

PENNSYLVANIA COMPENSATION RATING BUREAU

Retrospective Test of Trend Projections for Loss Ratios

Attached is a retrospective test of the predictive accuracy of various trend procedures.

Results for both indemnity and medical are shown using both linear and exponential fits. All possible combinations from 4 to 10 data points, which permitted a test of the projected loss ratio three years hence, were used. Our current review trends Policy Year 2013 3.25 years, Policy Year 2012 4.25 years, and Policy Year 2011 5.25 years. An average of those three values is then calculated.

Current estimates of policy year ultimate loss (to expected loss) ratios are compared with predicted values based on trending through earlier years. The results are shown for three loss development approaches: incurred, paid to twenty-seventh and the average of the incurred and the paid to twenty-seventh methods.

As an illustration, the incurred loss development approach generates an indemnity loss ratio of 0.5499 for Policy Year 2008. Fitting the loss ratios for Policy Years 2002 to 2005 using a straight line and projecting that to 2008 yields a loss ratio of 0.4982, which understates our current estimate for 2008 by 0.0517.

Please note that the boxed numbers correspond to those numbers that do not have a comparable value in Exhibit 11b, Retrospective Test of Trend Projections for Severity Ratios.

**Indemnity**  
**Actual Ultimate Loss Ratios**  
**Including Average of Paid and Incurred**

INDEMNITY	Policy Year	Loss Ratio Average (Pd & Inc)	Loss Ratio (Incur)	Loss Ratio (Pd-27)
	1996	0.7010	0.6951	0.7069
	1997	0.7202	0.7071	0.7333
	1998	0.6712	0.6562	0.6861
	1999	0.6912	0.6755	0.7068
	2000	0.7102	0.6952	0.7252
	2001	0.6809	0.6659	0.6960
	2002	0.6882	0.6765	0.6999
	2003	0.6440	0.6334	0.6547
	2004	0.6410	0.6332	0.6489
	2005	0.5918	0.5786	0.6050
	2006	0.5815	0.5697	0.5934
	2007	0.5889	0.5736	0.6042
	2008	0.5704	0.5499	0.5909
	2009	0.5427	0.5201	0.5652
	2010	0.5356	0.5143	0.5569
	2011	0.5105	0.4842	0.5367
	2012	0.4849	0.4534	0.5163
	2013	0.4990	0.4646	0.5334

Trend # Years = 3

**Indemnity  
Linear Fit  
Trended Loss Ratios**

Years Used (# Yrs)	3 Yr Trend To	Loss Ratio Average (Pd & Inc)	Loss Ratio (Incur)	Loss Ratio (Pd-27)
96-99 (4)	2002	0.6606	0.6341	0.6869
97-00 (4)	2003	0.6937	0.6761	0.7112
98-01 (4)	2004	0.7100	0.6952	0.7252
99-02 (4)	2005	0.6754	0.6664	0.6845
00-03 (4)	2006	0.5947	0.5891	0.6005
01-04 (4)	2007	0.5898	0.5887	0.5910
02-05 (4)	2008	0.5098	0.4982	0.5214
03-06 (4)	2009	0.5081	0.4932	0.5230
04-07 (4)	2010	0.5258	0.5043	0.5473
05-08 (4)	2011	0.5576	0.5310	0.5842
06-09 (4)	2012	0.5102	0.4757	0.5444
07-10 (4)	2013	0.4750	0.4460	0.5039
96-00 (5)	2003	0.6935	0.6701	0.7167
97-01 (5)	2004	0.6749	0.6583	0.6917
98-02 (5)	2005	0.7002	0.6894	0.7112
99-03 (5)	2006	0.6247	0.6179	0.6318
00-04 (5)	2007	0.5852	0.5826	0.5880
01-05 (5)	2008	0.5365	0.5286	0.5444
02-06 (5)	2009	0.4965	0.4841	0.5090
03-07 (5)	2010	0.5246	0.5062	0.5430
04-08 (5)	2011	0.5227	0.4952	0.5501
05-09 (5)	2012	0.5204	0.4900	0.5507
06-10 (5)	2013	0.4948	0.4634	0.5261
96-01 (6)	2004	0.6784	0.6570	0.6999
97-02 (6)	2005	0.6761	0.6630	0.6892
98-03 (6)	2006	0.6536	0.6451	0.6623
99-04 (6)	2007	0.6064	0.6026	0.6105
00-05 (6)	2008	0.5406	0.5333	0.5479
01-06 (6)	2009	0.5139	0.5044	0.5234
02-07 (6)	2010	0.5073	0.4914	0.5234
03-08 (6)	2011	0.5189	0.4946	0.5432
04-09 (6)	2012	0.4999	0.4691	0.5306
05-10 (6)	2013	0.5031	0.4734	0.5328
96-02 (7)	2005	0.6780	0.6604	0.6956
97-03 (7)	2006	0.6427	0.6321	0.6534
98-04 (7)	2007	0.6309	0.6254	0.6366
99-05 (7)	2008	0.5624	0.5554	0.5697
00-06 (7)	2009	0.5172	0.5087	0.5258
01-07 (7)	2010	0.5148	0.5019	0.5279
02-08 (7)	2011	0.5030	0.4815	0.5245
03-09 (7)	2012	0.4983	0.4702	0.5263
04-10 (7)	2013	0.4877	0.4570	0.5182
96-03 (8)	2006	0.6488	0.6341	0.6636
97-04 (8)	2007	0.6245	0.6170	0.6321
98-05 (8)	2008	0.5876	0.5799	0.5954
99-06 (8)	2009	0.5357	0.5277	0.5439
00-07 (8)	2010	0.5140	0.5024	0.5257
01-08 (8)	2011	0.5067	0.4884	0.5250
02-09 (8)	2012	0.4859	0.4603	0.5114
03-10 (8)	2013	0.4858	0.4570	0.5146
96-04 (9)	2007	0.6312	0.6198	0.6427
97-05 (9)	2008	0.5869	0.5779	0.5960
98-06 (9)	2009	0.5585	0.5501	0.5669
99-07 (9)	2010	0.5273	0.5166	0.5382
00-08 (9)	2011	0.5046	0.4881	0.5210
01-09 (9)	2012	0.4889	0.4664	0.5112
02-10 (9)	2013	0.4748	0.4479	0.5015
96-05 (10)	2008	0.5962	0.5841	0.6083
97-06 (10)	2009	0.5599	0.5507	0.5693
98-07 (10)	2010	0.5460	0.5354	0.5566
99-08 (10)	2011	0.5149	0.4999	0.5301
00-09 (10)	2012	0.4870	0.4665	0.5073
01-10 (10)	2013	0.4765	0.4522	0.5006

**Indemnity**  
**Linear Fit**  
**Differences: (Actual - Trended)**

Years Used (# Yrs)	3 Yr Trend To	Loss Ratio Average (Pd & Inc)	Loss Ratio (Incur)	Loss Ratio (Pd-27)
96-99 (4)	2002	0.0276	0.0424	0.0130
97-00 (4)	2003	-0.0497	-0.0427	-0.0565
98-01 (4)	2004	-0.0690	-0.0620	-0.0763
99-02 (4)	2005	-0.0836	-0.0878	-0.0795
00-03 (4)	2006	-0.0132	-0.0194	-0.0071
01-04 (4)	2007	-0.0009	-0.0151	0.0133
02-05 (4)	2008	0.0606	0.0517	0.0695
03-06 (4)	2009	0.0346	0.0269	0.0422
04-07 (4)	2010	0.0098	0.0100	0.0096
05-08 (4)	2011	-0.0471	-0.0468	-0.0475
06-09 (4)	2012	-0.0253	-0.0223	-0.0281
07-10 (4)	2013	0.0240	0.0186	0.0295
96-00 (5)	2003	-0.0495	-0.0367	-0.0620
97-01 (5)	2004	-0.0339	-0.0251	-0.0428
98-02 (5)	2005	-0.1084	-0.1108	-0.1062
99-03 (5)	2006	-0.0432	-0.0482	-0.0384
00-04 (5)	2007	0.0037	-0.0090	0.0162
01-05 (5)	2008	0.0339	0.0213	0.0465
02-06 (5)	2009	0.0462	0.0360	0.0562
03-07 (5)	2010	0.0110	0.0081	0.0139
04-08 (5)	2011	-0.0122	-0.0110	-0.0134
05-09 (5)	2012	-0.0355	-0.0366	-0.0344
06-10 (5)	2013	0.0042	0.0012	0.0073
96-01 (6)	2004	-0.0374	-0.0238	-0.0510
97-02 (6)	2005	-0.0843	-0.0844	-0.0842
98-03 (6)	2006	-0.0721	-0.0754	-0.0689
99-04 (6)	2007	-0.0175	-0.0290	-0.0063
00-05 (6)	2008	0.0298	0.0166	0.0430
01-06 (6)	2009	0.0288	0.0157	0.0418
02-07 (6)	2010	0.0283	0.0229	0.0335
03-08 (6)	2011	-0.0084	-0.0104	-0.0065
04-09 (6)	2012	-0.0150	-0.0157	-0.0143
05-10 (6)	2013	-0.0041	-0.0088	0.0006
96-02 (7)	2005	-0.0862	-0.0818	-0.0906
97-03 (7)	2006	-0.0611	-0.0624	-0.0600
98-04 (7)	2007	-0.0420	-0.0518	-0.0324
99-05 (7)	2008	0.0080	-0.0055	0.0213
00-06 (7)	2009	0.0255	0.0114	0.0394
01-07 (7)	2010	0.0208	0.0125	0.0291
02-08 (7)	2011	0.0075	0.0027	0.0122
03-09 (7)	2012	-0.0134	-0.0168	-0.0100
04-10 (7)	2013	0.0113	0.0076	0.0152
96-03 (8)	2006	-0.0673	-0.0644	-0.0702
97-04 (8)	2007	-0.0356	-0.0434	-0.0279
98-05 (8)	2008	-0.0172	-0.0300	-0.0045
99-06 (8)	2009	0.0070	-0.0076	0.0213
00-07 (8)	2010	0.0216	0.0119	0.0312
01-08 (8)	2011	0.0038	-0.0042	0.0117
02-09 (8)	2012	-0.0010	-0.0069	0.0049
03-10 (8)	2013	0.0132	0.0076	0.0188
96-04 (9)	2007	-0.0423	-0.0462	-0.0385
97-05 (9)	2008	-0.0165	-0.0280	-0.0051
98-06 (9)	2009	-0.0158	-0.0300	-0.0017
99-07 (9)	2010	0.0083	-0.0023	0.0187
00-08 (9)	2011	0.0059	-0.0039	0.0157
01-09 (9)	2012	-0.0040	-0.0130	0.0051
02-10 (9)	2013	0.0242	0.0167	0.0319
96-05 (10)	2008	-0.0258	-0.0342	-0.0174
97-06 (10)	2009	-0.0172	-0.0306	-0.0041
98-07 (10)	2010	-0.0104	-0.0211	0.0003
99-08 (10)	2011	-0.0044	-0.0157	0.0066
00-09 (10)	2012	-0.0021	-0.0131	0.0090
01-10 (10)	2013	0.0225	0.0124	0.0328

**Indemnity  
Exponential Fit  
Trended Loss Ratios**

Years Used (# Yrs)	3 Yr Trend To	Loss Ratio Average (Pd & Inc)	Loss Ratio (Incur)	Loss Ratio (Pd-27)
96-99 (4)	2002	0.6613	0.6356	0.6871
97-00 (4)	2003	0.6940	0.6765	0.7115
98-01 (4)	2004	0.7103	0.6955	0.7255
99-02 (4)	2005	0.6756	0.6665	0.6848
00-03 (4)	2006	0.5991	0.5927	0.6056
01-04 (4)	2007	0.5933	0.5913	0.5954
02-05 (4)	2008	0.5212	0.5096	0.5328
03-06 (4)	2009	0.5160	0.5018	0.5303
04-07 (4)	2010	0.5312	0.5112	0.5514
05-08 (4)	2011	0.5580	0.5318	0.5843
06-09 (4)	2012	0.5124	0.4797	0.5453
07-10 (4)	2013	0.4809	0.4536	0.5084
96-00 (5)	2003	0.6933	0.6702	0.7166
97-01 (5)	2004	0.6754	0.6589	0.6921
98-02 (5)	2005	0.7004	0.6896	0.7113
99-03 (5)	2006	0.6260	0.6188	0.6335
00-04 (5)	2007	0.5902	0.5866	0.5939
01-05 (5)	2008	0.5438	0.5351	0.5524
02-06 (5)	2009	0.5088	0.4966	0.5210
03-07 (5)	2010	0.5303	0.5128	0.5478
04-08 (5)	2011	0.5275	0.5018	0.5534
05-09 (5)	2012	0.5220	0.4928	0.5515
06-10 (5)	2013	0.4982	0.4685	0.5281
96-01 (6)	2004	0.6785	0.6574	0.6999
97-02 (6)	2005	0.6765	0.6635	0.6896
98-03 (6)	2006	0.6532	0.6446	0.6620
99-04 (6)	2007	0.6089	0.6045	0.6136
00-05 (6)	2008	0.5486	0.5405	0.5567
01-06 (6)	2009	0.5234	0.5135	0.5333
02-07 (6)	2010	0.5174	0.5022	0.5327
03-08 (6)	2011	0.5246	0.5017	0.5475
04-09 (6)	2012	0.5057	0.4772	0.5345
05-10 (6)	2013	0.5059	0.4775	0.5344
96-02 (7)	2005	0.6782	0.6608	0.6957
97-03 (7)	2006	0.6434	0.6328	0.6541
98-04 (7)	2007	0.6313	0.6257	0.6372
99-05 (7)	2008	0.5672	0.5594	0.5752
00-06 (7)	2009	0.5274	0.5182	0.5366
01-07 (7)	2010	0.5240	0.5110	0.5369
02-08 (7)	2011	0.5128	0.4926	0.5330
03-09 (7)	2012	0.5051	0.4789	0.5314
04-10 (7)	2013	0.4941	0.4658	0.5227
96-03 (8)	2006	0.6492	0.6347	0.6637
97-04 (8)	2007	0.6259	0.6183	0.6337
98-05 (8)	2008	0.5892	0.5810	0.5976
99-06 (8)	2009	0.5428	0.5341	0.5517
00-07 (8)	2010	0.5244	0.5126	0.5362
01-08 (8)	2011	0.5163	0.4986	0.5339
02-09 (8)	2012	0.4966	0.4728	0.5204
03-10 (8)	2013	0.4933	0.4666	0.5203
96-04 (9)	2007	0.6321	0.6210	0.6434
97-05 (9)	2008	0.5894	0.5801	0.5989
98-06 (9)	2009	0.5621	0.5532	0.5711
99-07 (9)	2010	0.5354	0.5243	0.5466
00-08 (9)	2011	0.5155	0.4994	0.5316
01-09 (9)	2012	0.4996	0.4783	0.5209
02-10 (9)	2013	0.4860	0.4613	0.5109
96-05 (10)	2008	0.5979	0.5859	0.6099
97-06 (10)	2009	0.5642	0.5546	0.5739
98-07 (10)	2010	0.5509	0.5400	0.5620
99-08 (10)	2011	0.5241	0.5091	0.5392
00-09 (10)	2012	0.4992	0.4796	0.5188
01-10 (10)	2013	0.4881	0.4653	0.5108

**Indemnity**  
**Exponential Fit**  
**Differences: (Actual - Trended)**

Years Used (# Yrs)	3 Yr Trend To	Loss Ratio Average (Pd & Inc)	Loss Ratio (Incur)	Loss Ratio (Pd-27)
96-99 (4)	2002	0.0269	0.0409	0.0128
97-00 (4)	2003	-0.0500	-0.0431	-0.0568
98-01 (4)	2004	-0.0693	-0.0623	-0.0766
99-02 (4)	2005	-0.0838	-0.0879	-0.0798
00-03 (4)	2006	-0.0176	-0.0230	-0.0122
01-04 (4)	2007	-0.0044	-0.0177	0.0088
02-05 (4)	2008	0.0492	0.0403	0.0581
03-06 (4)	2009	0.0267	0.0183	0.0349
04-07 (4)	2010	0.0044	0.0031	0.0055
05-08 (4)	2011	-0.0475	-0.0476	-0.0476
06-09 (4)	2012	-0.0275	-0.0263	-0.0290
07-10 (4)	2013	0.0181	0.0110	0.0250
96-00 (5)	2003	-0.0493	-0.0368	-0.0619
97-01 (5)	2004	-0.0344	-0.0257	-0.0432
98-02 (5)	2005	-0.1086	-0.1110	-0.1063
99-03 (5)	2006	-0.0445	-0.0491	-0.0401
00-04 (5)	2007	-0.0013	-0.0130	0.0103
01-05 (5)	2008	0.0266	0.0148	0.0385
02-06 (5)	2009	0.0339	0.0235	0.0442
03-07 (5)	2010	0.0053	0.0015	0.0091
04-08 (5)	2011	-0.0170	-0.0176	-0.0167
05-09 (5)	2012	-0.0371	-0.0394	-0.0352
06-10 (5)	2013	0.0008	-0.0039	0.0053
96-01 (6)	2004	-0.0375	-0.0242	-0.0510
97-02 (6)	2005	-0.0847	-0.0849	-0.0846
98-03 (6)	2006	-0.0717	-0.0749	-0.0686
99-04 (6)	2007	-0.0200	-0.0309	-0.0094
00-05 (6)	2008	0.0218	0.0094	0.0342
01-06 (6)	2009	0.0193	0.0066	0.0319
02-07 (6)	2010	0.0182	0.0121	0.0242
03-08 (6)	2011	-0.0141	-0.0175	-0.0108
04-09 (6)	2012	-0.0208	-0.0238	-0.0182
05-10 (6)	2013	-0.0069	-0.0129	-0.0010
96-02 (7)	2005	-0.0864	-0.0822	-0.0907
97-03 (7)	2006	-0.0619	-0.0631	-0.0607
98-04 (7)	2007	-0.0424	-0.0521	-0.0330
99-05 (7)	2008	0.0032	-0.0095	0.0157
00-06 (7)	2009	0.0153	0.0019	0.0286
01-07 (7)	2010	0.0116	0.0033	0.0200
02-08 (7)	2011	-0.0023	-0.0084	0.0037
03-09 (7)	2012	-0.0202	-0.0255	-0.0151
04-10 (7)	2013	0.0049	-0.0012	0.0107
96-03 (8)	2006	-0.0677	-0.0650	-0.0703
97-04 (8)	2007	-0.0370	-0.0447	-0.0295
98-05 (8)	2008	-0.0188	-0.0311	-0.0067
99-06 (8)	2009	-0.0001	-0.0140	0.0135
00-07 (8)	2010	0.0112	0.0017	0.0207
01-08 (8)	2011	-0.0058	-0.0144	0.0028
02-09 (8)	2012	-0.0117	-0.0194	-0.0041
03-10 (8)	2013	0.0057	-0.0020	0.0131
96-04 (9)	2007	-0.0432	-0.0474	-0.0392
97-05 (9)	2008	-0.0190	-0.0302	-0.0080
98-06 (9)	2009	-0.0194	-0.0331	-0.0059
99-07 (9)	2010	0.0002	-0.0100	0.0103
00-08 (9)	2011	-0.0050	-0.0152	0.0051
01-09 (9)	2012	-0.0147	-0.0249	-0.0046
02-10 (9)	2013	0.0130	0.0033	0.0225
96-05 (10)	2008	-0.0275	-0.0360	-0.0190
97-06 (10)	2009	-0.0215	-0.0345	-0.0087
98-07 (10)	2010	-0.0153	-0.0257	-0.0051
99-08 (10)	2011	-0.0136	-0.0249	-0.0025
00-09 (10)	2012	-0.0143	-0.0262	-0.0025
01-10 (10)	2013	0.0109	-0.0007	0.0226

**Medical**  
**Actual Ultimate Loss Ratios**  
**Including Average of Paid and Incurred**

MEDICAL

Policy Year	Loss Ratio Average (Pd & Inc)	Loss Ratio (Incur)	Loss Ratio (Pd-27)
1996	0.6263	0.6229	0.6296
1997	0.6496	0.6435	0.6557
1998	0.6358	0.6259	0.6457
1999	0.6501	0.6424	0.6577
2000	0.6447	0.6285	0.6610
2001	0.6031	0.5840	0.6221
2002	0.6323	0.6184	0.6462
2003	0.6261	0.6078	0.6444
2004	0.6501	0.6339	0.6664
2005	0.6083	0.5930	0.6236
2006	0.5936	0.5788	0.6083
2007	0.6202	0.6036	0.6368
2008	0.5870	0.5659	0.6081
2009	0.5761	0.5552	0.5970
2010	0.5993	0.5840	0.6145
2011	0.5966	0.5749	0.6183
2012	0.5635	0.5387	0.5882
2013	0.5827	0.5625	0.6029

Trend # Years = 3

**Medical  
Linear Fit  
Trended Loss Ratios**

Years Used (# Yrs)	3 Yr Trend To	Loss Ratio Average (Pd & Inc)	Loss Ratio (Incur)	Loss Ratio (Pd-27)
96-99 (4)	2002	0.6664	0.6521	0.6806
97-00 (4)	2003	0.6449	0.6223	0.6676
98-01 (4)	2004	0.5869	0.5574	0.6163
99-02 (4)	2005	0.5898	0.5659	0.6137
00-03 (4)	2006	0.6146	0.5972	0.6319
01-04 (4)	2007	0.6886	0.6736	0.7038
02-05 (4)	2008	0.6076	0.5907	0.6245
03-06 (4)	2009	0.5568	0.5458	0.5677
04-07 (4)	2010	0.5711	0.5550	0.5869
05-08 (4)	2011	0.5855	0.5599	0.6111
06-09 (4)	2012	0.5557	0.5271	0.5844
07-10 (4)	2013	0.5625	0.5459	0.5790
96-00 (5)	2003	0.6600	0.6377	0.6823
97-01 (5)	2004	0.5946	0.5667	0.6225
98-02 (5)	2005	0.6062	0.5831	0.6292
99-03 (5)	2006	0.6011	0.5766	0.6256
00-04 (5)	2007	0.6482	0.6318	0.6646
01-05 (5)	2008	0.6381	0.6242	0.6521
02-06 (5)	2009	0.5745	0.5594	0.5895
03-07 (5)	2010	0.5855	0.5717	0.5993
04-08 (5)	2011	0.5547	0.5323	0.5769
05-09 (5)	2012	0.5615	0.5351	0.5881
06-10 (5)	2013	0.5789	0.5585	0.5992
96-01 (6)	2004	0.6166	0.5895	0.6438
97-02 (6)	2005	0.6061	0.5821	0.6300
98-03 (6)	2006	0.6095	0.5853	0.6336
99-04 (6)	2007	0.6302	0.6081	0.6524
00-05 (6)	2008	0.6200	0.6049	0.6352
01-06 (6)	2009	0.6039	0.5907	0.6171
02-07 (6)	2010	0.5904	0.5742	0.6065
03-08 (6)	2011	0.5671	0.5477	0.5864
04-09 (6)	2012	0.5419	0.5177	0.5660
05-10 (6)	2013	0.5769	0.5560	0.5977
96-02 (7)	2005	0.6204	0.5958	0.6450
97-03 (7)	2006	0.6079	0.5828	0.6329
98-04 (7)	2007	0.6309	0.6083	0.6535
99-05 (7)	2008	0.6110	0.5911	0.6311
00-06 (7)	2009	0.5958	0.5816	0.6100
01-07 (7)	2010	0.6097	0.5952	0.6242
02-08 (7)	2011	0.5730	0.5528	0.5932
03-09 (7)	2012	0.5521	0.5305	0.5737
04-10 (7)	2013	0.5571	0.5367	0.5773
96-03 (8)	2006	0.6187	0.5930	0.6444
97-04 (8)	2007	0.6256	0.6018	0.6495
98-05 (8)	2008	0.6144	0.5935	0.6353
99-06 (8)	2009	0.5918	0.5734	0.6101
00-07 (8)	2010	0.6016	0.5866	0.6166
01-08 (8)	2011	0.5909	0.5727	0.6091
02-09 (8)	2012	0.5581	0.5360	0.5801
03-10 (8)	2013	0.5616	0.5426	0.5804
96-04 (9)	2007	0.6319	0.6071	0.6568
97-05 (9)	2008	0.6120	0.5897	0.6344
98-06 (9)	2009	0.5967	0.5773	0.6162
99-07 (9)	2010	0.5968	0.5785	0.6152
00-08 (9)	2011	0.5863	0.5682	0.6044
01-09 (9)	2012	0.5743	0.5542	0.5945
02-10 (9)	2013	0.5641	0.5443	0.5838
96-05 (10)	2008	0.6189	0.5953	0.6426
97-06 (10)	2009	0.5965	0.5755	0.6175
98-07 (10)	2010	0.5999	0.5805	0.6193
99-08 (10)	2011	0.5836	0.5630	0.6043
00-09 (10)	2012	0.5719	0.5520	0.5917
01-10 (10)	2013	0.5765	0.5581	0.5950



**Medical**  
**Linear Fit**  
**Differences: (Actual - Trended)**

Years Used (# Yrs)	3 Yr Trend To	Loss Ratio Average (Pd & Inc)	Loss Ratio (Incur)	Loss Ratio (Pd-27)
96-99 (4)	2002	-0.0341	-0.0337	-0.0344
97-00 (4)	2003	-0.0188	-0.0145	-0.0232
98-01 (4)	2004	0.0633	0.0765	0.0502
99-02 (4)	2005	0.0185	0.0271	0.0099
00-03 (4)	2006	-0.0210	-0.0184	-0.0236
01-04 (4)	2007	-0.0684	-0.0700	-0.0670
02-05 (4)	2008	-0.0206	-0.0248	-0.0164
03-06 (4)	2009	0.0193	0.0094	0.0293
04-07 (4)	2010	0.0282	0.0290	0.0276
05-08 (4)	2011	0.0111	0.0150	0.0072
06-09 (4)	2012	0.0078	0.0116	0.0038
07-10 (4)	2013	0.0202	0.0166	0.0239
96-00 (5)	2003	-0.0339	-0.0299	-0.0379
97-01 (5)	2004	0.0555	0.0672	0.0439
98-02 (5)	2005	0.0021	0.0099	-0.0056
99-03 (5)	2006	-0.0075	0.0022	-0.0173
00-04 (5)	2007	-0.0280	-0.0282	-0.0278
01-05 (5)	2008	-0.0511	-0.0583	-0.0440
02-06 (5)	2009	0.0016	-0.0042	0.0075
03-07 (5)	2010	0.0138	0.0123	0.0153
04-08 (5)	2011	0.0419	0.0426	0.0414
05-09 (5)	2012	0.0020	0.0036	0.0001
06-10 (5)	2013	0.0038	0.0040	0.0037
96-01 (6)	2004	0.0335	0.0444	0.0226
97-02 (6)	2005	0.0022	0.0109	-0.0064
98-03 (6)	2006	-0.0159	-0.0065	-0.0253
99-04 (6)	2007	-0.0100	-0.0045	-0.0156
00-05 (6)	2008	-0.0330	-0.0390	-0.0271
01-06 (6)	2009	-0.0278	-0.0355	-0.0201
02-07 (6)	2010	0.0089	0.0098	0.0080
03-08 (6)	2011	0.0295	0.0272	0.0319
04-09 (6)	2012	0.0216	0.0210	0.0222
05-10 (6)	2013	0.0058	0.0065	0.0052
96-02 (7)	2005	-0.0121	-0.0028	-0.0214
97-03 (7)	2006	-0.0143	-0.0040	-0.0246
98-04 (7)	2007	-0.0106	-0.0047	-0.0167
99-05 (7)	2008	-0.0240	-0.0252	-0.0230
00-06 (7)	2009	-0.0197	-0.0264	-0.0130
01-07 (7)	2010	-0.0104	-0.0112	-0.0096
02-08 (7)	2011	0.0236	0.0221	0.0251
03-09 (7)	2012	0.0114	0.0082	0.0145
04-10 (7)	2013	0.0256	0.0258	0.0256
96-03 (8)	2006	-0.0251	-0.0142	-0.0361
97-04 (8)	2007	-0.0054	0.0018	-0.0127
98-05 (8)	2008	-0.0274	-0.0276	-0.0272
99-06 (8)	2009	-0.0157	-0.0182	-0.0131
00-07 (8)	2010	-0.0023	-0.0026	-0.0021
01-08 (8)	2011	0.0057	0.0022	0.0092
02-09 (8)	2012	0.0054	0.0027	0.0081
03-10 (8)	2013	0.0211	0.0199	0.0225
96-04 (9)	2007	-0.0117	-0.0035	-0.0200
97-05 (9)	2008	-0.0250	-0.0238	-0.0263
98-06 (9)	2009	-0.0206	-0.0221	-0.0192
99-07 (9)	2010	0.0025	0.0055	-0.0007
00-08 (9)	2011	0.0103	0.0067	0.0139
01-09 (9)	2012	-0.0108	-0.0155	-0.0063
02-10 (9)	2013	0.0186	0.0182	0.0191
96-05 (10)	2008	-0.0319	-0.0294	-0.0345
97-06 (10)	2009	-0.0204	-0.0203	-0.0205
98-07 (10)	2010	-0.0006	0.0035	-0.0048
99-08 (10)	2011	0.0130	0.0119	0.0140
00-09 (10)	2012	-0.0084	-0.0133	-0.0035
01-10 (10)	2013	0.0062	0.0044	0.0079

**Medical  
Exponential Fit  
Trended Loss Ratios**

Years Used (# Yrs)	3 Yr Trend To	Loss Ratio Average (Pd & Inc)	Loss Ratio (Incur)	Loss Ratio (Pd-27)
96-99 (4)	2002	0.6670	0.6523	0.6816
97-00 (4)	2003	0.6449	0.6224	0.6677
98-01 (4)	2004	0.5874	0.5589	0.6161
99-02 (4)	2005	0.5910	0.5679	0.6144
00-03 (4)	2006	0.6150	0.5977	0.6323
01-04 (4)	2007	0.6915	0.6770	0.7064
02-05 (4)	2008	0.6072	0.5904	0.6241
03-06 (4)	2009	0.5592	0.5478	0.5704
04-07 (4)	2010	0.5733	0.5574	0.5891
05-08 (4)	2011	0.5853	0.5598	0.6109
06-09 (4)	2012	0.5565	0.5286	0.5848
07-10 (4)	2013	0.5637	0.5470	0.5803
96-00 (5)	2003	0.6603	0.6377	0.6833
97-01 (5)	2004	0.5950	0.5679	0.6223
98-02 (5)	2005	0.6063	0.5836	0.6291
99-03 (5)	2006	0.6019	0.5780	0.6259
00-04 (5)	2007	0.6483	0.6320	0.6647
01-05 (5)	2008	0.6379	0.6242	0.6518
02-06 (5)	2009	0.5754	0.5603	0.5903
03-07 (5)	2010	0.5863	0.5724	0.6001
04-08 (5)	2011	0.5575	0.5355	0.5793
05-09 (5)	2012	0.5621	0.5360	0.5883
06-10 (5)	2013	0.5790	0.5586	0.5994
96-01 (6)	2004	0.6161	0.5892	0.6434
97-02 (6)	2005	0.6063	0.5828	0.6299
98-03 (6)	2006	0.6097	0.5859	0.6336
99-04 (6)	2007	0.6302	0.6083	0.6523
00-05 (6)	2008	0.6198	0.6047	0.6349
01-06 (6)	2009	0.6035	0.5903	0.6166
02-07 (6)	2010	0.5908	0.5746	0.6068
03-08 (6)	2011	0.5685	0.5492	0.5878
04-09 (6)	2012	0.5451	0.5216	0.5687
05-10 (6)	2013	0.5770	0.5561	0.5978
96-02 (7)	2005	0.6201	0.5957	0.6448
97-03 (7)	2006	0.6082	0.5837	0.6329
98-04 (7)	2007	0.6306	0.6082	0.6533
99-05 (7)	2008	0.6111	0.5914	0.6309
00-06 (7)	2009	0.5958	0.5816	0.6100
01-07 (7)	2010	0.6095	0.5951	0.6239
02-08 (7)	2011	0.5740	0.5540	0.5940
03-09 (7)	2012	0.5542	0.5328	0.5756
04-10 (7)	2013	0.5592	0.5390	0.5792
96-03 (8)	2006	0.6186	0.5932	0.6443
97-04 (8)	2007	0.6255	0.6019	0.6493
98-05 (8)	2008	0.6142	0.5936	0.6350
99-06 (8)	2009	0.5922	0.5742	0.6102
00-07 (8)	2010	0.6017	0.5867	0.6167
01-08 (8)	2011	0.5909	0.5727	0.6091
02-09 (8)	2012	0.5597	0.5379	0.5814
03-10 (8)	2013	0.5631	0.5442	0.5820
96-04 (9)	2007	0.6317	0.6070	0.6567
97-05 (9)	2008	0.6120	0.5901	0.6341
98-06 (9)	2009	0.5968	0.5777	0.6160
99-07 (9)	2010	0.5972	0.5791	0.6153
00-08 (9)	2011	0.5867	0.5686	0.6047
01-09 (9)	2012	0.5747	0.5546	0.5948
02-10 (9)	2013	0.5655	0.5458	0.5850
96-05 (10)	2008	0.6187	0.5954	0.6422
97-06 (10)	2009	0.5967	0.5762	0.6173
98-07 (10)	2010	0.6001	0.5810	0.6192
99-08 (10)	2011	0.5842	0.5639	0.6046
00-09 (10)	2012	0.5726	0.5528	0.5924
01-10 (10)	2013	0.5770	0.5585	0.5954

**Medical**  
**Exponential Fit**  
**Differences: (Actual - Trended)**

Years Used (# Yrs)	3 Yr Trend To	Loss Ratio Average (Pd & Inc)	Loss Ratio (Incur)	Loss Ratio (Pd-27)
96-99 (4)	2002	-0.0347	-0.0339	-0.0354
97-00 (4)	2003	-0.0188	-0.0146	-0.0233
98-01 (4)	2004	0.0627	0.0750	0.0503
99-02 (4)	2005	0.0173	0.0251	0.0092
00-03 (4)	2006	-0.0214	-0.0189	-0.0240
01-04 (4)	2007	-0.0713	-0.0734	-0.0696
02-05 (4)	2008	-0.0202	-0.0245	-0.0160
03-06 (4)	2009	0.0169	0.0074	0.0266
04-07 (4)	2010	0.0260	0.0266	0.0254
05-08 (4)	2011	0.0113	0.0151	0.0074
06-09 (4)	2012	0.0070	0.0101	0.0034
07-10 (4)	2013	0.0190	0.0155	0.0226
96-00 (5)	2003	-0.0342	-0.0299	-0.0389
97-01 (5)	2004	0.0551	0.0660	0.0441
98-02 (5)	2005	0.0020	0.0094	-0.0055
99-03 (5)	2006	-0.0083	0.0008	-0.0176
00-04 (5)	2007	-0.0281	-0.0284	-0.0279
01-05 (5)	2008	-0.0509	-0.0583	-0.0437
02-06 (5)	2009	0.0007	-0.0051	0.0067
03-07 (5)	2010	0.0130	0.0116	0.0144
04-08 (5)	2011	0.0391	0.0394	0.0390
05-09 (5)	2012	0.0014	0.0027	-0.0001
06-10 (5)	2013	0.0037	0.0039	0.0035
96-01 (6)	2004	0.0340	0.0447	0.0230
97-02 (6)	2005	0.0020	0.0102	-0.0063
98-03 (6)	2006	-0.0161	-0.0071	-0.0253
99-04 (6)	2007	-0.0100	-0.0047	-0.0155
00-05 (6)	2008	-0.0328	-0.0388	-0.0268
01-06 (6)	2009	-0.0274	-0.0351	-0.0196
02-07 (6)	2010	0.0085	0.0094	0.0077
03-08 (6)	2011	0.0281	0.0257	0.0305
04-09 (6)	2012	0.0184	0.0171	0.0195
05-10 (6)	2013	0.0057	0.0064	0.0051
96-02 (7)	2005	-0.0118	-0.0027	-0.0212
97-03 (7)	2006	-0.0146	-0.0049	-0.0246
98-04 (7)	2007	-0.0104	-0.0046	-0.0165
99-05 (7)	2008	-0.0241	-0.0255	-0.0228
00-06 (7)	2009	-0.0197	-0.0264	-0.0130
01-07 (7)	2010	-0.0102	-0.0111	-0.0094
02-08 (7)	2011	0.0226	0.0209	0.0243
03-09 (7)	2012	0.0093	0.0059	0.0126
04-10 (7)	2013	0.0235	0.0235	0.0237
96-03 (8)	2006	-0.0250	-0.0144	-0.0360
97-04 (8)	2007	-0.0053	0.0017	-0.0125
98-05 (8)	2008	-0.0272	-0.0277	-0.0269
99-06 (8)	2009	-0.0161	-0.0190	-0.0132
00-07 (8)	2010	-0.0024	-0.0027	-0.0022
01-08 (8)	2011	0.0057	0.0022	0.0092
02-09 (8)	2012	0.0038	0.0008	0.0068
03-10 (8)	2013	0.0196	0.0183	0.0209
96-04 (9)	2007	-0.0115	-0.0034	-0.0199
97-05 (9)	2008	-0.0250	-0.0242	-0.0260
98-06 (9)	2009	-0.0207	-0.0225	-0.0190
99-07 (9)	2010	0.0021	0.0049	-0.0008
00-08 (9)	2011	0.0099	0.0063	0.0136
01-09 (9)	2012	-0.0112	-0.0159	-0.0066
02-10 (9)	2013	0.0172	0.0167	0.0179
96-05 (10)	2008	-0.0317	-0.0295	-0.0341
97-06 (10)	2009	-0.0206	-0.0210	-0.0203
98-07 (10)	2010	-0.0008	0.0030	-0.0047
99-08 (10)	2011	0.0124	0.0110	0.0137
00-09 (10)	2012	-0.0091	-0.0141	-0.0042
01-10 (10)	2013	0.0057	0.0040	0.0075