



NCCI Experience Rating Plan Review

C-23

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NCCI Experience Rating Plan Review

- Background
- Recommended changes
 - Short term
 - Long term
- Other items reviewed
- Other topics discussed
- Implementation considerations



Background

- NCCI is at the end of its multi-year project to review all aspects of NCCI's experience rating plan
- This review was done in conjunction with the Individual Risk Rating Working Group, a subcommittee of NCCI's Actuarial Committee
- This presentation summarizes the review and NCCI staff recommendations



Experience Rating Plan Short Term Recommendations

- Increase the split point
- Index the split point so future increases are automatic
- Revise the maximum modification formula/cap so the maximum mod is not less than 1.10



Experience Rating Plan Split Point Review

- The split point separates losses into primary and excess components. It is currently 5,000
- If the split point is not indexed for claim cost inflation, a greater proportion of losses fall into the excess category as time goes on
- Since excess losses receive less weight than primary losses in the experience rating formula, the plan becomes less responsive



Split Point Review

- The Experience Rating Adjustment (ERA), filed as Item E-1339 first effective in 1998, allowed for indexation of the split point
- The split point remained at 5,000 in the wake of a plateau in the severity index in the 1990's and a series of well performing quintile tests
- Severities have since increased significantly in the past 10 years; the average cost of a claim has tripled since the last split point update (20 yrs ago)
- Recent testing of the performance of the NCCI Experience Rating Plan has demonstrated positive slope in quintile testing, confirming the need to increase the split point



Experience Rating Plan Split Point Review

- Indications are that the split point should be increased to 15,000
- A transition program could be used that increases the split point most of the way initially and phases in the rest of the change:
 - The split point could initially be increased to 10K
 - The next effective year filing could further increase the split point to approximately 13.5K
 - The 3rd effective year filing could further increase the split point all the way to the indicated split point of 15K trended 2 years forward (rounded to the nearest 500)
- Subsequent effective year filings could increase the split point as indicated



Changes in Average Claim Cost Over Time

Experience Rating Plan losses at first report

<u>Midpoint of Experience</u>	<u>Average Claim Cost</u>
12/15/88	\$2,527
11/11/89	\$2,777
01/07/91	\$3,157
11/20/91	\$3,321
12/11/92	\$3,418
11/28/94	\$3,409
08/29/95	\$3,432
10/28/96	\$3,571
10/15/97	\$3,693
08/08/98	\$3,850
01/14/00	\$4,306
06/22/00	\$4,508
03/05/02	\$5,349
02/15/03	\$5,861
03/26/04	\$6,267
03/02/05	\$6,419
03/24/06	\$6,803
03/06/07	\$7,224
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01/01/11	\$8,787 (estimated)



Split Point Review

Percentage of All Ratable Loss Dollars in the layer above:

Rating Year	Split Point			
	5,000	10,000	15,000	20,000
2008	80%	69%	60%	53%
2009	81%	70%	61%	54%

Percentage of All Ratable Claim Counts Exceeding:

Rating Year	Split Point			
	5,000	10,000	15,000	20,000
2008	15%	11%	9%	7%
2009	16%	12%	10%	8%

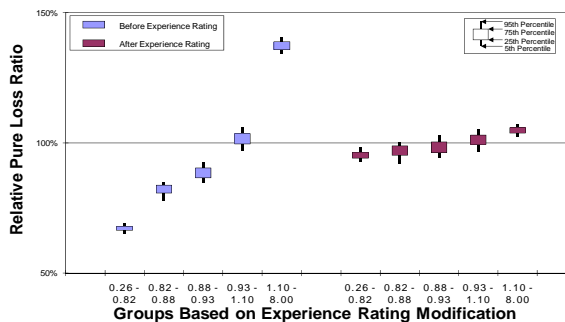
Percentage of Ratable Lost Time Claim Counts Exceeding:

Rating Year	Split Point			
	5,000	10,000	15,000	20,000
2008	65%	50%	40%	33%
2009	66%	51%	41%	34%

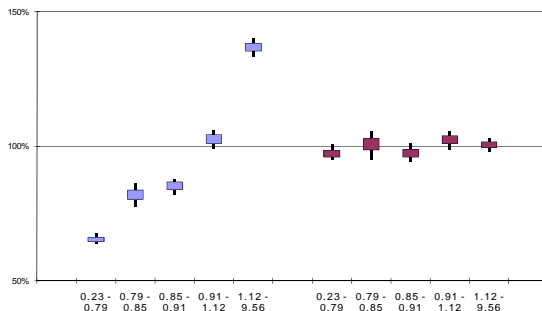


Quintile Performance Testing for Various Split Points

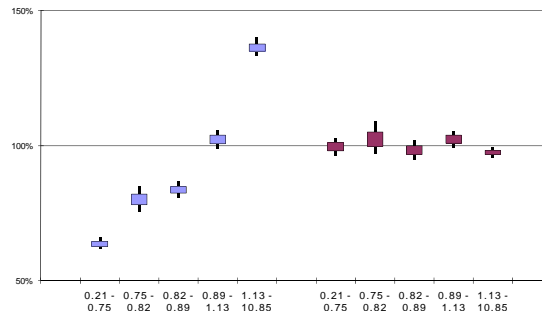
PY 2002 Countrywide Split Point 5000



PY 2002 Countrywide Split Point 7500

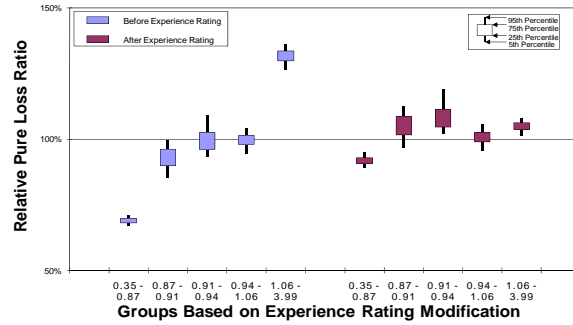


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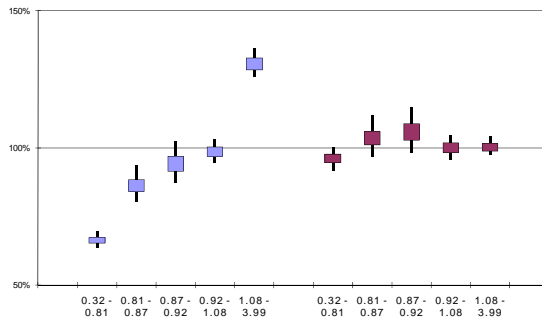


Quintile Performance Testing for Various Split Points

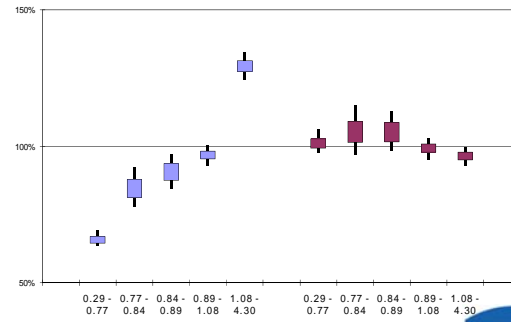
PY 2006 Countrywide Split Point 5000



PY 2006 Countrywide Split Point 10000



PY 2006 Countrywide Split Point 15000



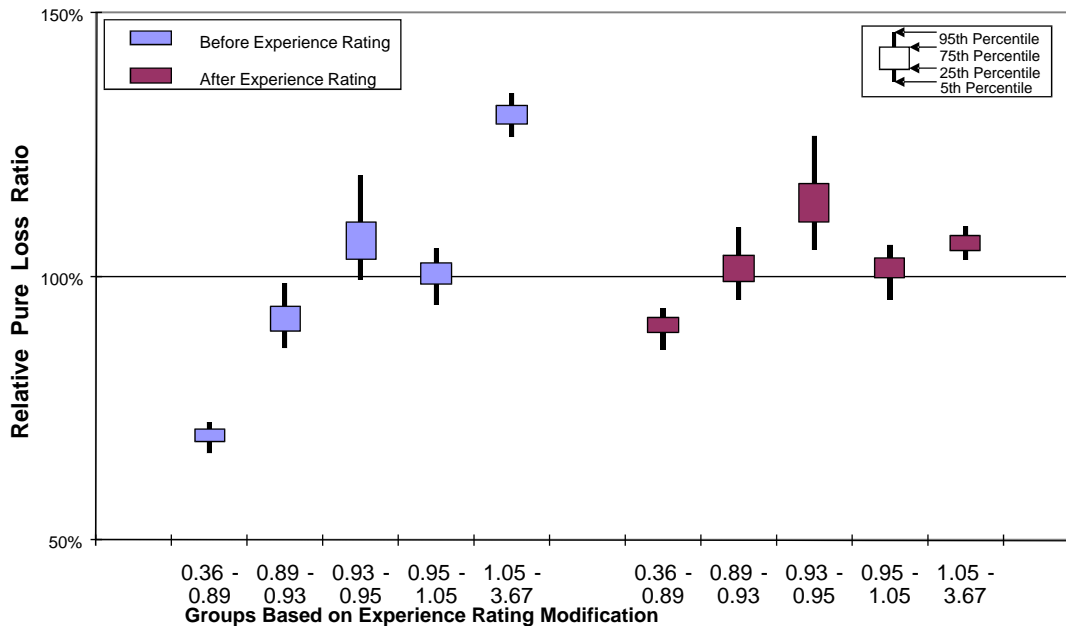
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Quintile Analysis: Current \$5,000 Split Point

Policy Year 2006 experience under the ER Plan, indexed for severity inflation



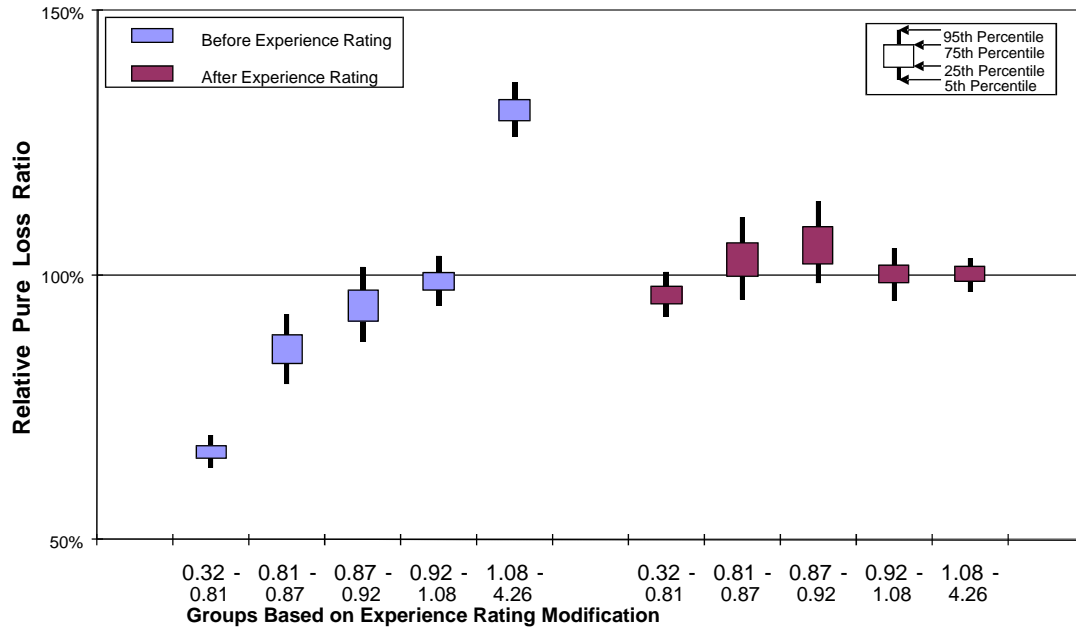
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Quintile Analysis: Indicated \$15,000 Split Point

Policy Year 2006 experience under the ER Plan, indexed for severity inflation



Experience Rating Plan Split Point Review

Countrywide Impact on Experience Mods, Alternative Split Points, Ratings in 2009

Impact of Alternative Splits Points and Mod Cap on Intrastate Mods Effective in 2009*; Split Points detrended with 20% reduction

Original Mod	Percentage of			Average Mod				
				Current Cap		Proposed Cap		
	Risks	Payroll	Expected Losses	\$5,000	\$5,000	\$10,000	\$15,000	\$20,000
Mod < 0.75	0.2%	2.0%	2.4%	0.69	0.68	0.64	0.60	0.57
0.75 <= Mod < 0.80	0.6%	2.8%	3.5%	0.77	0.77	0.72	0.69	0.65
0.80 <= Mod < 0.85	3.1%	7.9%	9.1%	0.82	0.82	0.77	0.74	0.70
0.85 <= Mod < 0.90	10.3%	14.3%	16.1%	0.87	0.87	0.83	0.80	0.77
0.90 <= Mod < 0.95	27.8%	20.8%	20.0%	0.92	0.92	0.90	0.88	0.86
0.95 <= Mod < 0.98	26.7%	13.0%	11.1%	0.96	0.96	0.95	0.94	0.93
0.98 <= Mod <= 1.02	9.4%	9.5%	9.4%	1.00	1.00	1.00	1.01	1.01
1.02 < Mod <= 1.05	2.9%	4.3%	4.4%	1.04	1.04	1.06	1.08	1.09
1.05 < Mod <= 1.10	4.3%	6.1%	6.0%	1.08	1.08	1.11	1.14	1.17
1.10 < Mod <= 1.15	3.8%	4.8%	4.7%	1.13	1.13	1.18	1.22	1.26
1.15 < Mod <= 1.20	3.2%	3.9%	3.6%	1.18	1.18	1.24	1.30	1.34
1.20 < Mod <= 1.25	2.3%	2.8%	2.6%	1.23	1.23	1.30	1.37	1.42
1.25 < Mod	5.5%	7.8%	7.2%	1.42	1.42	1.53	1.63	1.71
Overall				0.98	0.98	0.98	0.98	0.98

* Excludes large deductible policies



Distribution of Differences Between Old and New Mod Values

Impact of \$10,000 Split Point on 2009 ER Plan Intrastate Mods

Impact of changing the split point to \$10,000 and implementing new cap formula on intrastate mods effective in 2009; split points indexed for severity inflation

Change in Mod	Percentage of			Average Mod	
	Risks	Payroll	Expected Losses	Current	Proposal
Change < -0.25	0.0%	0.0%	0.0%	---	---
-0.25 <= Change < -0.20	0.0%	0.0%	0.0%	---	---
-0.20 <= Change < -0.15	0.0%	0.0%	0.0%	---	---
-0.15 <= Change < -0.10	0.0%	0.0%	0.0%	1.31	1.19
-0.10 <= Change < -0.05	8.1%	12.5%	13.8%	0.83	0.77
-0.05 <= Change < -0.02	38.3%	31.9%	33.0%	0.89	0.85
-0.02 <= Change <= 0.02	35.8%	33.6%	33.5%	0.99	0.98
0.02 < Change <= 0.05	4.3%	8.4%	8.0%	1.14	1.18
0.05 < Change <= 0.10	6.5%	7.4%	6.8%	1.21	1.29
0.10 < Change <= 0.15	4.5%	3.6%	2.9%	1.30	1.42
0.15 < Change <= 0.20	1.6%	1.4%	1.1%	1.40	1.58
0.20 < Change <= 0.25	0.5%	0.6%	0.5%	1.50	1.73
0.25 < Change	0.4%	0.5%	0.4%	1.69	2.01

Note: excludes large deductible policies



Experience Rating Plan Maximum Mod Formula

- Currently, mods are subject to the following cap:

$$1 + [0.00005 \times (E + 2E/G)]$$
- For very small risks, this can produce a very low cap
- Staff has recommended the following formula so the maximum mod is not less than 1.10:

$$1.10 + 0.0004 \times E/G$$
- This will increase the mod cap for small policies and reduce the mod cap for other sizes



Experience Rating Plan Maximum Mod Formula

ER Mod Caps - Current and Proposed

Current Formula: $1 + 0.00005(E+2E/G)$
 Proposed Formula: $1.1 + 0.0004(E/G)$

Expected Losses (E)	G (SACC) = 5		G (SACC) = 7		G (SACC) = 10	
	Current	Proposed	Current	Proposed	Current	Proposed
500	1.04	1.14	1.03	1.13	1.03	1.12
1,000	1.07	1.18	1.06	1.16	1.06	1.14
2,500	1.18	1.30	1.16	1.24	1.15	1.20
5,000	1.35	1.50	1.32	1.39	1.30	1.30
6,667	1.47	1.63	1.43	1.48	1.40	1.37
7,500	1.53	1.70	1.48	1.53	1.45	1.40
10,000	1.70	1.90	1.64	1.67	1.60	1.50
15,000	2.05	2.30	1.96	1.96	1.90	1.70
20,000	2.40	2.70	2.29	2.24	2.20	1.90
25,000	2.75	3.10	2.61	2.53	2.50	2.10
30,000	3.10	3.50	2.93	2.81	2.80	2.30
40,000	3.80	4.30	3.57	3.39	3.40	2.70
50,000	4.50	5.10	4.21	3.96	4.00	3.10
75,000	6.25	7.10	5.82	5.39	5.50	4.10
100,000	8.00	9.10	7.43	6.81	7.00	5.10

G-Values

The G-value is the State Average Claim Cost (SACC) in units of 1,000. Here are 2009 G-values by state:

State Code	G (SACC)	State Code	G (SACC)	State Code	G (SACC)
AL	6.3	LA	11.25	OK	9.9
AR	5.1	ME	5.25	OR	5.65
CO	6.15	MD	7.8	SC	11.25
CT	8.05	MN	6.85	SD	5.65
DC	10.6	MS	7.65	TN	7.5
FL	7.2	MO	8.65	TX	4.3
GA	8.15	MT	7.7	UT	4.1
ID	5.3	NE	6.95	VT	7.2
IL	12.7	NV	5.7	VA	6.85
IN	4.7	NH	6.4	WV	7
IA	7.15	NM	7.2	WI	5.6
KS	6.5	NY	14	HI	7.2
KY	6	NC	9.05	AK	10.55



Impact of Mod Caps on 2009 ER Plan Intrastate Mods

Proposed includes new mod cap formula and current 5K split point
 Split point NOT indexed for severity inflation

Expected Loss (E)	Total Intrastate Risks	Number of Risks Reaching Current Mod Cap	Number of Risks Reaching Proposed Mod Cap	
				Total
1	1,000	187	10	2
1,000	5,000	128,904	8,283	5,039
5,000	10,000	166,352	4,088	2,977
10,000	20,000	120,013	448	462
20,000	50,000	85,418	16	28
50,000	100,000	30,323	0	0
100,000	200,000	13,815	0	0
200,000	500,000	5,950	0	0
Over 500,000		1,284	0	0
Total		552,246	12,845	8,508
Percentage		100.0%	2.3%	1.5%



Impact of Mod Caps on 2009 ER Plan Intrastate Mods

Proposed includes new mod cap formula and 10K split point
Split points indexed for severity inflation

Expected Loss (E)		Total Intrastate Risks	Number of Risks Reaching Current Mod Cap	Number of Risks Reaching Proposed Mod Cap
1	1,000	187	10	2
1,000	5,000	128,904	6,788	8,646
5,000	10,000	166,352	3,154	5,316
10,000	20,000	120,013	312	1,048
20,000	50,000	85,418	8	64
50,000	100,000	30,323	0	1
100,000	200,000	13,815	0	0
200,000	500,000	5,950	0	0
Over	500,000	1,284	0	0
Total		552,246	10,272	15,077
Percentage		100.0%	1.9%	2.7%



Experience Rating Plan Longer Term Recommendations

- Increase the eligibility threshold
 - Index the threshold so future increases are automatic
- Make the plan more understandable
 - Use Z_p and Z_e (primary and excess credibility) instead of W and B
 - Use plain English instead of “G Value”



Experience Rating Plan Eligibility Threshold Recommendations

- Use a claim frequency standard for eligibility. The dollar eligibility standard will vary by state
- If a risk is so small that it rarely has claims, then it will not be experience rated
- We are currently evaluating the following standards:
 - The policy size for which we expect an average of one claim during the 3-year ER period
 - Using the SACC (state average cost per case), which is similar to the threshold in prior sub-bullet



Experience Rating Plan Eligibility Thresholds

- Raising the eligibility thresholds to the SACC would eliminate about 25% of our mods
- Using the SACC, or another appropriate index, would allow for future automatic increases in the eligibility threshold



Experience Rating Plan

Make the Plan More Understandable

- Primary and excess credibility (Z_p and Z_e) are relatively easy to explain
- Weights and ballasts (Ws and Bs) are hard to explain
 - What is the difference between a weight and a ballast?
- The change in the formula from Ws and Bs to Z_p and Z_e will result in a production and filing efficiency. Ws and Bs vary by state and over time; Z_p and Z_e do not
- Easier to rate interstate risks
- California will be implementing this change



Experience Mod

An experience mod can be written as:

$$M = 1 + Z_p \left(\frac{A_p - E_p}{E} \right) + Z_x \left(\frac{A_x - E_x}{E} \right)$$



Countrywide Z_p and Z_e

- Tables of W and B values by state and filing will be eliminated.
- Countrywide Z_p and Z_e tables, that do not change over time, in terms of (E / SACC) will be used instead.
 - Note, for intrastate risks these will reproduce, aside from rounding, the same values for mods since they are based on the same formulas as the current W and B tables.
- There will be up to 5 countrywide Z tables:
 - Z_p other than Texas
 - Z_p Texas
 - Z_e ERA
 - Z_e GERT, RERP
 - Z_e Texas
- The new credibility weighting algorithm for interstate risks will only produce slight changes from the current algorithm.



Experience Rating Plan Other Items Reviewed

- Ws and Bs
 - Recommending change to Z_p and Z_e but are not refitting the underlying values
 - Refitting the underlying values will be considered once we have results from the new class ratemaking methodology
- Individual claim limit/cap
 - No changes proposed
- Severity index
 - Currently referred to as G-value
 - Plain language name change (perhaps SACC) but no other changes
 - Impacts the indexing/updating of the Ws and Bs, ELRs, claim cap and mod cap
- ELR, ELAF, D-ratio calculations
 - Updated under new class ratemaking methodologies



Experience Rating Plan Other Topics Discussed

- Performance metrics
 - Quintile results by Hazard Group, risk size and state. Slope was generally evident in all of these subsets
 - The impact of loss development on quintile results. Using emerged losses instead of ultimate losses did not change quintile results (including results by Hazard Group)
 - The concept of “lift” was added as a new metric. Tracks absolute improvement vs percentage improvement
- Impacts of recent class ratemaking changes on ER. Improvement by Hazard Group evident.
- A simplified plan (i.e., a merit rating plan) for small risks
- Small risk characteristics. Separate project created and shared with Actuarial Committee



Experience Rating Plan Implementation Considerations

- Implementation timing depends on
 - Regulatory considerations
 - IT considerations
- The split point selection and indexing can be handled by NCCI's current experience rating system
- Systems impacts of changing maximum mod formula are small
- Regulatory considerations on eligibility thresholds likely indicate a later implementation (in a subsequent filing) for that piece
- Using Z_p and Z_e will wait for an experience rating system rewrite



Experience Rating Plan Update

Projected timeline

Phase 1 - Split Point & Mod Cap

- Potential filing around Q3 of this year (2011)
- Effective on the loss cost effective date beginning with 1/1/13 filings
- We will pursue a minimum 6 month approval lead time (e.g. ER approval by 6/30/12 in states with 1/1/13 loss cost filings)

Phase 2 - Eligibility Threshold and Zp, Ze

- Eligibility thresholds and filing timelines will be addressed in late 2011



NCCI Experience Rating Plan Review

Questions?

