

Table VI: Timings for the methods shown in Figure 6.

	$d = -4$	$d = -3$	$d = -2$	$d = -1$	$d = 0$
Panjer	0.275	11.950	NA	NA	NA
MonteCarlo	1.106	2.099	5.625	10.329	11.837
Moment	0.016	0.070	0.210	0.355	0.431
Chernoff	0.508	2.057	5.659	10.853	14.992
Cantelli	0.003	0.006	0.019	0.032	0.041

non-random case with  $\theta = 0$  (Table IV), with the exception of the Panjer method, which takes longer because it scales linearly with the upper limit on the horizontal axis.

#### 6.4 Capping the loss from a single event

Now consider the case where the single-event loss is capped at \$5 m. The implementation of this cap is straightforward, and we describe it in the Appendix. The results are given in Figure 6 and Table VI. For the timings, the main effect of the cap is on the Panjer method, because the cap reduces the probability in the righthand tail of the loss distribution, and allows us to use a smaller upper limit on the horizontal axis. But the Panjer approximation, where it can be computed, still takes a thousand times longer to compute than the Moment bound.

#### 6.5 Ten-year losses

Finally, consider expanding the time period from  $t = 1$  to  $t = 10$  years; the results are given in Figure 7 and Table VII. The timings of the Markov,