

Table 1: Comparison between TMLE estimators and one-step EIF estimator under positivity assumption violation when the outcome is in the district of the treatment.

	$\psi_{dnorm}^+(\hat{Q})$	$\psi_{dnorm}(\hat{Q}^*)$	$\psi_{densratio}^+(\hat{Q})$	$\psi_{densratio}(\hat{Q}^*)$	$\psi_{bayes}^+(\hat{Q})$	$\psi_{bayes}(\hat{Q}^*)$
n=500						
Bias	-0.030	0.002	-0.036	0.003	-0.038	-0.044
SD	2.026	2.740	2.044	2.733	2.068	3.434
MSE	4.100	7.501	4.177	7.462	4.272	11.782
CI coverage	79.3%	89.8%	78.2%	90%	86.7%	92.2%
CI width	5.108	6.947	5.102	6.941	6.319	8.909
n=1000						
Bias	-0.029	-0.031	-0.038	-0.033	-0.023	-0.027
SD	1.413	1.499	1.421	1.497	1.443	2.321
MSE	1.994	2.245	2.018	2.241	2.080	5.380
CI coverage	86.8%	91.3%	87.1%	91.8%	91.8%	93.6%
CI width	4.373	4.986	4.367	4.980	5.214	6.387
n=2000						
Bias	-0.039	-0.037	-0.043	-0.038	-0.046	-0.054
SD	1.063	1.109	1.070	1.109	1.086	1.477
MSE	1.131	1.229	1.146	1.231	1.179	2.183
CI coverage	90.6%	94.3%	90.5%	94.3%	94.5%	95.6%
CI width	3.618	3.917	3.614	3.913	4.231	4.802