

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 six 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 4/1/05 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 -6.0%. Page 3 derives 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 1999 Ratio of Loss to Expected Loss	0.5046	0.4626	0.9672
(2) Policy Year 2000 Ratio of Loss to Expected Loss	0.5294	0.4769	1.0063
(3) Policy Year 2001 Ratio of Loss to Expected Loss	0.4967	0.4514	0.9481
(4) Average (Midpoint = 1/1/2001)	0.5102	0.4636	0.9739
(5) Policy Year 1999 Ratio Trended to 4/1/2005 +	0.5504	0.4938	1.0442
(6) Policy Year 2000 Ratio Trended to 4/1/2005 +	0.5680	0.5027	1.0707
(7) Policy Year 2001 Ratio Trended to 4/1/2005 +	0.5242	0.4700	0.9942
(8) Average at 4/1/2005	0.5475	0.4888	1.0363
(9) Savings at 9/1/1993	0.9943	1.0000	
(10) Act 57 Savings	1.0000	1.0000	
(11) Combined Impact: Act 44 & Act 57 (9) * (10)	0.9943	1.0000	0.9970
(12) Indicated Change in Loss Costs (8) * (11)	0.5444	0.4888	1.0332

**CHANGES IN MANUAL LOSS COST LEVEL BY INDUSTRY GROUP**

	<u>Mfg.</u>	<u>Cont.</u>	<u>Other</u>	<u>Total</u>
(13) Current Collectible Premium Ratio	1.0899	1.0525	1.0526	
(14) Anticipated Collectible Premium Ratio	1.0835	1.0805	1.0530	
(15) Final Indicated Change in Manual Loss Cost Level (12T) * (14) / (13)	1.0271	1.0607	1.0336	1.0365

+ Refer to pages 12.2 and 12.3

**DETERMINATION OF TREND**

**INDEMNITY**

Policy Year	1996	1997	1998	1999	2000	2001
Actual Loss Ratio	0.4680	0.4939	0.4732	0.5046	0.5294	0.4967
Normalized Frequency	0.5741	0.5438	0.5064	0.4785	0.4500	0.4210
Severity Loss Ratio	0.8152	0.9082	0.9344	1.0545	1.1764	1.1798
<b>x</b>	1	2	3	4	5	6
<b>y</b>	0.8152	0.9082	0.9344	1.0545	1.1764	1.1798

6 Point Exponential Regression:  $y = 0.761487 * 1.08160 ^ x$

Policy Year	Fitted Value @ Midpoint of PY (1)	Fitted Value @ 4/1/04 (2)	Severity Trend Factor (3) = (2) / (1)	Frequency Trend Factor (4) #
1999	0.9635	1.4545	1.5096	0.7226
2000	1.0422	1.4545	1.3956	0.7688
2001	1.1272	1.4545	1.2904	0.8178

**Trended Loss Ratio**

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3)*(4)	Trended Loss Ratio (7) = (5) * (6)
1999	0.5046	1.0908	0.5504
2000	0.5294	1.0729	0.5680
2001	0.4967	1.0553	0.5242

**MEDICAL**

Policy Year	1996	1997	1998	1999	2000	2001
Actual Loss Ratio	0.4249	0.4598	0.4565	0.4626	0.4769	0.4514
Normalized Frequency	0.5741	0.5438	0.5064	0.4785	0.4500	0.4210
Severity Loss Ratio	0.7401	0.8455	0.9015	0.9668	1.0598	1.0722
<b>x</b>	1	2	3	4	5	6
<b>y</b>	0.7401	0.8455	0.9015	0.9668	1.0598	1.0722

6 Point Exponential Regression:  $y = 0.71188 * 1.077147 ^ x$

Policy Year	Fitted Value @ Midpoint of PY (1)	Fitted Value @ 4/1/04 (2)	Severity Trend Factor (3) = (2) / (1)	Frequency Trend Factor (4) #
1999	0.8897	1.3142	1.4771	0.7226
2000	0.9583	1.3142	1.3714	0.7688
2001	1.0322	1.3142	1.2732	0.8178

**Trended Loss Ratio**

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3)*(4)	Trended Loss Ratio (7) = (5) * (6)
1999	0.4626	1.0674	0.4938
2000	0.4769	1.0543	0.5027
2001	0.4514	1.0412	0.4700

# See page 12.3 for column (4).

**DETERMINATION OF TREND**

**Claim Frequency**

Policy Year Frequency per \$1 million of Expected Losses  
{1 = PY 1990, 12 = PY 2001}

Policy Year	Claim Frequency	Normalized Frequency
1990	44.88	1.0000
1991	41.46	0.9238
1992	38.48	0.8574
1993	35.70	0.7955
1994	31.96	0.7122
1995	28.45	0.6340
1996	25.76	0.5741
1997	24.40	0.5438
1998	22.72	0.5064
1999	21.47	0.4785
2000	20.19	0.4500
2001	18.89	0.4210

Policy Year	1996	1997	1998	1999	2000	2001
<b>x</b>	1	2	3	4	5	6
<b>y</b>	0.5741	0.5438	0.5064	0.4785	0.4500	0.4210

6 Point Exponential Regression:  $y = 0.61263 * 0.9397345 ^ x$

**SELECTED FREQUENCY TREND FACTOR**

**-6.0%**

Policy Year	Frequency Trend Factor (1)	# of years to 4/1/04 (2)	Frequency Trend to 4/1/04 (3) = (1)^(2)
1999	0.9400	5.2500	0.7226
2000	0.9400	4.2500	0.7688
2001	0.9400	3.2500	0.8178