

# 1 Computational time of EVIboost

We make additional comparison on computational time of the EVIboost and TIR model. Since EVIboost is an ensemble of regression trees, it is supposed to take more time to fit a given data set than the TIR model, as TIR only needs to solve a convex-optimization problem. However, simulation results have shown that the computational time of EVIboost is quite acceptable for real applications.

In the simulation, we fix the tail fraction  $q$  at 0.10. Table 1 presents the total time of fitting EVIboost and TIR for 100 replications. The model parameters of EVIboost are  $L = 2, M = 1000$ . We implement several different sample sizes  $n$  and forms of the extreme value index  $\gamma(\mathbf{x})$  for experiments.

Table 1: Computational time of EVIboost and TIR (seconds).

cases	sample size	EVIboost	TIR
1	1000	45.396	1.953
	2000	69.364	2.950
	5000	137.986	5.163
2	1000	45.456	2.046
	2000	69.320	3.250
	5000	137.634	5.587
3	1000	45.303	1.922
	2000	69.120	3.063
	5000	136.509	5.350
4	1000	45.410	1.859
	2000	67.428	2.656
	5000	136.047	5.122
5	1000	45.361	1.875
	2000	67.222	2.672
	5000	136.066	5.016