

PENNSYLVANIA COMPENSATION RATING BUREAU

Indicated Change in Loss Cost

Page 1 presents the overall indicated change in loss costs.

Derivation of the indemnity and medical trend factors and trended loss ratios shown on page 1 is presented on page 2. Severity ratios, defined herein as loss ratios adjusted by dividing out the frequency component, for both indemnity and medical, have been fitted using a seven point exponential curve. Severity trend factors are calculated by fitting severity ratios to curves using a least squares regression analysis and comparing the fitted values at 4/1/15 to the fitted values at the midpoints of the latest three available policy years. Frequency trend factors are derived on page 3. The resulting severity and frequency trend factors are then applied to the latest three available policy year loss ratios to generate projected ultimate trended loss ratios.

As described in Exhibit 8, staff has selected an annual frequency trend of -4.8%. Page 3 shows the derivation of overall frequency trend factors for each of the latest three available policy years.

INDICATED CHANGE IN LOSS COSTS

	<u>Indemnity</u>	<u>Medical</u>	<u>Total</u>
(1) Policy Year 2009 Ratio of Loss to Expected Loss	0.4978	0.5003	0.9981
(2) Policy Year 2010 Ratio of Loss to Expected Loss	0.4850	0.5217	1.0067
(3) Policy Year 2011 Ratio of Loss to Expected Loss	0.4763	0.5169	0.9932
(4) Average (Midpoint = 1/1/2011)	0.4864	0.5130	0.9994
(5) Policy Year 2009 Ratio Trended to 4/1/2015 +	0.4493	0.4857	0.9350
(6) Policy Year 2010 Ratio Trended to 4/1/2015 +	0.4464	0.5094	0.9558
(7) Policy Year 2011 Ratio Trended to 4/1/2015 +	0.4471	0.5075	0.9546
(8) Average at 4/1/2015	0.4476	0.5009	0.9485
(9) Indicated Change in Loss Costs	0.4476	0.5009	0.9485

CHANGES IN MANUAL LOSS COST LEVEL BY INDUSTRY GROUP

	<u>Mfg.</u>	<u>Cont.</u>	<u>Other</u>	<u>Total</u>
(10) Current Collectible Premium Ratio	1.0368	1.0883	1.0148	
(11) Anticipated Collectible Premium Ratio	1.0391	1.0935	1.0089	
(12) Final Indicated Change in Manual Loss Cost Level (9T) * (11) / (10)	0.9506	0.9530	0.9430	0.9465

+ Refer to pages 12.2 and 12.3

DETERMINATION OF TREND

INDEMNITY

Policy Year	2005	2006	2007	2008	2009	2010	2011
Actual Loss Ratio	0.5316	0.5212	0.5365	0.5201	0.4978	0.4850	0.4763
Normalized Frequency	0.7124	0.6876	0.6472	0.5968	0.5764	0.5679	0.5312
Severity Loss Ratio	0.7462	0.7580	0.8290	0.8715	0.8636	0.8540	0.8966
x	1	2	3	4	5	6	7
y	0.7462	0.7580	0.8290	0.8715	0.8636	0.8540	0.8966

7 Point Exponential Regression: $y = 0.736728 * 1.030095 ^x$

Policy Year	Severity Trend Factor (1)	# of years to 4/1/15 (2)	Severity Trend to 4/1/15 (3) = (1) ^ (2)	Frequency Trend Factor (4) #
2009	1.0301	5.2500	1.1685	0.7724
2010	1.0301	4.2500	1.1343	0.8113
2011	1.0301	3.2500	1.1012	0.8523

Trended Loss Ratio

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3) * (4)	Trended Loss Ratio (7) = (5) * (6)
2009	0.4978	0.9025	0.4493
2010	0.4850	0.9203	0.4464
2011	0.4763	0.9386	0.4471

MEDICAL

Policy Year	2005	2006	2007	2008	2009	2010	2011
Actual Loss Ratio	0.5338	0.5162	0.5442	0.5111	0.5003	0.5217	0.5169
Normalized Frequency	0.7124	0.6876	0.6472	0.5968	0.5764	0.5679	0.5312
Severity Loss Ratio	0.7493	0.7507	0.8409	0.8564	0.8680	0.9186	0.9731
x	1	2	3	4	5	6	7
y	0.7493	0.7507	0.8409	0.8564	0.8680	0.9186	0.9731

7 Point Exponential Regression: $y = 0.712090 * 1.044514 ^x$

Policy Year	Severity Trend Factor (1)	# of years to 4/1/15 (2)	Severity Trend to 4/1/15 (3) = (1) ^ (2)	Frequency Trend Factor (4) #
2009	1.0445	5.2500	1.2568	0.7724
2010	1.0445	4.2500	1.2033	0.8113
2011	1.0445	3.2500	1.1520	0.8523

Trended Loss Ratio

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3) * (4)	Trended Loss Ratio (7) = (5) * (6)
2009	0.5003	0.9708	0.4857
2010	0.5217	0.9762	0.5094
2011	0.5169	0.9818	0.5075

See page 12.3

DETERMINATION OF TREND

Claim Frequency

Policy Year Frequency per \$1 million of Expected Losses
{1 = PY 2000, 12 = PY 2011}

Policy Year	Claim Frequency	Normalized Frequency
2000	26.98	1.0000
2001	24.84	0.9207
2002	23.84	0.8836
2003	21.86	0.8102
2004	20.71	0.7676
2005	19.22	0.7124
2006	18.55	0.6876
2007	17.46	0.6472
2008	16.10	0.5968
2009	15.55	0.5764
2010	15.32	0.5679
2011	14.33	0.5312

Policy Year	2005	2006	2007	2008	2009	2010	2011
x	1	2	3	4	5	6	7
y	0.7124	0.6876	0.6472	0.5968	0.5764	0.5679	0.5312

7 Point Exponential Regression: $y = 0.747683 * 0.95194719 ^ x$

SELECTED FREQUENCY TREND FACTOR

-4.8%

Policy Year	Frequency Trend Factor (1)	# of years to 4/1/15 (2)	Frequency Trend to 4/1/15 (3) = (1)^(2)
2009	0.9520	5.2500	0.7724
2010	0.9520	4.2500	0.8113
2011	0.9520	3.2500	0.8523