

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							
	<i>Univariate Binary</i>				<i>Univariate Continuous</i>				<i>Univariate Binary</i>				<i>Univariate Continuous</i>			
	$\psi_1(\hat{Q}^*)$		$\psi_{2a}(\hat{Q}^*)$		$\psi_{2b}(\hat{Q}^*)$		$\psi_1^+(\hat{Q})$		$\psi_{2a}^+(\hat{Q})$		$\psi_{2b}^+(\hat{Q})$					
	RF	CF	RF	CF	RF	CF	RF	CF	RF	CF	RF	CF	RF	CF	RF	CF
n=500																
Bias	-0.175	-0.021	-0.368	0.058	-0.518	0.020	-0.105	-0.027	-0.088	0.068	-0.524	0.018				
SD	0.167	0.140	0.379	0.334	0.381	0.288	0.052	0.130	0.429	0.322	0.384	0.289				
MSE	0.059	0.020	0.279	0.115	0.413	0.083	0.014	0.018	0.192	0.108	0.421	0.084				
CI coverage	18.1%	83.9%	42.4%	87%	33.9%	88.4%	19.6%	86.6%	53.9%	88.2%	33%	87.7%				
CI width	0.133	0.397	0.657	0.995	0.743	0.880	0.122	0.396	0.657	0.992	0.744	0.879				
n=1000																
Bias	-0.177	-0.016	-0.380	0.055	-0.520	0.013	-0.102	-0.020	-0.106	0.059	-0.525	0.010				
SD	0.117	0.096	0.259	0.214	0.274	0.221	0.040	0.092	0.288	0.218	0.277	0.223				
MSE	0.045	0.010	0.211	0.049	0.346	0.049	0.012	0.009	0.094	0.051	0.352	0.050				
CI coverage	11.7%	89.5%	23.2%	89%	17.4%	87.6%	12.6%	90.6%	49.3%	87.9%	17.5%	88.2%				
CI width	0.105	0.320	0.412	0.700	0.535	0.666	0.101	0.320	0.414	0.699	0.535	0.666				
n=2000																
Bias	-0.175	-0.010	-0.372	0.065	-0.498	0.025	-0.098	-0.012	-0.120	0.067	-0.504	0.021				
SD	0.083	0.074	0.179	0.149	0.188	0.166	0.034	0.073	0.196	0.151	0.192	0.166				
MSE	0.038	0.006	0.170	0.026	0.283	0.028	0.011	0.005	0.053	0.027	0.291	0.028				
CI coverage	5.7%	90.9%	9.9%	89.7%	4.9%	85.9%	8.5%	91.1%	50.9%	89.4%	5.2%	86.3%				
CI width	0.084	0.250	0.294	0.526	0.384	0.506	0.082	0.250	0.295	0.525	0.385	0.505				