

DELAWARE COMPENSATION RATING BUREAU, INC.

Measures of Goodness of Fit in Trend Calculations Using Severity Ratios – Unlimited Losses

Estimates of trended severity ratios using from 4 to 10 data points for each loss development technique are shown in Exhibit 2.

The first page of the attachment shows  $R^2$  values for the regressions producing those trended severity ratios.

Pages 2 through 5 show fitted values for the curves used in the trend projections. Page 2 shows indemnity results using linear regression, page 3 is for indemnity-exponential, page 4 for medical-linear, and page 5 for medical-exponential.

Pages 6 through 9 show residuals resulting from the comparison of actual and fitted (actual minus fitted) values for the curves used in the trend projections. Page 6 shows indemnity results using linear regression, page 7 is for indemnity-exponential, page 8 for medical-linear, and page 9 for medical-exponential.

INDEMNITY		(Average)	(Incur)	(Pd-20)
r <sup>2</sup>				
4 Point	Linear	0.013	0.103	0.593
5 Point	Linear	0.389	0.543	0.096
6 Point	Linear	0.001	0.069	0.160
7 Point	Linear	0.278	0.406	0.123
8 Point	Linear	0.518	0.600	0.412
9 Point	Linear	0.649	0.703	0.575
10 Point	Linear	0.740	0.780	0.683
4 Point	Expon'l	0.013	0.102	0.592
5 Point	Expon'l	0.397	0.545	0.103
6 Point	Expon'l	0.000	0.073	0.147
7 Point	Expon'l	0.297	0.414	0.145
8 Point	Expon'l	0.525	0.596	0.430
9 Point	Expon'l	0.656	0.702	0.592
10 Point	Expon'l	0.748	0.782	0.699
MEDICAL		(Average)	(Incur)	(Pd-20)
r <sup>2</sup>				
4 Point	Linear	0.817	0.279	0.988
5 Point	Linear	0.855	0.639	0.945
6 Point	Linear	0.756	0.500	0.874
7 Point	Linear	0.846	0.686	0.918
8 Point	Linear	0.875	0.771	0.936
9 Point	Linear	0.912	0.839	0.955
10 Point	Linear	0.936	0.882	0.967
4 Point	Expon'l	0.810	0.271	0.993
5 Point	Expon'l	0.832	0.635	0.918
6 Point	Expon'l	0.726	0.482	0.848
7 Point	Expon'l	0.822	0.669	0.905
8 Point	Expon'l	0.831	0.736	0.901
9 Point	Expon'l	0.875	0.809	0.928
10 Point	Expon'l	0.907	0.861	0.943

INDEMNITY Linear <b>FITTED</b>	Policy Year	Severity Ratio (Average)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	2002	0.5703	0.5860	0.5547
	2003	0.5695	0.5897	0.5493
	2004	0.5686	0.5934	0.5439
	2005	0.5678	0.5971	0.5386
5 Point	2001	0.5429	0.5504	0.5353
	2002	0.5514	0.5647	0.5382
	2003	0.5600	0.5790	0.5411
	2004	0.5686	0.5934	0.5439
	2005	0.5772	0.6077	0.5468
6 Point	2000	0.5671	0.5733	0.5609
	2001	0.5668	0.5774	0.5560
	2002	0.5664	0.5816	0.5511
	2003	0.5660	0.5858	0.5462
	2004	0.5656	0.5900	0.5414
	2005	0.5652	0.5942	0.5365
7 Point	1999	0.5159	0.5148	0.5169
	2000	0.5275	0.5315	0.5233
	2001	0.5390	0.5482	0.5297
	2002	0.5505	0.5649	0.5361
	2003	0.5620	0.5816	0.5425
	2004	0.5736	0.5983	0.5489
	2005	0.5851	0.6150	0.5553
8 Point	1998	0.4485	0.4449	0.4521
	1999	0.4712	0.4722	0.4702
	2000	0.4939	0.4996	0.4883
	2001	0.5166	0.5269	0.5063
	2002	0.5393	0.5543	0.5244
	2003	0.5620	0.5816	0.5425
	2004	0.5847	0.6090	0.5605
	2005	0.6074	0.6363	0.5786
9 Point	1997	0.4089	0.4078	0.4100
	1998	0.4345	0.4369	0.4323
	1999	0.4602	0.4659	0.4546
	2000	0.4859	0.4950	0.4769
	2001	0.5116	0.5241	0.4993
	2002	0.5373	0.5531	0.5216
	2003	0.5630	0.5822	0.5439
	2004	0.5887	0.6113	0.5662
	2005	0.6144	0.6403	0.5885
10 Point	1996	0.3702	0.3676	0.3730
	1997	0.3980	0.3984	0.3976
	1998	0.4257	0.4292	0.4223
	1999	0.4534	0.4601	0.4469
	2000	0.4812	0.4909	0.4715
	2001	0.5089	0.5217	0.4962
	2002	0.5366	0.5525	0.5208
	2003	0.5644	0.5834	0.5454
	2004	0.5921	0.6142	0.5701
	2005	0.6199	0.6450	0.5947

INDEMNITY Expon'l <b>FITTED</b>	Policy Year	Severity Ratio (Average)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	2002	0.5702	0.5859	0.5546
	2003	0.5694	0.5895	0.5492
	2004	0.5686	0.5932	0.5439
	2005	0.5677	0.5970	0.5386
5 Point	2001	0.5423	0.5497	0.5349
	2002	0.5509	0.5639	0.5379
	2003	0.5597	0.5784	0.5409
	2004	0.5686	0.5932	0.5439
	2005	0.5776	0.6085	0.5469
6 Point	2000	0.5660	0.5721	0.5600
	2001	0.5659	0.5765	0.5553
	2002	0.5658	0.5809	0.5506
	2003	0.5657	0.5853	0.5460
	2004	0.5655	0.5897	0.5414
	2005	0.5654	0.5942	0.5368
7 Point	1999	0.5123	0.5108	0.5137
	2000	0.5241	0.5274	0.5206
	2001	0.5362	0.5446	0.5277
	2002	0.5486	0.5623	0.5348
	2003	0.5613	0.5805	0.5420
	2004	0.5743	0.5994	0.5493
	2005	0.5876	0.6189	0.5567
8 Point	1998	0.4415	0.4385	0.4448
	1999	0.4633	0.4638	0.4627
	2000	0.4860	0.4906	0.4814
	2001	0.5099	0.5189	0.5008
	2002	0.5350	0.5489	0.5210
	2003	0.5613	0.5805	0.5420
	2004	0.5889	0.6140	0.5639
	2005	0.6179	0.6495	0.5866
9 Point	1997	0.4053	0.4058	0.4049
	1998	0.4281	0.4309	0.4253
	1999	0.4521	0.4575	0.4467
	2000	0.4775	0.4857	0.4692
	2001	0.5043	0.5157	0.4929
	2002	0.5327	0.5475	0.5177
	2003	0.5626	0.5813	0.5437
	2004	0.5942	0.6171	0.5711
	2005	0.6276	0.6552	0.5999
10 Point	1996	0.3701	0.3695	0.3711
	1997	0.3932	0.3944	0.3921
	1998	0.4176	0.4210	0.4144
	1999	0.4436	0.4493	0.4379
	2000	0.4712	0.4796	0.4627
	2001	0.5005	0.5120	0.4889
	2002	0.5316	0.5465	0.5166
	2003	0.5647	0.5833	0.5459
	2004	0.5998	0.6227	0.5769
	2005	0.6372	0.6647	0.6096

MEDICAL Linear <b>FITTED</b>	Policy Year	Severity Ratio (Average)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	2002	0.8671	0.9172	0.8170
	2003	0.9061	0.9385	0.8737
	2004	0.9451	0.9598	0.9303
	2005	0.9841	0.9811	0.9870
5 Point	2001	0.7653	0.8220	0.7087
	2002	0.8252	0.8680	0.7826
	2003	0.8851	0.9139	0.8564
	2004	0.9451	0.9598	0.9303
	2005	1.0050	1.0057	1.0042
6 Point	2000	0.7606	0.8302	0.6911
	2001	0.8055	0.8613	0.7496
	2002	0.8503	0.8925	0.8082
	2003	0.8952	0.9237	0.8667
	2004	0.9400	0.9549	0.9252
	2005	0.9849	0.9860	0.9837
7 Point	1999	0.6834	0.7366	0.6301
	2000	0.7357	0.7821	0.6892
	2001	0.7880	0.8277	0.7483
	2002	0.8404	0.8733	0.8074
	2003	0.8927	0.9189	0.8665
	2004	0.9450	0.9645	0.9256
	2005	0.9973	1.0100	0.9847
8 Point	1998	0.5767	0.6154	0.5380
	1999	0.6399	0.6761	0.6037
	2000	0.7031	0.7368	0.6694
	2001	0.7663	0.7975	0.7351
	2002	0.8295	0.8582	0.8008
	2003	0.8927	0.9189	0.8665
	2004	0.9559	0.9796	0.9322
	2005	1.0191	1.0403	0.9979
9 Point	1997	0.4899	0.5154	0.4645
	1998	0.5573	0.5830	0.5316
	1999	0.6246	0.6506	0.5986
	2000	0.6920	0.7183	0.6657
	2001	0.7594	0.7859	0.7328
	2002	0.8267	0.8536	0.7999
	2003	0.8941	0.9212	0.8669
	2004	0.9614	0.9888	0.9340
	2005	1.0288	1.0565	1.0011
10 Point	1996	0.4137	0.4333	0.3941
	1997	0.4825	0.5032	0.4617
	1998	0.5512	0.5731	0.5293
	1999	0.6200	0.6431	0.5969
	2000	0.6887	0.7130	0.6645
	2001	0.7575	0.7829	0.7321
	2002	0.8262	0.8528	0.7997
	2003	0.8950	0.9227	0.8673
	2004	0.9638	0.9926	0.9349
	2005	1.0325	1.0625	1.0025

MEDICAL Expon'l <b>FITTED</b>	Policy Year	Severity Ratio (Average)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	2002	0.8680	0.9166	0.8191
	2003	0.9051	0.9374	0.8720
	2004	0.9439	0.9587	0.9283
	2005	0.9843	0.9806	0.9883
5 Point	2001	0.7652	0.8200	0.7109
	2002	0.8206	0.8638	0.7770
	2003	0.8801	0.9101	0.8493
	2004	0.9439	0.9587	0.9283
	2005	1.0123	1.0100	1.0147
6 Point	2000	0.7629	0.8297	0.6970
	2001	0.8034	0.8590	0.7476
	2002	0.8460	0.8893	0.8019
	2003	0.8909	0.9207	0.8601
	2004	0.9381	0.9532	0.9225
	2005	0.9879	0.9868	0.9895
7 Point	1999	0.6869	0.7346	0.6392
	2000	0.7323	0.7760	0.6882
	2001	0.7807	0.8197	0.7410
	2002	0.8323	0.8658	0.7978
	2003	0.8872	0.9146	0.8590
	2004	0.9459	0.9660	0.9249
	2005	1.0084	1.0204	0.9958
8 Point	1998	0.5800	0.6110	0.5488
	1999	0.6315	0.6623	0.6003
	2000	0.6875	0.7179	0.6565
	2001	0.7485	0.7783	0.7181
	2002	0.8149	0.8437	0.7854
	2003	0.8872	0.9146	0.8590
	2004	0.9660	0.9914	0.9395
	2005	1.0517	1.0747	1.0275
9 Point	1997	0.5003	0.5179	0.4823
	1998	0.5508	0.5699	0.5312
	1999	0.6063	0.6270	0.5850
	2000	0.6675	0.6899	0.6444
	2001	0.7348	0.7592	0.7097
	2002	0.8089	0.8353	0.7817
	2003	0.8905	0.9191	0.8610
	2004	0.9804	1.0113	0.9483
	2005	1.0793	1.1128	1.0445
10 Point	1996	0.4337	0.4473	0.4199
	1997	0.4810	0.4961	0.4655
	1998	0.5334	0.5503	0.5161
	1999	0.5916	0.6104	0.5723
	2000	0.6561	0.6771	0.6345
	2001	0.7276	0.7510	0.7035
	2002	0.8069	0.8331	0.7800
	2003	0.8949	0.9241	0.8648
	2004	0.9925	1.0250	0.9588
	2005	1.1007	1.1370	1.0631

INDEMNITY Linear RESIDUALS	Policy Year	Severity Ratio (Average)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	2002	0.0089	0.0132	0.0046
	2003	-0.0116	-0.0190	-0.0040
	2004	-0.0036	-0.0017	-0.0058
	2005	0.0062	0.0074	0.0052
5 Point	2001	-0.0189	-0.0213	-0.0165
	2002	0.0278	0.0345	0.0211
	2003	-0.0021	-0.0083	0.0042
	2004	-0.0036	-0.0017	-0.0058
	2005	-0.0032	-0.0032	-0.0030
6 Point	2000	0.0299	0.0338	0.0259
	2001	-0.0428	-0.0483	-0.0372
	2002	0.0128	0.0176	0.0082
	2003	-0.0081	-0.0151	-0.0009
	2004	-0.0006	0.0017	-0.0033
	2005	0.0088	0.0103	0.0073
7 Point	1999	-0.0595	-0.0626	-0.0564
	2000	0.0695	0.0756	0.0635
	2001	-0.0150	-0.0191	-0.0109
	2002	0.0287	0.0343	0.0232
	2003	-0.0041	-0.0109	0.0028
	2004	-0.0086	-0.0066	-0.0108
	2005	-0.0111	-0.0105	-0.0115
8 Point	1998	-0.0782	-0.0746	-0.0817
	1999	-0.0148	-0.0200	-0.0097
	2000	0.1031	0.1075	0.0985
	2001	0.0074	0.0022	0.0125
	2002	0.0399	0.0449	0.0349
	2003	-0.0041	-0.0109	0.0028
	2004	-0.0197	-0.0173	-0.0224
	2005	-0.0334	-0.0318	-0.0348
9 Point	1997	-0.0280	-0.0160	-0.0397
	1998	-0.0642	-0.0666	-0.0619
	1999	-0.0038	-0.0137	0.0059
	2000	0.1111	0.1121	0.1099
	2001	0.0124	0.0050	0.0195
	2002	0.0419	0.0461	0.0377
	2003	-0.0051	-0.0115	0.0014
	2004	-0.0237	-0.0196	-0.0281
	2005	-0.0404	-0.0358	-0.0447
10 Point	1996	-0.0245	-0.0212	-0.0278
	1997	-0.0171	-0.0066	-0.0273
	1998	-0.0554	-0.0589	-0.0519
	1999	0.0030	-0.0079	0.0136
	2000	0.1158	0.1162	0.1153
	2001	0.0151	0.0074	0.0226
	2002	0.0426	0.0467	0.0385
	2003	-0.0065	-0.0127	-0.0001
	2004	-0.0271	-0.0225	-0.0320
	2005	-0.0459	-0.0405	-0.0509

INDEMNITY Expon'l RESIDUALS	Policy Year	Severity Ratio (Average)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	2002	0.0090	0.0133	0.0047
	2003	-0.0115	-0.0188	-0.0039
	2004	-0.0036	-0.0015	-0.0058
	2005	0.0063	0.0075	0.0052
5 Point	2001	-0.0183	-0.0206	-0.0161
	2002	0.0283	0.0353	0.0214
	2003	-0.0018	-0.0077	0.0044
	2004	-0.0036	-0.0015	-0.0058
	2005	-0.0036	-0.0040	-0.0031
6 Point	2000	0.0310	0.0350	0.0268
	2001	-0.0419	-0.0474	-0.0365
	2002	0.0134	0.0183	0.0087
	2003	-0.0078	-0.0146	-0.0007
	2004	-0.0005	0.0020	-0.0033
	2005	0.0086	0.0103	0.0070
7 Point	1999	-0.0559	-0.0586	-0.0532
	2000	0.0729	0.0797	0.0662
	2001	-0.0122	-0.0155	-0.0089
	2002	0.0306	0.0369	0.0245
	2003	-0.0034	-0.0098	0.0033
	2004	-0.0093	-0.0077	-0.0112
	2005	-0.0136	-0.0144	-0.0129
8 Point	1998	-0.0712	-0.0682	-0.0744
	1999	-0.0069	-0.0116	-0.0022
	2000	0.1110	0.1165	0.1054
	2001	0.0141	0.0102	0.0180
	2002	0.0442	0.0503	0.0383
	2003	-0.0034	-0.0098	0.0033
	2004	-0.0239	-0.0223	-0.0258
	2005	-0.0439	-0.0450	-0.0428
9 Point	1997	-0.0244	-0.0140	-0.0346
	1998	-0.0578	-0.0606	-0.0549
	1999	0.0043	-0.0053	0.0138
	2000	0.1195	0.1214	0.1176
	2001	0.0197	0.0134	0.0259
	2002	0.0465	0.0517	0.0416
	2003	-0.0047	-0.0106	0.0016
	2004	-0.0292	-0.0254	-0.0330
	2005	-0.0536	-0.0507	-0.0561
10 Point	1996	-0.0244	-0.0231	-0.0259
	1997	-0.0123	-0.0026	-0.0218
	1998	-0.0473	-0.0507	-0.0440
	1999	0.0128	0.0029	0.0226
	2000	0.1258	0.1275	0.1241
	2001	0.0235	0.0171	0.0299
	2002	0.0476	0.0527	0.0427
	2003	-0.0068	-0.0126	-0.0006
	2004	-0.0348	-0.0310	-0.0388
	2005	-0.0632	-0.0602	-0.0658



MEDICAL Linear RESIDUALS	Policy Year	Severity Ratio (Average)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	2002	0.0181	0.0289	0.0071
	2003	-0.0342	-0.0612	-0.0071
	2004	0.0144	0.0356	-0.0072
	2005	0.0019	-0.0034	0.0071
5 Point	2001	-0.0418	-0.0492	-0.0344
	2002	0.0599	0.0782	0.0415
	2003	-0.0133	-0.0366	0.0102
	2004	0.0144	0.0356	-0.0072
	2005	-0.0191	-0.0280	-0.0101
6 Point	2000	0.0502	0.0491	0.0512
	2001	-0.0820	-0.0885	-0.0753
	2002	0.0348	0.0536	0.0159
	2003	-0.0234	-0.0464	-0.0001
	2004	0.0194	0.0405	-0.0021
	2005	0.0010	-0.0083	0.0104
7 Point	1999	-0.0374	-0.0721	-0.0029
	2000	0.0751	0.0972	0.0531
	2001	-0.0645	-0.0549	-0.0740
	2002	0.0447	0.0728	0.0167
	2003	-0.0209	-0.0416	0.0001
	2004	0.0144	0.0309	-0.0025
	2005	-0.0114	-0.0323	0.0094
8 Point	1998	-0.0761	-0.1058	-0.0463
	1999	0.0061	-0.0116	0.0235
	2000	0.1077	0.1425	0.0729
	2001	-0.0428	-0.0247	-0.0608
	2002	0.0556	0.0879	0.0233
	2003	-0.0209	-0.0416	0.0001
	2004	0.0035	0.0158	-0.0091
	2005	-0.0332	-0.0626	-0.0038
9 Point	1997	-0.0388	-0.0648	-0.0128
	1998	-0.0567	-0.0734	-0.0399
	1999	0.0214	0.0139	0.0286
	2000	0.1188	0.1610	0.0766
	2001	-0.0359	-0.0131	-0.0585
	2002	0.0584	0.0925	0.0242
	2003	-0.0223	-0.0439	-0.0003
	2004	-0.0020	0.0066	-0.0109
	2005	-0.0429	-0.0788	-0.0070
10 Point	1996	-0.0168	-0.0273	-0.0063
	1997	-0.0314	-0.0526	-0.0100
	1998	-0.0506	-0.0635	-0.0376
	1999	0.0260	0.0214	0.0303
	2000	0.1221	0.1663	0.0778
	2001	-0.0340	-0.0101	-0.0578
	2002	0.0589	0.0933	0.0244
	2003	-0.0232	-0.0454	-0.0007
	2004	-0.0044	0.0028	-0.0118
	2005	-0.0466	-0.0848	-0.0084

MEDICAL Expon'l RESIDUALS	Policy Year	Severity Ratio (Average)	Severity Ratio (Incur)	Severity Ratio (Pd-20)
4 Point	2002	0.0171	0.0295	0.0050
	2003	-0.0333	-0.0601	-0.0054
	2004	0.0155	0.0367	-0.0052
	2005	0.0016	-0.0029	0.0058
5 Point	2001	-0.0417	-0.0472	-0.0366
	2002	0.0645	0.0823	0.0471
	2003	-0.0083	-0.0328	0.0173
	2004	0.0155	0.0367	-0.0052
	2005	-0.0264	-0.0323	-0.0206
6 Point	2000	0.0479	0.0496	0.0453
	2001	-0.0799	-0.0862	-0.0733
	2002	0.0391	0.0568	0.0222
	2003	-0.0191	-0.0434	0.0065
	2004	0.0213	0.0422	0.0006
	2005	-0.0020	-0.0091	0.0046
7 Point	1999	-0.0409	-0.0701	-0.0120
	2000	0.0785	0.1033	0.0541
	2001	-0.0572	-0.0469	-0.0667
	2002	0.0528	0.0803	0.0263
	2003	-0.0154	-0.0373	0.0076
	2004	0.0135	0.0294	-0.0018
	2005	-0.0225	-0.0427	-0.0017
8 Point	1998	-0.0794	-0.1014	-0.0571
	1999	0.0145	0.0022	0.0269
	2000	0.1233	0.1614	0.0858
	2001	-0.0250	-0.0055	-0.0438
	2002	0.0702	0.1024	0.0387
	2003	-0.0154	-0.0373	0.0076
	2004	-0.0066	0.0040	-0.0164
	2005	-0.0658	-0.0970	-0.0334
9 Point	1997	-0.0492	-0.0673	-0.0306
	1998	-0.0502	-0.0603	-0.0395
	1999	0.0397	0.0375	0.0422
	2000	0.1433	0.1894	0.0979
	2001	-0.0113	0.0136	-0.0354
	2002	0.0762	0.1108	0.0424
	2003	-0.0187	-0.0418	0.0056
	2004	-0.0210	-0.0159	-0.0252
	2005	-0.0934	-0.1351	-0.0504
10 Point	1996	-0.0368	-0.0413	-0.0321
	1997	-0.0299	-0.0455	-0.0138
	1998	-0.0328	-0.0407	-0.0244
	1999	0.0544	0.0541	0.0549
	2000	0.1547	0.2022	0.1078
	2001	-0.0041	0.0218	-0.0292
	2002	0.0782	0.1130	0.0441
	2003	-0.0231	-0.0468	0.0018
	2004	-0.0331	-0.0296	-0.0357
	2005	-0.1148	-0.1593	-0.0690