The correct model specification is

$$m_0(U) = \beta_{01}U$$
$$m_1(U) = \beta_{11} + \beta_{12}U,$$

where $U \sim \mathit{Unif}[0,1]$. Noise is added to the outcome variables to generate the observed outcomes,

$$Y_0 = m_0(U) + V_0$$
$$Y_1 = m_1(U) + V_1,$$

where $V_0 \sim N(0, 0.5^2)$, and $V_1 \sim N(0, 0.75^2)$. 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 = 2000
ATU: avg. estimate	15.811	8.651	8.489
ATU: avg. bootstrap s.e. estimate	117.467	1.958	1.198
ATU: population s.d.	77.540	1.701	1.168
Propensity: avg. coef. estimate, ϕ_1	0.402	0.400	0.399
Propensity: avg. coef. estimate, ϕ_2	0.598	0.601	0.601
Propensity: avg. bootstrap s.e., ϕ_1	0.069	0.022	0.015
Propensity: avg. bootstrap s.e., ϕ_2	0.069	0.022	0.015
Propensity: population s.d., ϕ_1	0.070	0.022	0.015
Propensity: population s.d., ϕ_2	0.071	0.022	0.016
MTR: avg. coef. estimate, β_{01}	6.029	6.003	6.004
MTR: avg. coef. estimate, β_{11}	3.493	6.912	6.998
MTR: avg. coef. estimate, β_{12}	22.615	8.342	8.013
MTR: avg. bootstrap s.e., β_{01}	0.316	0.098	0.069
MTR: avg. bootstrap s.e., β_{11}	57.153	0.972	0.596

MTR: avg. bootstrap s.e., β_{12}	234.942	3.899	2.385
MTR: population s.d., β_{01}	0.329	0.098	0.068
MTR: population s.d., β_{11}	37.033	0.843	0.586
MTR: population s.d., β_{12}	155.059	3.388	2.333
ATU: 90% CI1 (quantile method) coverage prob.	0.951	0.893	0.895
ATU: 95% CI1 (quantile method) coverage prob.	0.973	0.946	0.952
ATU: 90% CI2 (percentile method) coverage prob.	0.961	0.923	0.907
ATU: 95% CI2 (percentilemethod) coverage prob.	0.967	0.948	0.948
Propensity: 90% CI1 coverage prob., ϕ_1	0.894	0.904	0.900
Propensity: 90% CI1 coverage prob., ϕ_2	0.891	0.886	0.888
Propensity: 95% CI1 coverage prob., ϕ_1	0.941	0.944	0.953
Propensity: 95% CI1 coverage prob., ϕ_2	0.943	0.935	0.947
Propensity: 90% CI2 coverage prob., ϕ_1	0.891	0.904	0.903
Propensity: 90% CI2 coverage prob., ϕ_2	0.890	0.884	0.885
Propensity: 95% CI2 coverage prob., ϕ_1	0.934	0.943	0.951
Propensity: 95% CI2 coverage prob., ϕ_2	0.940	0.937	0.947
MTR: 90% CI1 coverage prob., β_{01}	0.872	0.901	0.898
MTR: 90% CI1 coverage prob., β_{11}	0.951	0.901	0.895
MTR: 90% CI1 coverage prob., β_{12}	0.951	0.890	0.892
MTR: 95% CI1 coverage prob., β_{01}	0.933	0.948	0.950
MTR: 95% CI1 coverage prob., β_{11}	0.973	0.946	0.950
MTR: 95% CI1 coverage prob., β_{12}	0.972	0.943	0.950
MTR: 90% CI2 coverage prob., β_{01}	0.882	0.904	0.905
MTR: 90% CI2 coverage prob., β_{11}	0.960	0.924	0.908
MTR: 90% CI2 coverage prob., β_{12}	0.961	0.923	0.910
MTR: 95% CI2 coverage prob., β_{01}	0.930	0.948	0.948
MTR: 95% CI2 coverage prob., β_{11}	0.968	0.949	0.952
MTR: 95% CI2 coverage prob., β_{12}	0.968	0.948	0.945
Bootstraps per simulation	1000.000	1000.000	1000.000
Avg. # bootstraps with collinearities	2.708	0.000	0.000