

Table 1: Comparative analysis for the impact of cross-fitting on TMLEs and one-step estimators in conjunction with the use of random forests. RF refers to random forest with 200 trees and a minimum node size of 1, and CF denotes random forest with cross fitting using 5 folds.

	TMLEs						One-step estimators					
	$\psi_{dnorm}(\hat{Q}^*)$		$\psi_{densratio}(\hat{Q}^*)$		$\psi_{bayes}(\hat{Q}^*)$		$\psi_{dnorm}^+(\hat{Q})$		$\psi_{densratio}^+(\hat{Q})$		$\psi_{bayes}^+(\hat{Q})$	
	RF	CF	RF	CF	RF	CF	RF	CF	RF	CF	RF	CF
n=500												
Bias	-0.250	-0.025	-0.282	-0.094	-0.288	-0.060	-0.233	-0.009	-0.088	-0.052	-0.252	-0.036
SD	0.394	0.802	0.352	0.724	0.350	0.787	0.409	0.842	0.549	0.823	0.382	0.847
MSE	0.218	0.643	0.203	0.533	0.206	0.623	0.221	0.709	0.308	0.680	0.209	0.718
CI coverage	58.6%	68.5%	93.2%	75.3%	59.6%	71%	59.7%	67%	86.8%	70.1%	60.5%	68.5%
CI width	0.778	1.615	1.622	1.714	0.788	1.696	0.778	1.615	1.628	1.714	0.789	1.697
n=1000												
Bias	-0.249	-0.034	-0.273	-0.092	-0.278	-0.059	-0.233	-0.023	-0.102	-0.047	-0.247	-0.042
SD	0.283	0.559	0.259	0.523	0.257	0.556	0.298	0.582	0.379	0.585	0.283	0.583
MSE	0.142	0.313	0.141	0.282	0.143	0.312	0.143	0.339	0.154	0.344	0.141	0.342
CI coverage	49.1%	67.9%	90.2%	74.2%	45.6%	69.3%	48.6%	66.3%	87.8%	69.5%	48.8%	67.9%
CI width	0.548	1.114	1.199	1.198	0.554	1.155	0.548	1.115	1.200	1.198	0.554	1.154
n=2000												
Bias	-0.246	-0.030	-0.267	-0.071	-0.270	-0.044	-0.227	-0.024	-0.109	-0.033	-0.237	-0.032
SD	0.214	0.417	0.199	0.394	0.199	0.412	0.226	0.427	0.273	0.442	0.216	0.427
MSE	0.106	0.175	0.111	0.160	0.112	0.171	0.102	0.183	0.087	0.196	0.103	0.183
CI coverage	35.8%	65.3%	73.9%	75%	32.2%	67.5%	39.3%	65.1%	81.3%	69.3%	37%	66.1%
CI width	0.387	0.781	0.778	0.887	0.391	0.802	0.387	0.780	0.778	0.887	0.391	0.801