

Sample Workers' Compensation Self-Insurance Fund: Data

Cumulative Paid Losses as of 12/31/2003

AY	@12	@24	@36	@48	@60	@72	@84	@96	@108	@120	@132	@144	Case			Pure Prem
													Paid	Incurred	Payroll (00)	
1992	420,999	933,061	1,157,572	1,255,545	1,296,464	1,317,376	1,332,775	1,330,390	1,341,499	1,350,247	1,345,950	1,362,100	1,362,100	1,363,271	753,557	1.81
1993	1,086,467	2,476,130	3,244,912	3,651,969	3,763,241	4,044,012	4,196,661	4,300,467	4,449,556	4,330,732	4,388,323		4,388,323	4,430,366	1,975,738	2.24
1994	1,942,957	4,146,756	5,199,233	5,383,163	5,576,542	5,733,184	5,810,907	5,726,223	5,719,159	5,745,843			5,745,843	5,745,843	2,854,794	2.01
1995	2,198,438	4,980,785	6,537,165	7,280,254	7,705,444	7,844,735	7,889,070	8,002,279	7,960,209				7,960,209	7,963,017	3,908,004	2.04
1996	3,191,625	6,869,376	8,619,272	9,320,922	10,081,765	10,432,054	10,584,508	10,761,433					10,761,433	10,926,619	5,002,350	2.18
1997	3,455,646	7,285,870	8,596,163	9,136,292	9,623,740	9,799,544	9,786,099						9,786,099	9,828,575	4,664,362	2.11
1998	3,371,722	7,504,511	8,998,554	9,730,644	9,848,488	10,165,328							10,165,328	10,613,644	4,863,634	2.18
1999	4,483,648	8,817,973	10,808,938	11,901,397	11,978,315								11,978,315	12,444,503	4,929,005	2.52
2000	3,716,963	7,914,203	9,600,802	10,904,146									10,904,146	11,693,171	5,716,521	2.05
2001	3,678,149	7,418,289	9,077,917										9,077,917	10,372,074	6,228,069	1.67
2002	3,125,703	7,270,207											7,270,207	10,244,466	6,887,032	1.49
2003	4,134,704												4,134,704	9,678,547	8,805,562	1.10
													93,534,624	105,304,096	56,588,628	1.86

Sample Workers' Compensation Self-Insurance Fund: Chain-Ladder Method

AY	Development Factors											
	@12	@24	@36	@48	@60	@72	@84	@96	@108	@120	@132	@144
1992		2.216	1.241	1.085	1.033	1.016	1.012	0.998	1.008	1.007	0.997	1.012
1993		2.279	1.310	1.125	1.030	1.075	1.038	1.025	1.035	0.973	1.013	
1994		2.134	1.254	1.035	1.036	1.028	1.014	0.985	0.999	1.005		
1995		2.266	1.312	1.114	1.058	1.018	1.006	1.014	0.995			
1996		2.152	1.255	1.081	1.082	1.035	1.015	1.017				
1997		2.108	1.180	1.063	1.053	1.018	0.999					
1998		2.226	1.199	1.081	1.012	1.032						
1999		1.967	1.226	1.101	1.006							
2000		2.129	1.213	1.136								
2001		2.017	1.224									
2002		2.326										
Simple Average		2.165	1.241	1.091	1.039	1.032	1.014	1.008	1.009	0.995	1.005	1.012
Weighted Avg		2.139	1.231	1.092	1.038	1.030	1.011	1.010	1.006	0.993	1.009	1.012
Median		2.152	1.233	1.085	1.034	1.028	1.013	1.014	1.004	1.005	1.005	1.012
Selected		2.139	1.231	1.092	1.038	1.030	1.011	1.010	1.006	1.005	1.009	1.012

AY	Paid Losses Developed to 144 Months												Paid	Incurred	Developed	PPrem	
	@12	@24	@36	@48	@60	@72	@84	@96	@108	@120	@132	@144					
1992	420,999	933,061	1,157,572	1,255,545	1,296,464	1,317,376	1,332,775	1,330,390	1,341,499	1,350,247	1,345,950	1,362,100	1,362,100	1,363,271	1,362,100	1.81	
1993	1,086,467	2,476,130	3,244,912	3,651,969	3,763,241	4,044,012	4,196,661	4,300,467	4,449,556	4,330,732	4,388,323	4,440,978	4,388,323	4,430,366	4,440,978	2.25	
1994	1,942,957	4,146,756	5,199,233	5,383,163	5,576,542	5,733,184	5,810,907	5,726,223	5,719,159	5,745,843	5,799,745	5,869,336	5,745,843	5,745,843	5,869,336	2.06	
1995	2,198,438	4,980,785	6,537,165	7,280,254	7,705,444	7,844,735	7,889,070	8,002,279	7,960,209	7,997,349	8,072,373	8,169,233	7,960,209	7,963,017	8,169,233	2.09	
1996	3,191,625	6,869,376	8,619,272	9,320,922	10,081,765	10,432,054	10,584,508	10,761,433	10,823,171	10,873,669	10,975,676	11,107,373	10,761,433	10,926,619	11,107,373	2.22	
1997	3,455,646	7,285,870	8,596,163	9,136,292	9,623,740	9,799,544	9,786,099	9,886,826	9,943,546	9,989,940	10,083,657	10,204,651	9,786,099	9,828,575	10,204,651	2.19	
1998	3,371,722	7,504,511	8,998,554	9,730,644	9,848,488	10,165,328	10,276,689	10,382,465	10,442,029	10,490,749	10,589,164	10,716,223	10,165,328	10,613,644	10,716,223	2.20	
1999	4,483,648	8,817,973	10,808,938	11,901,397	11,978,315	12,338,584	12,473,753	12,602,144	12,674,442	12,733,577	12,853,033	13,007,256	11,978,315	12,444,503	13,007,256	2.64	
2000	3,716,963	7,914,203	9,600,802	10,904,146	11,322,801	11,663,355	11,791,126	11,912,491	11,980,832	12,036,732	12,149,650	12,295,433	10,904,146	11,693,171	12,295,433	2.15	
2001	3,678,149	7,418,289	9,077,917	9,917,072	10,297,829	10,607,555	10,723,760	10,834,138	10,896,293	10,947,133	11,049,829	11,182,415	9,077,917	10,372,074	11,182,415	1.80	
2002	3,125,703	7,270,207	8,951,547	9,779,020	10,154,477	10,459,892	10,574,479	10,683,321	10,744,611	10,794,742	10,896,009	11,026,750	7,270,207	10,244,466	11,026,750	1.60	
2003	4,134,704	8,845,355	10,890,971	11,897,723	12,354,526	12,726,110	12,865,524	12,997,947	13,072,516	13,133,509	13,256,716	13,415,783	4,134,704	9,678,547	13,415,783	1.52	
													Sum 1992-2000	73,051,796	75,009,009	77,172,583	2.23
													Sum 2001-2003	20,482,828	30,295,087	35,624,948	1.63
													Total	93,534,624	105,304,096	112,797,531	1.99

Notes:

- 1) Losses @144 are not ultimate.
- 2) Deterministic development. Even if developed amounts be unbiased, their variances are unknown.

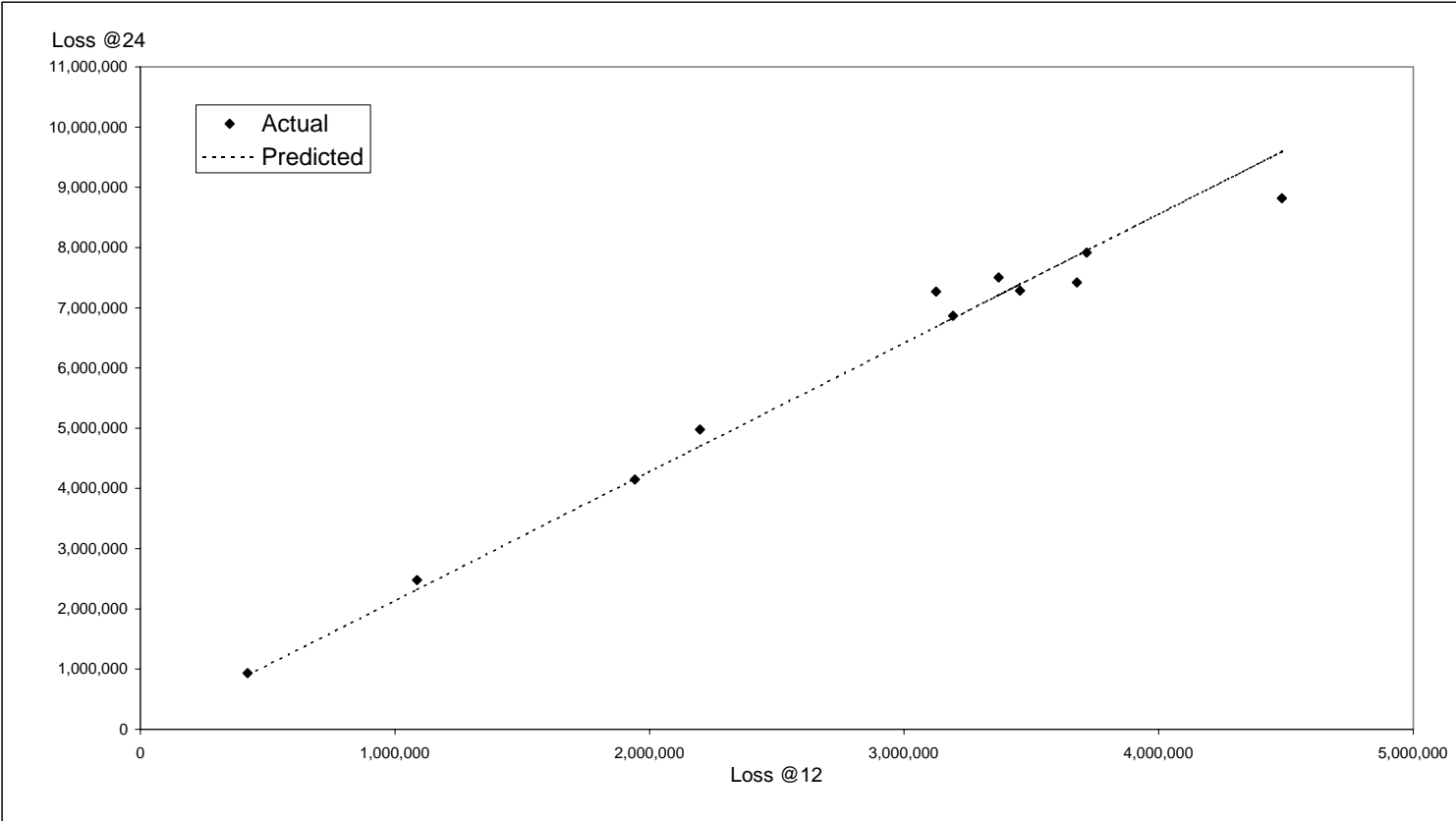
IBNR 7,493,435

Sample Workers' Compensation Self-Insurance Fund: CL Regression

AY	@12	@24
1992	420,999	933,061
1993	1,086,467	2,476,130
1994	1,942,957	4,146,756
1995	2,198,438	4,980,785
1996	3,191,625	6,869,376
1997	3,455,646	7,285,870
1998	3,371,722	7,504,511
1999	4,483,648	8,817,973
2000	3,716,963	7,914,203
2001	3,678,149	7,418,289
2002	3,125,703	7,270,207
2003	4,134,704	

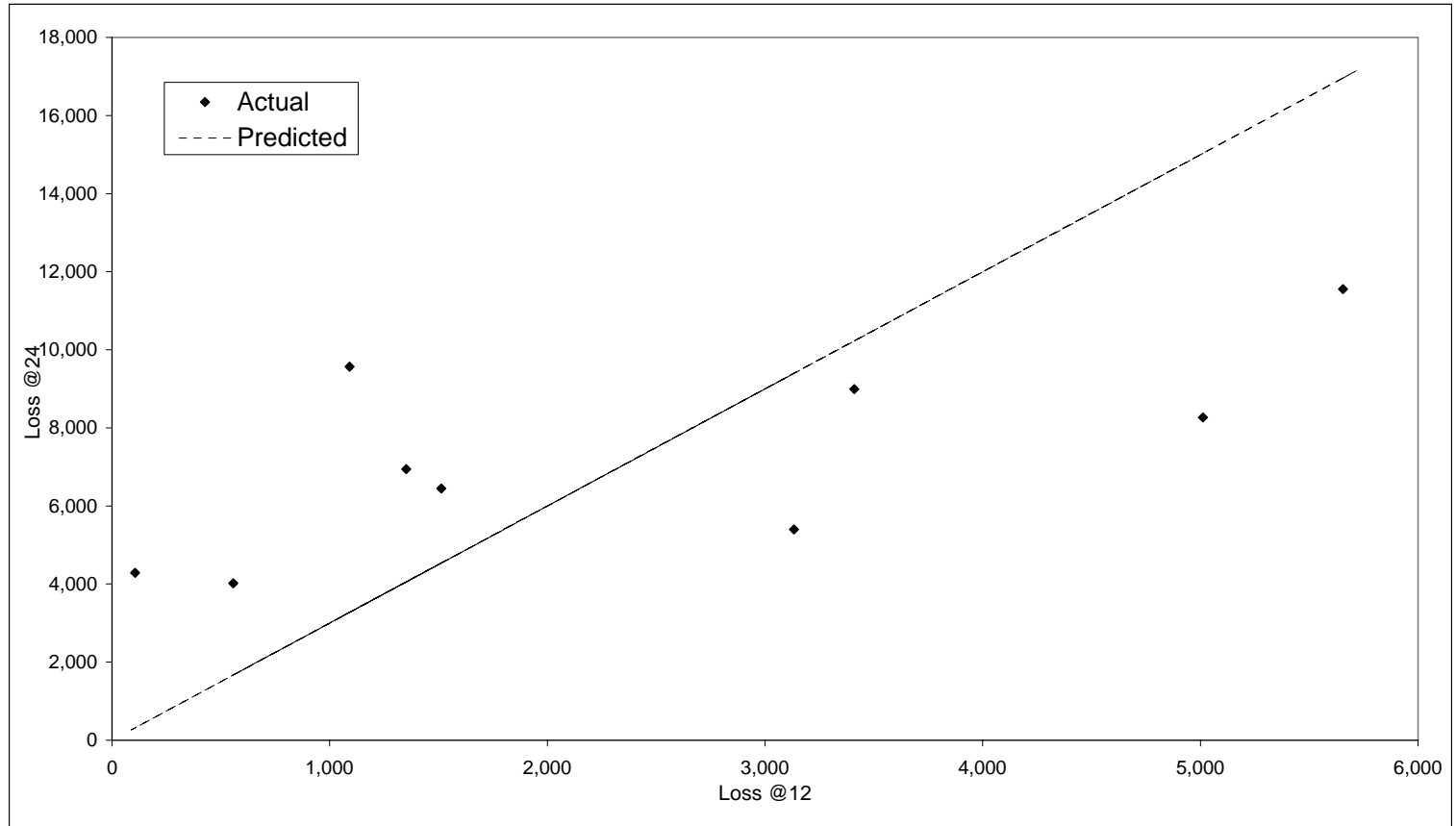
MSum 30,672,317 65,617,161

Dev Fac 2.139



Volatile (Mack Example) Data and Regression toward the Mean

AY	@12	@24
1981	5,012	8,269
1982	106	4,285
1983	3,410	8,992
1984	5,655	11,555
1985	1,092	9,565
1986	1,513	6,445
1987	557	4,020
1988	1,351	6,947
1989	3,133	5,395
1990	2,063	
1991		
1992		
MSum	21,829	65,473
Dev Fac		2.999



Sample Workers' Compensation Self-Insurance Fund: Additive Method

AY	Incremental Paid Losses as of 12/31/2003												Payroll (00)
	@12	@24	@36	@48	@60	@72	@84	@96	@108	@120	@132	@144	
1992	420,999	512,062	224,511	97,973	40,919	20,912	15,399	-2,385	11,109	8,748	-4,297	16,150	753,557
1993	1,086,467	1,389,663	768,782	407,057	111,272	280,771	152,649	103,806	149,089	-118,824	57,591		1,975,738
1994	1,942,957	2,203,799	1,052,477	183,930	193,379	156,642	77,723	-84,684	-7,064	26,684			2,854,794
1995	2,198,438	2,782,347	1,556,380	743,089	425,190	139,291	44,335	113,209	-42,070				3,908,004
1996	3,191,625	3,677,751	1,749,896	701,650	760,843	350,289	152,454	176,925					5,002,350
1997	3,455,646	3,830,224	1,310,293	540,129	487,448	175,804	-13,445						4,664,362
1998	3,371,722	4,132,789	1,494,043	732,090	117,844	316,840							4,863,634
1999	4,483,648	4,334,325	1,990,965	1,092,459	76,918								4,929,005
2000	3,716,963	4,197,240	1,686,599	1,303,344									5,716,521
2001	3,678,149	3,740,140	1,659,628										6,228,069
2002	3,125,703	4,144,504											6,887,032
2003	4,134,704												8,805,562
PPrem	0.62	0.73	0.33	0.17	0.08	0.06	0.02	0.02	0.01	-0.01	0.02	0.02	2.06

AY	Residuals												Average
	@12	@24	@36	@48	@60	@72	@84	@96	@108	@120	@132	@144	
1992	-42,505	-39,031	-24,124	-28,136	-16,703	-24,276	-1,479	-18,339	2,292	20,002	-19,011	0	-15,943
1993	-128,787	-55,239	116,891	76,415	-39,806	162,292	108,397	61,976	125,972	-89,319	19,011		32,528
1994	187,006	116,023	110,543	-293,823	-24,917	-14,551	13,782	-145,125	-40,467	69,317			-2,221
1995	-205,331	-75,665	266,941	89,080	126,359	-95,060	-43,196	30,470	-87,796				645
1996	114,736	19,419	99,379	-135,499	378,331	50,314	40,412	71,017					79,764
1997	586,650	419,070	-228,705	-240,457	130,781	-103,903	-117,916						63,646
1998	380,156	575,903	-110,704	-81,844	-254,061	25,183							89,105
1999	1,451,873	729,631	364,649	267,585	-299,985								502,751
2000	200,796	16,618	-199,557	346,678									91,134
2001	-152,665	-814,589	-395,312										-454,189
2002	-1,110,432	-892,139											-1,001,286
2003	-1,281,497												-1,281,497
Sum	0	0	0	0	0	0	0	0	0	0	0	0	0

AY	Squared Residuals / Payroll											
	@12	@24	@36	@48	@60	@72	@84	@96	@108	@120	@132	@144
1992	2,398	2,022	772	1,050	370	782	3	446	7	531	480	0
1993	8,395	1,544	6,916	2,955	802	13,331	5,947	1,944	8,032	4,038	183	
1994	12,250	4,715	4,280	30,241	217	74	67	7,377	574	1,683		
1995	10,788	1,465	18,234	2,031	4,086	2,312	477	238	1,972			
1996	2,632	75	1,974	3,670	28,613	506	326	1,008				
1997	73,785	37,651	11,214	12,396	3,667	2,315	2,981					
1998	29,714	68,193	2,520	1,377	13,271	130						
1999	427,659	108,006	26,977	14,527	18,257							
2000	7,053	48	6,966	21,024								
2001	3,742	106,543	25,092									
2002	179,041	115,567										
2003	186,500											
Sum	943,956	445,830	104,945	89,272	69,284	19,451	9,801	11,014	10,585	6,252	663	0
df	11	10	9	8	7	6	5	4	3	2	1	0
σ²	85,814	44,583	11,661	11,159	9,898	3,242	1,960	2,753	3,528	3,126	663	#DIV/0!
Select	85,814	44,583	10,979	10,979	10,979	2,751	2,751	2,751	2,751	2,751	2,751	2,751

AY	Standardized Residuals											
	@12	@24	@36	@48	@60	@72	@84	@96	@108	@120	@132	@144
1992	-0.17	-0.21	-0.26	-0.31	-0.19	-0.49	-0.04	-0.40	0.04	0.41	-0.85	#DIV/0!
1993	-0.31	-0.19	0.77	0.51	-0.28	2.03	1.74	0.84	1.51	-1.14	0.53	
1994	0.38	0.33	0.61	-1.65	-0.15	-0.15	0.18	-1.64	-0.40	0.73		
1995	-0.35	-0.18	1.25	0.43	0.64	-0.84	-0.49	0.29	-0.75			
1996	0.18	0.04	0.41	-0.57	1.70	0.40	0.41	0.61				
1997	0.93	0.92	-0.98	-1.05	0.61	-0.84	-1.23					
1998	0.59	1.24	-0.46	-0.35	-1.16	0.20						
1999	2.23	1.56	1.52	1.14	-1.36							
2000	0.29	0.03	-0.77	1.37								
2001	-0.21	-1.55	-1.47									
2002	-1.44	-1.61										
2003	-1.47											

Sample Workers' Compensation Self-Insurance Fund: Diagnosis

Standardized Residuals of Linear Model												
AY	@12	@24	@36	@48	@60	@72	@84	@96	@108	@120	@132	@144
1992	-0.40	-0.47	-0.41	-0.35	-0.21	-0.61	-0.04	-0.46	0.06	0.50	-0.48	0.00
1993	-0.70	-0.59	0.72	0.59	-0.31	2.50	1.67	0.96	1.94	-1.38	0.29	
1994	0.02	-0.08	0.49	-1.89	-0.16	-0.19	0.18	-1.86	-0.52	0.89		
1995	-0.88	-0.73	1.21	0.49	0.69	-1.04	-0.47	0.33	-0.96			
1996	-0.34	-0.55	0.19	-0.66	1.84	0.49	0.39	0.69				
1997	0.53	0.47	-1.43	-1.21	0.66	-1.04	-1.18					
1998	0.13	0.82	-0.83	-0.40	-1.25	0.25						
1999	2.00	1.18	1.50	1.31	-1.47							
2000	-0.25	-0.60	-1.21	1.57								
2001	0.67	0.00	0.10									
2002	-0.69	0.02										
2003	-0.60											

Standardized Residuals of Additive Model												
AY	@12	@24	@36	@48	@60	@72	@84	@96	@108	@120	@132	@144
1992	-0.17	-0.21	-0.26	-0.31	-0.19	-0.49	-0.04	-0.40	0.04	0.41	-0.85	#DIV/0!
1993	-0.31	-0.19	0.77	0.51	-0.28	2.03	1.74	0.84	1.51	-1.14	0.53	
1994	0.38	0.33	0.61	-1.65	-0.15	-0.15	0.18	-1.64	-0.40	0.73		
1995	-0.35	-0.18	1.25	0.43	0.64	-0.84	-0.49	0.29	-0.75			
1996	0.18	0.04	0.41	-0.57	1.70	0.40	0.41	0.61				
1997	0.93	0.92	-0.98	-1.05	0.61	-0.84	-1.23					
1998	0.59	1.24	-0.46	-0.35	-1.16	0.20						
1999	2.23	1.56	1.52	1.14	-1.36							
2000	0.29	0.03	-0.77	1.37								
2001	-0.21	-1.55	-1.47									
2002	-1.44	-1.61										
2003	-1.47											

Sample Workers' Compensation Self-Insurance Fund: Summary of Predictions

Incremental Expected Unpaid Losses as of 12/31/2003

AY	@12	@24	@36	@48	@60	@72	@84	@96	@108	@120	@132	@144	Paid	Incurred	E[Unpaid]	Std[Unpd]	IBNR	quasi-Ult (@144)	Pure Prem
1992													1,362,100	1,363,271	0	0	-1,171	1,362,100	1.81
1993												42,343	4,388,323	4,430,366	42,343	123,331	300	4,430,666	2.24
1994											55,745	61,183	5,745,843	5,745,843	116,928	203,647	116,928	5,862,771	2.05
1995												83,755	7,960,209	7,963,017	101,704	292,760	98,896	8,061,913	2.06
1996												107,209	10,761,433	10,926,619	188,715	384,362	232,529	10,950,148	2.19
1997												99,965	9,786,099	9,828,575	274,716	379,776	232,240	10,060,815	2.16
1998												104,236	10,165,328	10,613,644	395,387	409,354	-52,929	10,560,715	2.17
1999												105,637	11,978,315	12,444,503	696,278	428,821	230,090	12,674,593	2.57
2000												122,515	10,904,146	11,693,171	1,244,646	540,211	455,621	12,148,792	2.13
2001												102,675	9,077,917	10,372,074	1,844,845	561,362	550,688	10,922,762	1.75
2002												113,539	7,270,207	10,244,466	3,851,000	653,277	876,741	11,121,207	1.61
2003												145,168	4,134,704	9,678,547	10,212,092	969,198	4,668,249	14,346,796	1.63
Total													93,534,624	105,304,096	18,968,652	3,540,671	7,199,180	112,503,276	1.99

Chain-Ladder Amounts	19,262,907	#N/A	7,493,435	112,797,531	1.99
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Method of Moments	μ	σ	σ^2
Lognormal Parameters	16.741	0.185	0.034

AY	E[PV[Upd]]	Std[PV[Upd]]
1992	0	0
1993	41,621	121,228
1994	112,900	195,456
1995	91,959	274,097
1996	171,262	350,809
1997	251,359	338,722
1998	360,311	356,695
1999	643,342	365,431
2000	1,150,565	462,302
2001	1,719,719	486,119
2002	3,617,444	560,735
2003	9,666,883	856,902
Total	17,827,364	2,965,580

Sample Workers' Compensation Self-Insurance Fund: Reserving Quantiles

