,000	0.63	0.74	0.74
6	$ 7,500	0.69	0.78	0.87
5	$ 10,000	0.76	0.83	1.01
3	$ 15,000	0.83	0.88	1.14
2	$ 20,000	0.89	0.92	1.26
2	$ 25,000	0.96	0.97	1.38
1	$ 30,000	1.00	1.00	1.44
27	$ 300,000			

Example with only small claims to illustrate the impact of claim frequency

Experience Mods for each plan include the current claim and all prior claims

Mechanics of Experience Rating
Experience Mod Comparisons

Comparison of Plans for a $300,000 expected loss risk; assumes all claims are lost time to simplify process, $175,000 maximum single loss for split plan; $20,000 primary split point; $125,000 maximum single loss for Ohio

Parameters	Total	Primary	Excess
Expected Losses	300,000	90,000	210,000
Credibility No Split[85%]	43%		
Credibility Split Plan		0.86	0.17

Example with small and large claims to illustrate the impact of claim frequency and claim severity

Experience Modification Factors by Plan				
Claim Count	Amount	Ohio 85% No Split	Ohio 60% No Split	Example Split Plan
1	$ 25,000	0.61	0.72	0.68
1	$ 75,000	0.71	0.80	0.77
1	$ 100,000	0.86	0.90	0.87
1	$ 125,000	1.04	1.03	0.99
1	$ 150,000	1.22	1.15	1.12
1	$ 175,000	1.39	1.28	1.27
1	$ 200,000	1.57	1.40	1.41
7	$ 850,000			

Experience Mods for each plan include the current claim and all prior claims

Mechanics of Experience Rating
Experience Mod Comparisons

Comparison of Plans for a $1,000,000 expected loss risk; assumes all claims are lost time to simplify process, $175,000 maximum single loss for split plan; $20,000 primary split point; $250,000 maximum single loss for Ohio

Parameters	Total	Primary	Excess
Expected Losses	1,000,000	300,000	700,000
Credibility No Split[85%]	85%		
Credibility Split Plan		0.89	0.32

Example with only small claims to illustrate the impact of claim frequency

Experience Modification Factors by Plan				
Claim Count	Amount	Ohio 85% No Split	Ohio 60% No Split	Example Split Plan
35	$ 5,000	0.30	0.51	0.66
30	$ 7,500	0.49	0.64	0.86
24	$ 10,000	0.69	0.78	1.08
10	$ 15,000	0.82	0.87	1.21
5	$ 20,000	0.91	0.93	1.30
2	$ 25,000	0.95	0.96	1.34
2	$ 30,000	1.00	1.00	1.38
108	$ 1,000,000			

Experience Mods for each plan include the current claim and all prior claims

Mechanics of Experience Rating
Experience Mod Comparisons

Comparison of Plans for a $1,000,000 expected loss risk; assumes all claims are lost time to simplify process, $175,000 maximum single loss for split plan; $20,000 primary split point; $250,000 maximum single loss for Ohio

Parameters	Total	Primary	Excess
Expected Losses	1,000,000	300,000	700,000
Credibility No Split[85%]	85%		
Credibility Split Plan		0.89	0.32

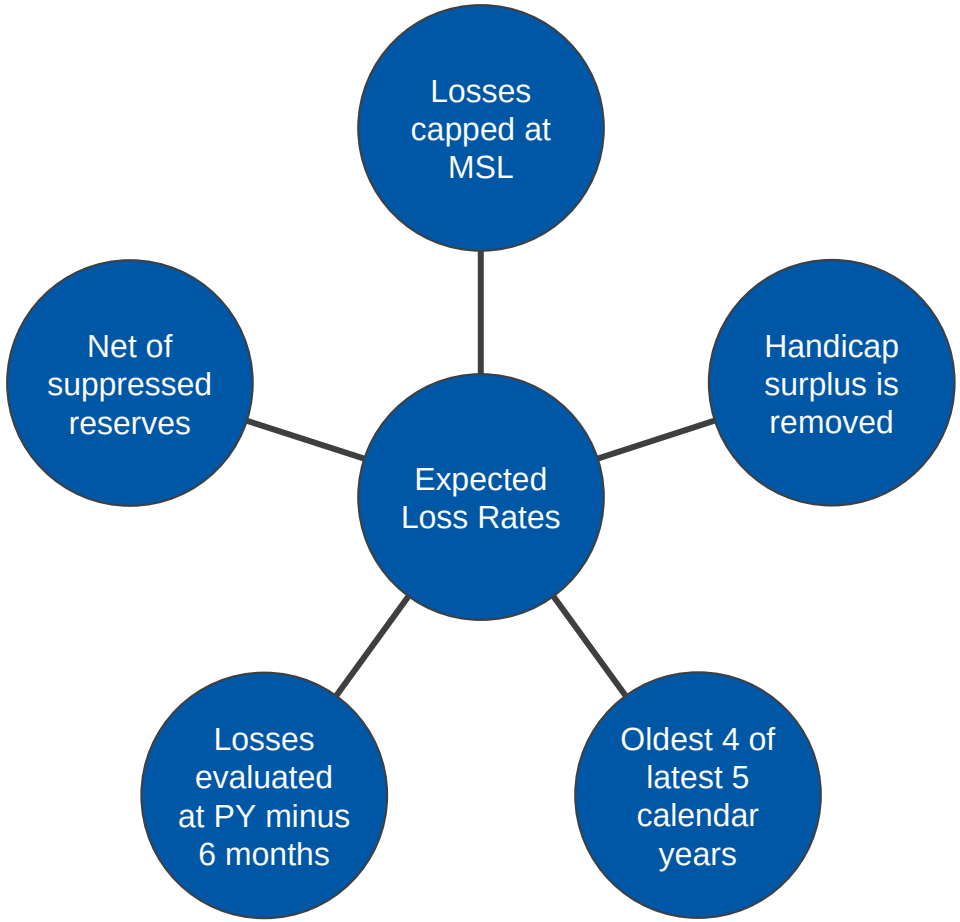
Example with only large claims to illustrate the impact of claim severity

Experience Modification Factors by Plan				
Claim Count	Amount	Ohio 85% No Split	Ohio 60% No Split	Example Split Plan
1	$ 250,000	0.36	0.55	0.57
1	$ 250,000	0.58	0.70	0.64
1	$ 250,000	0.79	0.85	0.71
1	$ 250,000	1.00	1.00	0.78
1	$ 250,000	1.21	1.15	0.85
1	$ 250,000	1.43	1.30	0.91
1	$ 250,000	1.64	1.45	0.98
7	$ 1,750,000			

Experience Mods for each plan include the current claim and all prior claims

Development of Expected Loss Rates

Development of Expected Loss Rates Data



Development of Expected Loss Rates
Current Method

Split and no split plans use expected loss rates (ELR's) to determine the expected losses. The ELR's are computed at the manual class level, and are updated each policy year. The basic formula is as follows: ELR = (4 year total losses)/(4 year total payroll).

For many classes the approach works well because:

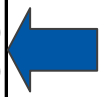
- All of the loss data for Ohio is reported to the BWC, which means the complete history is included for each class.
- Each employer's results are compared to the state average for the class
- It is simple to determine

For some classes the results are not optimal because:

- Classes with small volume can have big swings in ELR's.
- The base rate calculation includes a credibility provision, whereas the ELR calculation does not.
- The current manual pure premium and ELR should have a reasonably consistent relationship since each is estimating expected losses, just at different points in time.

Development of Expected Loss Rates
Comparison of ELR's to Pure Premium

Class Code	State 1	State 2	State 3	State 4	State 5	Ohio July 2007
2388	71%	51%	60%	68%	56%	64%
2402	66%	51%	53%	63%	51%	6%
2413	70%	52%	57%	67%	55%	54%
2416	73%	49%	56%	68%	57%	28%
2417	69%	48%	54%	66%	57%	121%
2501	71%	52%	58%	67%	57%	64%
2503	70%	50%	54%	65%	55%	65%
2534	74%	51%	57%	69%	57%	4%
2570	71%	50%	57%	67%	56%	63%
2585	68%	50%	54%	68%	54%	60%
2586	71%	49%	59%	68%	55%	64%
2587	72%	48%	53%	68%	56%	55%
2589	72%	44%	57%	66%	55%	67%
2600	62%	50%	54%	64%	52%	66%
2623	74%	49%	56%	63%	58%	1%
2651	70%	48%	58%	67%	54%	56%
2660	74%	51%	58%	68%	56%	8%
2670	75%	51%	58%	69%	56%	160%
2683	74%	51%	59%	64%	58%	84%
2688	70%	47%	58%	67%	56%	39%



This table shows the ratio of expected loss rates to pure premiums for a small subset of manual classes. States 1 to 5 are actual industry examples from filed NCCI manuals.

It is clear from this table that the relationship of ELR's to pure premium is more consistent in the industry sample than the current Ohio plan.

Moving to an ELR method that reduces the swings from year-to-year, and that has a more consistent relationship to pure premiums would bring more stability to the experience rating process.

Development of Expected Loss Rates Methodology

Method	Algorithim	Considerations	Performance
'1'	Primary ELR = primary loss/payroll Excess ELR= excess loss/payroll (Medical only limited to 30%)	Similar to current; simple to estimate; subject to fluctuations	Under performed relative to other methods
'2'	Primary ELR = primary loss/payroll Excess ELR= Industry Grp excess ratio * total ELR (Medical only limited to 30%)	More stable, but also more steps to estimate	Better than method #1; about the same as method #3
'3'	Primary ELR = (Mthd 1 primary ELR)*Zp + (primary pure premium)*(1-Zp) Excess ELR= (Mthd 1 excess ELR)*Ze + (primary pure premium)*(1-Ze) (Medical only limited to 30%)	Stable, with more steps to estimate; more consistent with pure premium	Better than method #1; about the same as method #2

Development of Expected Loss Rates
Examples

Method 1-Current with Med Only 30% Limit
Policy Year 2005
MSL 175k, Primary Loss $20,000

Manual Class	Primary Loss Rate	Excess Loss Rate	Total Expected Loss Rate
5	0.66	0.73	1.38
8	0.42	0.66	1.08
16	1.57	3.53	5.10
34	0.98	1.11	2.08
35	0.67	0.57	1.24
36	0.80	1.36	2.15
37	0.82	1.50	2.33
42	1.28	1.83	3.11
50	0.49	-	0.49
79	0.77	-	0.77
83	1.13	1.13	2.26
106	3.58	6.03	9.60
113	0.12	-	0.12
170	0.52	-	0.52
251	3.91	-	3.91

Method 2-Industry Grp Excess Loss Rates
Policy Year 2005
MSL 175k, Primary Loss $20,000

Manual Class	Primary Loss Rate	Excess Loss Rate	Total Expected Loss Rate
5	0.66	0.82	1.47
8	0.42	0.64	1.06
16	1.57	3.01	4.59
34	0.98	1.23	2.21
35	0.67	0.73	1.40
36	0.80	1.27	2.07
37	0.82	1.37	2.20
42	1.28	1.94	3.22
50	0.49	0.30	0.79
79	0.77	0.45	1.22
83	1.13	1.34	2.47
106	3.58	5.99	9.57
113	0.12	0.07	0.19
170	0.52	0.31	0.82
251	3.91	2.31	6.23

Method 3-Credibility Wghtd Exp. Loss Rates
Policy Year 2005
MSL 175k, Primary Loss $20,000

Manual Class	Primary Loss Rate	Excess Loss Rate	Total Expected Loss Rate
5	0.66	0.83	1.48
8	0.44	0.67	1.11
16	1.73	2.69	4.42
34	0.93	1.13	2.06
35	0.66	0.71	1.36
36	0.86	1.35	2.21
37	0.84	1.35	2.19
42	1.28	1.86	3.14
50	1.34	2.36	3.71
79	0.57	0.73	1.29
83	1.07	1.33	2.40
106	3.58	5.99	9.57
113	0.73	1.09	1.82
170	0.71	1.02	1.73
251	0.90	1.14	2.04

Development of Expected Loss Rates
D-Ratios

- The D-ratio is defined as the ratio of primary losses to total losses, and is typically determined at the class level.
- Workers Compensation rating plans often show a table of expected loss rates and D-ratios by class, where the D-ratios are used to split the ELR's into primary and excess components.
- In Ohio we have explicitly determined the primary and excess ELR's, however D-ratios could easily be determined if required for implementation.
- An overall D-ratio estimate is used as weight to determine the total credibility curves.
- The D-ratio increases as the primary split point increases; in other words the D-ratio is higher for a $20k split point than for a $10k split point.

Example:

Primary Losses/Total Losses = D-ratio

Class 'A': $100,000/$450,000= 22%

Expected Loss Rate Class 'A':	$	1.50
D-ratio		22%
Primary Expected Loss Rate	$	0.33
Excess Expected Loss Rate	$	1.17

Performance Measures

Performance Measures
Loss Ratio Equity

- How do we know if experience rating is fair and equitable? Is the plan predictive of future loss cost differences?
- A basic way to review plan performance is to examine the loss ratios before and after experience rating has been applied—the desired outcome is equal loss ratios across the range of debit and credit risk groups. [we are ignoring possible expense differences]

Example of desired experience rating plan results

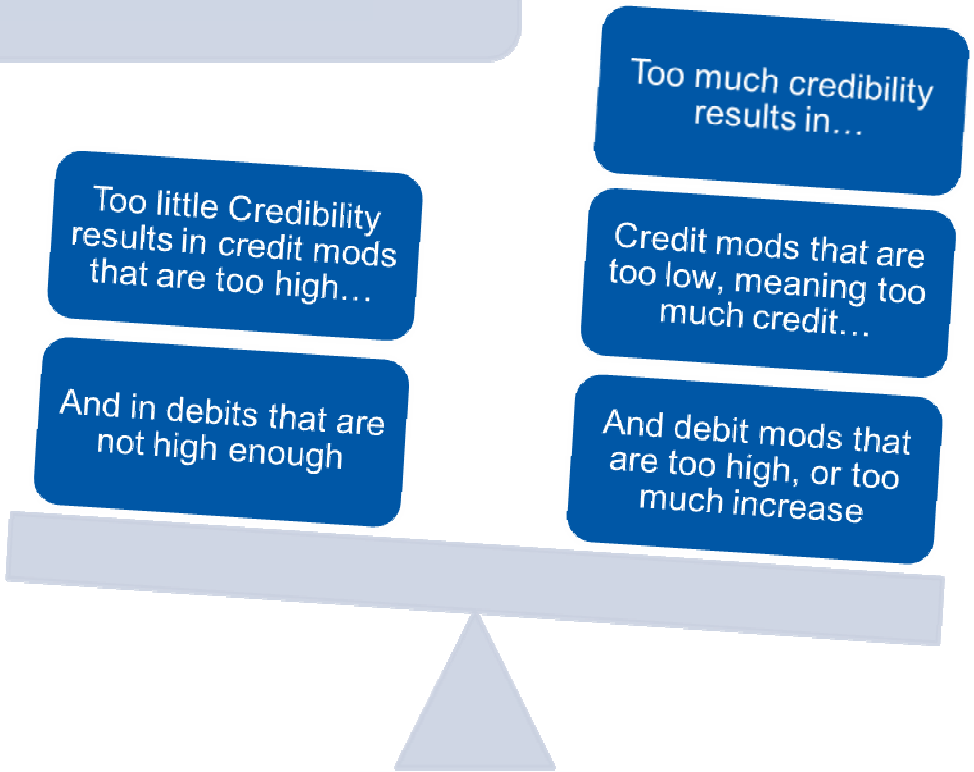
Quintile Rank	Description	Manual Loss Ratio	Exp Rated Loss Ratio
1	Highest	150%	85%
2	High	100%	78%
3	Average	80%	83%
4	Low	60%	75%
5	Lowest	40%	82%
Total		80%	80%

The experience rated loss ratios are within a few points of the total, or average. Rarely will the loss ratios be exactly equal with real insurance data.

Performance Measures
Credibility

Credibility is the measure that determines the degree to which past loss experience is predictive of future loss costs

How much is predictive, and how much is random noise?



Performance Measures
Loss Ratio Equity

- How do we know if experience rating is fair and equitable? In this case the plan is giving too much weight to past results, and the resulting loss ratios are not equitable.

Too much credibility given to historical experience

Quintile Rank	Description	Manual Loss Ratio	Exp Rated Loss Ratio
1	Highest	150%	60%
2	High	100%	72%
3	Average	80%	81%
4	Low	60%	91%
5	Lowest	40%	98%
Total		80%	80%

The experience rated loss ratios are too low for the debit rated classes, and too high for the credit rated classes

Performance Measures
Loss Ratio Equity

- How do we know if experience rating is fair and equitable? In this case the plan is not giving enough weight to past results, and the resulting loss ratios are not equitable.

Too little credibility given to historical experience

Quintile Rank	Description	Manual Loss Ratio	Exp Rated Loss Ratio
1	Highest	150%	105%
2	High	100%	92%
3	Average	80%	83%
4	Low	60%	69%
5	Lowest	40%	58%
Total		80%	80%

The experience rated loss ratios are too high for the debit rated classes, and too low for the credit rated classes.

Performance Measures
Credibility Table Comparison

Current Ohio Plan compared to a split plan with a $250,000 maximum single loss and a $5,000 primary split point. The assumed D-ratio is 0.20.

This split plan example is for illustration only; a more current plan would likely have a higher split point, and higher total credibility.

Expected Losses	Ohio Current Table	Split Plan Total [5k split, 250 msl]	Split Plan Primary Credibility	Split Plan Excess Credibility
10,000	4%	10%	39%	3%
15,000	9%	11%	45%	3%
20,000	9%	13%	49%	3%
25,000	9%	13%	53%	4%
30,000	13%	14%	56%	4%
50,000	17%	17%	65%	5%
55,000	17%	17%	67%	5%
60,000	17%	18%	68%	5%
75,000	21%	19%	71%	6%
80,000	21%	19%	72%	6%
85,000	21%	19%	73%	6%
90,000	26%	20%	74%	6%
95,000	26%	20%	74%	6%
100,000	26%	20%	75%	7%
125,000	30%	22%	78%	8%
150,000	30%	23%	79%	9%
175,000	34%	24%	81%	9%
200,000	34%	25%	82%	10%
225,000	38%	25%	83%	11%
250,000	43%	26%	84%	12%
300,000	43%	28%	85%	13%
350,000	47%	29%	85%	15%
400,000	51%	30%	86%	16%
450,000	55%	31%	87%	17%
500,000	60%	32%	87%	19%
600,000	64%	34%	88%	21%
700,000	68%	36%	88%	23%
800,000	72%	37%	88%	24%
900,000	77%	39%	89%	26%
1,000,000	85%	40%	89%	27%
2,000,000	85%	47%	90%	37%
3,000,000	85%	51%	90%	42%
4,000,000	85%	54%	90%	45%
5,000,000	85%	55%	90%	47%
6,000,000	85%	57%	91%	48%
7,000,000	85%	57%	91%	49%
8,000,000	85%	58%	91%	50%
9,000,000	85%	59%	91%	51%
10,000,000	85%	59%	91%	51%
20,000,000	85%	61%	91%	54%
30,000,000	85%	62%	91%	55%
40,000,000	85%	63%	91%	56%
50,000,000	85%	63%	91%	56%

Performance Measures
Credibility Table Comparison

Current Ohio Plan compared to a split plan with a $250,000 maximum single loss and a $10,000 primary split point. The assumed D-ratio is 0.30.

Expected Losses	Ohio Current Table	Split Plan Total [10k split, 250 msl]	Split Plan Primary Credibility	Split Plan Excess Credibility
10,000	4%	14%	39%	3%
15,000	9%	16%	45%	3%
20,000	9%	17%	49%	3%
25,000	9%	18%	53%	4%
30,000	13%	20%	56%	4%
50,000	17%	23%	65%	5%
55,000	17%	23%	67%	5%
60,000	17%	24%	68%	5%
75,000	21%	25%	71%	6%
80,000	21%	26%	72%	6%
85,000	21%	26%	73%	6%
90,000	26%	26%	74%	6%
95,000	26%	27%	74%	6%
100,000	26%	27%	75%	7%
125,000	30%	29%	78%	8%
150,000	30%	30%	79%	9%
175,000	34%	31%	81%	9%
200,000	34%	32%	82%	10%
225,000	38%	33%	83%	11%
250,000	43%	33%	84%	12%
300,000	43%	35%	85%	13%
350,000	47%	36%	85%	15%
400,000	51%	37%	86%	16%
450,000	55%	38%	87%	17%
500,000	60%	39%	87%	19%
600,000	64%	41%	88%	21%
700,000	68%	42%	88%	23%
800,000	72%	44%	88%	24%
900,000	77%	45%	89%	26%
1,000,000	85%	46%	89%	27%
2,000,000	85%	53%	90%	37%
3,000,000	85%	56%	90%	42%
4,000,000	85%	58%	90%	45%
5,000,000	85%	60%	90%	47%
6,000,000	85%	61%	91%	48%
7,000,000	85%	62%	91%	49%
8,000,000	85%	62%	91%	50%
9,000,000	85%	63%	91%	51%
10,000,000	85%	63%	91%	51%
20,000,000	85%	65%	91%	54%
30,000,000	85%	66%	91%	55%
40,000,000	85%	66%	91%	56%
50,000,000	85%	66%	91%	56%

Performance Measures Credibility Table Comparison

Current Ohio Plan compared to a split plan with a $175,000 maximum single loss and a $20,000 primary split point. The assumed D-ratio is 0.43.

These tables were used for the experience mod comparisons on slides 15-22.

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Expected Losses	Ohio Current Table	Split Plan Total [20k split, 175 msl]	Split Plan Primary Credibility	Split Plan Excess Credibility
10,000	4%	21%	44%	3%
15,000	9%	24%	51%	3%
20,000	9%	26%	55%	4%
25,000	9%	28%	59%	4%
30,000	13%	29%	62%	4%
50,000	17%	33%	70%	6%
55,000	17%	34%	72%	6%
60,000	17%	35%	73%	6%
75,000	21%	37%	76%	7%
80,000	21%	37%	77%	7%
85,000	21%	37%	77%	7%
90,000	26%	38%	78%	8%
95,000	26%	38%	78%	8%
100,000	26%	39%	79%	8%
125,000	30%	40%	81%	10%
150,000	30%	42%	82%	11%
175,000	34%	43%	84%	12%
200,000	34%	44%	84%	13%
225,000	38%	45%	85%	14%
250,000	43%	45%	86%	15%
300,000	43%	47%	86%	17%
350,000	47%	48%	87%	19%
400,000	51%	49%	87%	20%
450,000	55%	50%	88%	22%
500,000	60%	51%	88%	23%
600,000	64%	53%	89%	25%
700,000	68%	54%	89%	27%
800,000	72%	55%	89%	29%
900,000	77%	56%	89%	31%
1,000,000	85%	57%	89%	32%
2,000,000	85%	62%	90%	41%
3,000,000	85%	65%	90%	45%
4,000,000	85%	66%	91%	48%
5,000,000	85%	67%	91%	49%
6,000,000	85%	68%	91%	50%
7,000,000	85%	68%	91%	51%
8,000,000	85%	69%	91%	52%
9,000,000	85%	69%	91%	52%
10,000,000	85%	69%	91%	53%
20,000,000	85%	70%	91%	55%
30,000,000	85%	71%	91%	56%
40,000,000	85%	71%	91%	56%
50,000,000	85%	71%	91%	56%

Conclusions

Conclusion
Plan Comparison

No Split Plan (Ohio)

Benefits
- Simple to administer
- Easy to understand and familiar to users

Drawbacks
- Plan is not stable relative to other options
- Does not appropriately balance risk bearing and risk sharing with current credibility table
- For those employers that lose group status, premium fluctuations are extreme

Split Plan

Benefits
- Appropriately balance risk bearing and risk sharing (if credibility is capped for groups)
- Utilized in the majority of states
- Multi-state employers are familiar with it
- Plan is more stable than current
- Puts appropriate weight on frequency and severity

Drawbacks
- Somewhat more difficult to implement
- More difficult to understand than current program
- Transition to plan requires managing premium increases in certain segments

Attributes of a good experience rating plan

- Serve the needs of the organization (BWC and Employers) using them
- Appropriately balance risk bearing and risk sharing
- Not subject to internal or external manipulation
- Simple to administer
- Easy to understand
- Responsive to individual risk experience
- Stable--does not subject the affected entities to large fluctuations in costs from year-to-year

OLIVER WYMAN

MARSH MERCER KROLL
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