

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 4/1/10 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.

Please note that staff has trended fitted frequency values using a 7 point regression. The curve selected was $y = 1/(a+b*x)$.

INDICATED CHANGE IN LOSS COSTS

	<u>Indemnity</u>	<u>Medical</u>	<u>Total</u>
(1) Policy Year 2004 Ratio of Loss to Expected Loss	0.5399	0.5499	1.0898
(2) Policy Year 2005 Ratio of Loss to Expected Loss	0.5070	0.5109	1.0179
(3) Policy Year 2006 Ratio of Loss to Expected Loss	0.4951	0.4897	0.9848
(4) Average (Midpoint = 1/1/2006)	0.5140	0.5168	1.0308
(5) Policy Year 2004 Ratio Trended to 4/1/2010 +	0.4888	0.5648	1.0536
(6) Policy Year 2005 Ratio Trended to 4/1/2010 +	0.4705	0.5252	0.9957
(7) Policy Year 2006 Ratio Trended to 4/1/2010 +	0.4695	0.5020	0.9715
(8) Average at 4/1/2010	0.4763	0.5307	1.0070
(9) Indicated Change in Loss Costs	0.4763	0.5307	1.0070

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	1.0562	1.1063	1.0544	
(11) Anticipated Collectible Premium Ratio	1.0463	1.0951	1.0399	
(12) Final Indicated Change in Manual Loss Cost Level (9T) * (11) / (10)	0.9976	0.9968	0.9932	0.9949

+ Refer to pages 12.2 and 12.3

DETERMINATION OF TREND

INDEMNITY

Policy Year	2000	2001	2002	2003	2004	2005	2006
Actual Loss Ratio	0.6049	0.5700	0.5603	0.5262	0.5399	0.5070	0.4951
Normalized Frequency	0.7107	0.6558	0.6287	0.5775	0.5483	0.5067	0.4895
Severity Loss Ratio	0.8511	0.8692	0.8912	0.9112	0.9847	1.0006	1.0114
x	1	2	3	4	5	6	7
y	0.8511	0.8692	0.8912	0.9112	0.9847	1.0006	1.0114

7 Point Exponential Regression: $y = 0.817318 * 1.03263 ^x$

Policy Year	Fitted Value @ Midpoint of PY (1)	Fitted Value @ 4/1/10 (2)	Severity Trend Factor (3) = (2) / (1)	Frequency Trend Factor (4) #
2004	0.9596	1.1358	1.1836	0.7649
2005	0.9910	1.1358	1.1461	0.8097
2006	1.0233	1.1358	1.1099	0.8542

Trended Loss Ratio

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3)*(4)	Trended Loss Ratio (7) = (5) * (6)
2004	0.5399	0.9054	0.4888
2005	0.5070	0.9280	0.4705
2006	0.4951	0.9481	0.4695

MEDICAL

Policy Year	2000	2001	2002	2003	2004	2005	2006
Actual Loss Ratio	0.5415	0.5022	0.5138	0.5110	0.5499	0.5109	0.4897
Normalized Frequency	0.7107	0.6558	0.6287	0.5775	0.5483	0.5067	0.4895
Severity Loss Ratio	0.7619	0.7658	0.8172	0.8848	1.0029	1.0083	1.0004
x	1	2	3	4	5	6	7
y	0.7619	0.7658	0.8172	0.8848	1.0029	1.0083	1.0004

7 Point Exponential Regression: $y = 0.707364 * 1.05775 ^x$

Policy Year	Fitted Value @ Midpoint of PY (1)	Fitted Value @ 4/1/10 (2)	Severity Trend Factor (3) = (2) / (1)	Frequency Trend Factor (4) #
2004	0.9366	1.2577	1.3428	0.7649
2005	0.9907	1.2577	1.2695	0.8097
2006	1.0479	1.2577	1.2002	0.8542

Trended Loss Ratio

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3)*(4)	Trended Loss Ratio (7) = (5) * (6)
2004	0.5499	1.0272	0.5648
2005	0.5109	1.0279	0.5252
2006	0.4897	1.0252	0.5020

See page 12.3 for column (4).

DETERMINATION OF TREND

Claim Frequency

Policy Year Frequency per \$1 million of Expected Losses
{1 = PY 1995, 12 = PY 2006}

Policy Year	Claim Frequency	Normalized Frequency
1995	33.18	1.0000
1996	30.18	0.9096
1997	28.56	0.8608
1998	26.58	0.8011
1999	25.17	0.7586
2000	23.58	0.7107
2001	21.76	0.6558
2002	20.86	0.6287
2003	19.16	0.5775
2004	18.19	0.5483
2005	16.81	0.5067
2006	16.24	0.4895

Policy Year	2000	2001	2002	2003	2004	2005	2006
x	1	2	3	4	5	6	7
y	23.58	21.76	20.86	19.16	18.19	16.81	16.24

7 Point Regression: $y = 1/(a+b*x)$ $a = 0.039097$, $b = 0.003240$

SELECTED FREQUENCY TREND FACTOR

Policy Year	Fitted Frequency (1)	Frequency Trended to 4/1/10 (2)	Frequency Trend to 4/1/10 (3) = (2)/(1)
2004	18.08	13.83	0.7649
2005	17.08	13.83	0.8097
2006	16.19	13.83	0.8542