The correct model specification is

$$m_0(U, V_0) = \beta_{01}U + V_0$$
$$m_1(U, V_1) = \beta_{11} + \beta_{12}U + V_1,$$

where $U \sim \mathit{Unif}[0,1]$, $V_0 \sim N(U, 1.5)$, and $V_1 \sim N(-U, 1.5)$. The true values of the MTR coefficients are $\beta_{01} = 6$, $\beta_{11} = 7$, and $\beta_{12} = 8$. However, the specifications of V_0 and V_1 will make it impossible for the estimator to consistently estimate β_{01} and β_{12} (both estimates will converge towards a value of 7).

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 7.

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	9.036	7.272	7.108
ATU: avg. bootstrap s.e. estimate	104.935	2.568	1.156
ATU: population s.d.	70.172	1.670	1.148
Propensity: avg. coef. estimate, ϕ_1	0.401	0.401	0.400
Propensity: avg. coef. estimate, ϕ_2	0.600	0.600	0.599
Propensity: avg. bootstrap s.e., ϕ_1	0.069	0.022	0.016
Propensity: avg. bootstrap s.e., ϕ_2	0.069	0.022	0.015
Propensity: population s.d., ϕ_1	0.069	0.022	0.016
Propensity: population s.d., ϕ_2	0.071	0.022	0.016
MTR: avg. coef. estimate, β_{01}	7.047	6.998	7.006
MTR: avg. coef. estimate, β_{11}	6.091	6.864	6.949
MTR: avg. coef. estimate, β_{12}	11.041	7.537	7.216
MTR: avg. bootstrap s.e., β_{01}	0.365	0.112	0.079
MTR: avg. bootstrap s.e., β_{11}	51.537	1.271	0.574
MTR: avg. bootstrap s.e., β_{12}	209.883	5.121	2.301
MTR: population s.d., β_{01}	0.360	0.112	0.081

MTR: population s.d., β_{11}	34.832	0.828	0.567
MTR: population s.d., β_{12}	140.327	3.321	2.282
ATU: 90% CI1 (quantile method) coverage prob.	0.923	0.899	0.889
ATU: 95% CI1 (quantile method) coverage prob.	0.951	0.951	0.941
ATU: 90% CI2 (percentile method) coverage prob.	0.939	0.930	0.920
ATU: 95% CI2 (percentilemethod) coverage prob.	0.950	0.958	0.959
Propensity: 90% CI1 coverage prob., ϕ_1	0.893	0.902	0.887
Propensity: 90% CI1 coverage prob., ϕ_2	0.894	0.884	0.882
Propensity: 95% CI1 coverage prob., ϕ_1	0.941	0.951	0.940
Propensity: 95% CI1 coverage prob., ϕ_2	0.929	0.944	0.940
Propensity: 90% CI2 coverage prob., ϕ_1	0.893	0.904	0.888
Propensity: 90% CI2 coverage prob., ϕ_2	0.896	0.883	0.884
Propensity: 95% CI2 coverage prob., ϕ_1	0.940	0.951	0.941
Propensity: 95% CI2 coverage prob., ϕ_2	0.930	0.944	0.942
MTR: 90% CI1 coverage prob., β_{01}	0.073	0.000	0.000
MTR: 90% CI1 coverage prob., β_{11}	0.933	0.905	0.896
MTR: 90% CI1 coverage prob., β_{12}	0.914	0.879	0.855
MTR: 95% CI1 coverage prob., β_{01}	0.126	0.000	0.000
MTR: 95% CI1 coverage prob., β_{11}	0.957	0.956	0.946
MTR: 95% CI1 coverage prob., β_{12}	0.941	0.940	0.921
MTR: 90% CI2 coverage prob., β_{01}	0.126	0.080	0.066
MTR: 90% CI2 coverage prob., β_{11}	0.888	0.670	0.598
MTR: 90% CI2 coverage prob., β_{12}	0.982	0.974	0.964
MTR: 95% CI2 coverage prob., β_{01}	0.147	0.098	0.080
MTR: 95% CI2 coverage prob., β_{11}	0.900	0.767	0.684
MTR: 95% CI2 coverage prob., β_{12}	0.995	0.995	0.988
Bootstraps per simulation	1000.000	1000.000	1000.000
Avg. # bootstraps with collinearities	2.639	0.000	0.000