WC Experience Rating
NCCI States, California and Pennsylvania

WC–1

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Philadelphia, PA
### March 11, 2004

Presentation Outline

NCCI Administered Plan

o Off-Balance

o Overall Plan Performance—Test Results

o ERA—Experience Rating Adjustment

California and Pennsylvania
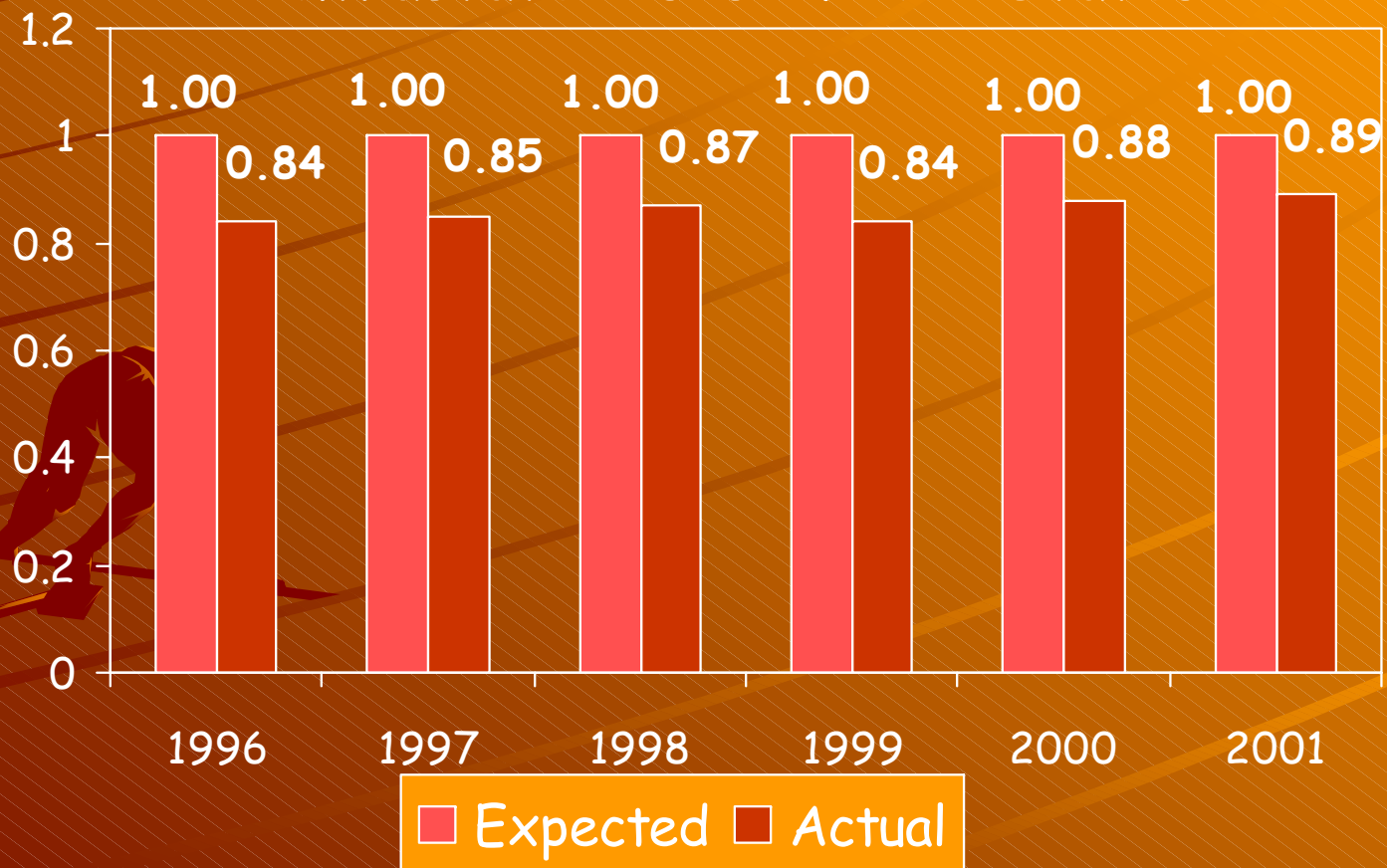
o Highlights of Unique Characteristics and Performance

Off-Balance Factors NCCI States

Intrastate Risks – NCCI States

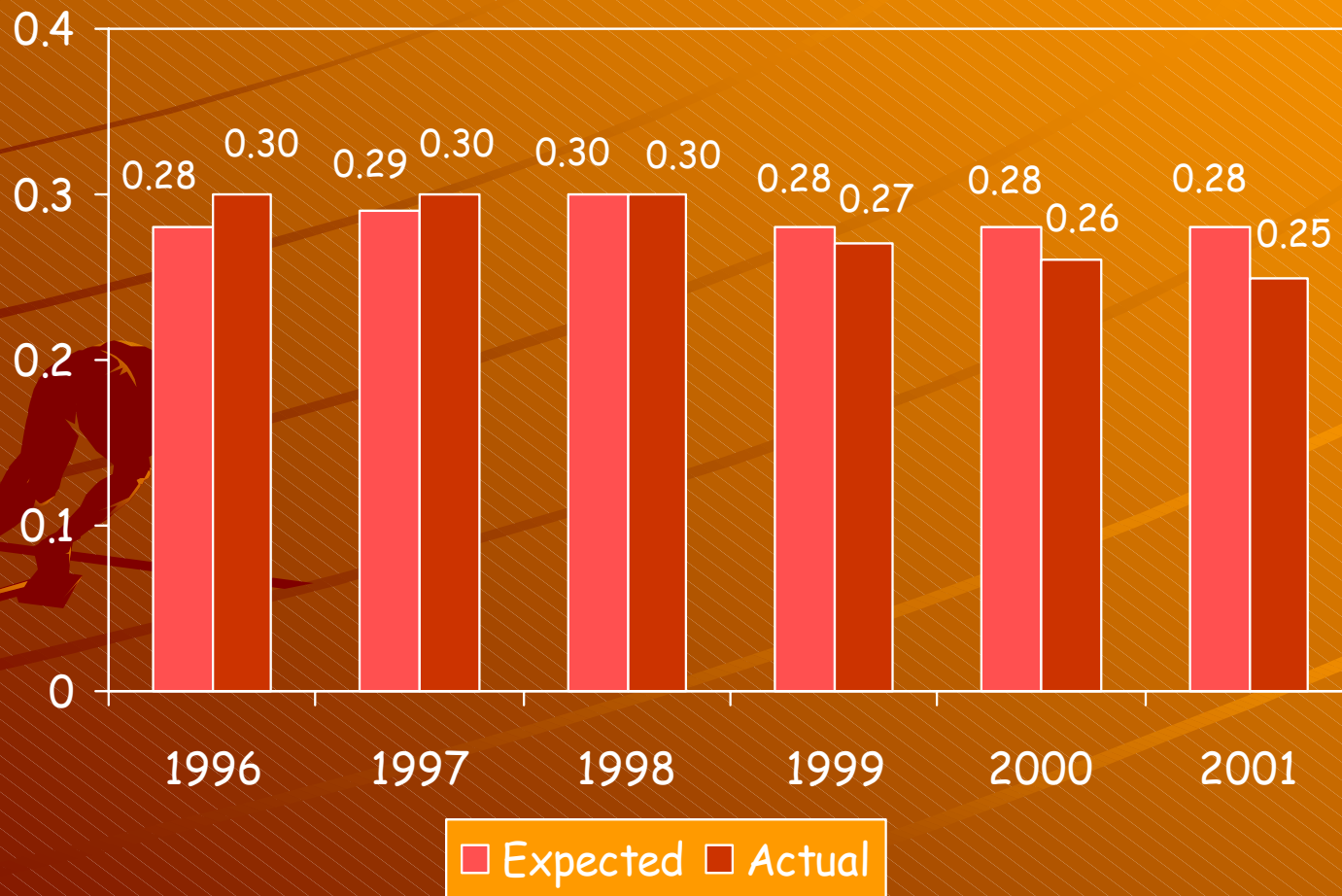| Year	Value
1994	0.97
1995	0.95
1996	0.93
1997	0.93
1998	0.92
1999	0.93
2000	0.93
2001	0.94
2002	0.97
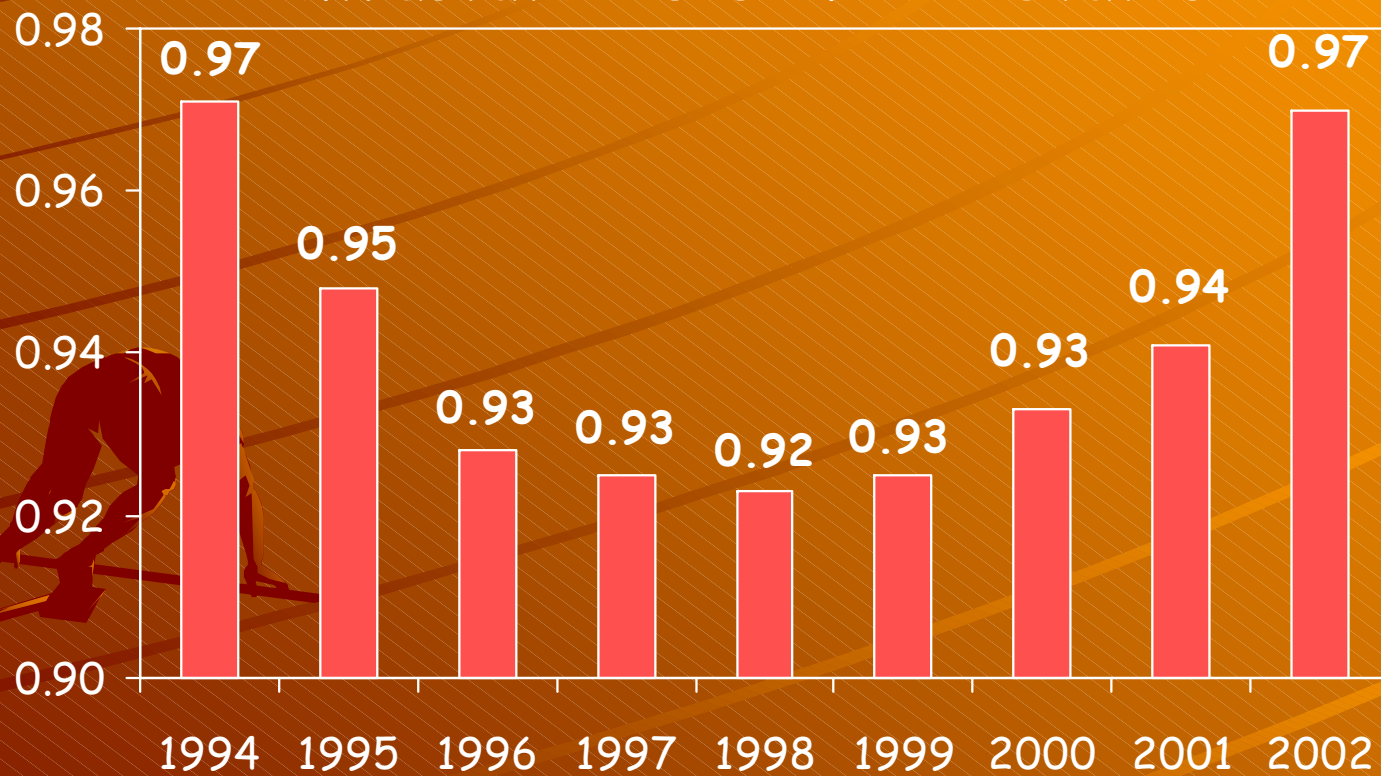
Total Losses:
Forecast vs. Actual Results

Intrastate Risks – NCCI States

Primary/Excess Split:
Forecast vs. Actual Results

Intrastate Risks – NCCI States

# Experience Rating Plan Off-Balance–Historical Analysis

o Countrywide (NCCI states) off-balance has increased in each of the last four years

o Relatively low off-balances from 1996-1999 were due to total **actual** losses that were less than total **expected** losses

o Unanticipated claim frequency has slightly more of an impact on mods than unanticipated severity

o While the split between primary and excess losses did not drive the low off-balances, it did dampen the off-balance increases in the last three years

What Should the Experience Rating Plan Off-Balance Be?

o Manual loss ratios for the smallest premium sizes and for unrated risks are higher than the all-risk average

o If the off-balance is 1.00, then there is no standard premium price differential between experience rated and unrated risks

o Having an off-balance less than 1.00 can partially address the difference

o The indicated standard premium level is still correct even if there is a net off-balance

Developed Manual Loss Ratios by
Policy Manual Premium
(State X, Five Recent Policy Years)
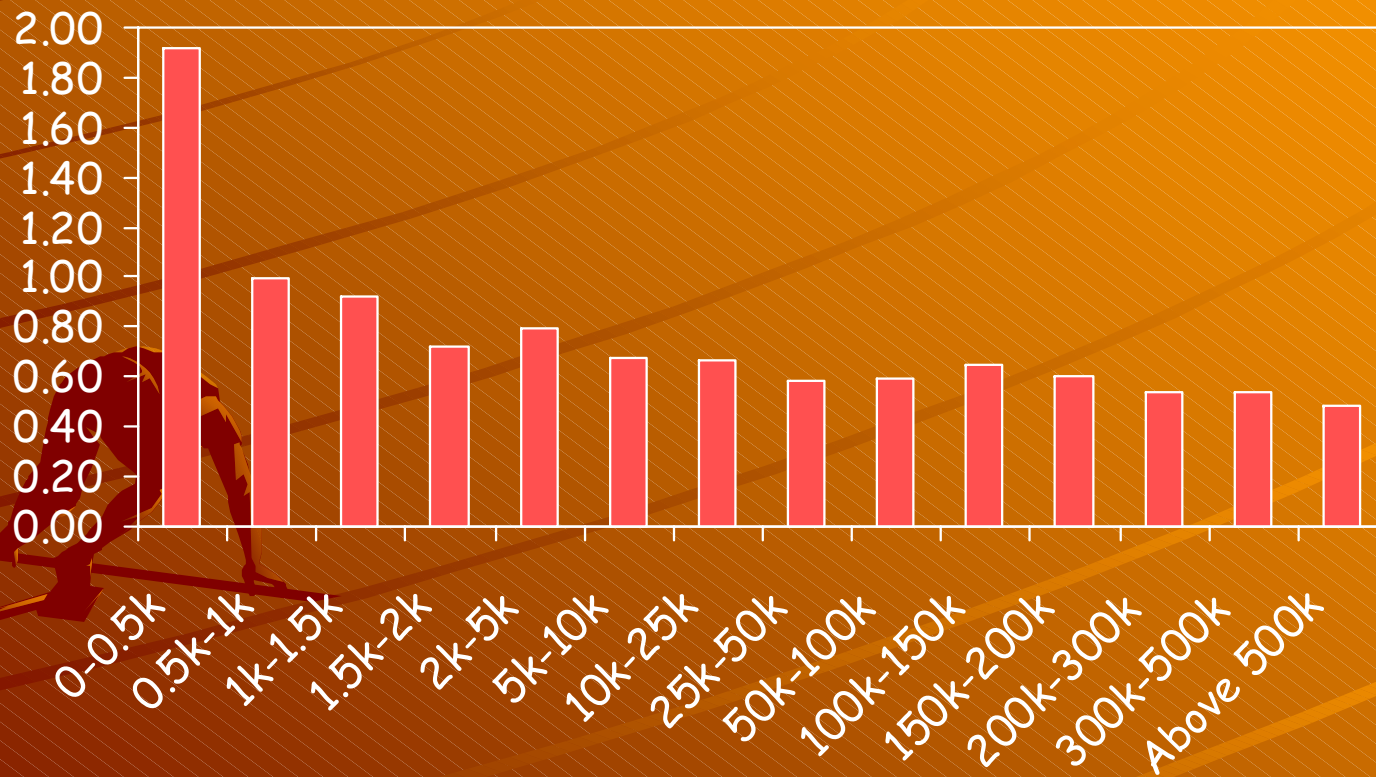
Developed Manual Loss Ratios
(State X, Five Recent Policy Years)

Legend: Unrated ■ (red), Intrastate ■ (pale yellow), Interstate ■ (dark red)
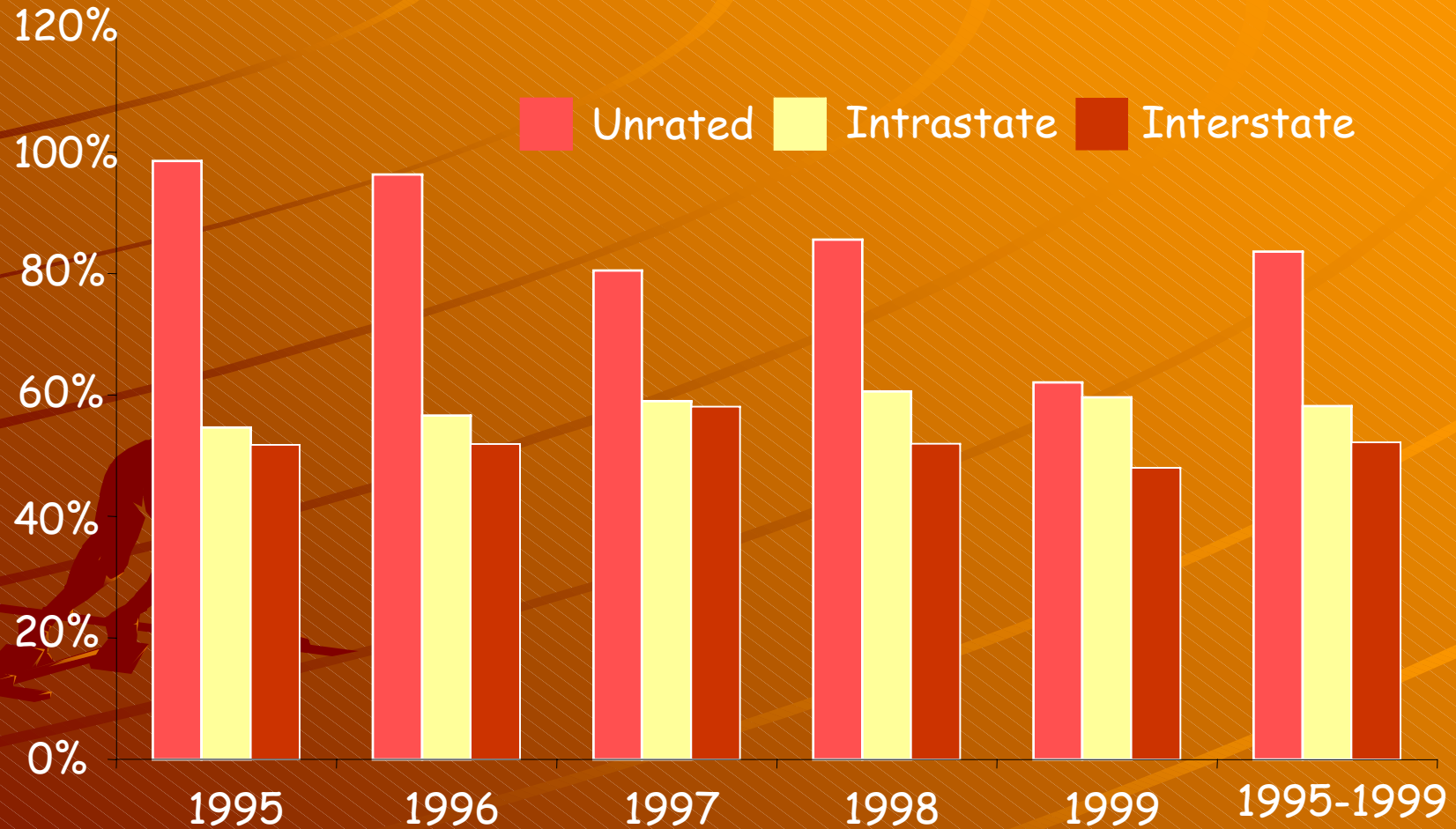
Brief Summary of Quintile Testing

o Col (2): The actual losses are unlimited losses from WCSP data, generally at a 2nd report or subsequent.

o The rates/loss costs in effect during the appropriate time period were used as a proxy for expected losses. The column (2) ratios have been normalized to 1.00 to minimize differences between the actual and expected losses related to development, expenses, etc.

o Col (3) shows the deviation of each quintile group from the overall total.

o Col (4) reflects the normalization from Col (2), but after application of the Mod (in the denominator) the results were NOT re-normalized. This has no impact on the result in Col (5). The mean value shown is an intermediate step in the calculation and has no particular meaning.

o Col (5) shows the deviation of each quintile group from the overall total.

o The test statistics shown at the bottom of each analysis are key. A statistic less than 1.00 is expected from an Experience Rating Plan. Lower values of the statistic indicate better performance.

Quintile Testing Results - NCCI States
All Risk Sizes
PY 7/1/98 - 6/30/99

Quintile Stratum Determined by Prior Mod	Actual Subsequent Losses Divided by Manual Expected	Squared Deviation from Mean of (2) x 10,000	Actual Subsequent Losses Divided by Modified Expected	Squared Deviation from Mean of (4) x 10,000	Percentage of Expected Loss in Quintile	Percentage of Risks Count in Quintile
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Expected Losses Uniformly Distributed Among Quintiles						
1	0.67	1,074	1.07	10	20.0%	8.9%
2	0.82	329	1.04	30	20.0%	19.7%
3	0.96	16	1.10	0	20.0%	30.4%
4	1.12	138	1.12	7	20.0%	19.1%
5	1.43	1,826	1.12	8	20.0%	22.0%
Mean or Total	1.00	3,382	1.10	55	100.0%	100.0%

Test Statistic: (5) / (3) = 0.016

Risk Count Uniformly Distributed Among Quintiles

Quintile	(2)	(3)	(4)	(5)	(6)	(7)
1	0.72	765	1.05	23	33.7%	20.0%
2	0.89	112	1.07	6	14.9%	20.0%
3	1.00	0	1.12	5	11.8%	20.0%
4	1.13	168	1.12	6	21.9%	20.0%
5	1.45	2,076	1.13	8	17.7%	20.0%
Mean or Total	1.00	3,121	1.10	48	100.0%	100.0%

Test Statistic: (5) / (3) = 0.015

Performance of Experience Rating Plan

Note: Includes nationwide data for all experience rated risks with policy effective dates 7/01/98 thru 6/30/99. Pure loss ratios are based on actual losses relative to expected losses, underlying prospective pure premium.

Summary of ERA Changes

ERA was designed to increase the incentive for employers to report small med-only claims and to improve the performance of the Plan. This was accomplished by the following three changes to the Plan:

o   Using only 30% of med-only claims in the experience rating formula

o   The weighting value (W) was increased

o   The primary/excess split point (currently $5,000) will be adjusted over time

The effective date of ERA varies by state. The earliest effective date is 7/1/98, which is applicable in several states.

ERA Impact on Med-Only Losses

o Compared changes in the proportion of med-only claims in states adopting ERA vs. states that had not

o Reviewed changes in the average severity of med-only claims

o Revealed that ERA did not cause a significant impact on the reporting of med-only claims

Med-Only Changes in Late 1990s

From policy period beginning 11/95 to policy period beginning 11/98

ERA States

State	% Chng in Med-Only	% Chng in Med-Only Severity
A	+ 2.3%	+ 6.1%
B	- 0.1%	+ 23.5%
C	- 0.7%	+ 25.3%
D	- 0.7%	+ 25.9%
E	+ 1.2%	+ 17.9%
F	+ 1.2%	+ 12.4%
G	+ 1.8%	+ 14.4%
H	+ 0.3%	+ 33.2%
I	+ 1.6%	+ 21.5%

Non-ERA States

State	% Chng in Med-Only	% Chng in Med-Only Severity
1*	+ 0.1%	+ 14.6%
2	+ 1.1%	+ 21.0%
3	+ 8.5%	+ 15.1%
4	+ 1.2%	+ 24.0%
5	+ 3.7%	+ 9.9%
6	+ 3.4%	+ 21.9%
7	- 4.4%	- 19.5%
8	+ 1.3%	+ 18.9%
9	+ 1.3%	+ 26.3%

* State 1 reflects a 2-yr change

15

Level of Medical Only Exclusion

o Currently, 70% of medical only losses are excluded from the calculation of the experience mod

o However, the experience mod is used as a predictor of **total** losses

o Testing seems to show minimal differences in various medical only exclusion percentages, even when the test group is limited to small risks

o Part of the motivation for the exclusion was to promote increased reporting of medical only claims, although we have not observed any change

NCCI Experience Rating Formula

Actual / Expected → $$\dfrac{A_p + A_e(W) + E_e(1-W) + B}{E + B}$$

Some Qualifications:

- Premium thresholds
- Actual Losses limited
- Mods limited
- ERA

A = Actual
E = Expected
p = primary
e = excess
B = Ballast
W = Weight

ER Plan Differences
Across NCCI States

o ERA vs GERT

o Premium Eligibility

o Individual loss limits

o ELR's, D-Ratios, W and B

o Miscellaneous

California Experience Rating

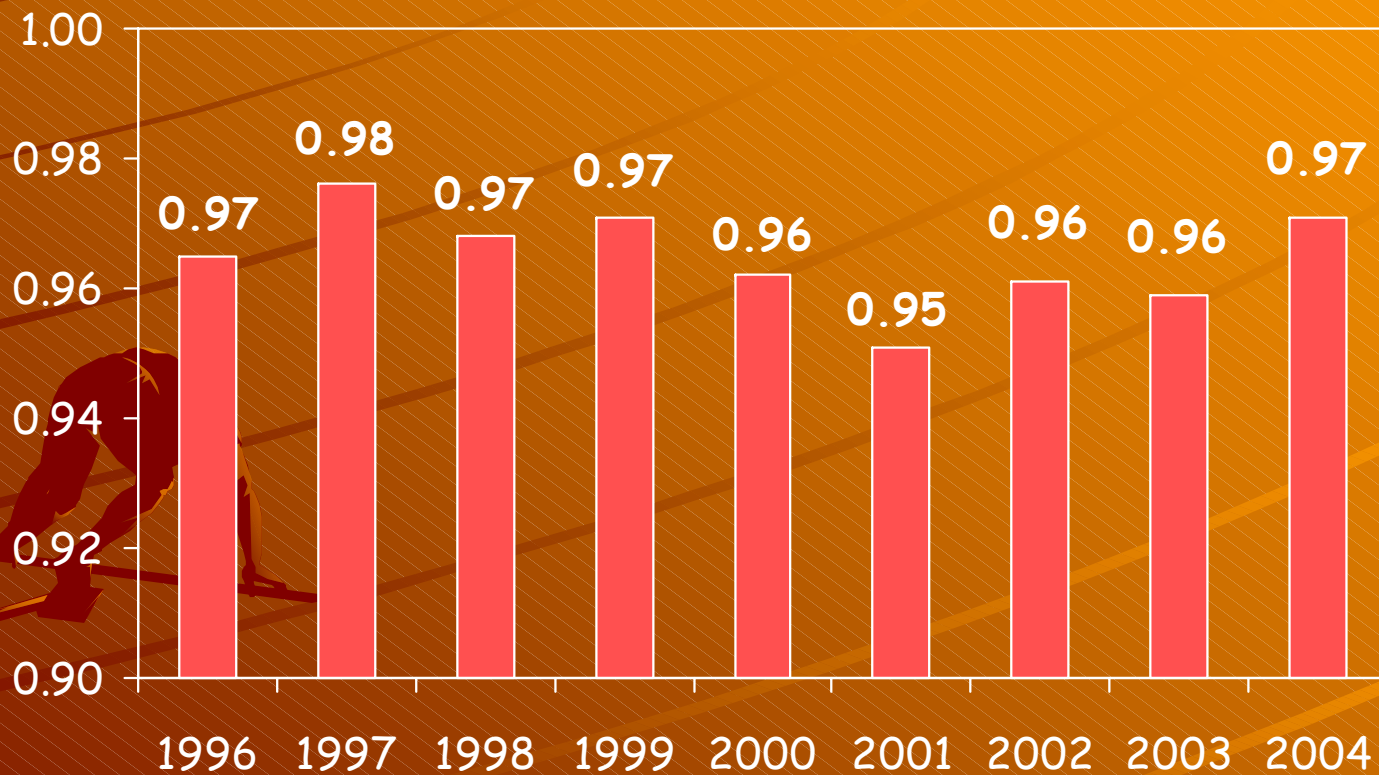Formula same as NCCI ➡️ $$\frac{A_p + A_e(W) + E_e(1-W) + B}{E + B}$$

o Eligibility = 30,900 of pure premium for total
   three year

o Primary Loss = (TL x 9,000) / (TL + 7,000)
   where TL = Total Loss
   o Primary on a $10,000 loss = $5,295
   o Primary on a $100,000 loss = $8,412

Projected California Off-Balance Factors Reflected in Pure Premium Rates
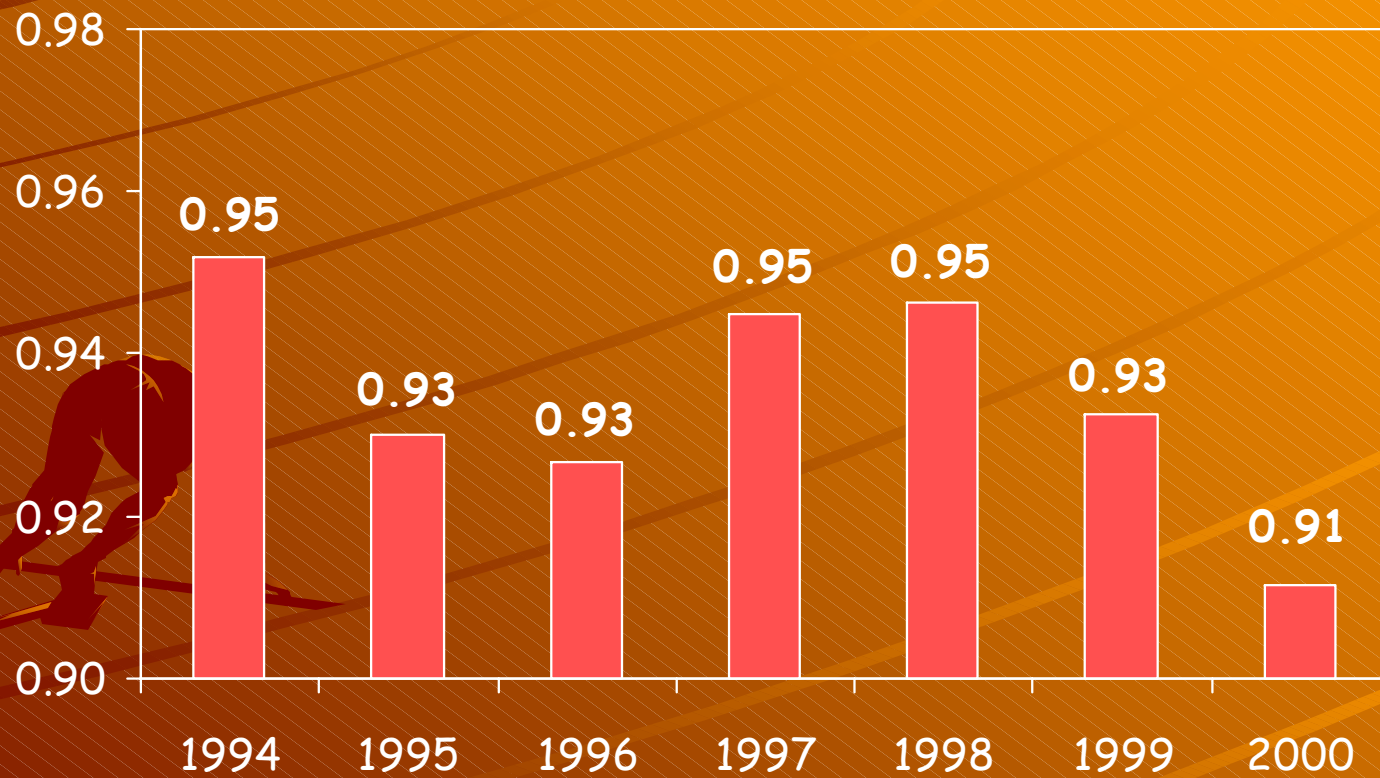
Pennsylvania Experience Rating

Formula same as old ➡ $$\frac{[A \times C + (L \times C) \times E + E \times (1-C)]}{E}$$

- A = Limited Actual Losses
- C = Risk Credibility
- L x C = Loss Limitation Charge
- E = Expected Losses
- The C and L x C values are taken from Table B of our Rating Plan by size of risk.

Pennsylvania Experience Rating

o Effective 4/1/04 significantly different and more responsive plan

o Eligibility = 10,000 of pure premium for total three year

o Primary Loss = $42,500

o Loss limitation charge varies by insured size (credibility)

o Maximum swing in insured mod of +/- 25%

Off-Balance Factors Pennsylvania

Chart showing Off-Balance Factors for Pennsylvania from 1994 to 2000:

Year	Value
1994	0.95
1995	0.93
1996	0.93
1997	0.95
1998	0.95
1999	0.93
2000	0.91

Sample Mod Comparison Across Four States

o Provides a comparison of Plan performance and responsiveness across risk sizes and class hazardousness in different plans

o Defined small risk to be least number of employees needed to meet eligibility reqs in all five states

o Selected two classes, Plumbing and Clerical

o Experience mods calculated using three scenarios:
   o No losses
   o Single loss equal to state's average lost time claim
   o Single loss equal to ten times state's average lost time claim

Small Risk Average Mod Comparison - Plumbing

	No Losses	Average Loss	Large Loss
California	0.88	1.16	1.21
Florida	0.91	1.26	1.53(a)
Iowa	0.89	1.23	1.55(b)
PA old plan	0.97	1.18	1.29
PA new pre cap	0.84	2.01	2.37
PA new post cap	0.84	1.47	1.61

(a) 2.34 prior to loss cap
(b) 1.86 prior to loss cap

Medium Sized Risk Average Mod Comparison - Plumbing

	No Losses	Average Loss	Large Loss
California	0.65	0.73	0.90(a)
Florida	0.75	0.86	1.00(b)
Iowa	0.75	0.83	0.94(c)
PA old plan	0.80	0.92	1.05
PA new pre cap	0.72	0.92	0.98
PA new post cap	0.72	0.92	0.98

(a) 1.11 prior to loss cap
(b) 1.43 prior to loss cap
(c) 1.05 prior to loss cap

Small vs. Medium Sized Risk Average Mod Comparison for No Losses

	Clerical		Plumbing	
	Small	Medium	Small	Medium
California	0.87	0.64	0.88	0.65
Florida	0.92	0.76	0.91	0.75
Iowa	0.89	0.71	0.89	0.75
PA old plan	0.97	0.85	0.97	0.80
PA new pre cap	0.84	0.75	0.84	0.72
PA new post cap	0.84	0.75	0.84	0.72

Small vs. Medium Sized Risk Average Mod Comparison for Large Loss

	Clerical		Plumbing	
	Small	Medium	Small	Medium
California	1.21	0.91	1.21	0.90
Florida	1.61	1.06	1.53	1.00
Iowa	1.61	0.94	1.55	0.94
PA old plan	1.39	1.10	1.29	1.05
PA new pre cap	2.87	1.07	2.37	0.98
PA new post cap	1.74	1.07	1.61	0.98

Presentation Summary

o Experience Rating Plans Working Effectively at Encouraging Safety by Emphasizing Frequency

o Experience Rating Involves Difficult Equity Issues Across Risk Sizes

o Significant State Differences Exist