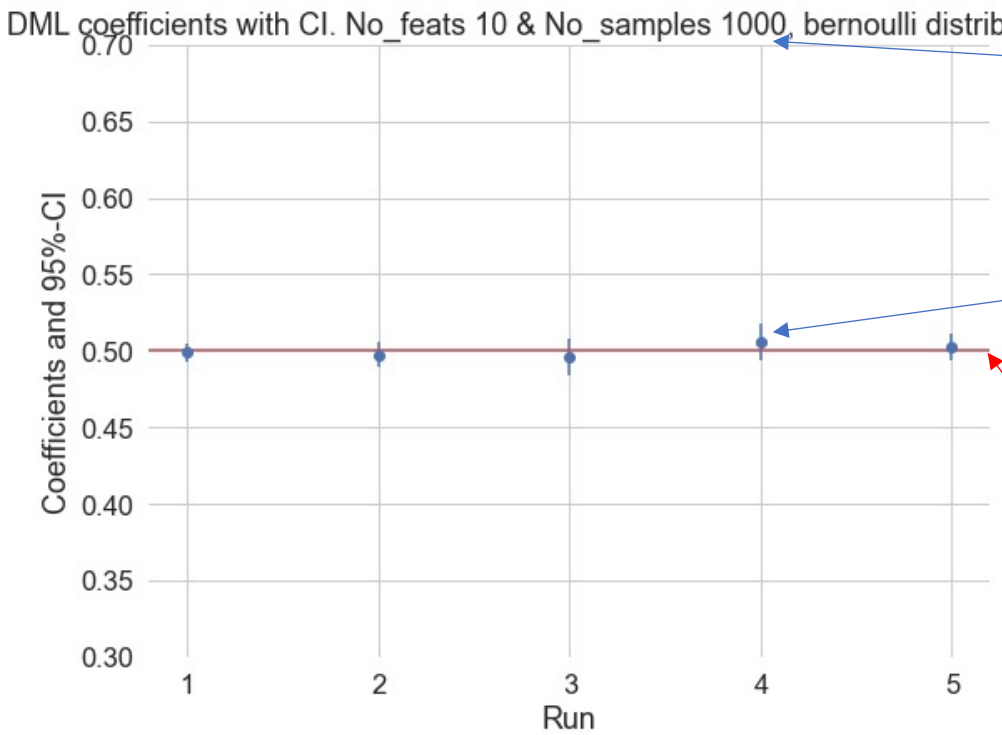
DML coefficient estimation



Number of features in dataset

Data distribution

Number of Samples in dataset

Estimate and CI of run

Actual value

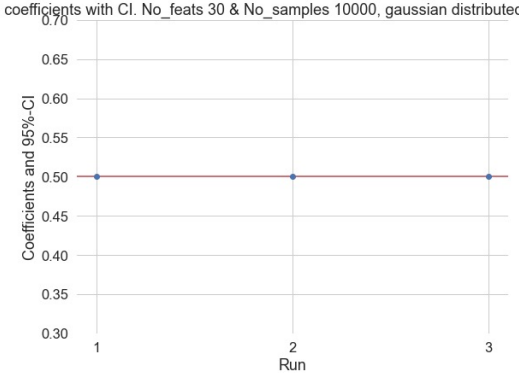
OLS	OLS_LB_95	OLS_LB_95	DML1	2.5 %	97.5 %
3.697	3.494	3.494	0.499	0.493	0.505
4.506	4.254	4.254	0.498	0.49	0.505
6.128	5.77	5.77	0.496	0.484	0.508
5.737	5.41	5.41	0.506	0.494	0.518
4.824	4.554	4.554	0.502	0.494	0.511

Table of Estimates and CI from each run including the OLS estimation

- Comparison of using Bernoulli/ Gaussian features to predict Continuous Y target.
- Noise = increasing the std of a normal continuous random variable centered around 0.

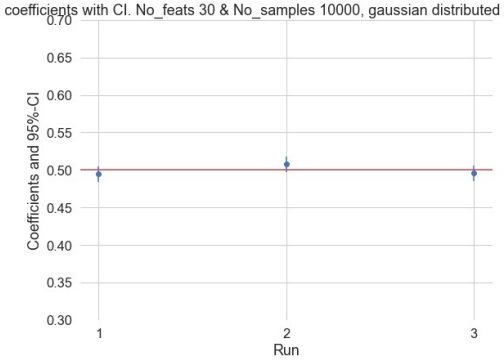
10,000 feats Gaussian

OLS coefficients with CI. No_feats 30 & No_samples 10000, gaussian distributed data, noise 0



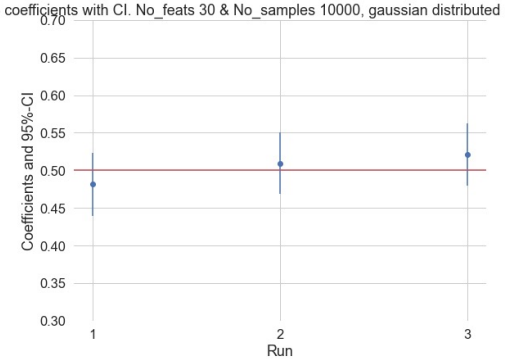
OLS	OLS_LB	OLS_UB
0.5	0.5	0.5
0.5	0.5	0.5
0.5	0.5	0.5

OLS coefficients with CI. No_feats 30 & No_samples 10000, gaussian distributed data, noise 0.5



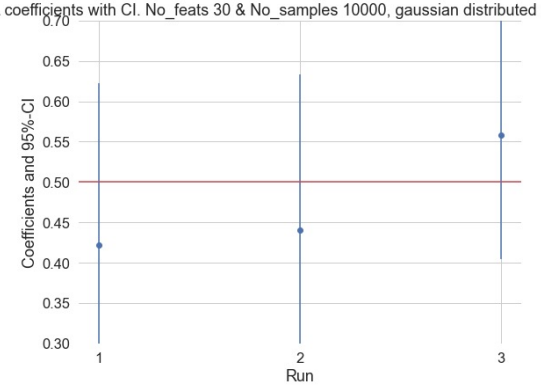
OLS	OLS_LB	OLS_UB
0.495	0.484	0.505
0.508	0.497	0.518
0.496	0.485	0.506

OLS coefficients with CI. No_feats 30 & No_samples 10000, gaussian distributed data, noise 2



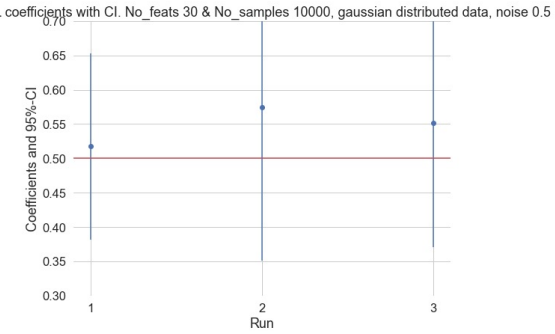
OLS	OLS_LB	OLS_UB
0.482	0.44	0.523
0.509	0.468	0.55
0.521	0.48	0.562

DML coefficients with CI. No_feats 30 & No_samples 10000, gaussian distributed data, noise 0



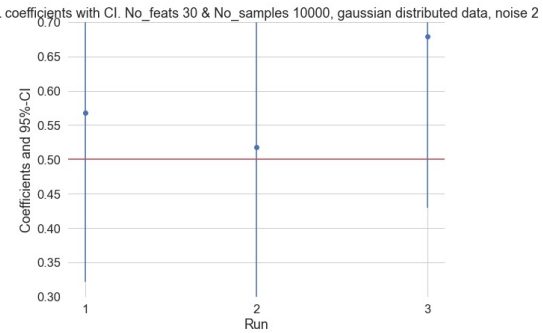
DML	DML_LB	DML_UB
0.422	0.222	0.622
0.44	0.247	0.633
0.558	0.405	0.712

DML coefficients with CI. No_feats 30 & No_samples 10000, gaussian distributed data, noise 0.5



DML	DML_LB	DML_UB
0.517	0.382	0.653
0.575	0.351	0.799
0.551	0.37	0.732

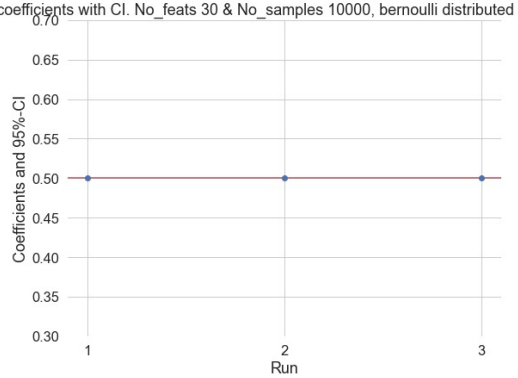
DML coefficients with CI. No_feats 30 & No_samples 10000, gaussian distributed data, noise 2



DML	DML_LB	DML_UB
0.567	0.321	0.814
0.518	0.268	0.768
0.679	0.43	0.928

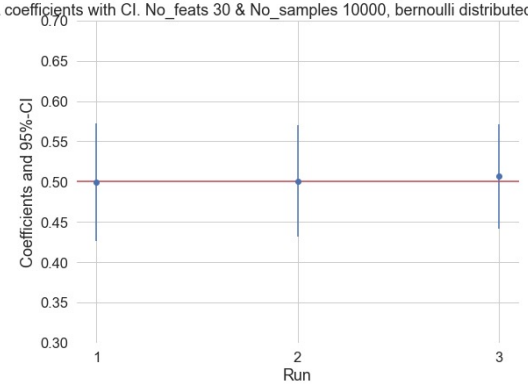
10,000 Bernoilli

OLS coefficients with CI. No_feats 30 & No_samples 10000, bernoulli distributed data, noise 0



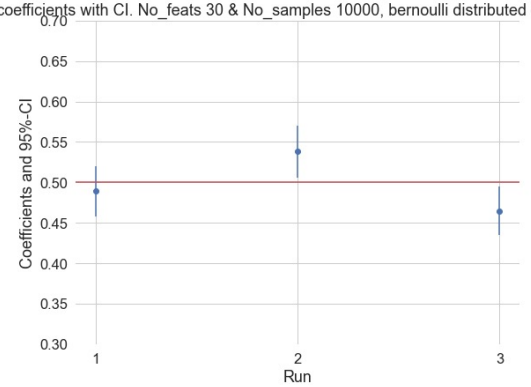
OLS	OLS_LB	OLS_UB
0.5	0.5	0.5
0.5	0.5	0.5
0.5	0.5	0.5

DML coefficients with CI. No_feats 30 & No_samples 10000, bernoulli distributed data, noise 0



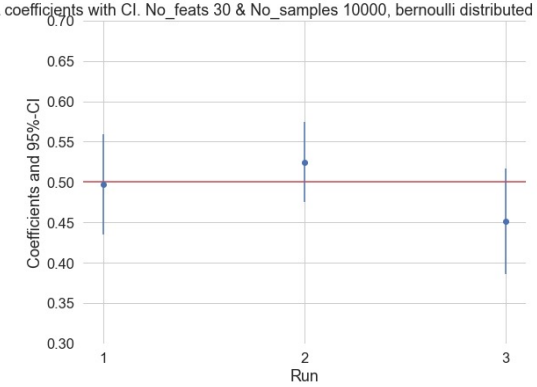
DML	DML_LB	DML_UB
0.499	0.426	0.572
0.501	0.432	0.57
0.506	0.441	0.571

OLS coefficients with CI. No_feats 30 & No_samples 10000, bernoulli distributed data, noise 0.5



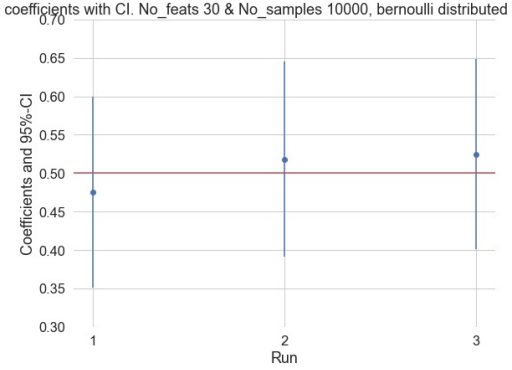
OLS	OLS_LB	OLS_UB
0.489	0.458	0.52
0.538	0.506	0.571
0.465	0.435	0.495

DML coefficients with CI. No_feats 30 & No_samples 10000, bernoulli distributed data, noise 0.5



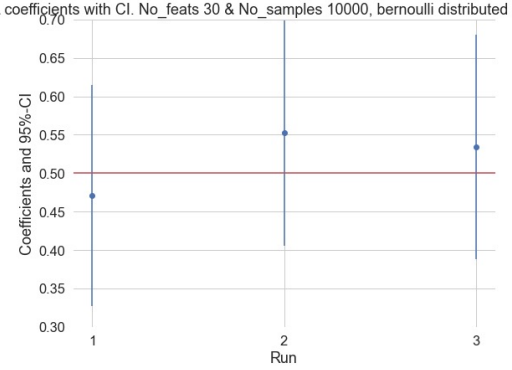
DML	DML_LB	DML_UB
0.497	0.435	0.559
0.525	0.475	0.574
0.452	0.386	0.517

OLS coefficients with CI. No_feats 30 & No_samples 10000, bernoulli distributed data, noise 2



OLS	OLS_LB	OLS_UB
0.475	0.351	0.6
0.518	0.391	0.645
0.525	0.401	0.648

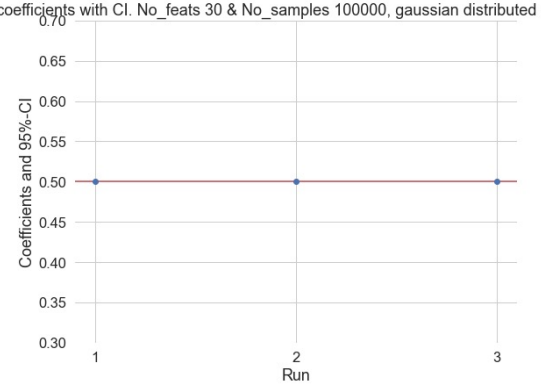
DML coefficients with CI. No_feats 30 & No_samples 10000, bernoulli distributed data, noise 2



DML	DML_LB	DML_UB
0.471	0.327	0.615
0.552	0.406	0.699
0.534	0.388	0.68

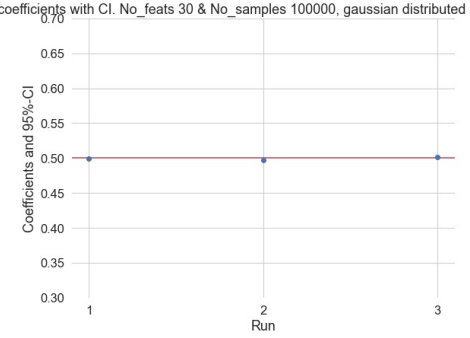
100,000 Gaussian

OLS coefficients with CI. No_feats 30 & No_samples 100000, gaussian distributed data, noise 0



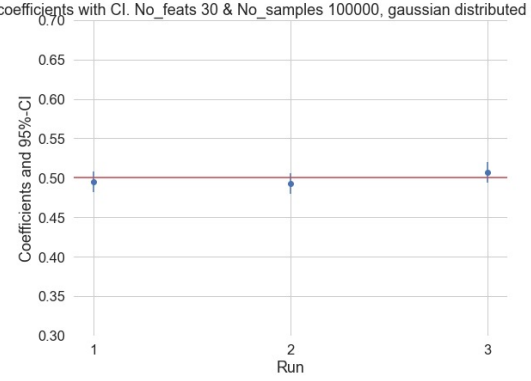
OLS	OLS_LB	OLS_UB
0.5	0.5	0.5
0.5	0.5	0.5
0.5	0.5	0.5

OLS coefficients with CI. No_feats 30 & No_samples 100000, gaussian distributed data, noise 0.5



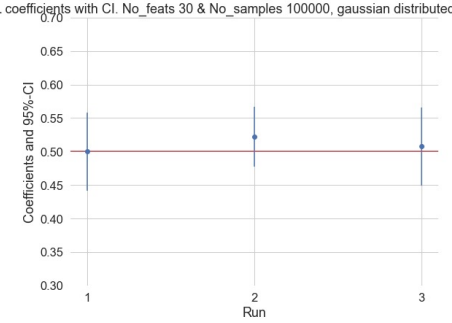
OLS	OLS_LB	OLS_UB
0.5	0.496	0.503
0.497	0.494	0.5
0.502	0.498	0.505

OLS coefficients with CI. No_feats 30 & No_samples 100000, gaussian distributed data, noise 2



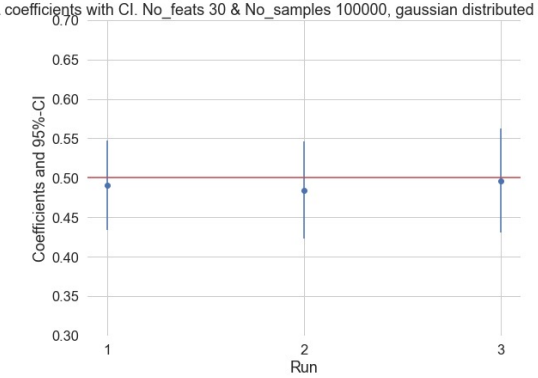
OLS	OLS_LB	OLS_UB
0.495	0.482	0.508
0.492	0.479	0.506
0.507	0.494	0.52

DML coefficients with CI. No_feats 30 & No_samples 100000, gaussian distributed data, noise 0



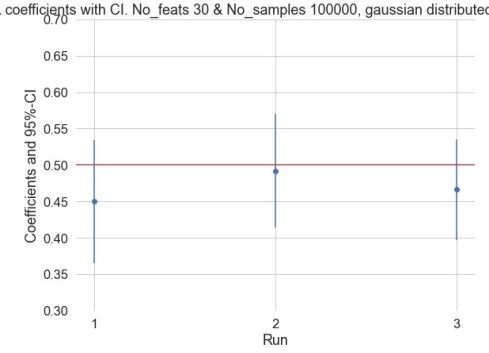
DML	DML_LB	DML_UB
0.5	0.442	0.558
0.522	0.477	0.566
0.507	0.449	0.566

DML coefficients with CI. No_feats 30 & No_samples 100000, gaussian distributed data, noise 0.5



DML	DML_LB	DML_UB
0.49	0.434	0.547
0.484	0.423	0.546
0.496	0.431	0.562

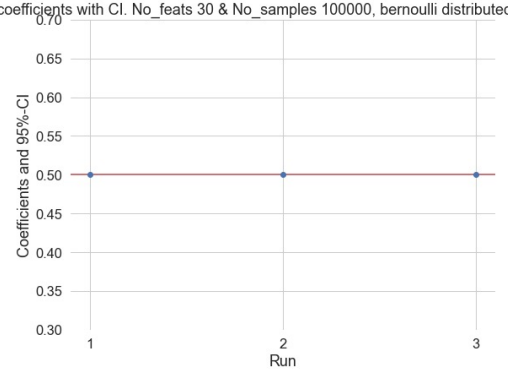
DML coefficients with CI. No_feats 30 & No_samples 100000, gaussian distributed data, noise 2



DML	DML_LB	DML_UB
0.45	0.366	0.534
0.492	0.414	0.57
0.466	0.397	0.535

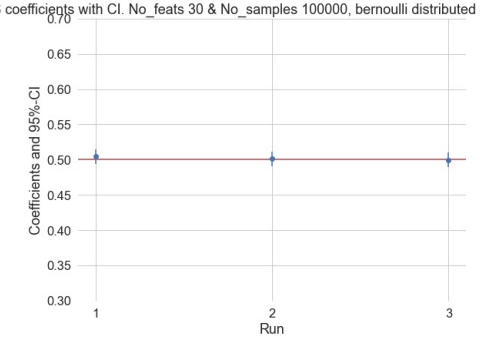
100,000 Bernoulli

OLS coefficients with CI. No_feats 30 & No_samples 100000, bernoulli distributed data, noise 0



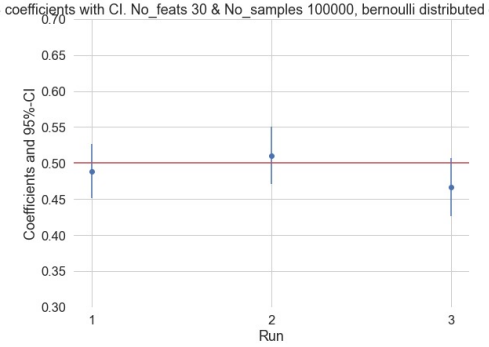
OLS	OLS_LB	OLS_UB
0.5	0.5	0.5
0.5	0.5	0.5
0.5	0.5	0.5

OLS coefficients with CI. No_feats 30 & No_samples 100000, bernoulli distributed data, noise 0.5



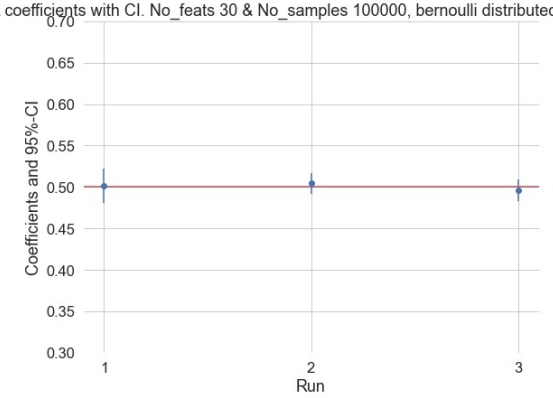
OLS	OLS_LB	OLS_UB
0.504	0.494	0.514
0.501	0.491	0.511
0.5	0.489	0.51

OLS coefficients with CI. No_feats 30 & No_samples 100000, bernoulli distributed data, noise 2



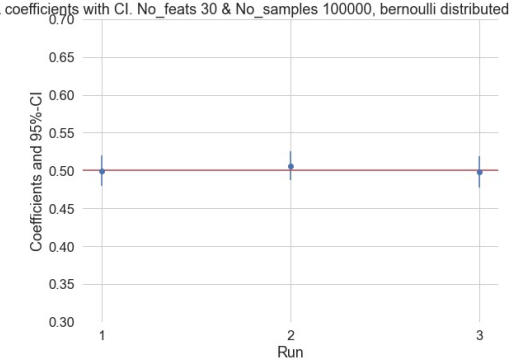
OLS	OLS_LB	OLS_UB
0.489	0.451	0.526
0.51	0.471	0.55
0.467	0.426	0.507

DML coefficients with CI. No_feats 30 & No_samples 100000, bernoulli distributed data, noise 0



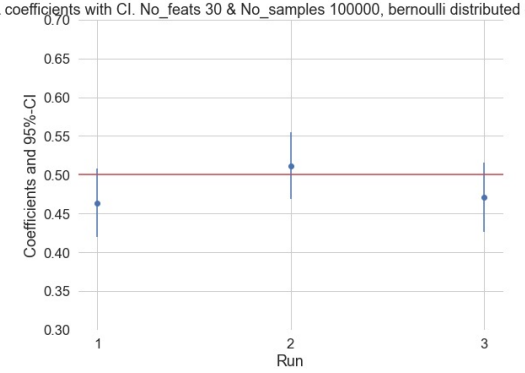
DML	DML_LB	DML_UB
0.501	0.48	0.522
0.504	0.492	0.517
0.496	0.483	0.509

DML coefficients with CI. No_feats 30 & No_samples 100000, bernoulli distributed data, noise 0.5



DML	DML_LB	DML_UB
0.5	0.479	0.52
0.506	0.487	0.525
0.498	0.478	0.518

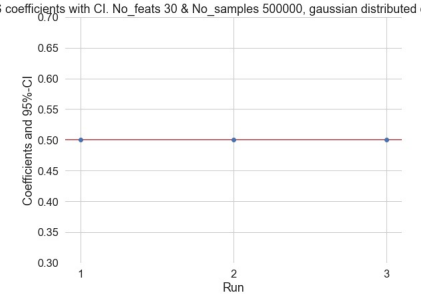
DML coefficients with CI. No_feats 30 & No_samples 100000, bernoulli distributed data, noise 2



DML	DML_LB	DML_UB
0.463	0.42	0.507
0.511	0.468	0.555
0.471	0.427	0.516

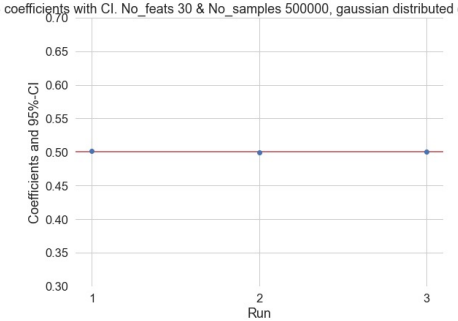
500,000 Gaussian

OLS coefficients with CI. No_feats 30 & No_samples 500000, gaussian distributed data, noise 0



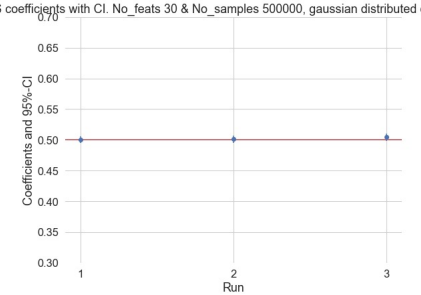
OLS	OLS_LB	OLS_UB
0.5	0.5	0.5
0.5	0.5	0.5
0.5	0.5	0.5

OLS coefficients with CI. No_feats 30 & No_samples 500000, gaussian distributed data, noise 0.5



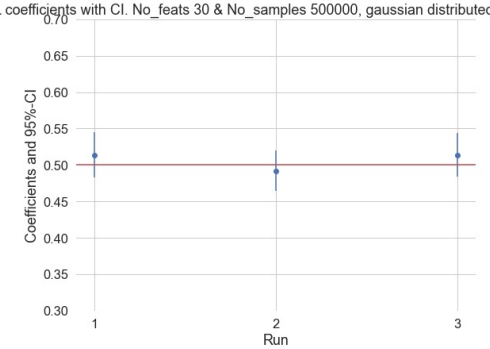
OLS	OLS_LB	OLS_UB
0.501	0.5	0.503
0.499	0.497	0.5
0.5	0.499	0.502

OLS coefficients with CI. No_feats 30 & No_samples 500000, gaussian distributed data, noise 2



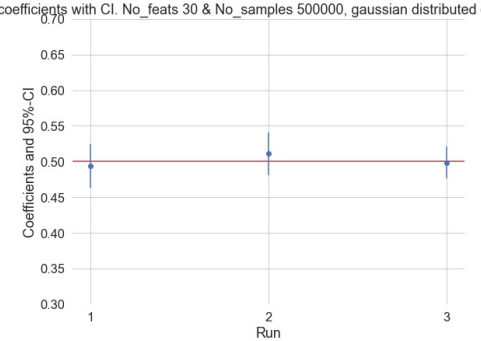
OLS	OLS_LB	OLS_UB
0.5	0.494	0.506
0.501	0.495	0.507
0.505	0.499	0.51

DML coefficients with CI. No_feats 30 & No_samples 500000, gaussian distributed data, noise 0



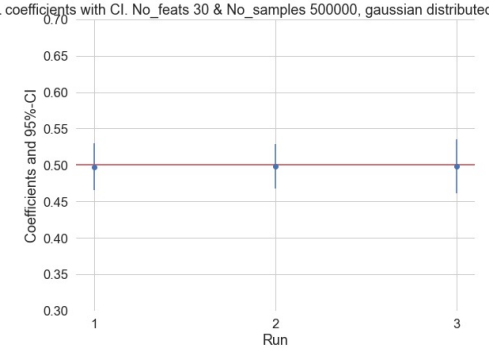
DML	DML_LB	DML_UB
0.514	0.483	0.545
0.492	0.464	0.519
0.514	0.484	0.544

DML coefficients with CI. No_feats 30 & No_samples 500000, gaussian distributed data, noise 0.5



DML	DML_LB	DML_UB
0.494	0.464	0.524
0.511	0.481	0.541
0.499	0.476	0.521

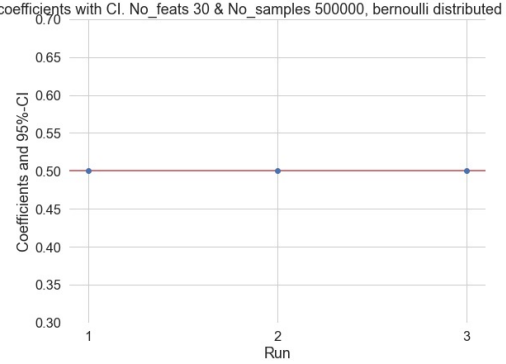
DML coefficients with CI. No_feats 30 & No_samples 500000, gaussian distributed data, noise 2



DML	DML_LB	DML_UB
0.497	0.465	0.53
0.498	0.468	0.529
0.498	0.461	0.535

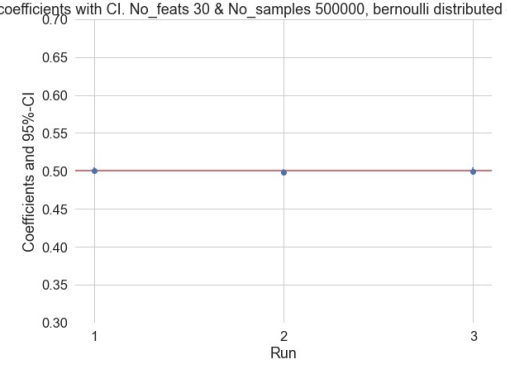
500,000 Bernoulli

OLS coefficients with CI. No_feats 30 & No_samples 500000, bernoulli distributed data, noise 0



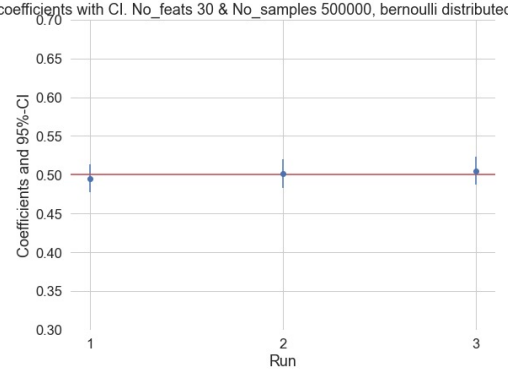
OLS	OLS_LB	OLS_UB
0.5	0.5	0.5
0.5	0.5	0.5
0.5	0.5	0.5

OLS coefficients with CI. No_feats 30 & No_samples 500000, bernoulli distributed data, noise 0.5



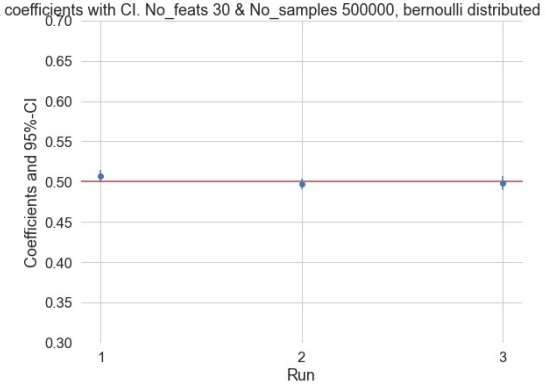
OLS	OLS_LB	OLS_UB
0.5	0.496	0.505
0.498	0.494	0.503
0.5	0.495	0.504

OLS coefficients with CI. No_feats 30 & No_samples 500000, bernoulli distributed data, noise 2



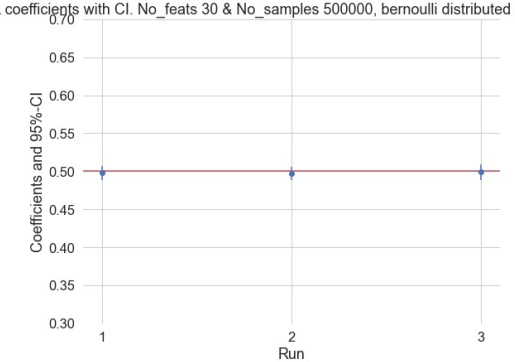
OLS	OLS_LB	OLS_UB
0.495	0.478	0.513
0.501	0.483	0.52
0.505	0.487	0.523

DML coefficients with CI. No_feats 30 & No_samples 500000, bernoulli distributed data, noise 0



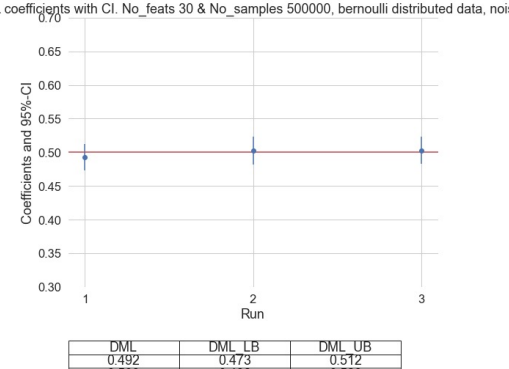
DML	DML_LB	DML_UB
0.507	0.499	0.515
0.497	0.49	0.504
0.498	0.49	0.507

DML coefficients with CI. No_feats 30 & No_samples 500000, bernoulli distributed data, noise 0.5



DML	DML_LB	DML_UB
0.498	0.488	0.507
0.497	0.488	0.506
0.499	0.489	0.509

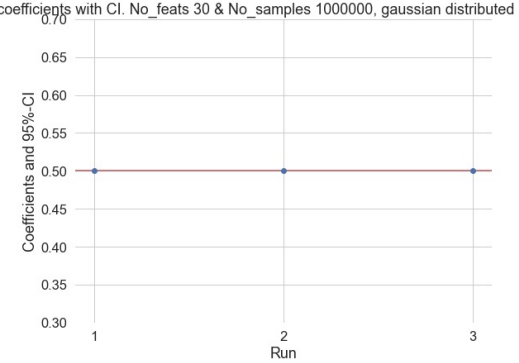
DML coefficients with CI. No_feats 30 & No_samples 500000, bernoulli distributed data, noise 2



DML	DML_LB	DML_UB
0.492	0.473	0.512
0.503	0.482	0.523
0.503	0.483	0.523

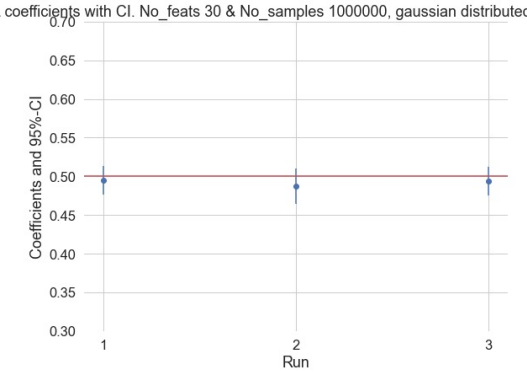
1,000,000 Gaussian

OLS coefficients with CI. No_feats 30 & No_samples 1000000, gaussian distributed data, noise 0



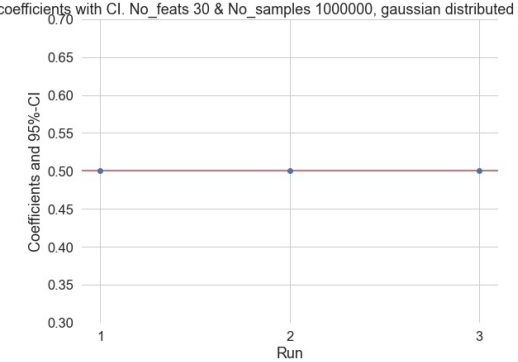
OLS	OLS_LB	OLS_UB
0.5	0.5	0.5
0.5	0.5	0.5
0.5	0.5	0.5

DML coefficients with CI. No_feats 30 & No_samples 1000000, gaussian distributed data, noise 0



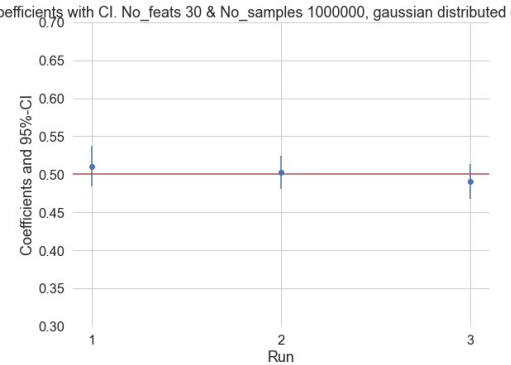
DML	DML_LB	DML_UB
0.495	0.476	0.514
0.487	0.465	0.51
0.494	0.475	0.512

OLS coefficients with CI. No_feats 30 & No_samples 1000000, gaussian distributed data, noise 0.5



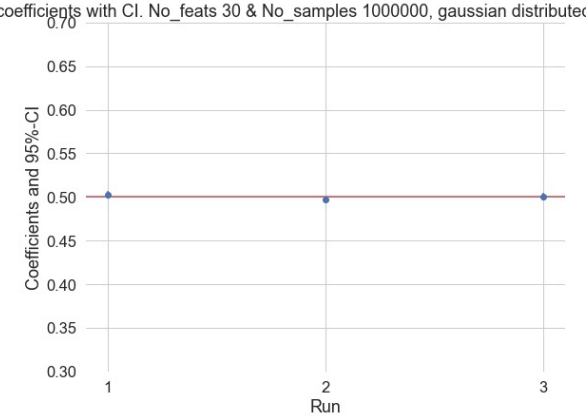
OLS	OLS_LB	OLS_UB
0.5	0.499	0.501
0.501	0.5	0.502
0.5	0.499	0.501

DML coefficients with CI. No_feats 30 & No_samples 1000000, gaussian distributed data, noise 0.5



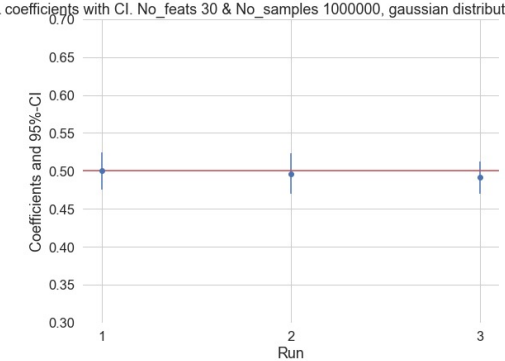
DML	DML_LB	DML_UB
0.51	0.484	0.537
0.503	0.481	0.525
0.491	0.468	0.514

OLS coefficients with CI. No_feats 30 & No_samples 1000000, gaussian distributed data, noise 2



OLS	OLS_LB	OLS_UB
0.503	0.499	0.507
0.497	0.492	0.501
0.5	0.496	0.505

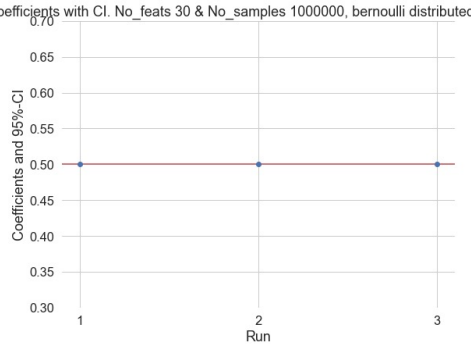
DML coefficients with CI. No_feats 30 & No_samples 1000000, gaussian distributed data, noise 2



DML	DML_LB	DML_UB
0.5	0.476	0.524
0.496	0.47	0.523
0.491	0.47	0.513

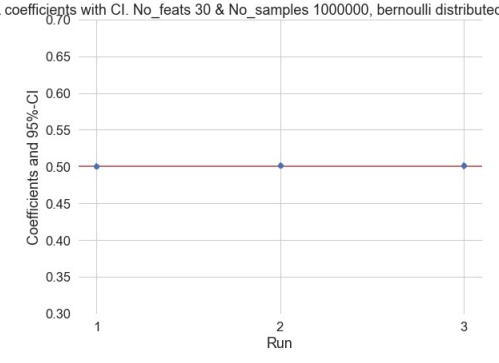
1,000,000 Bernoulli

OLS coefficients with CI. No_feats 30 & No_samples 1000000, bernoulli distributed data, noise 0



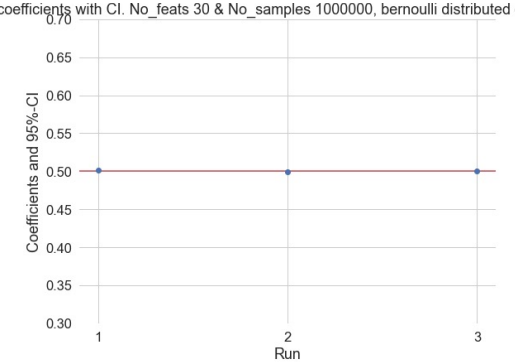
OLS	OLS_LB	OLS_UB
0.5	0.5	0.5
0.5	0.5	0.5
0.5	0.5	0.5

DML coefficients with CI. No_feats 30 & No_samples 1000000, bernoulli distributed data, noise 0



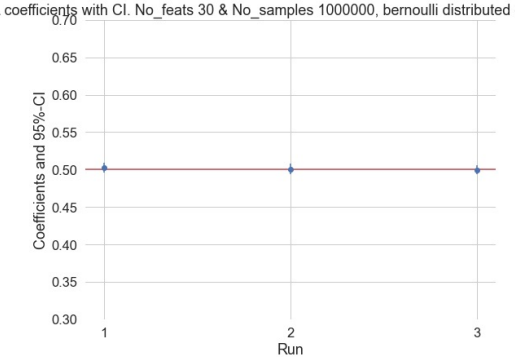
DML	DML_LB	DML_UB
0.501	0.497	0.505
0.502	0.498	0.506
0.501	0.496	0.506

OLS coefficients with CI. No_feats 30 & No_samples 1000000, bernoulli distributed data, noise 0.5



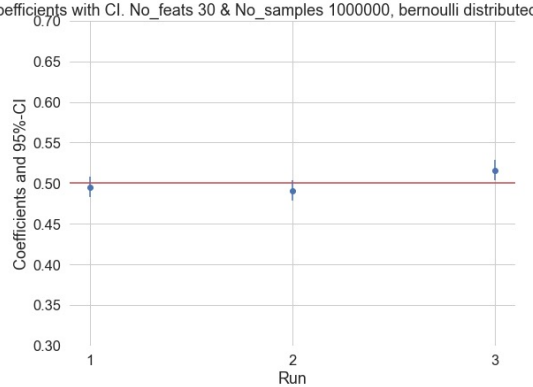
OLS	OLS_LB	OLS_UB
0.501	0.498	0.504
0.5	0.497	0.503
0.501	0.498	0.504

DML coefficients with CI. No_feats 30 & No_samples 1000000, bernoulli distributed data, noise 0.5



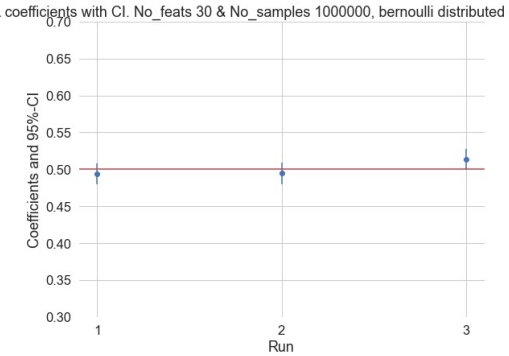
DML	DML_LB	DML_UB
0.502	0.496	0.509
0.501	0.493	0.508
0.5	0.493	0.506

OLS coefficients with CI. No_feats 30 & No_samples 1000000, bernoulli distributed data, noise 2



OLS	OLS_LB	OLS_UB
0.495	0.483	0.508
0.491	0.479	0.503
0.516	0.504	0.528

DML coefficients with CI. No_feats 30 & No_samples 1000000, bernoulli distributed data, noise 2



DML	DML_LB	DML_UB
0.493	0.479	0.508
0.494	0.48	0.509
0.514	0.499	0.528