

**Incurred - Constrained Prediction - Panning Model**

Acc. Year $i$	Development Year $k$											
	0	1	2	3	4	5	6	7	8	9	10	11
0	1981	-74	-10	-16	-8	-4	-9	-16	-4	-5	-6	-8
1	2141	-62	-16	-13	-7	-28	-9	-20	-8	-4	-10	-11
2	2128	-77	-46	-13	-28	-32	-12	-3	-8	-6	-11	-1
3	2320	-119	-52	-15	-33	-11	-17	-12	-8	-6	-12	-12
4	2385	-48	-21	-21	-50	-26	-7	-15	-7	-6	-13	-12
5	2364	-86	-36	-23	-11	-26	-6	-24	-7	-6	-13	-12
6	2783	-127	-42	-45	-39	-8	-15	-28	-9	-7	-15	-14
7	2437	-82	-67	-24	-31	-48	-13	-25	-8	-6	-13	-12
8	1778	-68	-41	-22	-40	-35	-9	-18	-6	-5	-9	-9
9	1672	-54	-27	-22	-38	-33	-9	-17	-5	-4	-9	-8
10	1692	-65	-49	-23	-38	-33	-9	-17	-5	-4	-9	-8
11	1615	-73	-47	-22	-37	-32	-9	-16	-5	-4	-9	-8

**Comparison**

On the basis of the above stated results, we can now compare the gaps between paid and incurred ultimate losses resulting from unconstrained and constrained prediction. The following table contains the predicted paid and incurred ultimate losses for every accident year and the respective differences for unconstrained and constrained prediction. For the sake of clarity, all entries in the following tables are rounded to integers.

**Panning Model**

Accident Year $i$	Unconstrained Predictors			Constrained Predictors		
	Paid	Incurred	Difference	Paid	Incurred	Difference
0	1704	1821	117	1704	1821	117
1	1826	1955	129	1827	1953	126
2	1748	1886	138	1750	1881	131
3	1886	2029	143	1890	2023	134
4	1970	2164	194	1975	2159	184
5	1935	2130	194	1939	2114	175
6	2258	2455	197	2262	2435	173
7	2022	2154	132	2028	2108	81
8	1457	1569	113	1458	1516	58
9	1387	1502	115	1391	1445	54
10	1384	1509	125	1385	1430	45
11	1367	1443	77	1385	1355	-30
<b>Sums</b>			1674			1246

These results are displayed in the following graph. For all accident years the inclusion of a constraint leads to a shrinking gap between paid and incurred ultimate losses.