

The correct model specification is

$$m_0 = \beta_{01}u$$

$$m_1 = \beta_{11} + \beta_{12}u.$$

The true values of the MTR coefficients are $\beta_{01} = 6$, $\beta_{11} = 7$, and $\beta_{12} = 8$. The instrument Z is equal to either 1 or 2, and the true propensity scores are

$$\mathbb{P}[D = 1 \mid Z = 1] = \phi_1 = 0.4$$

$$\mathbb{P}[D = 1 \mid Z = 2] = \phi_2 = 0.6.$$

The true ATU is 8.48.

The model is specified correctly for the estimator. A nonparametric probability model is estimated.

To estimate the coverage probabilities for the confidence intervals constructed in each simulation, I count the number of Monte Carlo simulations for which the coefficient of interest falls within the confidence interval, and then divide by the total number of Monte Carlo simulations (1000 for each sample size).

	$N = 100$	$N = 1000$	$N = 2500$
ATU: avg. estimate	5.77	8.69	8.58
ATU: avg. bootstrap s.e. estimate	126.44	2.08	1.03
ATU: population s.d.	131.71	1.62	0.93
Propensity: avg. coef. estimate, ϕ_1	0.40	0.40	0.40
Propensity: avg. coef. estimate, ϕ_2	0.59	0.60	0.60
Propensity: avg. bootstrap s.e., ϕ_1	0.07	0.02	0.01
Propensity: avg. bootstrap s.e., ϕ_2	0.07	0.02	0.01
Propensity: population s.d., ϕ_1	0.07	0.02	0.01
Propensity: population s.d., ϕ_2	0.07	0.02	0.01
MTR: avg. coef. estimate, β_{01}	6.05	6.00	6.00
MTR: avg. coef. estimate, β_{11}	8.70	6.89	6.95
MTR: avg. coef. estimate, β_{12}	2.51	8.42	8.20
MTR: avg. bootstrap s.e., β_{01}	0.24	0.07	0.05
MTR: avg. bootstrap s.e., β_{11}	61.36	1.05	0.53
MTR: avg. bootstrap s.e., β_{12}	252.90	4.17	2.07
MTR: population s.d., β_{01}	0.24	0.07	0.04
MTR: population s.d., β_{11}	76.33	0.81	0.47
MTR: population s.d., β_{12}	263.42	3.24	1.87
ATU: 90% CII (quantile method) coverage prob.	0.83	0.76	0.77
ATU: 95% CII (quantile method) coverage prob.	0.89	0.84	0.85

ATU: 90% CI2 (percentile method) coverage prob.	0.92	0.84	0.81
ATU: 95% CI2 (percentile method) coverage prob.	0.93	0.88	0.87
Propensity: 90% CI1 coverage prob., ϕ_1	0.73	0.75	0.75
Propensity: 90% CI1 coverage prob., ϕ_2	0.75	0.75	0.75
Propensity: 95% CI1 coverage prob., ϕ_1	0.81	0.83	0.83
Propensity: 95% CI1 coverage prob., ϕ_2	0.83	0.83	0.83
Propensity: 90% CI2 coverage prob., ϕ_1	0.73	0.75	0.75
Propensity: 90% CI2 coverage prob., ϕ_2	0.75	0.75	0.75
Propensity: 95% CI2 coverage prob., ϕ_1	0.81	0.83	0.83
Propensity: 95% CI2 coverage prob., ϕ_2	0.83	0.83	0.83
MTR: 90% CI1 coverage prob., β_{01}	0.75	0.75	0.74
MTR: 90% CI1 coverage prob., β_{11}	0.83	0.76	0.77
MTR: 90% CI1 coverage prob., β_{12}	0.83	0.76	0.77
MTR: 95% CI1 coverage prob., β_{01}	0.83	0.83	0.83
MTR: 95% CI1 coverage prob., β_{11}	0.89	0.84	0.85
MTR: 95% CI1 coverage prob., β_{12}	0.89	0.84	0.85
MTR: 90% CI2 coverage prob., β_{01}	0.76	0.76	0.77
MTR: 90% CI2 coverage prob., β_{11}	0.92	0.84	0.81
MTR: 90% CI2 coverage prob., β_{12}	0.92	0.84	0.81
MTR: 95% CI2 coverage prob., β_{01}	0.83	0.84	0.84
MTR: 95% CI2 coverage prob., β_{11}	0.93	0.88	0.88
MTR: 95% CI2 coverage prob., β_{12}	0.93	0.88	0.87
# bootstraps per simulation	1500.00	1500.00	1500.00
Avg. # bootstraps with collinearity issues	6.64	0.06	0.03