

PENNSYLVANIA COMPENSATION RATING BUREAU

Tail Factors for Loss Development

For a given calendar year, the PCRБ collects financial loss development data for the current policy year and the twenty previous individual policy years. A single aggregate line of experience is reported for all older policy years combined.

Thus, the 2000 vs. 2001 valuations in the tail factor calculation will use policy year 1981 as the earliest separate policy year and an aggregate line of experience for policy years 1980 and prior. The 2001 vs. 2002 valuations in the tail factor calculation will use policy year 1982 as the earliest separate policy year and an aggregate line of experience for policy years 1981 and prior. The 2002 vs. 2003 valuations in the tail factor calculation will use policy year 1983 as the earliest separate policy year and an aggregate line of experience for policy years 1982 and prior. The 2003 vs. 2004 valuations in the tail factor calculation will use policy year 1984 as the earliest separate policy year and an aggregate line of experience for policy years 1983 and prior.

The following discussion focuses on data with an earliest available policy year of 1978 for illustrative purposes. The discussion for data starting with later policy years would, however, be analogous.

Prior to 1995, the PCRБ has computed incurred loss development for maturities older than policy year 1978 (i.e., the pre-1978 “tail”) by comparing the total amount of dollar development in incurred losses occurring in a given calendar year to the incurred loss reported for policy year 1978 at the beginning of that same calendar period.

As part of the Insurance Department’s examination of the Bureau, the actuarial firm retained to perform portions of that review commented that the PCRБ’s approach effectively assumed that each policy year prior to 1978 had the same amount of ultimate losses as did policy year 1978. Since policy year losses have tended to increase from year to year in response to benefit and price changes, changes in employment volume and other features affecting loss trends, this assumption was noted as understating the true tail in the PCRБ’s loss development analysis. The contractor recommended that for future filings the PCRБ add a growth adjustment to its tail factor calculation.

In response to this recommendation the PCRБ changed its derivation of tail factors for its 12/1/95 filing. That approach, used again for this filing, is applied separately for indemnity and medical loss experience and for each calendar year of experience, and outlined as follows:

1. A starting policy year loss amount based on the average reported incurred loss for policy years 1978-1980 was computed.
2. An annual loss inflation factor was selected based on observed changes in incurred losses by policy year for the older policy years having separate experience data reported.
3. A historical series of estimated incurred losses by policy year beginning with policy year 1977 was computed using the starting point from #1 and the selected inflation factor from #2.
4. A calendar year loss development factor was selected for policy year 1977 based on observed developments for the oldest years with actual separate experience available.
5. A rate of decline in calendar year loss development factors by policy year was then computed such that when the resulting series of loss development factors was applied to the historical series of estimated incurred losses in #3, the total implied dollar amount of loss development for the calendar year balanced to the observed amount of development on policy years prior to 1978.
6. The “tail factor” applicable to maturities prior to policy year 1978 based on that calendar year of experience was then computed as the cumulative product of the series of loss development factors constructed in #5.

In general, this approach produced policy year incurred losses and loss development factors such that measurable development terminated for policy years in the mid- to early 1930's. Because the amount of calendar year development observed for policy years prior to 1978 varied considerably from year to year, some variations in the application of the initial selected loss development factor were necessary (i.e., whether the initial selection was applied to 1, 2 or 3 prior policy years before beginning the application of the selected rate of decline in loss development). In addition, the selected rates of decline in loss development factors vary from calendar year to calendar year in order to achieve the desired balance with observed calendar year development.

Recognizing the volatility of observed calendar year development for policy years prior to 1978 in the aggregate, the PCRB elected to use an experience period comprising four calendar years of loss development in computing indicated tail factors for this filing.

A summary exhibit on page 1 presents results of both the previous and revised approaches to the derivation of tail development factors. Following the summary page, eight exhibits presenting the derivation of indicated tail factors using the procedure outlined above are attached (four for indemnity and four for medical). These exhibits are numbered as pages 2 through 9 respectively.

SUMMARY OF LOSS DEVELOPMENT TAIL FACTOR CALCULATIONS

VALUATION	MATURITY	INDEMNITY		MEDICAL	
		Traditional Approach *	Indicated Factor	Traditional Approach *	Indicated Factor
03V04	20TH TO ULT.	1.0023	1.0026	0.9972	0.9961
02V03	20TH TO ULT.	1.0005	1.0006	1.0804	1.0874
01V02	20TH TO ULT.	1.0130	1.0137	1.1246	1.1426
00V01	20TH TO ULT.	0.9901	0.9881	1.0878	1.1096
AVERAGE OF LATEST 4 VALUATIONS		1.0015	1.0013	1.0725	1.0839

* I.e. for 03V04 =
$$\frac{\text{Incurred Loss @ 12/31/04} - \text{Incurred Loss @ 12/31/03 for policy years prior to 1984}}{\text{Incurred Loss @ 12/31/03 for policy year 1984}}$$

Indemnity: 03v04

Latest 12/31 Prior to 1984 Incurred	3,012,174,210
Next Latest 12/31 Prior to 1984 Incurred	3,011,164,550
CY Development of Prior Yrs	1,009,660
Next Latest PY 1984 Incurred	435,707,838
# of 1984 Yrs in Prior Data	6.91
Selected Decrement, Development Factor	0.75
Selected Average PY Deflation Factor	0.95

- 1 Policy Yr 1983 Incurred = Average of 1984, 1985, 1986, reduced by PY Deflation ^ 2
- 2 PY 1982 & Prior = Subsequent Yr x PY Deflation
- 3 1983 Development Selected Based on Observed 1984, 1985, 1986
- 4 PY 1982 & Prior Development = (Subsequent Yr - 1.0) x Selected Decrement + 1.0

TAIL = 1.0026 vs 1.0023 1,009,660
0

Pennsylvania Compensation Rating Bureau
Tail Factor Model - 2006 Loss Cost Filing

INDEMNITY

Policy Year	(*=Estimate)	12/31/04 Incurred	Prior Year Development	Dollar Development	DF	Policy Year	(*=Estimate)	12/31/04 Incurred	Prior Year Development	Dollar Development	DF
1936	*	40,759,953	1.000000	0	1.0000 #	1971	*	245,418,607	1.000020	4,970	1.0001
1937	*	42,905,213	1.000000	0	1.0000 #	1972	*	258,335,375	1.000027	6,976	1.0001
1938	*	45,163,382	1.000000	0	1.0000 #	1973	*	271,931,974	1.000036	9,791	1.0001
1939	*	47,540,403	1.000000	0	1.0000 #	1974	*	286,244,183	1.000048	13,741	1.0002
1940	*	50,042,529	1.000000	0	1.0000 #	1975	*	301,309,667	1.000064	19,286	1.0003
1941	*	52,676,346	1.000000	0	1.0000 #	1976	*	317,168,070	1.000085	27,067	1.0003
1942	*	55,448,786	1.000000	0	1.0000 #	1977	*	333,861,126	1.000114	37,988	1.0005
1943	*	58,367,143	1.000000	0	1.0000 #	1978	*	351,432,765	1.000152	53,314	1.0006
1944	*	61,439,098	1.000000	1	1.0000 #	1979	*	369,929,226	1.000202	74,823	1.0008
1945	*	64,672,734	1.000000	1	1.0000 #	1980	*	389,399,185	1.000270	105,008	1.0011
1946	*	68,076,563	1.000000	1	1.0000 #	1981	*	409,893,879	1.000360	147,367	1.0014
1947	*	71,659,540	1.000000	1	1.0000 #	1982	*	431,467,241	1.000480	206,805	1.0019
1948	*	75,431,094	1.000000	2	1.0000 #	1983	*	454,176,043	1.000639383	290,207	1.0026 20TH TO ULT.
1949	*	79,401,152	1.000000	3	1.0000 #	1984	*	436,139,001	0.9971		
1950	*	83,580,160	1.000000	4	1.0000 #	1985	*	496,871,114	0.9996	Total	
1951	*	87,979,116	1.000000	6	1.0000 #	1986	*	576,716,345	1.0015	Development:	
1952	*	92,609,595	1.000000	8	1.0000 #	1987	*	691,689,816	1.0012	1,009,660	
1953	*	97,483,785	1.000000	11	1.0000 #	1988	*	775,854,530	1.0006		
1954	*	102,614,510	1.000000	16	1.0000 #	1989	*	903,117,924	0.9991		
1955	*	108,015,274	1.000000	22	1.0000 #	1990	*	950,474,410	1.0000		
1956	*	113,700,288	1.000000	31	1.0000 #	1991	*	854,541,508	0.9991		
1957	*	119,684,514	1.000000	43	1.0000 #	1992	*	770,009,716	1.0033		
1958	*	125,983,699	1.000000	61	1.0000 #	1993	*	677,028,608	1.0010		
1959	*	132,614,420	1.000001	85	1.0000 #	1994	*	618,504,479	1.0006		
1960	*	139,594,126	1.000001	119	1.0000 #	1995	*	526,343,690	0.9993		
1961	*	146,941,185	1.000001	168	1.0000 #	1996	*	462,865,866	0.9972		
1962	*	154,674,932	1.000002	235	1.0000 #	1997	*	479,117,364	1.0148		
1963	*	162,815,718	1.000002	330	1.0000 #	1998	*	507,149,034	1.0146		
1964	*	171,384,966	1.000003	463	1.0000 #	1999	*	587,223,077	1.0223		
1965	*	180,405,228	1.000004	650	1.0000 #	2000	*	621,879,957	1.0705		
1966	*	189,900,240	1.000005	913	1.0000 #	2001	*	559,943,487	1.1686		
1967	*	199,894,989	1.000006	1,281	1.0000 #	2002	*	480,050,092	1.4311		
1968	*	210,415,778	1.000009	1,798	1.0000 #	2003	*	323,894,671	3.0590		
1969	*	221,490,292	1.000011	2,523	1.0000 #	2004	*	118,783,538			
1970	*	233,147,676	1.000015	3,541	1.0001 #						

Medical 03v04

Latest 12/31 Prior to 1983 Incurred	759,653,911
Next Latest 12/31 Prior to 1983 Incurred	760,129,467
CY Development of Prior Yrs	-475,556
Next Latest PY 1983 Incurred	172,374,379
# of 1983 Yrs in Prior Data	4.41
Selected Decrement, Development Factor	0.75
Selected Average PY Deflation Factor	0.93

- 1 Policy Yr 1983 Incurred = Average of 1984, 1985, 1986, reduced by PY Deflation ^ 2
- 2 PY 1982 & Prior = Subsequent Yr x PY Deflation
- 3 1983 Development Selected Based on Observed 1984, 1985, 1986
- 4 PY 1982 & Prior Development = (Subsequent Yr - 1.0) x Selected Decrement + 1.0

TAIL = .9961 vs .9972 -475,556
0

Pennsylvania Compensation Rating Bureau
Tail Factor Model - 2006 Loss Cost Filing

MEDICAL

Policy Year	(*=Estimate)	12/31/04 Incurred	Prior Year Development	Dollar Development	DF	Policy Year	(*=Estimate)	12/31/04 Incurred	Prior Year Development	Dollar Development	DF
1935	*	4,994,745	1.000000	0	1.0000 #	1971	*	68,096,873	.999970	-2,071	.9999
1936	*	5,370,693	1.000000	0	1.0000 #	1972	*	73,222,444	.999959	-2,969	.9998
1937	*	5,774,939	1.000000	0	1.0000 #	1973	*	78,733,811	.999946	-4,256	.9998
1938	*	6,209,612	1.000000	0	1.0000 #	1974	*	84,660,011	.999928	-6,102	.9997
1939	*	6,677,002	1.000000	0	1.0000 #	1975	*	91,032,270	.999904	-8,749	.9996
1940	*	7,179,572	1.000000	0	1.0000 #	1976	*	97,884,162	.999872	-12,543	.9995
1941	*	7,719,970	1.000000	0	1.0000 #	1977	*	105,251,787	.999829	-17,984	.9993
1942	*	8,301,043	1.000000	0	1.0000 #	1978	*	113,173,964	.999772	-25,785	.9991
1943	*	8,925,853	1.000000	0	1.0000 #	1979	*	121,692,435	.999696	-36,970	.9988
1944	*	9,597,691	1.000000	0	1.0000 #	1980	*	130,852,080	.999595	-53,009	.9984
1945	*	10,320,098	1.000000	0	1.0000 #	1981	*	140,701,162	.999460	-76,010	.9978
1946	*	11,096,880	1.000000	0	1.0000 #	1982	*	151,291,572	.999280	-108,994	.9971
1947	*	11,932,129	1.000000	0	1.0000 #	1983	*	120,050,047	0.999040128	-115,343	.9961
1948	*	12,830,246	1.000000	-1	1.0000 #	1984		175,980,509	1.0174		
1949	*	13,795,963	1.000000	-1	1.0000 #	1985		228,740,764	1.0187		
1950	*	14,834,369	1.000000	-1	1.0000 #	1986		252,793,984	1.0145	Total	
1951	*	15,950,935	1.000000	-2	1.0000 #	1987		334,412,643	1.0285	Development:	
1952	*	17,151,543	1.000000	-2	1.0000 #	1988		397,910,675	1.0175	-475,556	
1953	*	18,442,519	1.000000	-3	1.0000 #	1989		481,022,979	1.0111		
1954	*	19,830,666	1.000000	-5	1.0000 #	1990		521,446,185	1.0129		
1955	*	21,323,296	1.000000	-6	1.0000 #	1991		493,740,505	1.0135		
1956	*	22,928,276	1.000000	-9	1.0000 #	1992		474,698,402	1.0174		
1957	*	24,654,060	.999999	-13	1.0000 #	1993		402,510,263	1.0082		
1958	*	26,509,742	.999999	-19	1.0000 #	1994		376,224,982	1.0112		
1959	*	28,505,099	.999999	-27	1.0000 #	1995		347,279,100	1.0165		
1960	*	30,650,644	.999999	-39	1.0000 #	1996		349,424,505	1.0109		
1961	*	32,957,682	.999998	-56	1.0000 #	1997		364,964,820	1.0245		
1962	*	35,438,367	.999998	-81	1.0000 #	1998		418,250,282	1.0058		
1963	*	38,105,771	.999997	-116	1.0000 #	1999		457,497,856	1.0142		
1964	*	40,973,948	.999996	-166	1.0000 #	2000		479,933,365	1.0216		
1965	*	44,058,008	.999995	-238	1.0000 #	2001		436,169,513	1.0418		
1966	*	47,374,202	.999993	-342	1.0000 #	2002		424,609,410	1.1150		
1967	*	50,940,003	.999990	-490	1.0000 #	2003		393,143,275	2.3859		
1968	*	54,774,196	.999987	-703	.9999 #	2004		187,967,326			
1969	*	58,896,985	.999983	-1,007	.9999 #						
1970	*	63,330,092	.999977	-1,444	.9999 #						

20TH TO ULT.

Indemnity: 02v03

Latest 12/31 Prior to 1983 Incurred	2,967,847,667
Next Latest 12/31 Prior to 1983 Incurred	2,967,633,001
CY Development of Prior Yrs	214,666
Next Latest PY 1983 Incurred	391,162,883
# of 1983 Yrs in Prior Data	7.59
Selected Decrement, Development Factor	0.75
Selected Average PY Deflation Factor	0.95

- 1 Policy Yr 1982 Incurred = Average of 1983, 1984, 1985, reduced by PY Deflation ^ 2
- 2 PY 1981 & Prior = Subsequent Yr x PY Deflation
- 3 1982 Development Selected Based on Observed 1983, 1984, 1985
- 4 PY 1981 & Prior Development = (Subsequent Yr - 1.0) x Selected Decrement + 1.0

TAIL = 1.0006 vs 1.0005 214,666
0

Pennsylvania Compensation Rating Bureau
Tail Factor Model - 2006 Loss Cost Filing

INDEMNITY

Policy Year	(*=Estimate)	12/31/03 Incurred	Prior Year Development	Dollar Development	DF	Policy Year	(*=Estimate)	12/31/03 Incurred	Prior Year Development	Dollar Development	DF
1936	*	40,191,691	1.000000	0	1.0000 #	1970	*	229,897,209	1.000005	1,056	1.0000
1937	*	42,307,043	1.000000	0	1.0000 #	1971	*	241,997,062	1.000006	1,483	1.0000
1938	*	44,533,730	1.000000	0	1.0000 #	1972	*	254,733,749	1.000008	2,081	1.0000
1939	*	46,877,610	1.000000	0	1.0000 #	1973	*	268,140,789	1.000011	2,921	1.0000
1940	*	49,344,853	1.000000	0	1.0000 #	1974	*	282,253,462	1.000015	4,099	1.0001
1941	*	51,941,950	1.000000	0	1.0000 #	1975	*	297,108,907	1.000019	5,753	1.0001
1942	*	54,675,737	1.000000	0	1.0000 #	1976	*	312,746,218	1.000026	8,074	1.0001
1943	*	57,553,407	1.000000	0	1.0000 #	1977	*	329,206,545	1.000034	11,332	1.0001
1944	*	60,582,534	1.000000	0	1.0000 #	1978	*	346,533,206	1.000046	15,905	1.0002
1945	*	63,771,089	1.000000	0	1.0000 #	1979	*	364,771,795	1.000061	22,323	1.0002
1946	*	67,127,462	1.000000	0	1.0000 #	1980	*	383,970,311	1.000082	31,331	1.0003
1947	*	70,660,486	1.000000	0	1.0000 #	1981	*	404,179,275	1.000109	43,973	1.0004
1948	*	74,379,459	1.000000	1	1.0000 #	1982	*	425,451,868	1.00014506	61,716	1.0006 20TH TO ULT.
1949	*	78,294,167	1.000000	1	1.0000 #	1983	*	389,987,738	0.9970		
1950	*	82,414,913	1.000000	1	1.0000 #	1984	*	478,646,535	0.9998	Total	
1951	*	86,752,540	1.000000	2	1.0000 #	1985	*	545,610,164	1.0019	Development:	
1952	*	91,318,463	1.000000	2	1.0000 #	1986	*	640,715,570	1.0021	214,666	
1953	*	96,124,698	1.000000	3	1.0000 #	1987	*	776,693,885	1.0007		
1954	*	101,183,893	1.000000	5	1.0000 #	1988	*	873,813,261	0.9989		
1955	*	106,509,361	1.000000	7	1.0000 #	1989	*	1,024,763,991	1.0002		
1956	*	112,115,116	1.000000	9	1.0000 #	1990	*	1,061,470,384	0.9989		
1957	*	118,015,912	1.000000	13	1.0000 #	1991	*	945,195,749	1.0038		
1958	*	124,227,276	1.000000	18	1.0000 #	1992	*	819,461,749	1.0013		
1959	*	130,765,554	1.000000	25	1.0000 #	1993	*	705,909,803	1.0003		
1960	*	137,647,951	1.000000	36	1.0000 #	1994	*	648,918,349	0.9983		
1961	*	144,892,580	1.000000	50	1.0000 #	1995	*	549,781,669	0.9965		
1962	*	152,518,505	1.000000	70	1.0000 #	1996	*	489,578,546	1.0151		
1963	*	160,545,795	1.000001	98	1.0000 #	1997	*	503,839,366	1.0128		
1964	*	168,995,574	1.000001	138	1.0000 #	1998	*	522,894,170	1.0208		
1965	*	177,890,078	1.000001	194	1.0000 #	1999	*	593,569,230	1.0711		
1966	*	187,252,713	1.000001	272	1.0000 #	2000	*	609,017,440	1.1682		
1967	*	197,108,119	1.000002	382	1.0000 #	2001	*	512,529,705	1.4381		
1968	*	207,482,231	1.000003	536	1.0000 #	2002	*	342,845,222	3.0367		
1969	*	218,402,348	1.000003	753	1.0000 #	2003	*	106,525,140			

Inputs for Tail Factor Estimation - 2006 Loss Cost Filing

Medical 02v03

Latest 12/31 Prior to 1983 Incurred	713,272,113
Next Latest 12/31 Prior to 1983 Incurred	701,627,833
CY Development of Prior Yrs	11,644,280
Next Latest PY 1983 Incurred	144,814,768
# of 1983 Yrs in Prior Data	4.93
Selected Decrement, Development Factor	0.75
Selected Average PY Deflation Factor	0.93

- 1 Policy Yr 1982 Incurred = Average of 1983, 1984, 1985, reduced by PY Deflation ^ 2
- 2 PY 1981 & Prior = Subsequent Yr x PY Deflation
- 3 1982 Development Selected Based on Observed 1983, 1984, 1985
- 4 PY 1981 & Prior Development = (Subsequent Yr - 1.0) x Selected Decrement + 1.0

TAIL = 1.0874 vs 1.0804 11,644,280
0

Pennsylvania Compensation Rating Bureau
Tail Factor Model - 2006 Loss Cost Filing

MEDICAL

Policy Year	(*=Estimate)	12/31/03 Incurred	Prior Year Development	Dollar Development	DF	Policy Year	(*=Estimate)	12/31/03 Incurred	Prior Year Development	Dollar Development	DF
1937	*	6,377,286	1.000000	0	1.0000 #	1971	*	75,199,615	1.000890	66,961	1.0036
1938	*	6,857,296	1.000000	0	1.0000 #	1972	*	80,859,801	1.001187	96,002	1.0048
1939	*	7,373,437	1.000000	1	1.0000 #	1973	*	86,946,022	1.001583	137,637	1.0063
1940	*	7,928,427	1.000000	1	1.0000 #	1974	*	93,490,346	1.002111	197,329	1.0085
1941	*	8,525,190	1.000000	1	1.0000 #	1975	*	100,527,254	1.002814	282,910	1.0113
1942	*	9,166,871	1.000000	2	1.0000 #	1976	*	108,093,822	1.003752	405,605	1.0151
1943	*	9,856,851	1.000000	3	1.0000 #	1977	*	116,229,916	1.005003	581,513	1.0202
1944	*	10,598,764	1.000000	4	1.0000 #	1978	*	124,978,404	1.006671	833,710	1.0270
1945	*	11,396,521	1.000001	6	1.0000 #	1979	*	134,385,381	1.008894	1,195,283	1.0361
1946	*	12,254,323	1.000001	8	1.0000 #	1980	*	144,500,409	1.011859	1,713,667	1.0484
1947	*	13,176,692	1.000001	12	1.0000 #	1981	*	155,376,784	1.015812	2,456,871	1.0650
1948	*	14,168,486	1.000001	17	1.0000 #	1982	*	167,071,811	1.021083120	3,522,395	1.0874
1949	*	15,234,931	1.000002	24	1.0000 #	1983		146,198,868	1.0096		20TH TO ULT
1950	*	16,381,646	1.000002	35	1.0000 #	1984		187,900,786	1.0185		
1951	*	17,614,673	1.000003	50	1.0000 #	1985		245,407,148	1.0154	Total	
1952	*	18,940,509	1.000004	71	1.0000 #	1986		277,378,984	1.0282	Development:	
1953	*	20,366,138	1.000005	102	1.0000 #	1987		367,708,787	1.0180	11,644,280	
1954	*	21,899,073	1.000007	147	1.0000 #	1988		440,848,307	1.0126		
1955	*	23,547,391	1.000009	210	1.0000 #	1989		539,195,973	1.0125		
1956	*	25,319,775	1.000012	301	1.0000 #	1990		576,764,232	1.0136		
1957	*	27,225,565	1.000016	432	1.0001 #	1991		545,185,805	1.0172		
1958	*	29,274,801	1.000021	619	1.0001 #	1992		495,590,271	1.0090		
1959	*	31,478,280	1.000028	888	1.0001 #	1993		416,663,157	1.0103		
1960	*	33,847,613	1.000038	1,273	1.0002 #	1994		385,248,779	1.0173		
1961	*	36,395,283	1.000050	1,825	1.0002 #	1995		360,777,701	1.0101		
1962	*	39,134,713	1.000067	2,617	1.0003 #	1996		362,935,122	1.0258		
1963	*	42,080,336	1.000089	3,751	1.0004 #	1997		384,683,644	1.0043		
1964	*	45,247,674	1.000119	5,378	1.0005 #	1998		430,991,464	1.0137		
1965	*	48,653,412	1.000158	7,711	1.0006 #	1999		460,672,152	1.0192		
1966	*	52,315,497	1.000211	11,055	1.0008 #	2000		488,078,628	1.0363		
1967	*	56,253,223	1.000282	15,849	1.0011 #	2001		435,572,930	1.1152		
1968	*	60,487,336	1.000376	22,723	1.0015 #	2002		390,167,515	2.3547		
1969	*	65,040,147	1.000501	32,577	1.0020 #	2003		174,650,484			
1970	*	69,935,642	1.000668	46,706	1.0027 #						

Indemnity: 01v02

Latest 12/31 Prior to 1982 Incurred	2,817,213,052
Next Latest 12/31 Prior to 1982 Incurred	2,812,669,507
CY Development of Prior Yrs	4,543,545
Next Latest PY 1982 Incurred	348,246,993
# of 1982 Yrs in Prior Data	8.09
Selected Decrement, Development Factor	0.75
Selected Average PY Deflation Factor	0.95

- 1 Policy Yr 1981 Incurred = Average of 1982, 1983, 1984, reduced by PY Deflation ^ 2
- 2 PY 1980 & Prior = Subsequent Yr x PY Deflation
- 3 1981 Development Selected Based on Observed 1982, 1983, 1984
- 4 PY 1980 & Prior Development = (Subsequent Yr - 1.0) x Selected Decrement + 1.0

TAIL = 1.0137 vs 1.0130 4,543,545
0

Pennsylvania Compensation Rating Bureau
Tail Factor Model - 2006 Loss Cost Filing

INDEMNITY

Policy Year	(*=Estimate)	12/31/02 Incurred	Prior Year Development	Dollar Development	DF	Policy Year	(*=Estimate)	12/31/02 Incurred	Prior Year Development	Dollar Development	DF
1935	*	36,272,299	1.000000	0	1.0000 #	1969	*	207,478,214	1.000108	22,359	1.0004
1936	*	38,181,367	1.000000	0	1.0000 #	1970	*	218,398,120	1.000144	31,381	1.0006
1937	*	40,190,913	1.000000	0	1.0000 #	1971	*	229,892,758	1.000192	44,043	1.0008
1938	*	42,306,224	1.000000	1	1.0000 #	1972	*	241,992,376	1.000255	61,815	1.0010
1939	*	44,532,867	1.000000	1	1.0000 #	1973	*	254,728,817	1.000341	86,758	1.0014
1940	*	46,876,702	1.000000	1	1.0000 #	1974	*	268,135,597	1.000454	121,766	1.0018
1941	*	49,343,897	1.000000	2	1.0000 #	1975	*	282,247,997	1.000605	170,900	1.0024
1942	*	51,940,945	1.000000	2	1.0000 #	1976	*	297,103,155	1.000807	239,860	1.0032
1943	*	54,674,678	1.000000	3	1.0000 #	1977	*	312,740,163	1.001076	336,645	1.0043
1944	*	57,552,293	1.000000	5	1.0000 #	1978	*	329,200,171	1.001435	472,484	1.0058
1945	*	60,581,361	1.000000	7	1.0000 #	1979	*	346,526,496	1.001914	663,136	1.0077
1946	*	63,769,854	1.000000	9	1.0000 #	1980	*	364,764,733	1.002552	930,717	1.0103
1947	*	67,126,162	1.000000	13	1.0000 #	1981	*	383,962,877	1.00340207	1,306,269	1.0137 20TH TO ULT.
1948	*	70,659,118	1.000000	18	1.0000 #	1982		348,182,094	0.9998		
1949	*	74,378,019	1.000000	25	1.0000 #	1983		412,572,951	1.0007	Total	
1950	*	78,292,651	1.000000	36	1.0000 #	1984		515,575,847	0.9989	Development:	
1951	*	82,413,317	1.000001	50	1.0000 #	1985		585,122,419	1.0010	4,543,545	
1952	*	86,750,860	1.000001	70	1.0000 #	1986		686,153,414	1.0027		
1953	*	91,316,695	1.000001	99	1.0000 #	1987		835,619,726	1.0000		
1954	*	96,122,837	1.000001	138	1.0000 #	1988		958,437,042	1.0038		
1955	*	101,181,934	1.000002	194	1.0000 #	1989		1,114,010,229	1.0021		
1956	*	106,507,298	1.000003	273	1.0000 #	1990		1,146,106,992	0.9992		
1957	*	112,112,946	1.000003	383	1.0000 #	1991		1,015,586,301	0.9977		
1958	*	118,013,627	1.000005	537	1.0000 #	1992		870,306,218	1.0004		
1959	*	124,224,871	1.000006	754	1.0000 #	1993		742,340,266	0.9966		
1960	*	130,763,022	1.000008	1,058	1.0000 #	1994		688,817,894	0.9987		
1961	*	137,645,286	1.000011	1,485	1.0000 #	1995		582,856,678	1.0081		
1962	*	144,889,775	1.000014	2,084	1.0001 #	1996		511,440,532	1.0105		
1963	*	152,515,552	1.000019	2,925	1.0001 #	1997		535,183,419	1.0301		
1964	*	160,542,687	1.000026	4,106	1.0001 #	1998		553,547,060	1.0676		
1965	*	168,992,302	1.000034	5,762	1.0001 #	1999		596,174,358	1.1639		
1966	*	177,886,633	1.000045	8,087	1.0002 #	2000		547,863,781	1.4337		
1967	*	187,249,088	1.000061	11,351	1.0002 #	2001		375,832,838	3.0119		
1968	*	197,104,303	1.000081	15,931	1.0003 #	2002		115,626,491			

Inputs for Tail Factor Estimation - 2006 Loss Cost Filing

Medical 01v02

Latest 12/31 Prior to 1982 Incurred 613,359,665
 Next Latest 12/31 Prior to 1982 Incurred 598,016,744
 CY Development of Prior Yrs 15,342,921
 Next Latest PY 1982 Incurred 123,135,800
 # of 1982 Yrs in Prior Data 4.98
 Selected Decrement, Development Factor 0.75
 Selected Average PY Deflation Factor 0.93

1 Policy Yr 1981 Incurred = Average of 1982, 1983, 1984, reduced by PY Deflation ^ 2
 2 PY 1980 & Prior = Subsequent Yr x PY Deflation
 3 1981 Development Selected Based on Observed 1982, 1983, 1984
 4 PY 1980 & Prior Development = (Subsequent Yr - 1.0) x Selected Decrement + 1.0

TAIL = 1.1426 vs 1.1246 15,342,921
 0

Pennsylvania Compensation Rating Bureau
 Tail Factor Model - 2006 Loss Cost Filing

MEDICAL

Policy Year	(*=Estimate)	12/31/02 Incurred	Prior Year Development	Dollar Development	DF	Policy Year	(*=Estimate)	12/31/02 Incurred	Prior Year Development	Dollar Development	DF	
1936	*	5,266,770	1.000000	0	1.0000	#	1970	*	62,104,649	1.001421	88,231	1.0057
1937	*	5,663,194	1.000000	1	1.0000	#	1971	*	66,779,193	1.001894	126,496	1.0076
1938	*	6,089,456	1.000000	1	1.0000	#	1972	*	71,805,584	1.002526	181,356	1.0101
1939	*	6,547,802	1.000000	1	1.0000	#	1973	*	77,210,305	1.003368	260,008	1.0135
1940	*	7,040,647	1.000000	2	1.0000	#	1974	*	83,021,834	1.004490	372,772	1.0181
1941	*	7,570,588	1.000000	3	1.0000	#	1975	*	89,270,789	1.005987	534,440	1.0242
1942	*	8,140,417	1.000000	4	1.0000	#	1976	*	95,990,095	1.007982	766,222	1.0324
1943	*	8,753,137	1.000001	5	1.0000	#	1977	*	103,215,156	1.010643	1,098,526	1.0434
1944	*	9,411,975	1.000001	8	1.0000	#	1978	*	110,984,039	1.014191	1,574,948	1.0582
1945	*	10,120,404	1.000001	11	1.0000	#	1979	*	119,337,676	1.018921	2,257,989	1.0782
1946	*	10,882,154	1.000001	16	1.0000	#	1980	*	128,320,082	1.025228	3,237,261	1.1054
1947	*	11,701,241	1.000002	22	1.0000	#	1981	*	137,978,583	1.033637350	4,641,234	1.1426
1948	*	12,581,980	1.000003	32	1.0000	#	1982		125,364,242	1.0181		20TH TO ULT
1949	*	13,529,011	1.000003	46	1.0000	#	1983		152,662,980	1.0143		
1950	*	14,547,323	1.000005	66	1.0000	#	1984		200,566,545	1.0128	Total	
1951	*	15,642,283	1.000006	94	1.0000	#	1985		256,752,184	1.0109	Development:	
1952	*	16,819,659	1.000008	135	1.0000	#	1986		289,096,453	1.0168	15,342,921	
1953	*	18,085,655	1.000011	193	1.0000	#	1987		383,743,597	1.0084		
1954	*	19,446,941	1.000014	277	1.0001	#	1988		477,707,737	1.0110		
1955	*	20,910,689	1.000019	397	1.0001	#	1989		581,263,824	1.0128		
1956	*	22,484,612	1.000025	569	1.0001	#	1990		611,681,732	1.0084		
1957	*	24,177,002	1.000034	816	1.0001	#	1991		575,404,042	1.0154		
1958	*	25,996,776	1.000045	1,170	1.0002	#	1992		521,299,077	1.0073		
1959	*	27,953,523	1.000060	1,677	1.0002	#	1993		434,749,861	1.0111		
1960	*	30,057,552	1.000080	2,405	1.0003	#	1994		401,004,370	1.0111		
1961	*	32,319,948	1.000107	3,448	1.0004	#	1995		380,838,199	1.0218		
1962	*	34,752,632	1.000142	4,943	1.0006	#	1996		375,491,810	1.0163		
1963	*	37,368,422	1.000190	7,086	1.0008	#	1997		412,533,402	1.0130		
1964	*	40,181,099	1.000253	10,160	1.0010	#	1998		453,724,979	1.0041		
1965	*	43,205,482	1.000337	14,566	1.0013	#	1999		484,778,644	1.0554		
1966	*	46,457,508	1.000450	20,883	1.0018	#	2000		488,062,789	1.1262		
1967	*	49,954,310	1.000599	29,940	1.0024	#	2001		407,445,581	2.2107		
1968	*	53,714,311	1.000799	42,925	1.0032	#	2002		169,533,312			
1969	*	57,757,324	1.001066	61,541	1.0043	#						

Indemnity: 00v01

Latest 12/31 Prior to 1981 Incurred	2,549,485,519
Next Latest 12/31 Prior to 1981 Incurred	2,553,237,550
CY Development of Prior Yrs	-3,752,031
Next Latest PY 1981 Incurred	379,603,999
# of 1981 Yrs in Prior Data	6.72
Selected Decrement, Development Factor	0.75
Selected Average PY Inflation	0.95

- 1 Policy Yr 1980 Incurred = Average of 1981, 1982, 1983, reduced by PY Deflation ^ 2
- 2 PY 1979 & Prior = Subsequent Yr x PY Deflation
- 3 1980 Development Selected Based on Observed 1981, 1982, 1983
- 4 PY 1979 & Prior Development = (Subsequent Yr - 1.0) x Selected Decrement + 1.0

TAIL = .9881 vs .9901 -3,752,031
0

Pennsylvania Compensation Rating Bureau
Tail Factor Model - 2004 Loss Cost Filing

INDEMNITY

Policy Year	(*=Estimate)	12/31/01 Incurred	Prior Year Development	Dollar Development	DF	Policy Year	(*=Estimate)	12/31/01 Incurred	Prior Year Development	Dollar Development	DF
1934	*	34,041,255	1.000000	0	1.0000 #	1968	*	194,716,602	.999905	-18,464	.9996
1935	*	35,832,900	1.000000	0	1.0000 #	1969	*	204,964,844	.999874	-25,914	.9995
1936	*	37,718,842	1.000000	0	1.0000 #	1970	*	215,752,467	.999831	-36,371	.9993
1937	*	39,704,044	1.000000	-1	1.0000 #	1971	*	227,107,860	.999775	-51,047	.9991
1938	*	41,793,731	1.000000	-1	1.0000 #	1972	*	239,060,905	.999700	-71,645	.9988
1939	*	43,993,401	1.000000	-1	1.0000 #	1973	*	251,643,058	.999600	-100,554	.9984
1940	*	46,308,843	1.000000	-1	1.0000 #	1974	*	264,887,430	.999467	-141,128	.9979
1941	*	48,746,150	1.000000	-2	1.0000 #	1975	*	278,828,873	.999290	-198,075	.9972
1942	*	51,311,737	1.000000	-3	1.0000 #	1976	*	293,504,077	.999053	-277,999	.9962
1943	*	54,012,355	1.000000	-4	1.0000 #	1977	*	308,951,660	.998737	-390,175	.9950
1944	*	56,855,111	1.000000	-5	1.0000 #	1978	*	325,212,274	.998316	-547,613	.9933
1945	*	59,847,485	1.000000	-8	1.0000 #	1979	*	342,328,709	.997755	-768,580	.9911
1946	*	62,997,352	1.000000	-11	1.0000 #	1980	*	360,346,010	0.99700646	-1,078,709	.9881 20TH TO ULT.
1947	*	66,313,002	1.000000	-15	1.0000 #	1981		379,970,990	1.0010		
1948	*	69,803,161	1.000000	-21	1.0000 #	1982		372,323,631	0.9993	Total	
1949	*	73,477,011	1.000000	-29	1.0000 #	1983		445,531,451	0.9977	Development:	
1950	*	77,344,222	.999999	-41	1.0000 #	1984		568,097,488	1.0006	-3,752,031	
1951	*	81,414,971	.999999	-58	1.0000 #	1985		652,083,047	0.9982		
1952	*	85,699,969	.999999	-81	1.0000 #	1986		760,157,757	0.9991		
1953	*	90,210,494	.999999	-114	1.0000 #	1987		928,353,826	1.0029		
1954	*	94,958,415	.999998	-160	1.0000 #	1988		1,059,092,992	0.9983		
1955	*	99,956,226	.999998	-225	1.0000 #	1989		1,235,061,229	0.9989		
1956	*	105,217,080	.999997	-316	1.0000 #	1990		1,260,912,239	0.9985		
1957	*	110,754,821	.999996	-444	1.0000 #	1991		1,107,918,425	0.9967		
1958	*	116,584,022	.999995	-623	1.0000 #	1992		921,100,448	1.0015		
1959	*	122,720,023	.999993	-874	1.0000 #	1993		798,412,943	1.0020		
1960	*	129,178,972	.999991	-1,226	1.0000 #	1994		732,408,463	0.9982		
1961	*	135,977,865	.999987	-1,721	.9999 #	1995		630,999,732	1.0167		
1962	*	143,134,595	.999983	-2,416	.9999 #	1996		536,864,758	1.0280		
1963	*	150,667,994	.999977	-3,390	.9999 #	1997		553,493,726	1.0514		
1964	*	158,597,889	.999970	-4,758	.9999 #	1998		537,497,944	1.1621		
1965	*	166,945,146	.999960	-6,678	.9998 #	1999		527,699,573	1.4206		
1966	*	175,731,733	.999947	-9,373	.9998 #	2000		393,696,953	3.2605		
1967	*	184,980,771	.999929	-13,156	.9997 #	2001		126,948,348			

Inputs for Tail Factor Estimation - 2006 Loss Cost Filing

Medical 00v01

Latest 12/31 Prior to 1981 Incurred	504,407,679
Next Latest 12/31 Prior to 1981 Incurred	494,056,558
CY Development of Prior Yrs	10,351,121
Next Latest PY 1981 Incurred	117,912,364
# of 1981 Yrs in Prior Data	4.28
Selected Decrement, Development Factor	0.75
Selected Average PY Inflation	0.93

- 1 Policy Yr 1980 Incurred = Average of 1981, 1982, 1983, reduced by PY Deflation ^ 2
- 2 PY 1979 & Prior = Subsequent Yr x PY Deflation
- 3 1980 Development Selected Based on Observed 1981, 1982, 1983
- 4 PY 1979 & Prior Development = (Subsequent Yr - 1.0) x Selected Decrement + 1.0

TAIL = 1.1096 vs 1.0878 10,351,121
0

Pennsylvania Compensation Rating Bureau
Tail Factor Model - 2004 Loss Cost Filing

MEDICAL

Policy Year	(*=Estimate)	12/31/01 Incurred	Prior Year Development	Dollar Development	DF	Policy Year	(*=Estimate)	12/31/01 Incurred	Prior Year Development	Dollar Development	DF
1934	*	4,262,026	1.000000	0	1.0000 #	1968	*	50,256,914	1.000829	41,686	1.0033
1935	*	4,582,823	1.000000	0	1.0000 #	1969	*	54,039,693	1.001106	59,765	1.0044
1936	*	4,927,767	1.000000	0	1.0000 #	1970	*	58,107,196	1.001475	85,684	1.0059
1937	*	5,298,674	1.000000	1	1.0000 #	1971	*	62,480,856	1.001966	122,845	1.0079
1938	*	5,697,499	1.000000	1	1.0000 #	1972	*	67,183,716	1.002621	176,121	1.0105
1939	*	6,126,343	1.000000	1	1.0000 #	1973	*	72,240,555	1.003495	252,504	1.0141
1940	*	6,587,466	1.000000	2	1.0000 #	1974	*	77,678,016	1.004660	362,012	1.0188
1941	*	7,083,297	1.000000	2	1.0000 #	1975	*	83,524,749	1.006214	519,014	1.0251
1942	*	7,616,448	1.000000	4	1.0000 #	1976	*	89,811,558	1.008285	744,106	1.0336
1943	*	8,189,729	1.000001	5	1.0000 #	1977	*	96,571,568	1.011047	1,066,819	1.0450
1944	*	8,806,160	1.000001	7	1.0000 #	1978	*	103,840,395	1.014729	1,529,490	1.0604
1945	*	9,468,989	1.000001	11	1.0000 #	1979	*	111,656,339	1.019639	2,192,817	1.0813
1946	*	10,181,709	1.000001	15	1.0000 #	1980	*	120,060,579	1.026185315	3,143,824	1.1096 20TH TO ULT.
1947	*	10,948,074	1.000002	22	1.0000 #	1981		119,994,537	1.0177		
1948	*	11,772,123	1.000003	31	1.0000 #	1982		132,705,598	1.0071	Total	
1949	*	12,658,197	1.000004	44	1.0000 #	1983		163,743,082	1.0155	Development:	
1950	*	13,610,964	1.000005	64	1.0000 #	1984		215,364,593	1.0195	10,351,121	
1951	*	14,635,445	1.000006	91	1.0000 #	1985		275,579,877	1.0120		
1952	*	15,737,038	1.000008	131	1.0000 #	1986		309,162,414	0.9992		
1953	*	16,921,546	1.000011	188	1.0000 #	1987		418,411,298	1.0105		
1954	*	18,195,211	1.000015	269	1.0001 #	1988		513,167,946	1.0261		
1955	*	19,564,743	1.000020	386	1.0001 #	1989		627,824,167	1.0136		
1956	*	21,037,358	1.000026	553	1.0001 #	1990		663,272,784	1.0120		
1957	*	22,620,815	1.000035	792	1.0001 #	1991		620,542,428	1.0155		
1958	*	24,323,457	1.000047	1,136	1.0002 #	1992		543,864,871	1.0315		
1959	*	26,154,255	1.000062	1,629	1.0002 #	1993		460,441,760	1.0198		
1960	*	28,122,855	1.000083	2,335	1.0003 #	1994		421,298,536	1.0190		
1961	*	30,239,629	1.000111	3,348	1.0004 #	1995		394,984,765	1.0214		
1962	*	32,515,730	1.000148	4,800	1.0006 #	1996		401,023,516	1.0296		
1963	*	34,963,151	1.000197	6,882	1.0008 #	1997		432,207,224	1.0247		
1964	*	37,594,786	1.000262	9,867	1.0011 #	1998		465,199,710	1.0660		
1965	*	40,424,501	1.000350	14,146	1.0014 #	1999		470,199,763	1.1438		
1966	*	43,467,205	1.000467	20,280	1.0019 #	2000		443,150,066			
1967	*	46,738,930	1.000622	29,076	1.0025 #						