

Linear Model Simulations

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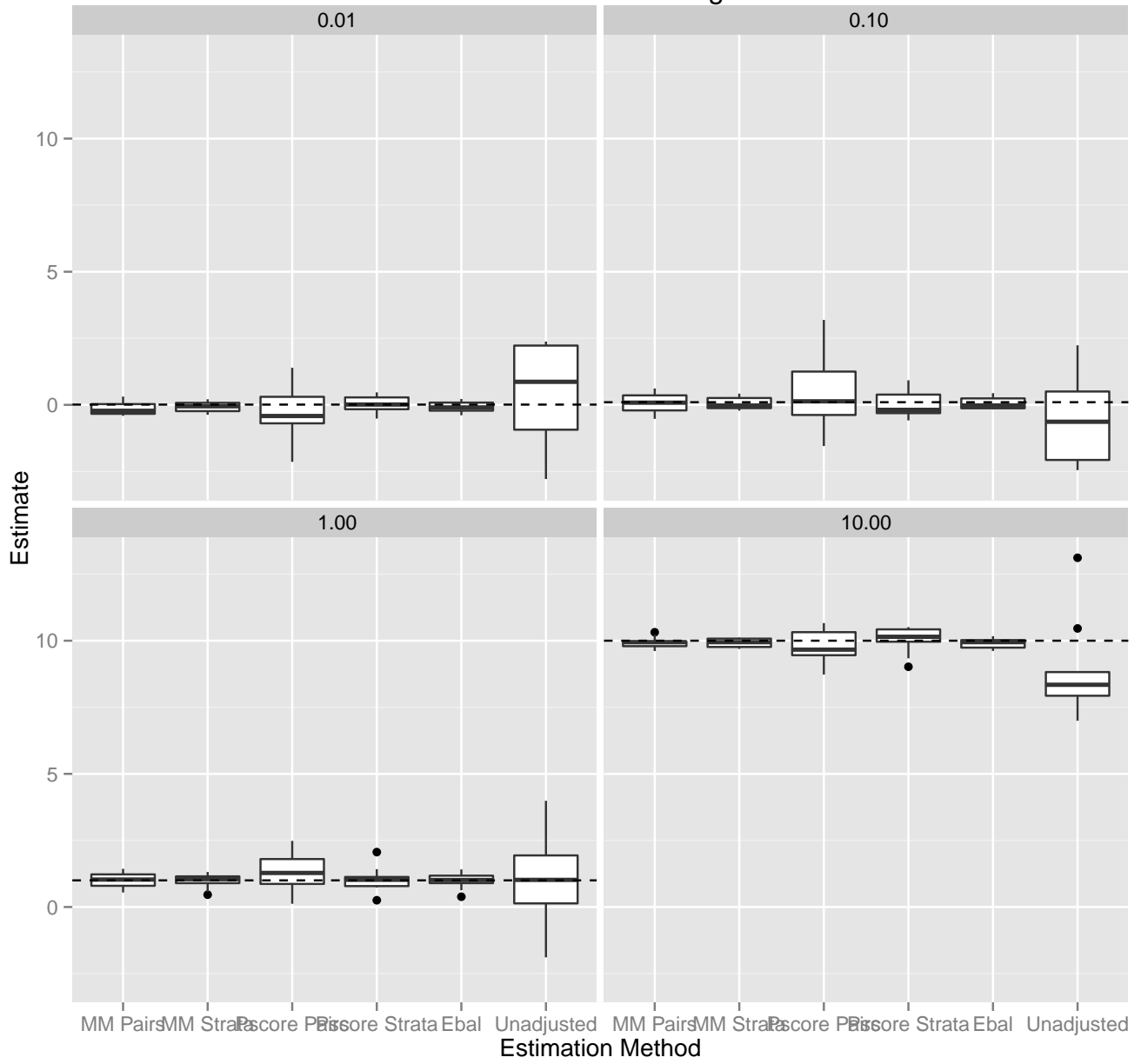
February 5, 2016

Set simulation parameters

```
set.seed(321)
gamma <- c(0.01, 0.1, 1, 10)
B <- 10
N <- 100
```

1 Gaussian Errors in the Linear Model

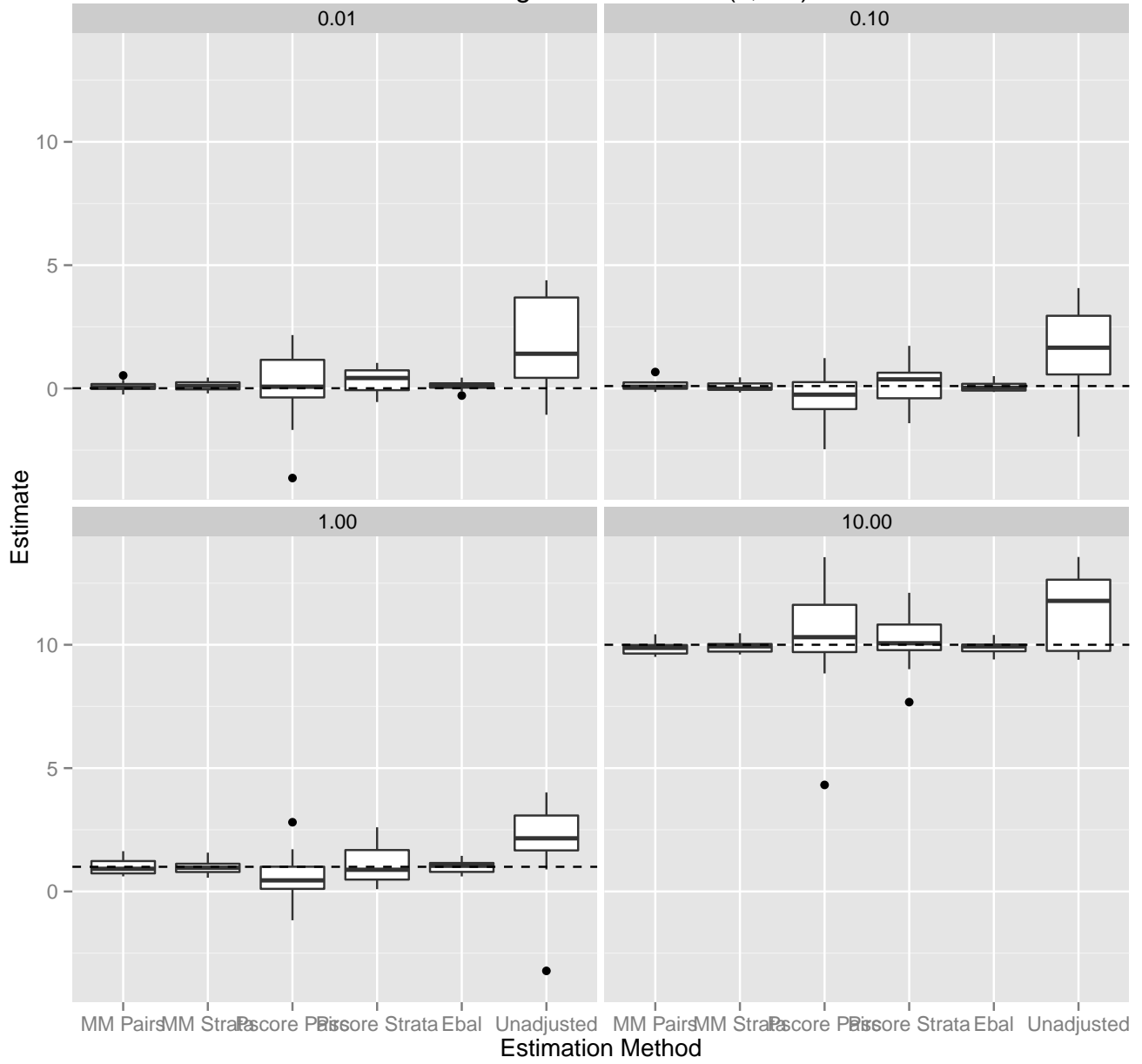
Estimates of Varying Levels of Constant Additive Treatment Effects
Random Treatment Assignment



	0.01	0.1	1	10
MM Pairs	0.290	0.349	0.294	0.215
MM Strata	0.208	0.236	0.267	0.178
Pscore Pairs	0.986	1.379	0.747	0.634
Pscore Strata	0.334	0.461	0.451	0.479
Ebal	0.222	0.227	0.291	0.198
Unadjusted	1.863	1.748	1.603	2.053

Table 1: RMSE for various treatment effects

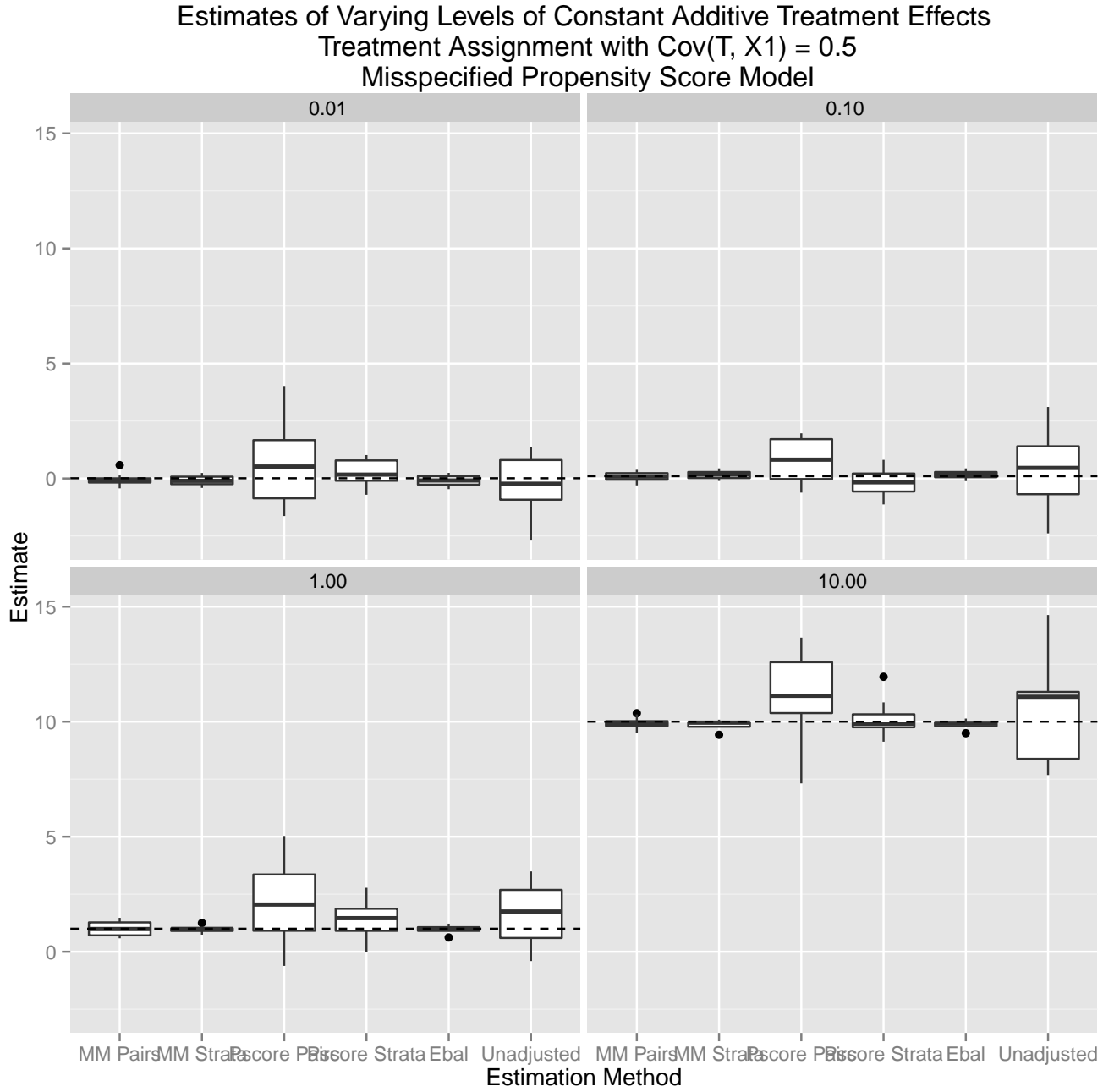
Estimates of Varying Levels of Constant Additive Treatment Effects
Treatment Assignment with $\text{Cov}(T, X_1) = 0.5$



	0.01	0.1	1	10
MM Pairs	0.235	0.225	0.326	0.291
MM Strata	0.218	0.188	0.285	0.256
Pscore Pairs	1.604	1.128	1.203	2.347
Pscore Strata	0.590	0.878	0.785	1.176
Ebal	0.237	0.191	0.244	0.271
Unadjusted	2.598	2.350	2.095	2.107

Table 2: RMSE for various treatment effects

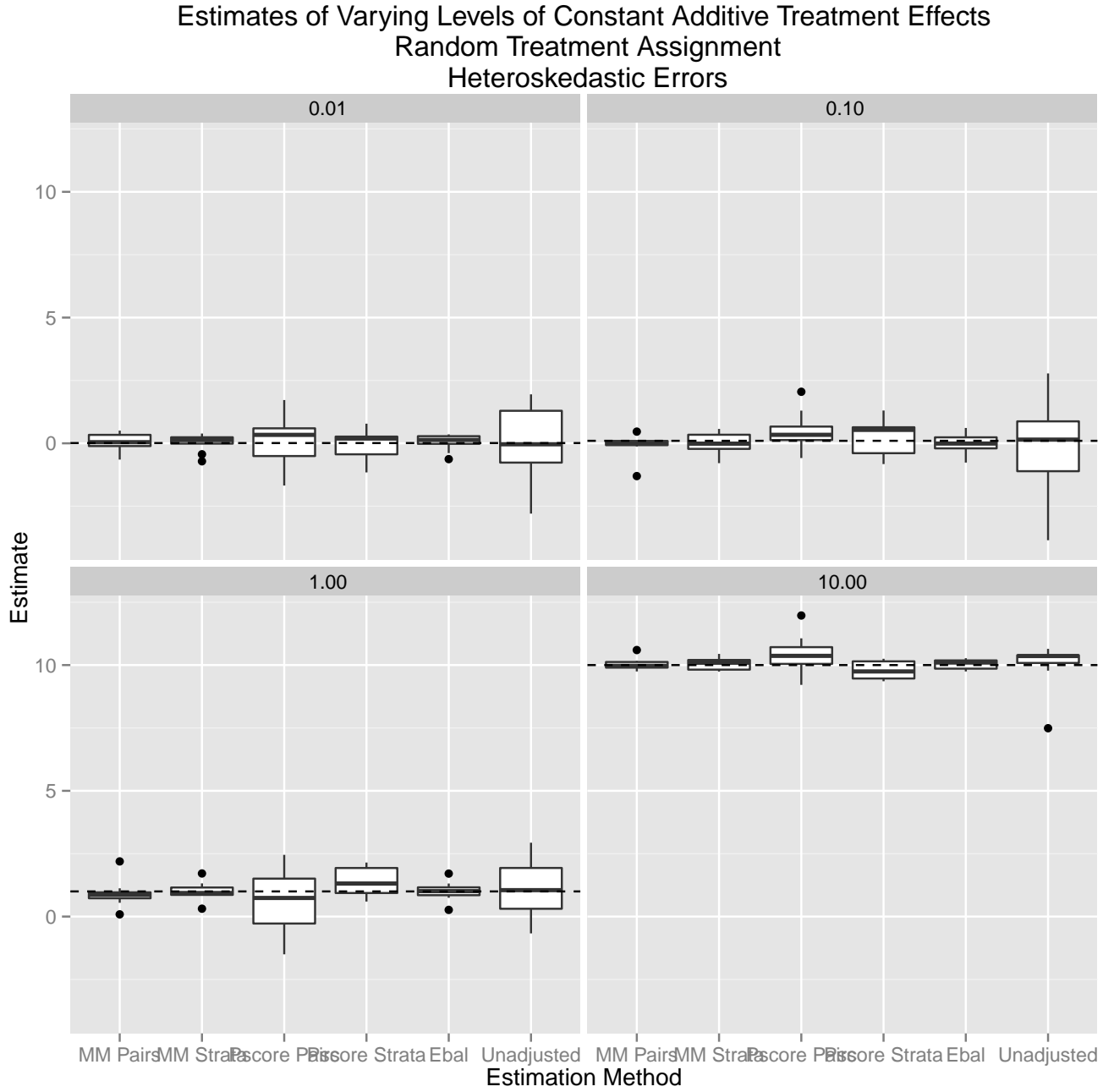
2 Misspecified Propensity Score Estimates



	0.01	0.1	1	10
MM Pairs	0.272	0.215	0.301	0.278
MM Strata	0.230	0.174	0.128	0.220
Pscore Pairs	1.829	1.139	2.080	2.091
Pscore Strata	0.613	0.647	0.876	0.785
Ebal	0.248	0.177	0.164	0.206
Unadjusted	1.194	1.553	1.462	2.086

Table 3: RMSE for various treatment effects

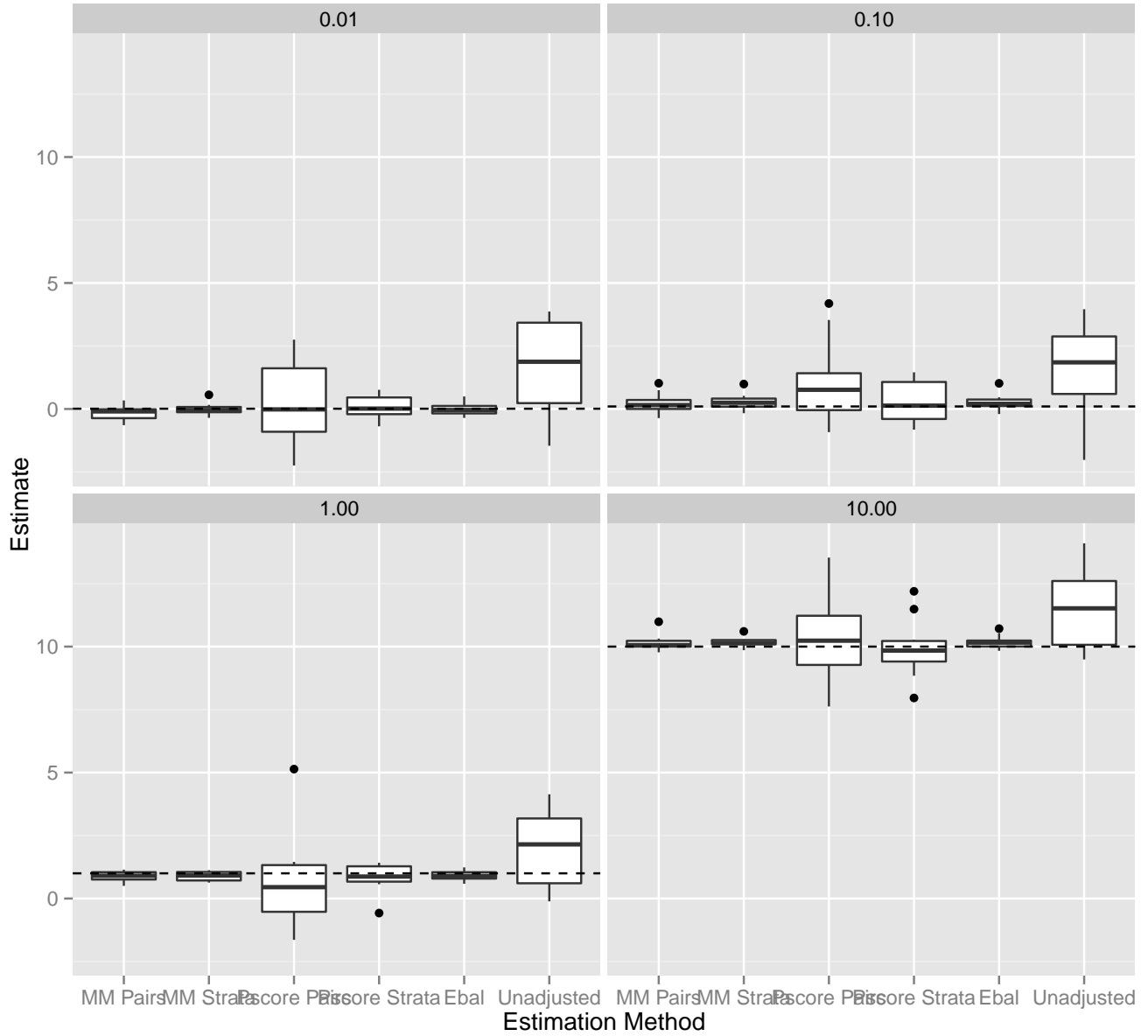
3 Heteroskedastic Linear Model Errors



	0.01	0.1	1	10
MM Pairs	0.360	0.471	0.514	0.226
MM Strata	0.327	0.392	0.347	0.238
Pscore Pairs	1.034	0.804	1.255	0.835
Pscore Strata	0.545	0.684	0.666	0.403
Ebal	0.308	0.382	0.359	0.190
Unadjusted	1.384	1.913	1.117	0.871

Table 4: RMSE for various treatment effects

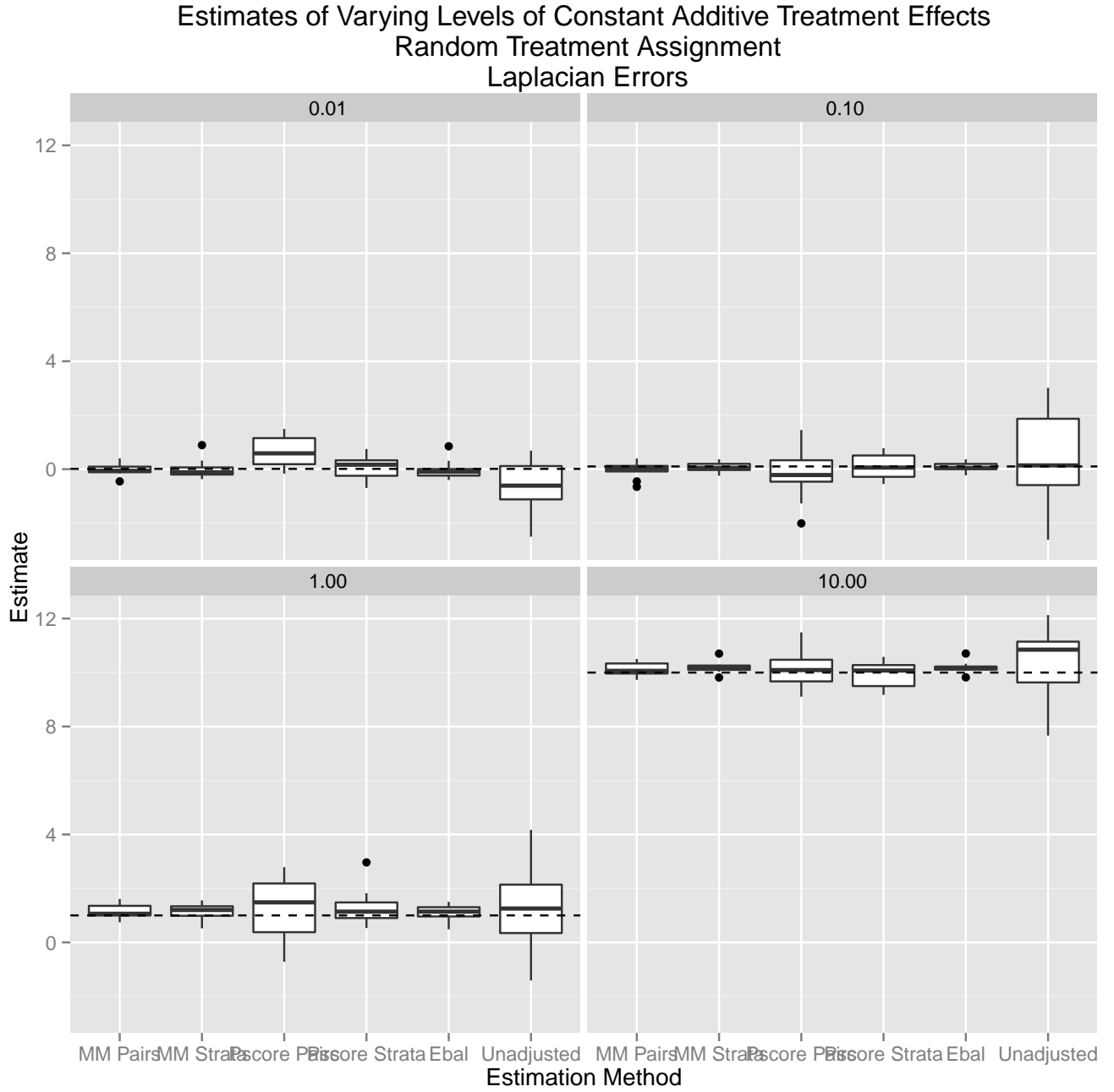
Estimates of Varying Levels of Constant Additive Treatment Effects
Treatment Assignment with $\text{Cov}(T, X_1) = 0.5$
Heteroskedastic Errors



	0.01	0.1	1	10
MM Pairs	0.320	0.406	0.252	0.352
MM Strata	0.250	0.356	0.210	0.256
Pscore Pairs	1.558	1.854	1.794	1.678
Pscore Strata	0.431	0.796	0.581	1.150
Ebal	0.229	0.351	0.199	0.317
Unadjusted	2.497	2.328	1.703	2.152

Table 5: RMSE for various treatment effects

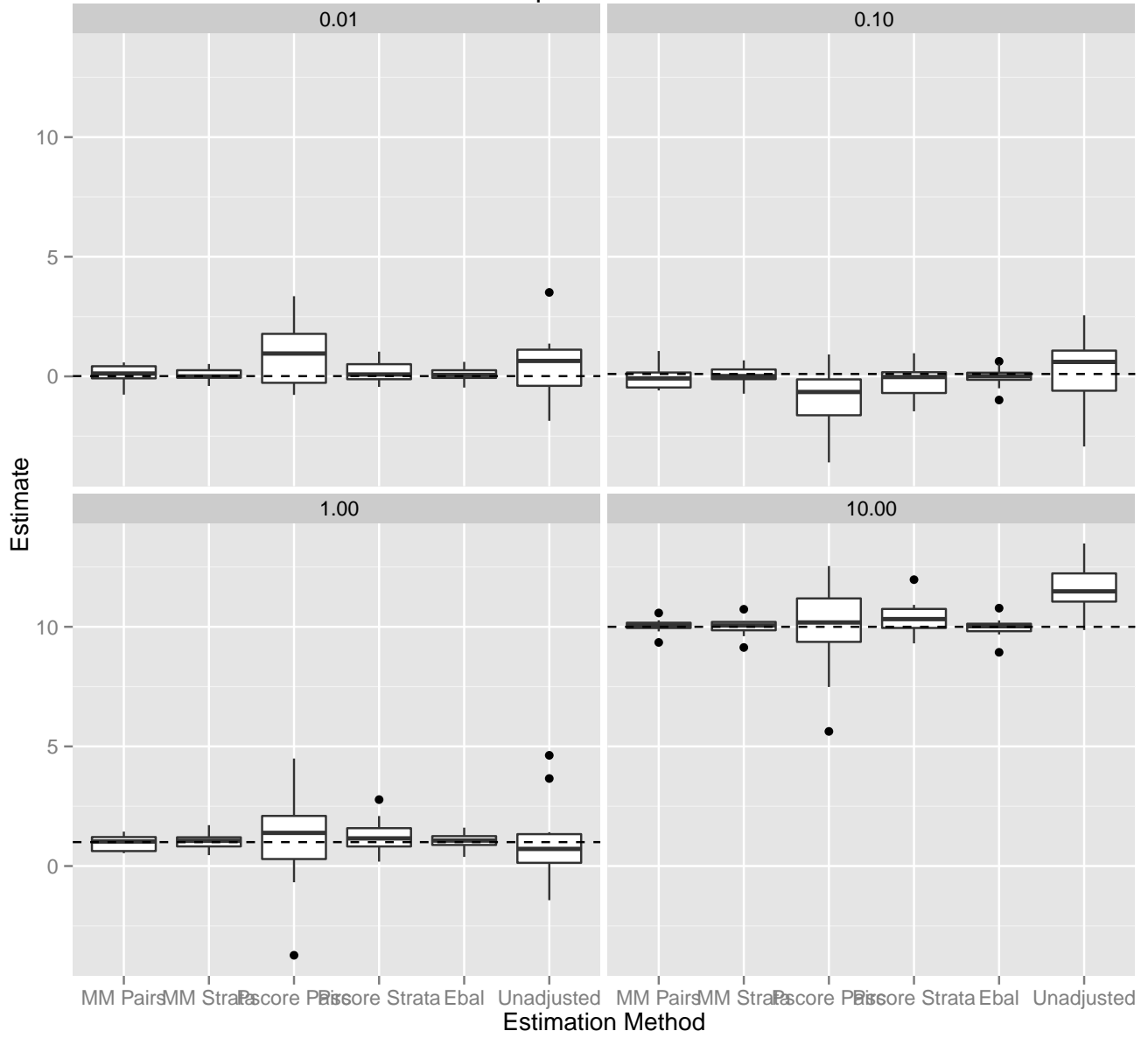
4 Heavy-tailed Linear Model Errors



	0.01	0.1	1	10
MM Pairs	0.219	0.325	0.308	0.269
MM Strata	0.350	0.177	0.325	0.287
Pscore Pairs	0.830	0.971	1.158	0.737
Pscore Strata	0.402	0.464	0.728	0.510
Ebal	0.346	0.177	0.293	0.288
Unadjusted	1.118	1.742	1.558	1.420

Table 6: RMSE for various treatment effects

Estimates of Varying Levels of Constant Additive Treatment Effects
Treatment Assignment with $\text{Cov}(T, X_1) = 0.5$
Laplacian Errors



	0.01	0.1	1	10
MM Pairs	0.409	0.508	0.315	0.307
MM Strata	0.269	0.445	0.378	0.403
Pscore Pairs	1.595	1.785	2.158	1.955
Pscore Strata	0.536	0.780	0.773	0.815
Ebal	0.285	0.462	0.353	0.448
Unadjusted	1.467	1.488	1.781	1.889

Table 7: RMSE for various treatment effects