

PENNSYLVANIA COMPENSATION RATING BUREAU
F CLASS FILING

ANALYSIS OF EXPERIENCE

The following pages present an analysis of Pennsylvania “F” class experience. The analysis is based on data reported to the PCRB under the Unit Statistical Plan.

Reported Premium and Losses - Pages 1 and 2 present reported standard earned premiums and incurred losses by policy year, separately for indemnity (page 1) and medical (page 2). Losses are shown through 10th report, which is the latest report currently available under the Unit Statistical Plan.

Indicated Loss Development Factors - Page 3 (indemnity) and page 4 (medical) show age-to-age development factors based on reported losses. A weighted average based on all available data was calculated and formed the basis for the factors ultimately selected. The process for calculation of selected loss development factors and tail factors for indemnity and medical are shown on pages 5 and 6, respectively. Factors to ultimate are calculated by compounding the age-to-age and 10th-to-ultimate factors.

Selected Loss Development Factors - Page 5 (indemnity) and page 6 (medical) show the derivation of selected age-to-age and 10th-to-ultimate development factors. The residuals of the seven-year average indicated age-to-age development factors from pages 3 and 4 were fitted to a curve of the form $Y = 1 - \exp(-a \cdot b^x)$ for indemnity and $Y = a \cdot \exp(-((x-b)^2)/(2 \cdot c^2))$ for medical. A value of 1.0000 was selected from the 14th-to-15th development stage to ensure a more reasonable shape for the final fitted curve. The 10th-to-ultimate factor was then calculated by compounding the age-to-age factors for 10th-to-11th and all subsequent development stages through the 15th report. These factors became the “selected” values on pages 3 and 4.

Loss Ratios - Indemnity and medical ultimate loss ratios are calculated on page 7.

Graphs - Indemnity, medical and total ultimate loss ratio graphs for Policy Years 2008 through 2017 are shown on page 8.

Trend Summary - Ultimate loss ratios were then fitted to both a linear and experimental curve to project a loss ratio for the prospective rating period. A summary of these results are shown on page 9.

PENNSYLVANIA COMPENSATION RATING BUREAU

"F" CLASS UNIT STATISTICAL PLAN EXPERIENCE

REPORTED STANDARD EARNED PREMIUM AND INDEMNITY INCURRED LOSSES

Policy Year	Standard Earned Premium	Reported Indemnity Incurred Losses									
		Report Level									
		1	2	3	4	5	6	7	8	9	10
02	18,811,734	1,334,807	1,840,111	2,309,583	2,603,880	2,645,245	2,940,184	2,940,184	2,940,184	2,940,184	2,940,184
03	9,703,002	1,654,185	2,378,806	3,594,256	4,307,912	4,693,497	4,806,614	4,707,955	4,723,547	4,740,167	4,757,763
04	5,412,095	1,206,032	2,063,556	2,214,772	2,227,923	2,311,423	2,368,031	2,472,464	2,382,031	2,382,031	2,666,682
05	4,247,161	1,180,618	1,163,588	1,682,054	1,682,054	1,416,004	1,416,004	1,382,671	1,384,438	1,498,443	1,498,443
06	6,041,432	1,874,241	2,929,488	4,459,050	4,377,122	4,397,932	4,649,398	4,820,299	4,824,848	4,847,530	4,738,409
07	4,712,048	718,534	1,126,675	1,376,732	1,358,792	1,335,668	1,386,903	1,408,228	1,514,100	1,514,100	1,576,939
08	3,876,520	766,266	1,028,131	1,301,614	1,313,724	1,368,724	1,423,568	1,463,980	1,102,993	1,105,224	1,100,763
09	4,063,288	249,857	369,448	449,042	449,042	550,496	550,496	550,496	550,496	550,496	
10	3,307,047	302,481	353,923	462,568	414,621	426,746	276,746	276,746	276,746		
11	4,288,780	362,749	526,310	563,100	848,234	853,474	1,209,868	1,264,205			
12	11,830,720	621,571	861,551	994,223	1,082,041	1,135,220	1,090,415				
13	13,868,911	497,960	643,427	687,767	732,539	918,844					
14	15,591,724	1,329,257	1,578,756	1,595,200	1,653,229						
15	16,577,343	974,036	1,768,616	2,196,290							
16	18,709,662	1,214,418	1,392,238								
17	11,906,845	1,953,928									

PENNSYLVANIA COMPENSATION RATING BUREAU

"F" CLASS UNIT STATISTICAL PLAN EXPERIENCE

REPORTED STANDARD EARNED PREMIUM AND MEDICAL INCURRED LOSSES

Policy Year	Standard Earned Premium	Reported Medical Incurred Losses									
		Report Level									
		1	2	3	4	5	6	7	8	9	10
02	18,811,734	688,788	764,960	902,425	876,765	907,488	1,199,647	1,202,876	1,203,277	1,203,277	1,203,277
03	9,703,002	1,186,330	1,360,549	1,431,650	1,482,740	1,470,197	1,468,379	1,442,222	1,442,441	1,438,324	1,433,599
04	5,412,095	793,110	984,276	1,070,624	1,126,241	1,110,882	1,126,617	1,111,232	1,118,431	1,118,832	1,118,949
05	4,247,161	619,947	499,031	552,839	552,839	523,427	523,427	523,427	509,182	519,100	512,210
06	6,041,432	1,132,127	1,641,357	1,793,848	1,896,328	2,177,628	2,362,481	2,602,541	2,592,541	2,626,691	2,570,856
07	4,712,048	525,340	529,351	763,343	800,089	561,293	803,743	966,728	984,195	998,426	1,003,915
08	3,876,520	470,052	474,481	449,476	417,262	455,206	460,706	471,706	468,706	468,706	363,706
09	4,063,288	170,604	180,148	224,233	215,938	209,139	209,258	209,369	209,369	209,369	
10	3,307,047	291,669	307,898	320,260	319,573	320,598	302,416	302,416	302,416		
11	4,288,780	358,814	385,357	404,007	515,601	525,601	654,173	664,424			
12	11,830,720	331,696	406,260	458,919	467,612	776,299	830,157				
13	13,868,911	314,357	372,348	367,649	387,737	408,185					
14	15,591,724	9,461,606	9,507,750	9,470,498	9,465,612						
15	16,577,343	781,211	1,044,170	1,097,691							
16	18,709,662	739,933	732,330								
17	11,906,845	1,556,020									

PENNSYLVANIA COMPENSATION RATING BUREAU

"F" CLASS UNIT STATISTICAL PLAN EXPERIENCE

INDEMNITY INCURRED LOSS DEVELOPMENT FACTORS

Age-to-Age Development Factors

Policy Year	Report									
	1 - 2	2 - 3	3 - 4	4 - 5	5 - 6	6 - 7	7 - 8	8 - 9	9 - 10	10 - ULT
02	1.3786	****	1.1274	1.0159	1.1115	1.0000	1.0000	1.0000	1.0000	
03	1.4381	1.5109	1.1986	1.0895	1.0241	0.9795	1.0033	1.0035	1.0037	
04	1.7110	1.0733	1.0059	1.0375	1.0245	1.0441	0.9634	1.0000	1.1195	
05	0.9856	1.4456	1.0000	****	1.0000	****	1.0013	1.0823	1.0000	
06	****	1.5221	****	1.0048	1.0572	1.0368	1.0009	1.0047	0.9775	
07	1.5680	1.2219	0.9870	0.9830	1.0384	1.0154	1.0752	1.0000	1.0415	
08	****	1.2660	1.0093	1.0419	1.0401	1.0284	0.7534	1.0020	0.9960	
09	1.4786	****	1.0000	1.2259	1.0000	1.0000	1.0000	1.0000		
10	1.1701	1.3070	0.8963	1.0292	0.6485	1.0000	1.0000			
11	1.4509	1.0699	1.5064	1.0062	1.4176	1.0449				
12	1.3861	1.1540	1.0883	1.0491	0.9605					
13	1.2921	1.0689	1.0651	1.2543						
14	1.1877	1.0104	1.0364							
15	1.8158	1.2418								
16	1.1464									
	1 - 2	2 - 3	3 - 4	4 - 5	5 - 6	6 - 7	7 - 8	8 - 9	9 - 10	
3 Yr Weighted Average	1.3474	1.1224	1.0582	1.0919	1.0669	1.0267	0.8424	1.0007	0.9932	
5 Yr Weighted Average	1.3466	1.1223	1.0994	1.1016	1.0499	1.0239	0.9706	1.0148	1.0206	
7 Yr Weighted Average	1.3437	1.1538	1.0727	1.0629	1.0516	1.0330	0.9726	1.0094	1.0132	
Weighted Average (All Available)	1.3796	1.2865	1.0837	1.0467	1.0465	1.0149	0.9838	1.0080	1.0132	
Selected (All Available)	1.4002	1.2281	1.1229	1.0643	1.0331	1.0169	1.0086	1.0044	1.0022	1.0022

Development Factors to Ultimate

	1-ULT	2-ULT	3-ULT	4-ULT	5-ULT	6-ULT	7-ULT	8-ULT	9-ULT	10-ULT *
3 Yr Weighted Average										
5 Yr Weighted Average										
7 Yr Weighted Average										
Weighted Average (All Available)	2.1535	1.5610	1.2134	1.1196	1.0696	1.0220	1.0070	1.0235	1.0154	1.0022
Selected (All Available)	2.1966	1.5688	1.2774	1.1376	1.0689	1.0347	1.0175	1.0088	1.0044	1.0022

* Based on selected value

**** Loss development factor not used

PENNSYLVANIA COMPENSATION RATING BUREAU

"F" CLASS UNIT STATISTICAL PLAN EXPERIENCE

MEDICAL INCURRED LOSS DEVELOPMENT FACTORS

Age-to-Age Development Factors

Policy Year	Report									
	1 - 2	2 - 3	3 - 4	4 - 5	5 - 6	6 - 7	7 - 8	8 - 9	9 - 10	10 - ULT
02	1.1106	****	0.9716	1.0350	1.3219	1.0027	1.0003	1.0000	1.0000	
03	1.1469	1.0523	1.0357	0.9915	0.9988	0.9822	1.0002	0.9971	0.9967	
04	1.2410	1.0877	1.0519	0.9864	1.0142	0.9863	1.0065	1.0004	1.0001	
05	0.8050	1.1078	1.0000	****	1.0000	1.0000	0.9728	1.0195	0.9867	
06	1.4498	1.0929	****	1.1483	1.0849	1.1016	0.9962	1.0132	0.9787	
07	1.0076	1.4420	1.0481	0.7015	1.4319	1.2028	1.0181	1.0145	1.0055	
08	****	0.9473	0.9283	1.0909	1.0121	1.0239	0.9936	1.0000	0.7760	
09	1.0559	****	0.9630	0.9685	1.0006	1.0005	1.0000	1.0000		
10	1.0556	1.0401	0.9979	1.0032	0.9433	1.0000	1.0000			
11	1.0740	1.0484	1.2762	1.0194	1.2446	1.0157				
12	1.2248	1.1296	1.0189	1.6601	1.0694					
13	1.1845	0.9874	1.0546	1.0527						
14	1.0049	0.9961	0.9995							
15	1.3366	1.0513								
16	0.9897									
	1 - 2	2 - 3	3 - 4	4 - 5	5 - 6	6 - 7	7 - 8	8 - 9	9 - 10	
3 Yr Weighted Average	1.0275	1.0011	1.0023	1.2474	1.1012	1.0089	0.9969	1.0086	0.9621	
5 Yr Weighted Average	1.0373	1.0071	1.0122	1.1749	1.0743	1.0759	1.0010	1.0122	0.9717	
7 Yr Weighted Average	1.0388	1.0056	1.0081	1.0424	1.1188	1.0798	0.9996	1.0075	0.9801	
Weighted Average (All Available)	1.0759	1.0381	1.0129	1.0490	1.0999	1.0424	0.9998	1.0064	0.9801	
Selected (All Available)	1.1079	1.0884	1.0703	1.0542	1.0406	1.0295	1.0208	1.0143	1.0095	1.0145

Development Factors to Ultimate

	1-ULT	2-ULT	3-ULT	4-ULT	5-ULT	6-ULT	7-ULT	8-ULT	9-ULT	10-ULT *
3 Yr Weighted Average										
5 Yr Weighted Average										
7 Yr Weighted Average										
Weighted Average (All Available)	1.3613	1.2653	1.2188	1.2033	1.1471	1.0429	1.0005	1.0007	0.9943	1.0145
Selected (All Available)	1.5455	1.3950	1.2817	1.1975	1.1359	1.0916	1.0603	1.0387	1.0241	1.0145

* Based on selected value

**** Loss development factor not used

PENNSYLVANIA COMPENSATION RATING BUREAU

"F" CLASS UNIT STATISTICAL PLAN EXPERIENCE

FITTED DEVELOPMENT FACTORS

INDEMNITY INCURRED LOSSES

$$Y = 1 - \exp(-a \cdot b^x)$$

a	1.009130
b	0.506492
R ^ 2 =	0.8814

<u>Incurred Development (a)</u>	<u>All Available Average</u>	<u>All Available Average - 1</u>	<u>Fitted Value</u>	<u>Fitted Value + 1</u>
1 1st to 2nd	1.3796	0.3796	0.4002	1.4002
2 2nd to 3rd	1.2865	0.2865	0.2281	1.2281
3 3rd to 4th	1.0837	0.0837	0.1229	1.1229
4 4th to 5th	1.0467	0.0467	0.0643	1.0643
5 5th to 6th	1.0465	0.0465	0.0331	1.0331
6 6th to 7th	1.0149	0.0149	0.0169	1.0169
7 7th to 8th	0.9838	(0.0162)	0.0086	1.0086
8 8th to 9th	1.0080	0.0080	0.0044	1.0044
9 9th to 10th	1.0132	0.0132	0.0022	1.0022
10 10th to 11th			0.0011	1.0011
11 11th to 12th			0.0006	1.0006
12 12th to 13th			0.0003	1.0003
13 13th to 14th			0.0001	1.0001
14 14th to 15th	1.0000	-	0.0001	1.0001
10th to Ultimate				1.0022

(a) 14th to 15th age-to-age factor set at 1.0000 to ensure proper tendency for the fitted curve.

PENNSYLVANIA COMPENSATION RATING BUREAU

"F" CLASS UNIT STATISTICAL PLAN EXPERIENCE

FITTED DEVELOPMENT FACTORS

MEDICAL INCURRED LOSSES

$$Y = a * \exp(-((x-b)^2)/(2*c^2))$$

a	0.295319
b	(8.885764)
c	6.991411

R ^ 2 = 0.6848

<u>Incurred Development (a)</u>	<u>All Available Average</u>	<u>All Available Average - 1</u>	<u>Fitted Value</u>	<u>Fitted Value + 1</u>
1 1st to 2nd	1.1205	0.1205	0.1079	1.1079
2 2nd to 3rd	1.0819	0.0819	0.0884	1.0884
3 3rd to 4th	1.0288	0.0288	0.0703	1.0703
4 4th to 5th	1.0598	0.0598	0.0542	1.0542
5 5th to 6th	1.1020	0.1020	0.0406	1.0406
6 6th to 7th	1.0316	0.0316	0.0295	1.0295
7 7th to 8th	0.9986	(0.0014)	0.0208	1.0208
8 8th to 9th	1.0056	0.0056	0.0143	1.0143
9 9th to 10th	0.9946	(0.0054)	0.0095	1.0095
10 10th to 11th			0.0061	1.0061
11 11th to 12th			0.0038	1.0038
12 12th to 13th			0.0023	1.0023
13 13th to 14th			0.0014	1.0014
14 14th to 15th	1.0000	-	0.0008	1.0008
10th to Ultimate				1.0145

(a) 14th to 15th age-to-age factor set at 1.0000 to ensure proper tendency for the fitted curve.

PENNSYLVANIA COMPENSATION RATING BUREAU

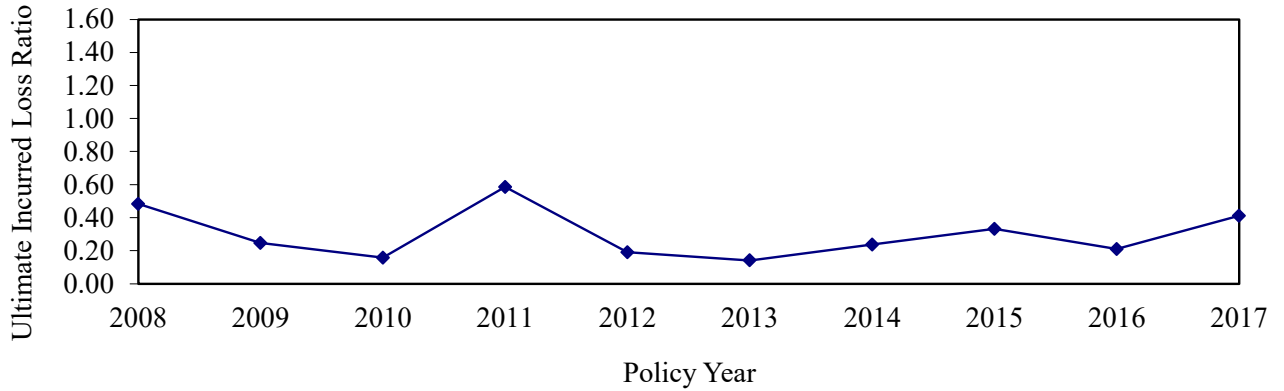
"F" CLASS UNIT STATISTICAL PLAN EXPERIENCE

ULTIMATE LOSS RATIOS

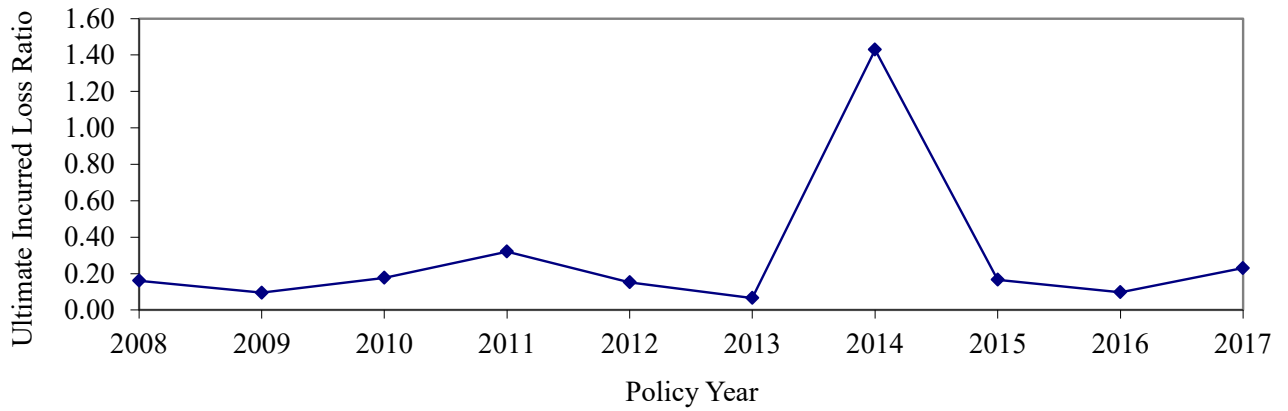
Policy Year	Standard Earned Premium	Premium On-Level Factor	Adjusted Premium	Reported Incurred Loss	Loss Level	Loss Development Factor	Ultimate Incurred Loss	Loss Ratio
	(1)	(2)	(3)	(4)	(5)	(6)	(7)=(4)*(6)	(8)=(7)/(3)
Indemnity								
2008	3,876,520	0.5892	2,284,046	1,100,763	10	1.0022	1,103,185	0.4830
2009	4,063,288	0.5517	2,241,716	550,496	9	1.0044	552,918	0.2466
2010	3,307,047	0.5369	1,775,554	276,746	8	1.0088	279,181	0.1572
2011	4,288,780	0.5117	2,194,569	1,264,205	7	1.0175	1,286,329	0.5861
2012	11,830,720	0.5020	5,939,021	1,090,415	6	1.0347	1,128,252	0.1900
2013	13,868,911	0.5020	6,962,193	918,844	5	1.0689	982,152	0.1411
2014	15,591,724	0.5085	7,928,392	1,653,229	4	1.1376	1,880,713	0.2372
2015	16,577,343	0.5114	8,477,653	2,196,290	3	1.2774	2,805,541	0.3309
2016	18,709,662	0.5554	10,391,346	1,392,238	2	1.5688	2,184,143	0.2102
2017	11,906,845	0.8760	10,430,396	1,953,928	1	2.1966	4,291,998	0.4115
10 Year Total	104,020,840		58,624,886	12,397,154			16,494,412	0.2814
Medical								
2008	3,876,520	0.5892	2,284,046	363,706	10	1.0145	368,980	0.1615
2009	4,063,288	0.5517	2,241,716	209,369	9	1.0241	214,415	0.0956
2010	3,307,047	0.5369	1,775,554	302,416	8	1.0387	314,119	0.1769
2011	4,288,780	0.5117	2,194,569	664,424	7	1.0603	704,489	0.3210
2012	11,830,720	0.5020	5,939,021	830,157	6	1.0916	906,199	0.1526
2013	13,868,911	0.5020	6,962,193	408,185	5	1.1359	463,657	0.0666
2014	15,591,724	0.5085	7,928,392	9,465,612	4	1.1975	11,335,070	1.4297
2015	16,577,343	0.5114	8,477,653	1,097,691	3	1.2817	1,406,911	0.1660
2016	18,709,662	0.5554	10,391,346	732,330	2	1.3950	1,021,600	0.0983
2017	11,906,845	0.8760	10,430,396	1,556,020	1	1.5455	2,404,829	0.2306
10 Year Total	104,020,840		58,624,886	15,629,910			19,140,269	0.3265
Total								
2008	3,876,520	0.5892	2,284,046	1,464,469			1,472,165	0.6445
2009	4,063,288	0.5517	2,241,716	759,865			767,333	0.3423
2010	3,307,047	0.5369	1,775,554	579,162			593,300	0.3341
2011	4,288,780	0.5117	2,194,569	1,928,629			1,990,818	0.9072
2012	11,830,720	0.5020	5,939,021	1,920,572			2,034,451	0.3426
2013	13,868,911	0.5020	6,962,193	1,327,029			1,445,809	0.2077
2014	15,591,724	0.5085	7,928,392	11,118,841			13,215,783	1.6669
2015	16,577,343	0.5114	8,477,653	3,293,981			4,212,452	0.4969
2016	18,709,662	0.5554	10,391,346	2,124,568			3,205,743	0.3085
2017	11,906,845	0.8760	10,430,396	3,509,948			6,696,827	0.6420
10 Year Total	104,020,840		58,624,886	28,027,064			35,634,681	0.6078

Pennsylvania "F" Class

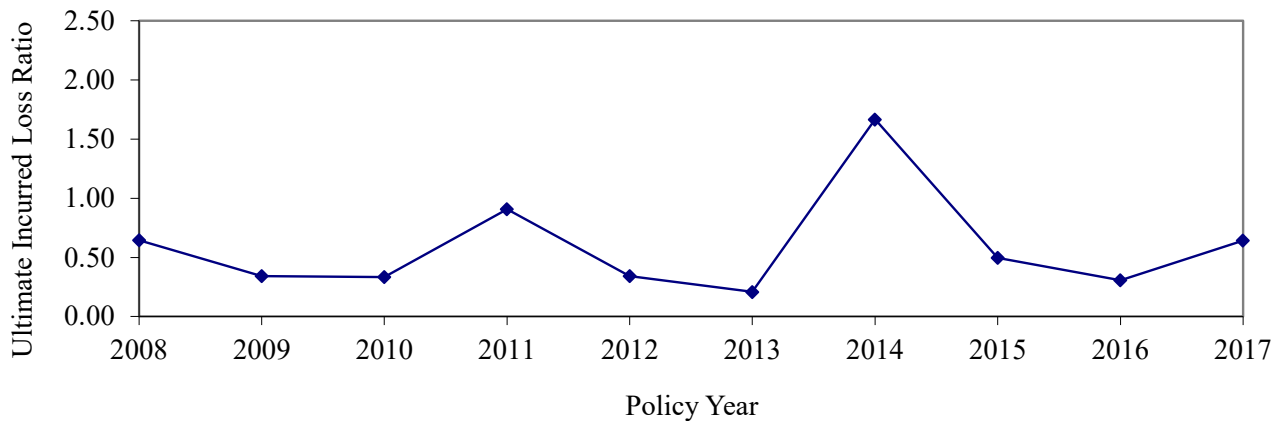
Indemnity Ultimate Incurred Loss Ratio



Medical Ultimate Incurred Loss Ratio



Total Ultimate Incurred Loss Ratio



		3 points	4 points	5 points	6 points	7 points	8 points	9 points	10 points
INDEMNITY									
LINEAR	Weighted Avg Loss Ratio	0.3168	0.2998	0.2748	0.2648	0.2783	0.2743	0.2732	0.2814
	Trended Loss Ratio	0.4888	0.4885	0.5359	0.4849	0.2355	0.3167	0.3219	0.2465
	Trend Factor	1.5430	1.6292	1.9500	1.8314	0.8464	1.1547	1.1783	0.8761
	Annual. Trend Factor	1.0719	1.0696	1.0843	1.0676	0.9839	1.0129	1.0135	0.9901
EXPONENTIAL	R^2	0.1582	0.3188	0.5876	0.5695	0.0213	0.0064	0.0128	0.0191
	Trended Loss Ratio	0.4861	0.5073	0.7191	0.5773	0.2704	0.3431	0.3211	0.2468
	Trend Factor	1.5345	1.6919	2.6166	2.1804	0.9718	1.2509	1.1754	0.8772
	Annual. Trend Factor	1.0709	1.0752	1.1237	1.0879	0.9972	1.0201	1.0133	0.9902
	R^2	0.1012	0.2536	0.5940	0.5555	-	0.0503	0.0391	0.0050
MEDICAL									
LINEAR	Weighted Avg Loss Ratio	0.1650	0.4343	0.3764	0.3499	0.3487	0.3430	0.3332	0.3265
	Trended Loss Ratio	0.3022	(1.2597)	(0.1285)	0.2294	0.2895	0.3837	0.4578	0.4696
	Trend Factor	1.8319	(2.9005)	(0.3414)	0.6557	0.8303	1.1186	1.3741	1.4383
	Annual. Trend Factor	1.1017	NA	NA	0.9554	0.9820	1.0100	1.0263	1.0278
EXPONENTIAL	R^2	0.2384	0.5558	0.0748	0.0062	0.0020	0.0019	0.0183	0.0297
	Trended Loss Ratio	0.3127	0.0157	0.1848	0.2326	0.1689	0.1930	0.2602	0.2544
	Trend Factor	1.8956	0.0361	0.4910	0.6648	0.4844	0.5627	0.7810	0.7792
	Annual. Trend Factor	1.1077	0.6325	0.9174	0.9568	0.9317	0.9502	0.9800	0.9813
	R^2	0.1461	0.4429	0.0007	0.0029	0.0055	0.0006	0.0185	0.0212
TOTAL									
LINEAR	Weighted Avg Loss Ratio	0.4818	0.7342	0.6512	0.6146	0.6269	0.6173	0.6064	0.6078
	Trended Loss Ratio	0.7910	(0.7712)	0.4074	0.7143	0.5250	0.7004	0.7797	0.7161
EXPONENTIAL	Trended Loss Ratio	0.7988	0.5230	0.9039	0.8099	0.4393	0.5361	0.5813	0.5012