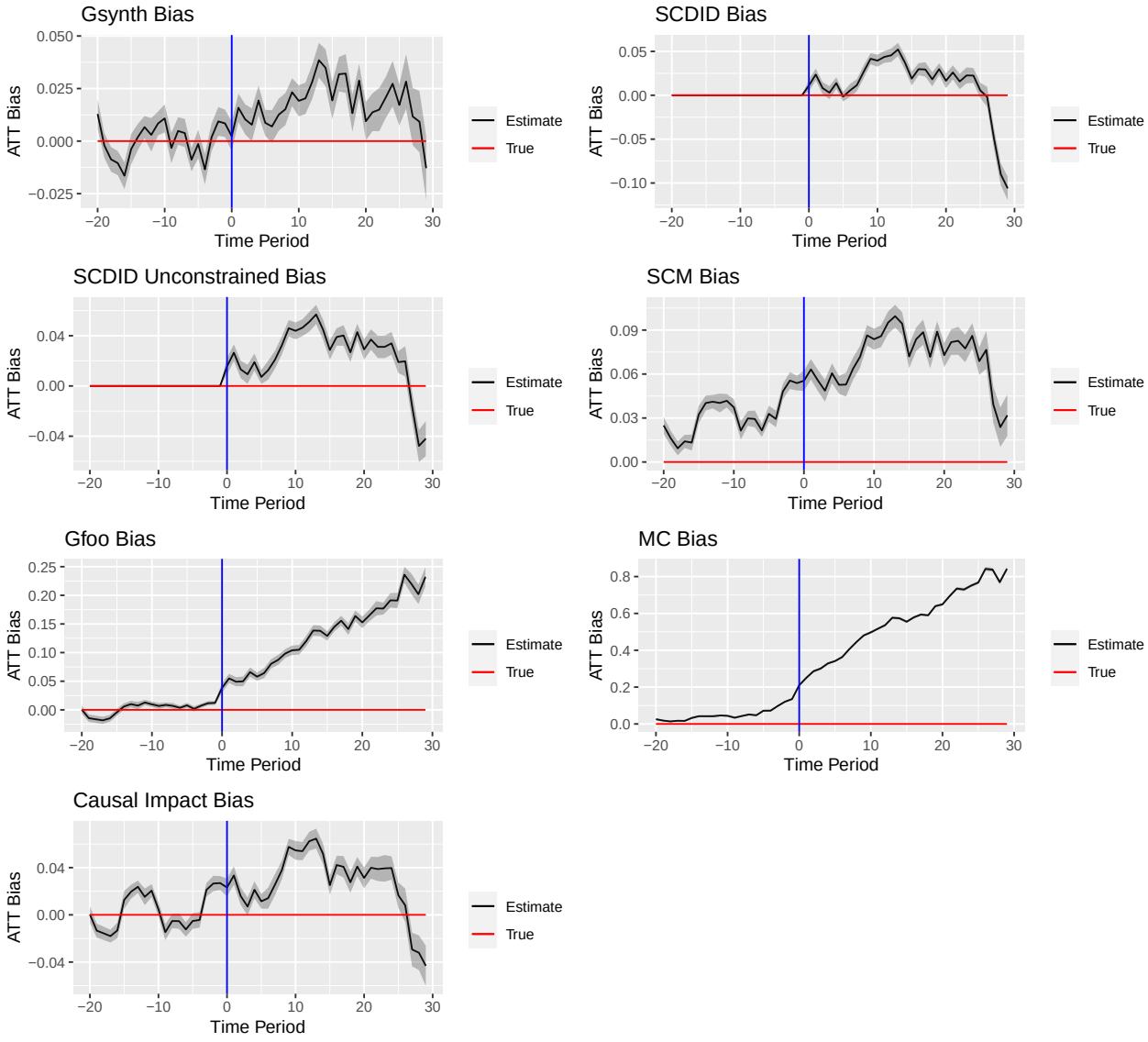
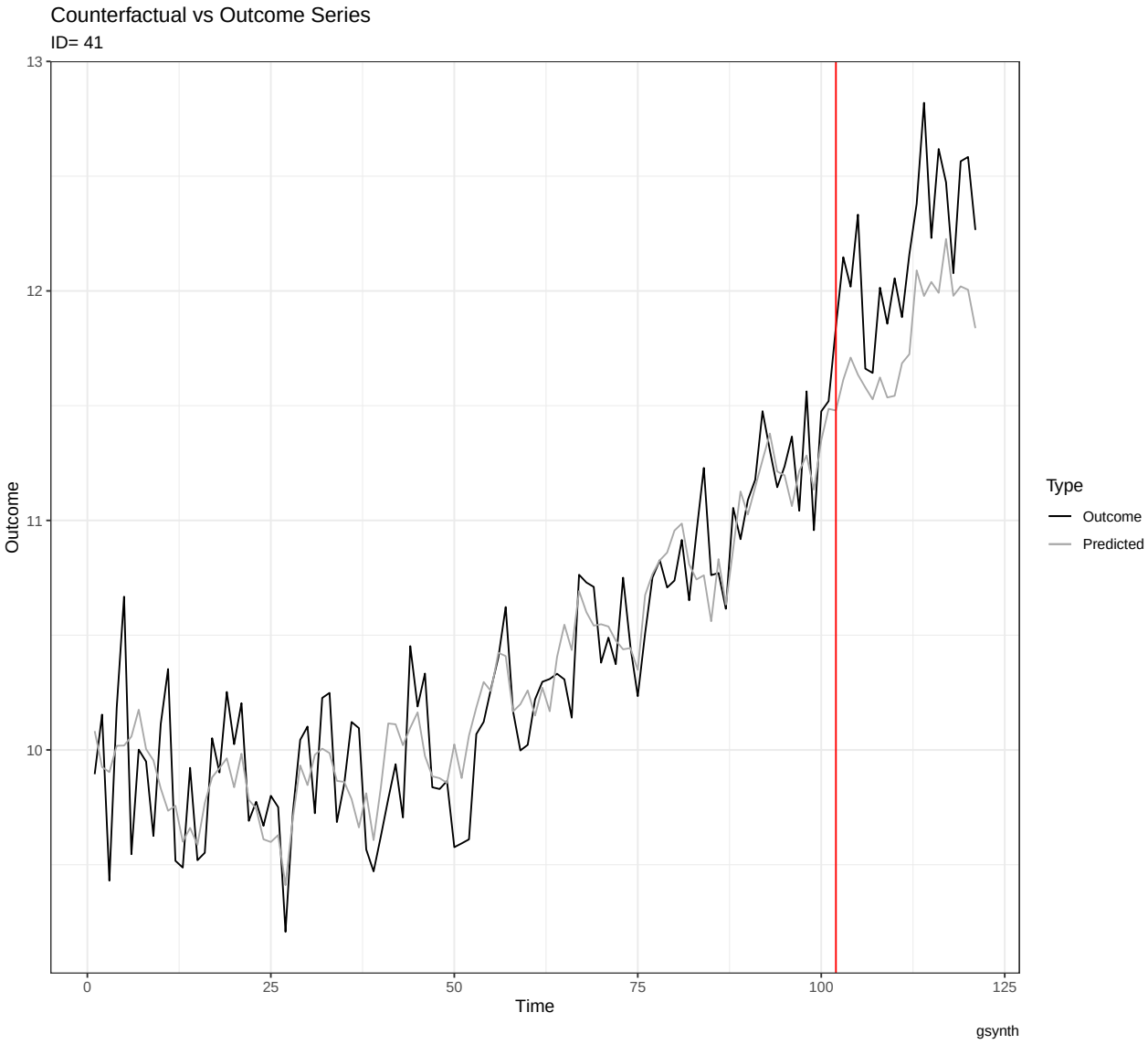
DGP Variations

For Loop Over DGPs

```
## [1] "aa_high_acf_loading_shift"
```

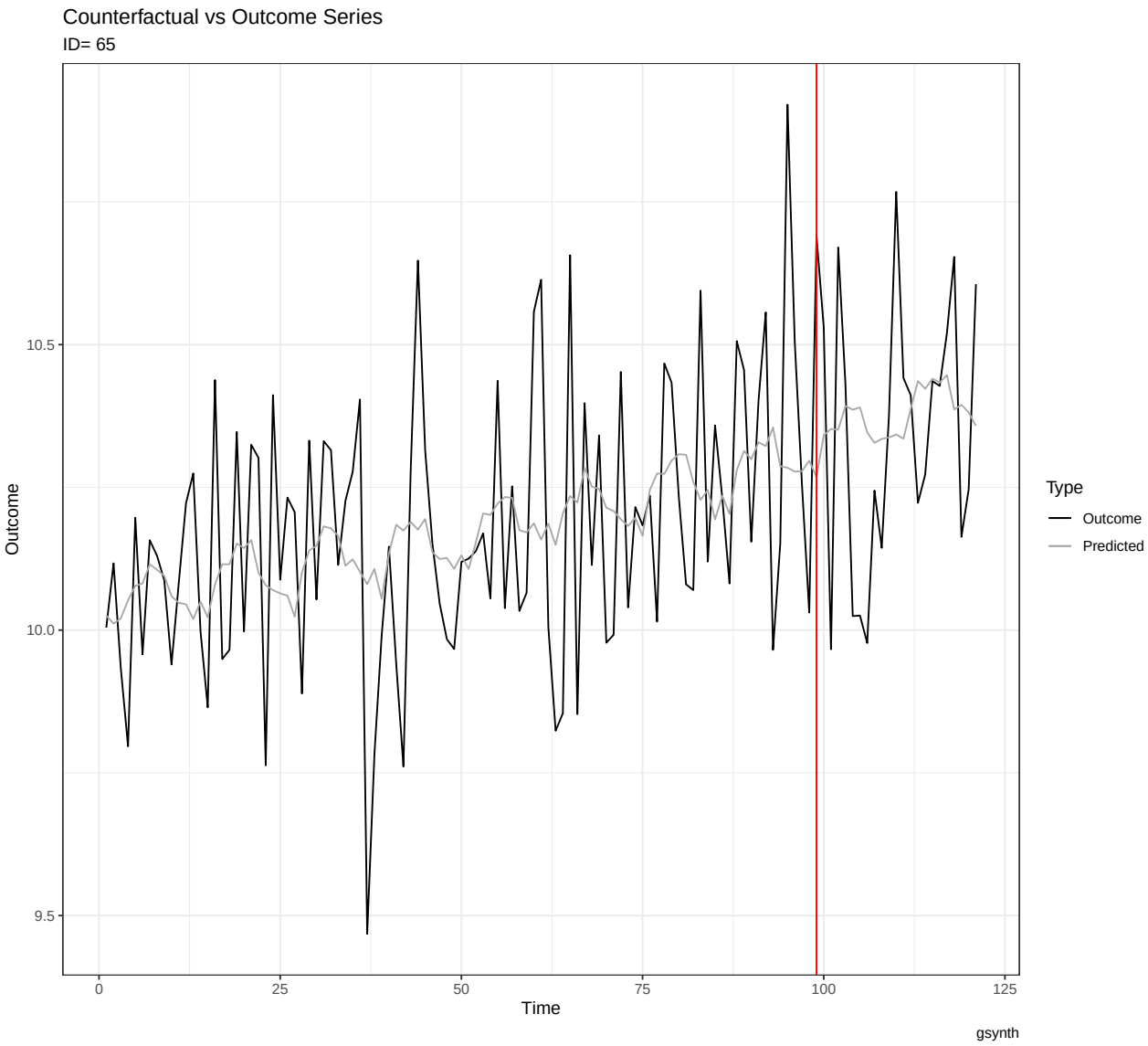



```
## [[1]]
```

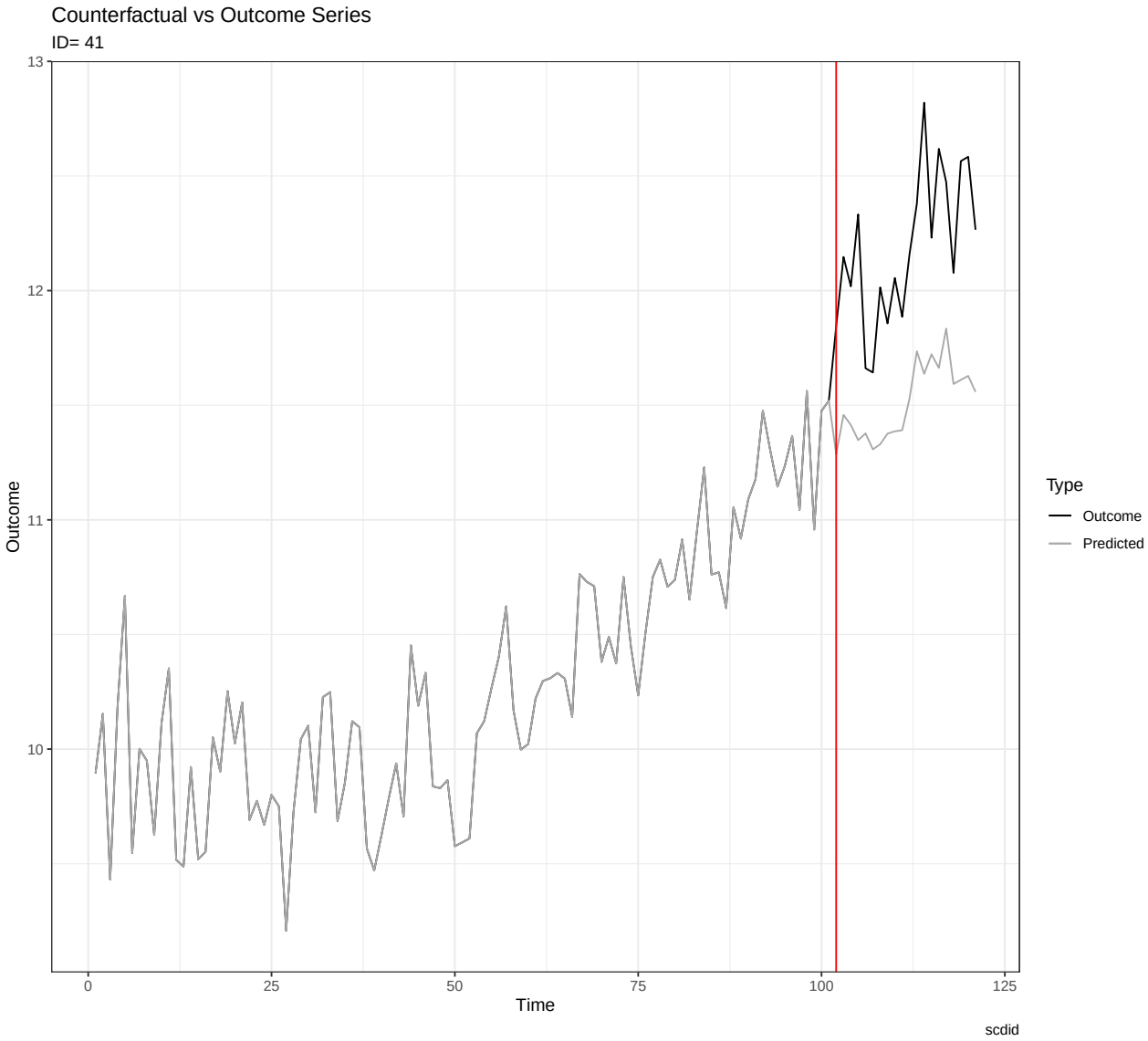

Counterfactual vs Outcome Series
ID= 41
13
12
11
10
Outcome
0
25
50
75
100
125
Time
gsynth
Type
Outcome
Predicted

##

[[2]]

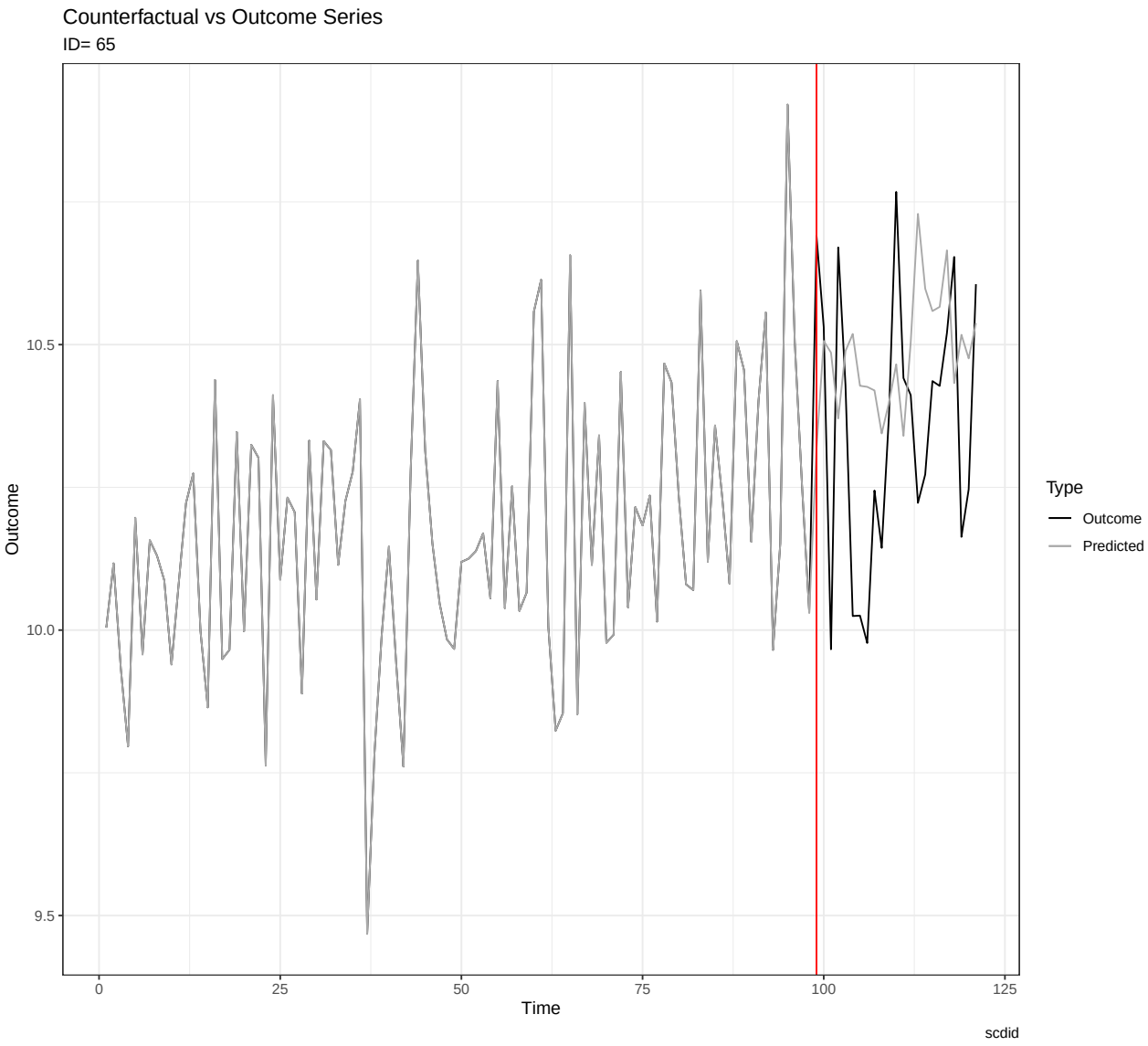

Counterfactual vs Outcome Series
ID= 65
Outcome
10.5
10.0
9.5
0
25
50
75
100
125
Time
Type
Outcome
Predicted
gsynth

##
[[1]]

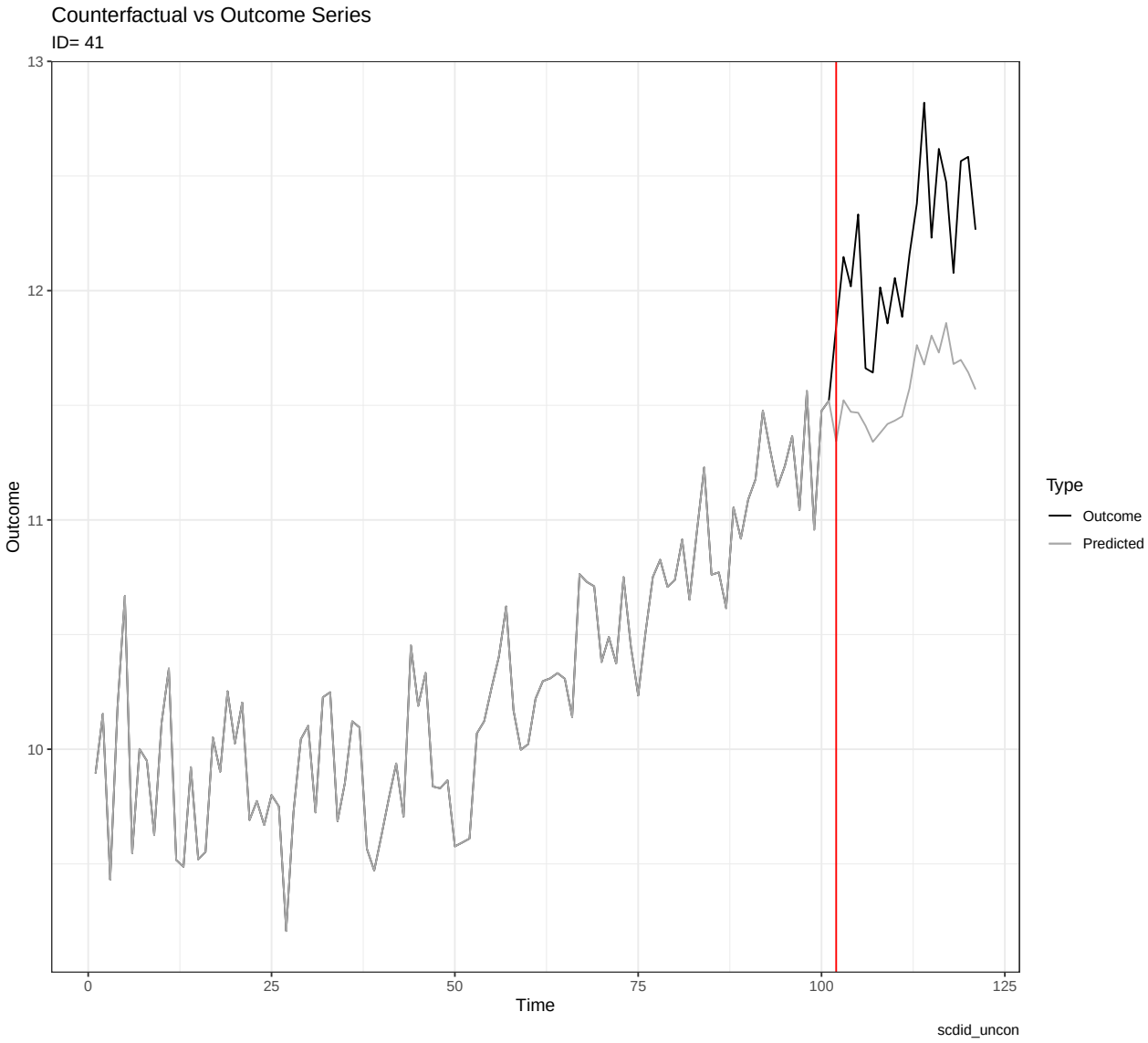

Counterfactual vs Outcome Series
ID= 41
13
12
11
10
Outcome
0
25
50
75
100
125
Time
scdid
Type
Outcome
Predicted

##

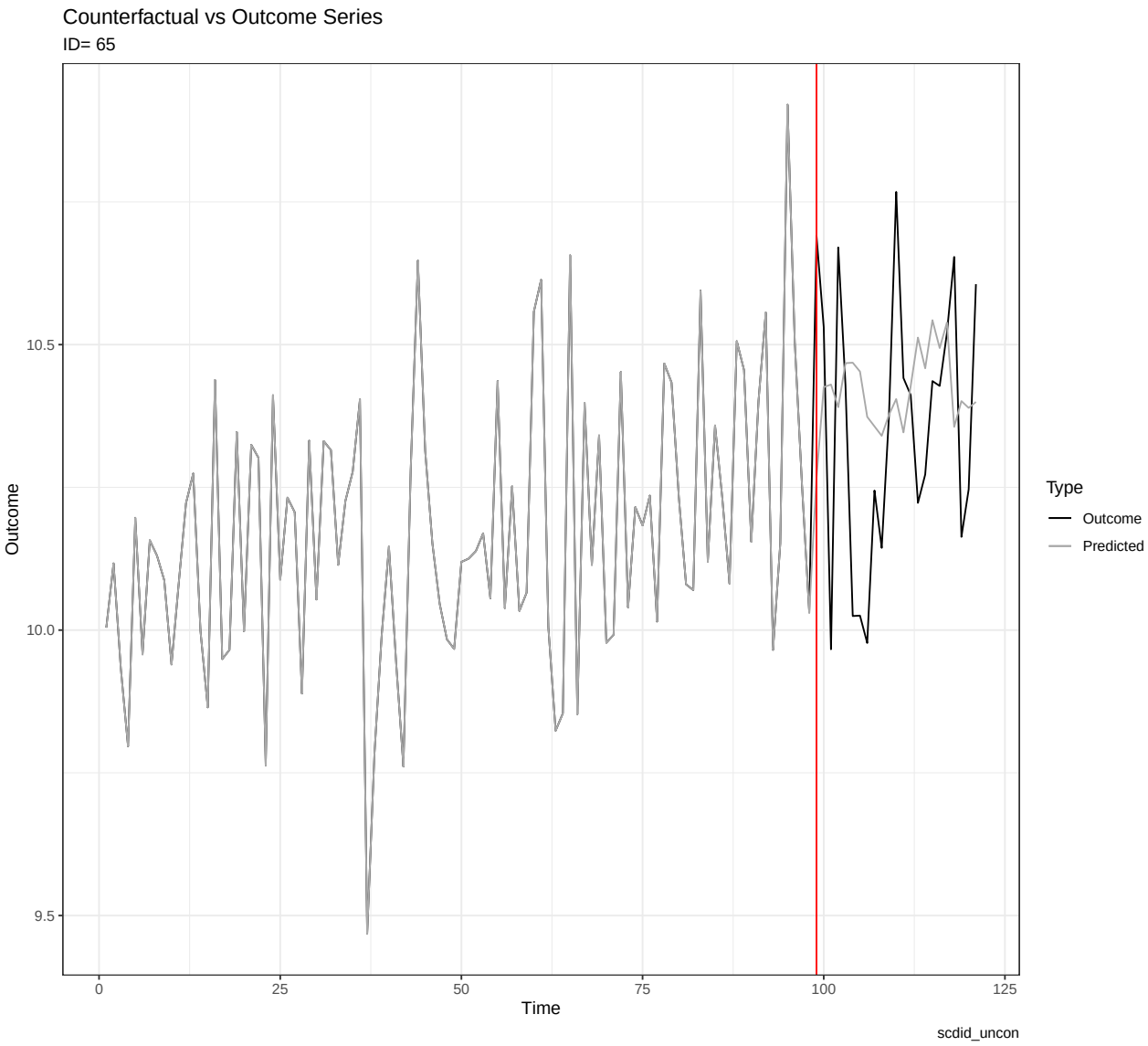
[[2]]


Counterfactual vs Outcome Series
ID= 65
Outcome
10.5
10.0
9.5
0
25
50
75
100
125
Time
Type
Outcome
Predicted
scdid

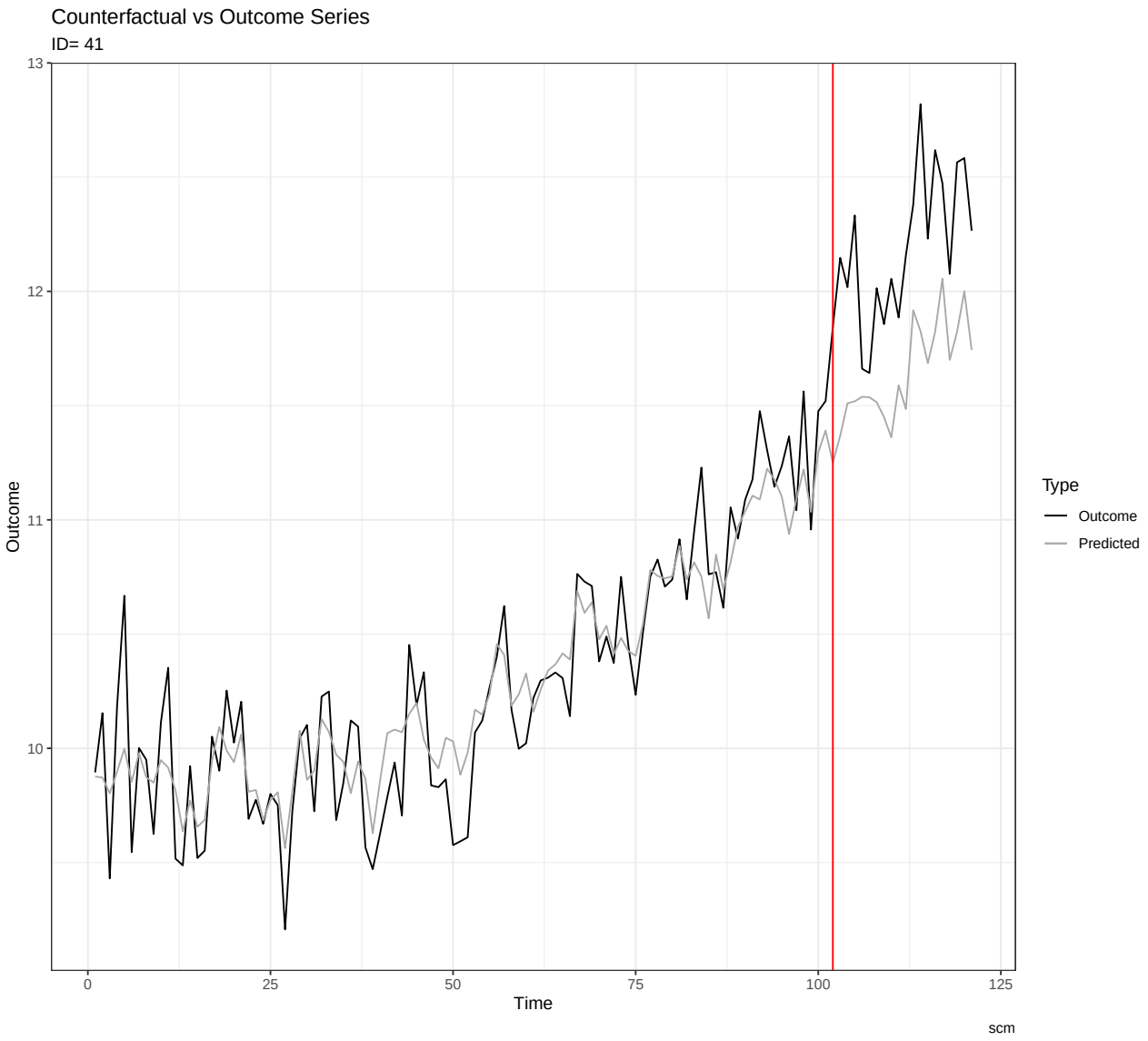
##
[[1]]


Counterfactual vs Outcome Series
ID= 41
13
12
11
10
Outcome
0
25
50
75
100
125
Time
scdid_uncon
Type
Outcome
Predicted

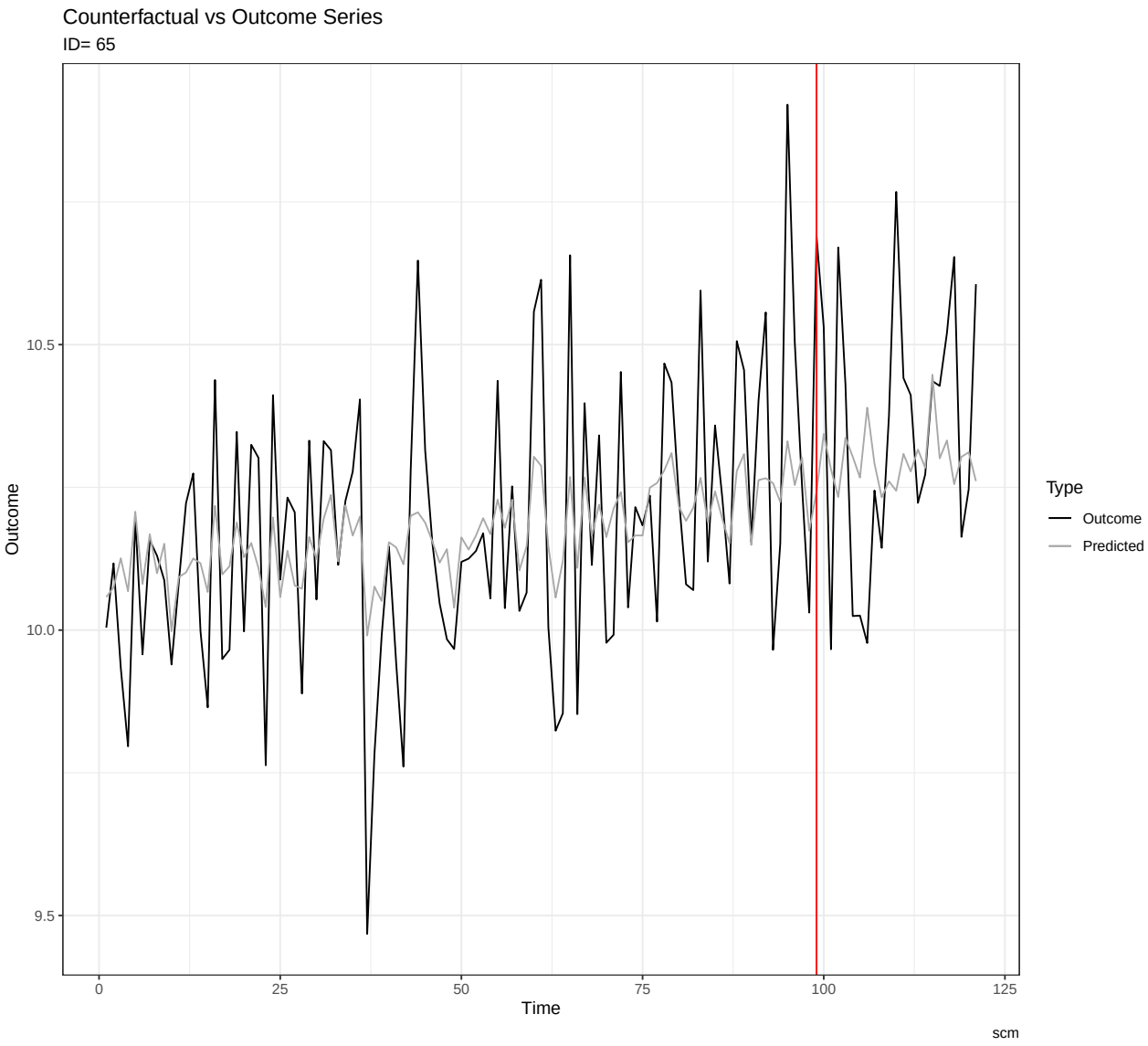
##
[[2]]


Counterfactual vs Outcome Series
ID= 65
Outcome
10.5
10.0
9.5
0
25
50
75
100
125
Time
Type
Outcome
Predicted
scdid_uncon

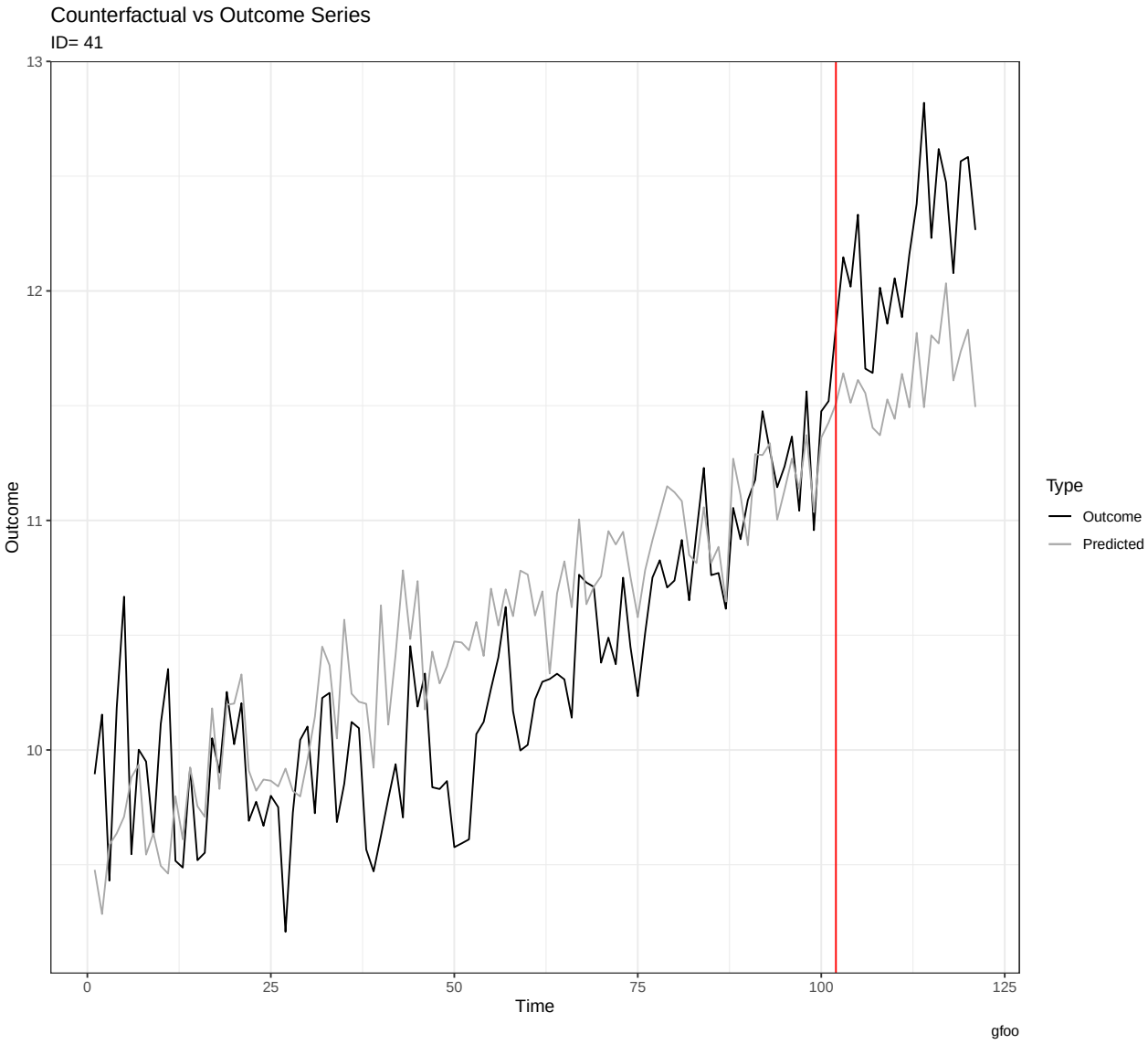
```
##
## [[1]]
```


Counterfactual vs Outcome Series
ID= 41
Outcome
Time
scm
Type
Outcome
Predicted
13
12
11
10
0
25
50
75
100
125

##
[[2]]

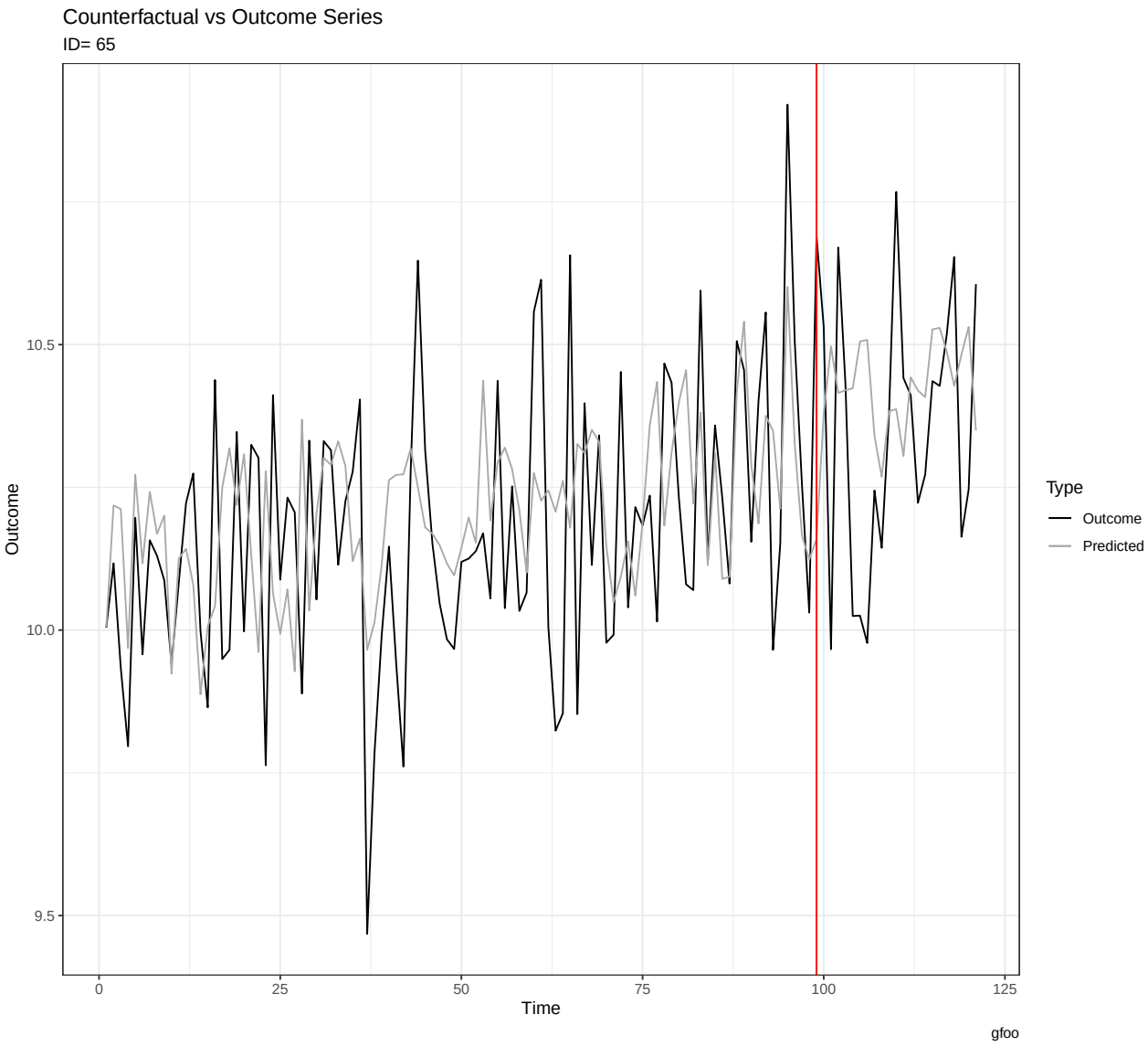

Counterfactual vs Outcome Series
ID= 65
Outcome
10.5
10.0
9.5
0
25
50
75
100
125
Time
scm
Type
Outcome
Predicted

##
[[1]]

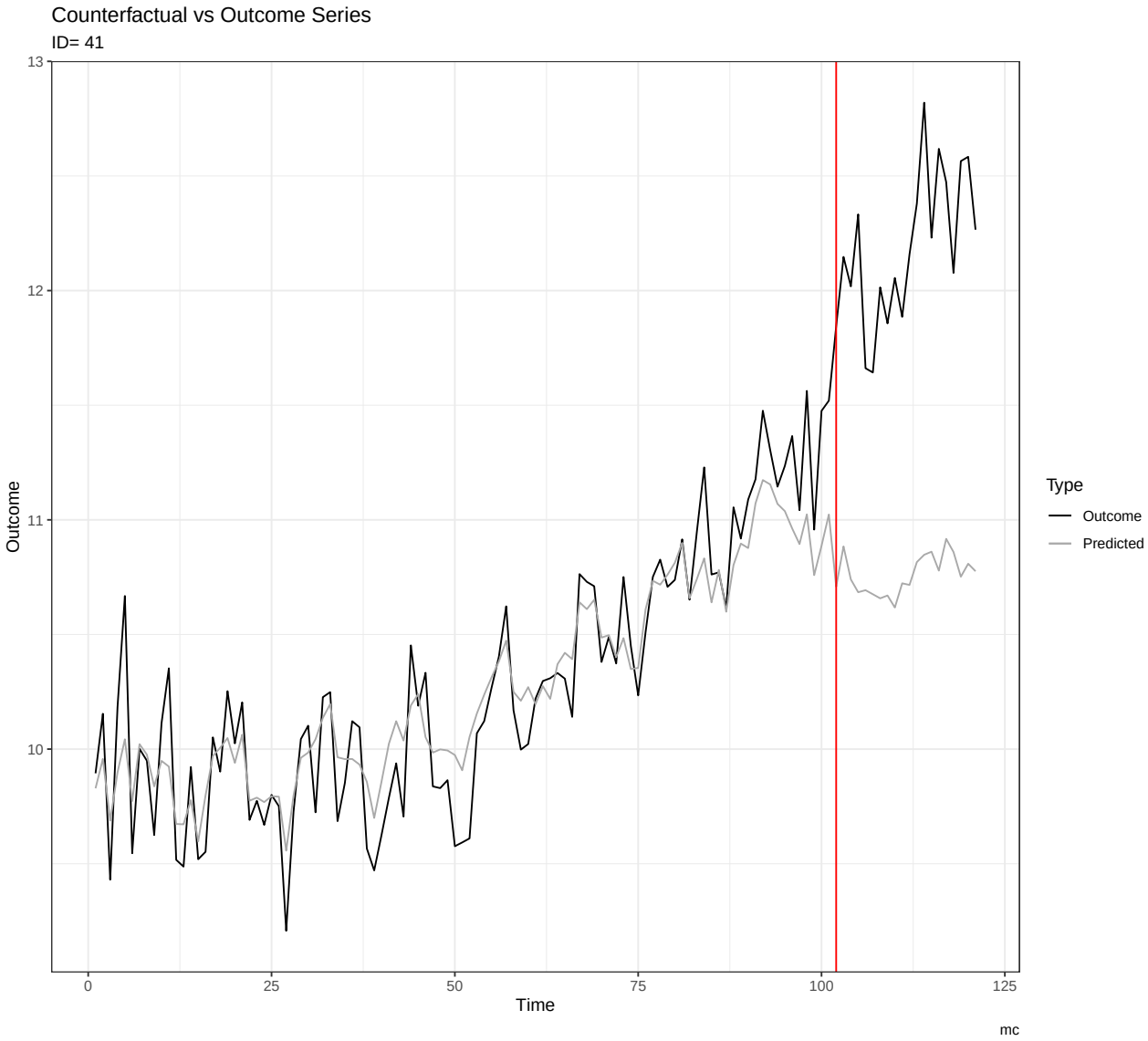

Counterfactual vs Outcome Series
ID= 41
13
12
11
10
Outcome
0
25
50
75
100
125
Time
gfoo
Type
Outcome
Predicted

##

[[2]]

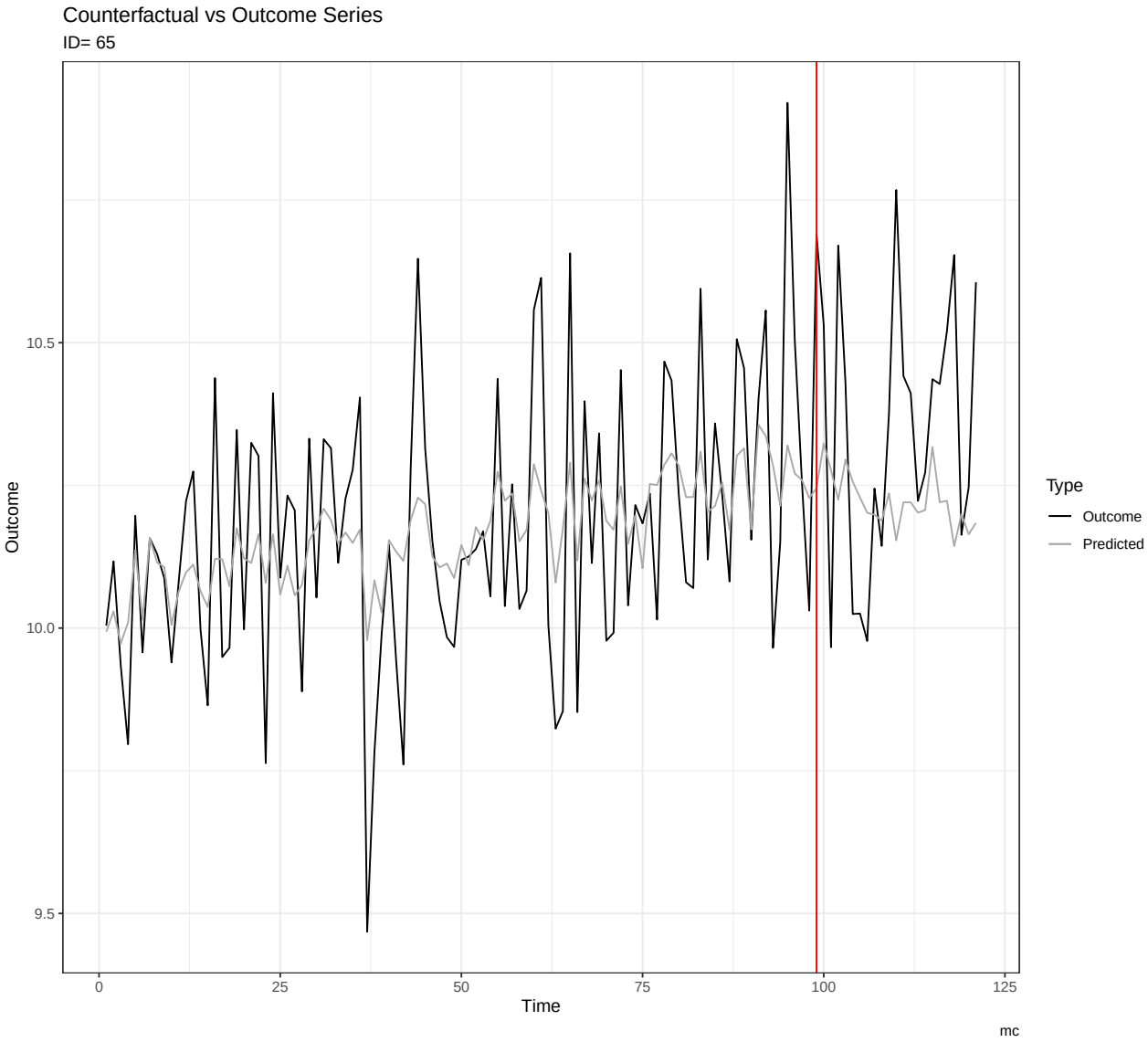

Counterfactual vs Outcome Series
ID= 65
Outcome
10.5
10.0
9.5
0
25
50
75
100
125
Time
gfoo
Type
Outcome
Predicted

##
[[1]]

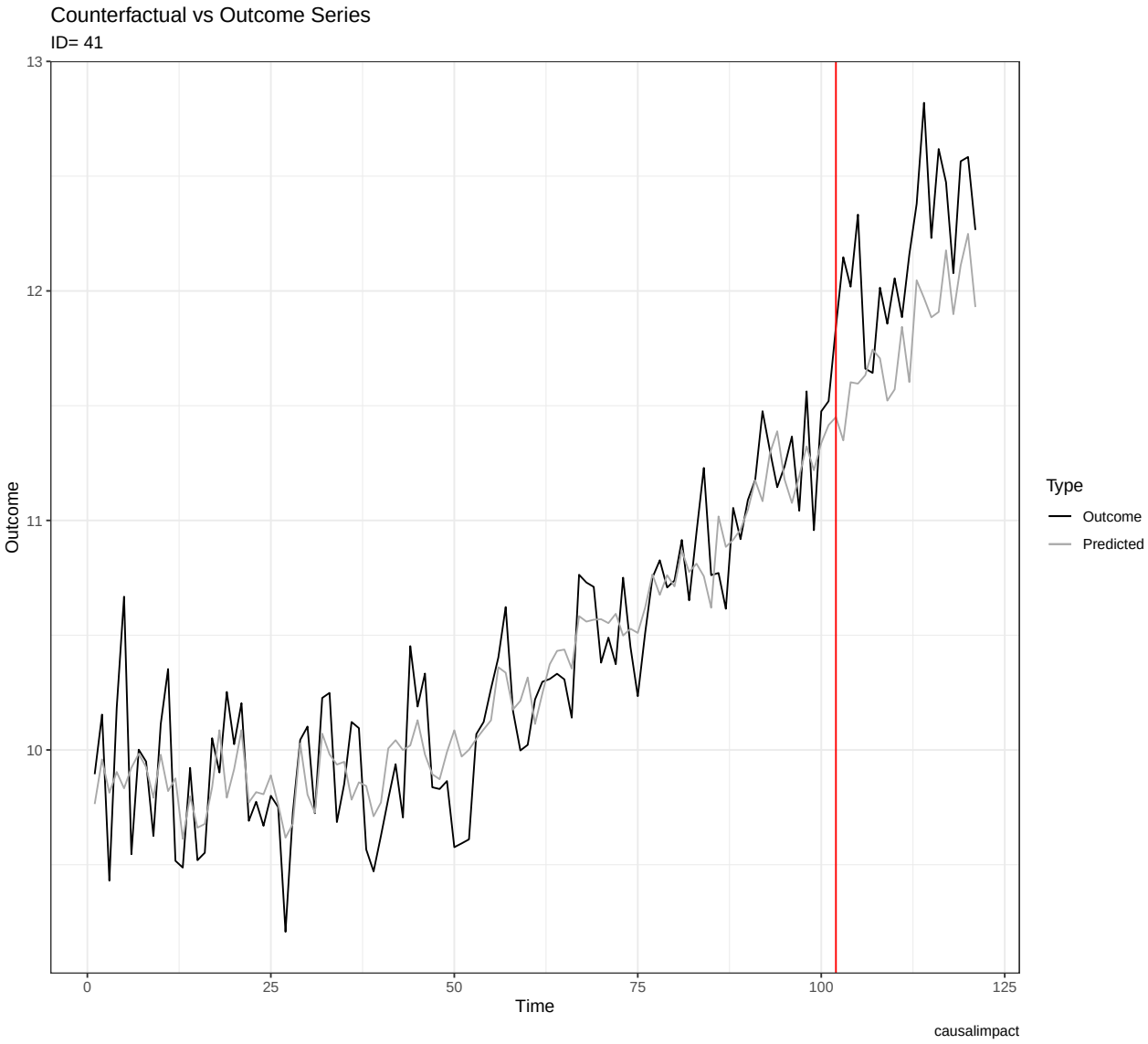

Counterfactual vs Outcome Series
ID= 41
Outcome
Time
Type
Outcome
Predicted
mc

##

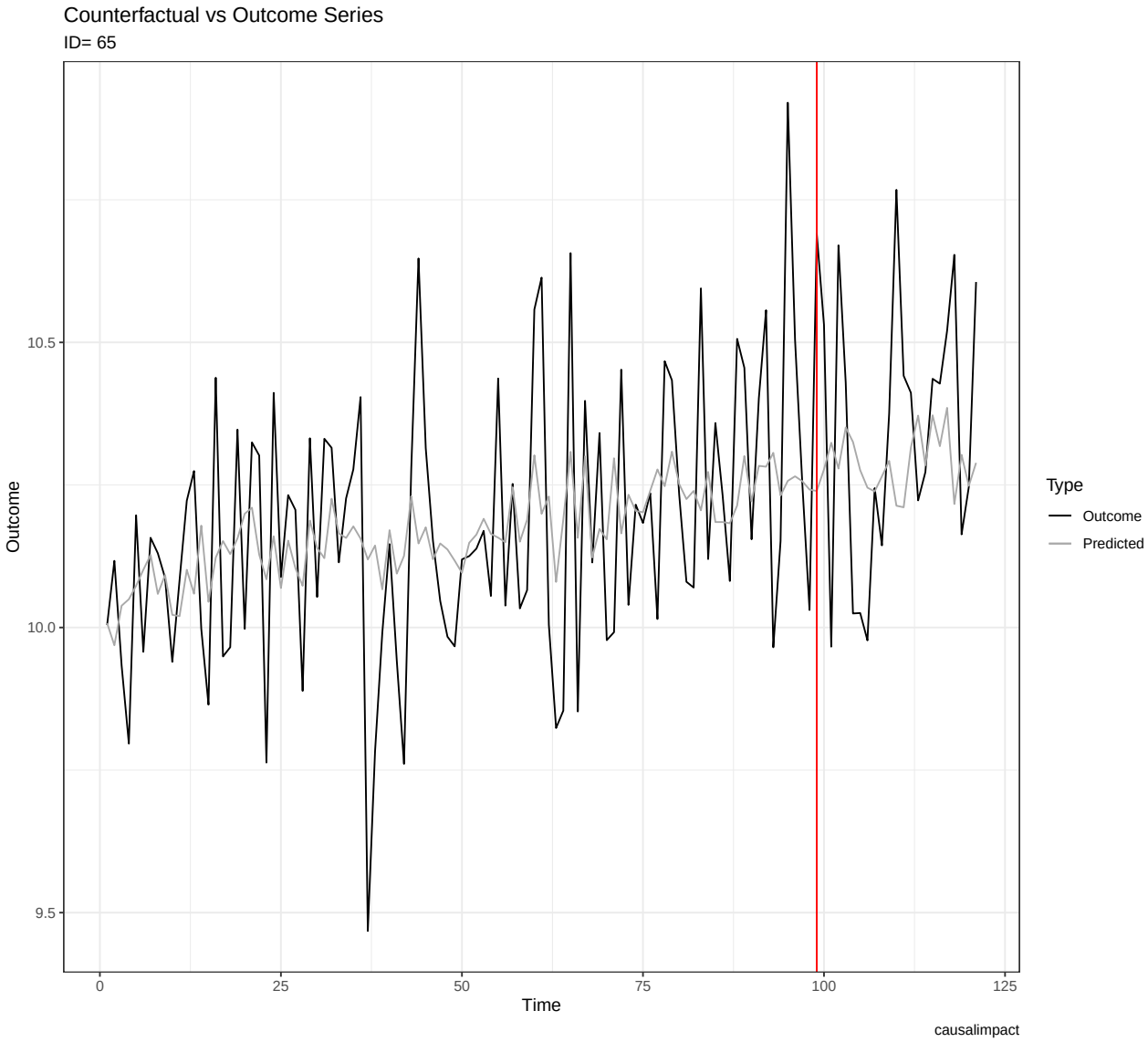
[[2]]


Counterfactual vs Outcome Series
ID= 65
Outcome
10.5
10.0
9.5
0
25
50
75
100
125
Time
Type
Outcome
Predicted
mc

##
[[1]]

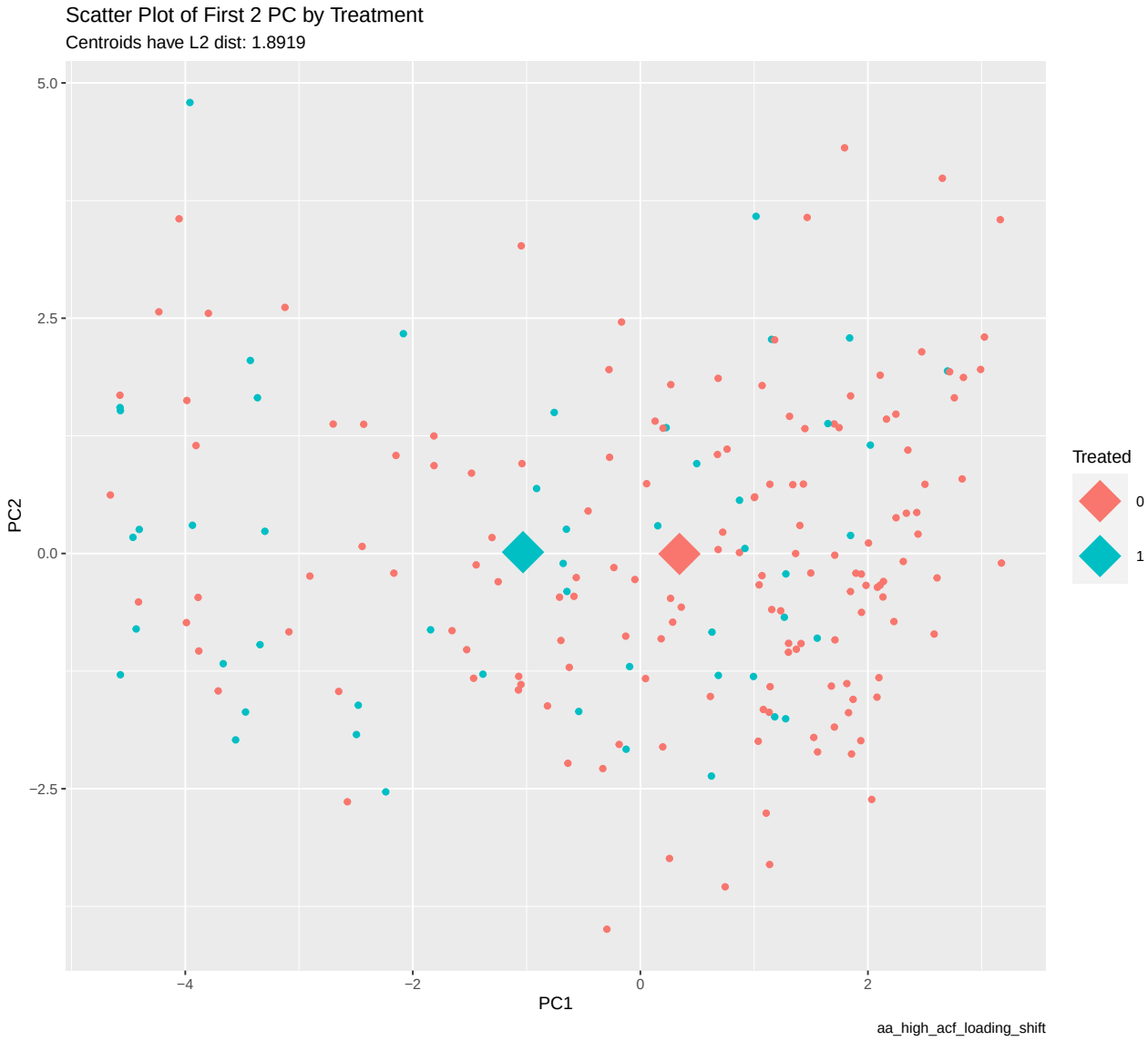

Counterfactual vs Outcome Series
ID= 41
13
12
11
10
Outcome
0
25
50
75
100
125
Time
causalimpact
Type
Outcome
Predicted

##
[[2]]




```
## Registered S3 method overwritten by 'quantmod':
##   method            from
##   as.zoo.data.frame zoo
```

```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df        p    p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>    <dbl>    <dbl> <chr>
## 1 curvature    150    50     0.250  86.0 0.803    0.803    ns
## 2 diff1_acf1   150    50    -0.631  81.5 0.53     0.681    ns
## 3 diff2_acf1   150    50     0.336  88.8 0.738    0.803    ns
## 4 e_acf1       150    50    -0.644  78.3 0.522    0.681    ns
## 5 entropy      150    50     3.51   70.1 0.000791 0.00142  **
## 6 linearity    150    50    -3.87   83.8 0.000212 0.000948 ***
## 7 spike        150    50     3.82   88.7 0.000245 0.000948 ***
## 8 trend        150    50    -3.78   74.0 0.000316 0.000948 ***
## 9 x_acf1       150    50    -3.54   74.6 0.000685 0.00142  **
```

Metrics by Method

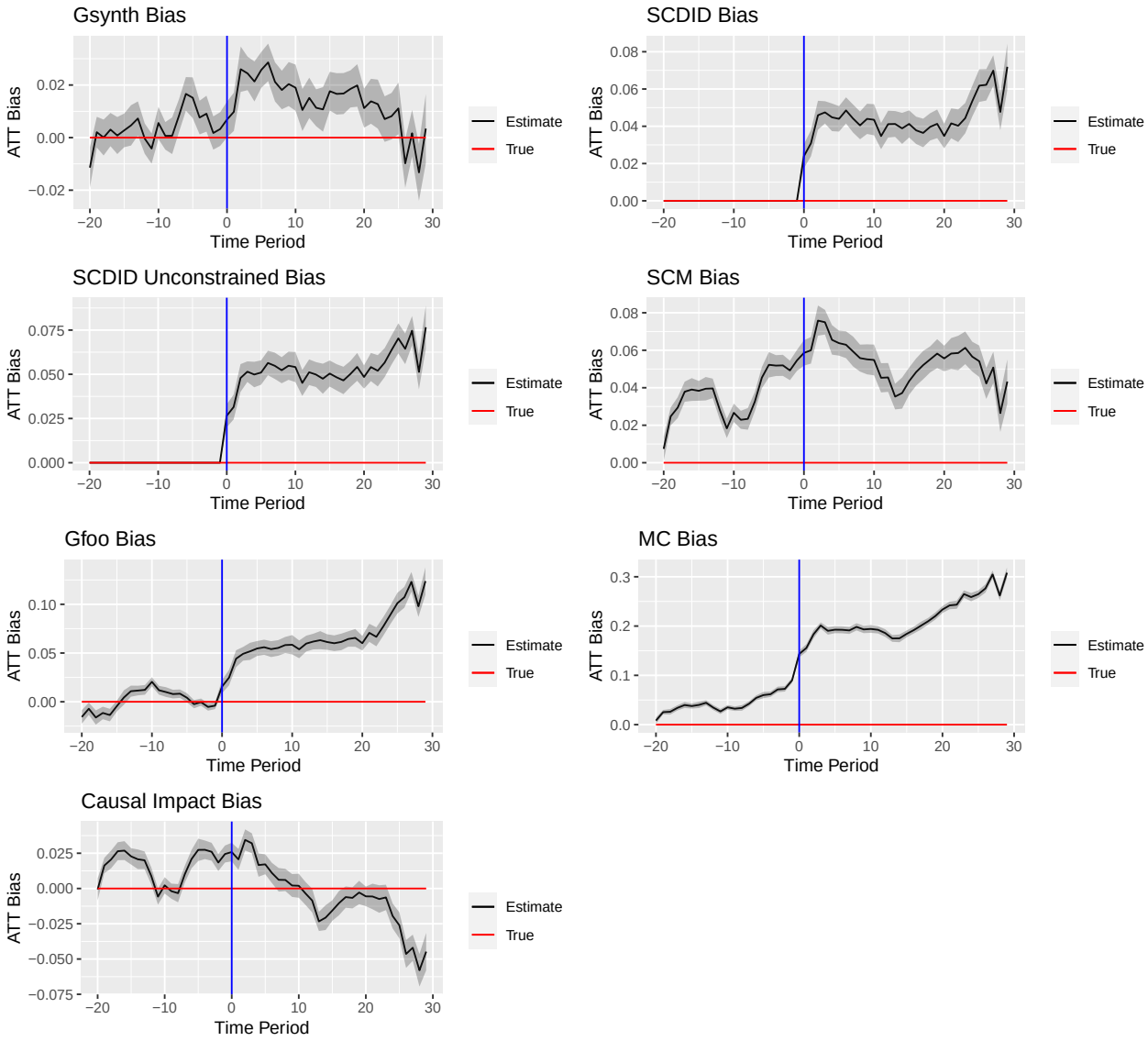
aa_high_acf_loading_shift

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

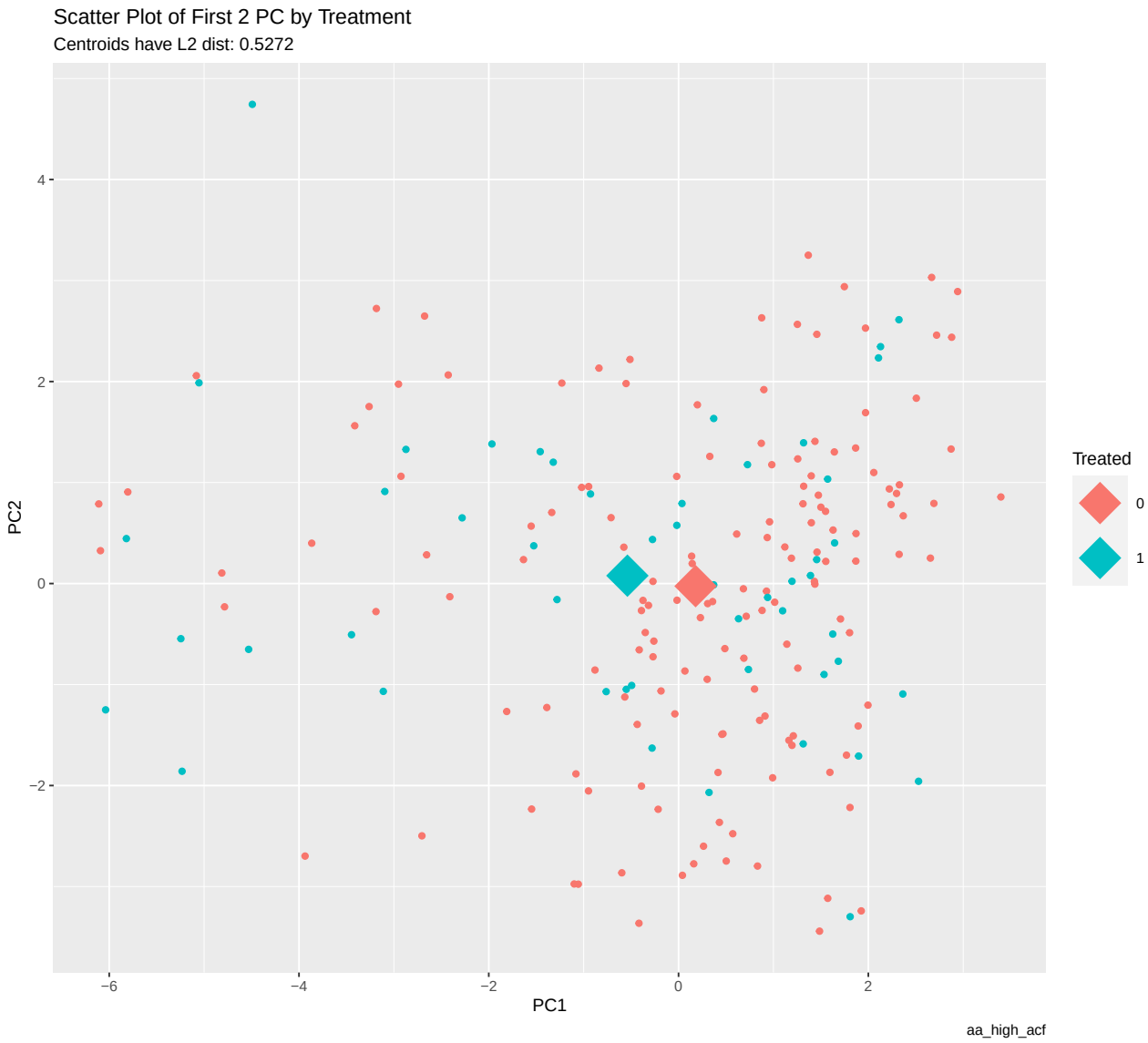
0	0.933	0.973	0.947	0.613	0.813	0.000	0.880
1	0.933	0.880	0.867	0.533	0.640	0.000	0.827
2	0.960	0.987	0.973	0.547	0.667	0.000	0.960
3	0.933	0.987	0.973	0.680	0.707	0.000	0.987
4	0.920	1.000	0.960	0.600	0.533	0.000	0.933
rmse							
0	0.215	0.223	0.217	0.230	0.241	0.416	0.236
1	0.223	0.236	0.230	0.244	0.255	0.462	0.247
2	0.224	0.237	0.231	0.242	0.260	0.526	0.247
3	0.226	0.237	0.230	0.239	0.258	0.540	0.245
4	0.223	0.241	0.234	0.242	0.267	0.562	0.248
bias							
0	0.002	0.011	0.016	0.055	0.038	0.210	0.023
1	0.016	0.024	0.026	0.063	0.055	0.251	0.033
2	0.010	0.008	0.013	0.056	0.049	0.286	0.016
3	0.008	0.003	0.009	0.049	0.050	0.301	0.007
4	0.019	0.014	0.019	0.061	0.066	0.328	0.021

Notes:

```
## [1] "aa_high_acf"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df      p p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>  <dbl> <dbl> <chr>
## 1 curvature    150    50   -0.635   74.3 0.527  0.790 ns
## 2 diff1_acf1   150    50   -0.277   95.8 0.783  0.923 ns
## 3 diff2_acf1   150    50   -0.0973  86.1 0.923  0.923 ns
## 4 e_acf1       150    50    0.151   84.5 0.88   0.923 ns
## 5 entropy      150    50    2.03    66.0 0.0459 0.138 ns
## 6 linearity    150    50   -1.20    68.9 0.233  0.419 ns
## 7 spike        150    50    1.22    71.4 0.228  0.419 ns
## 8 trend        150    50   -2.19    71.0 0.0319 0.138 ns
## 9 x_acf1       150    50   -2.07    72.6 0.042  0.138 ns
```

Metrics by Method

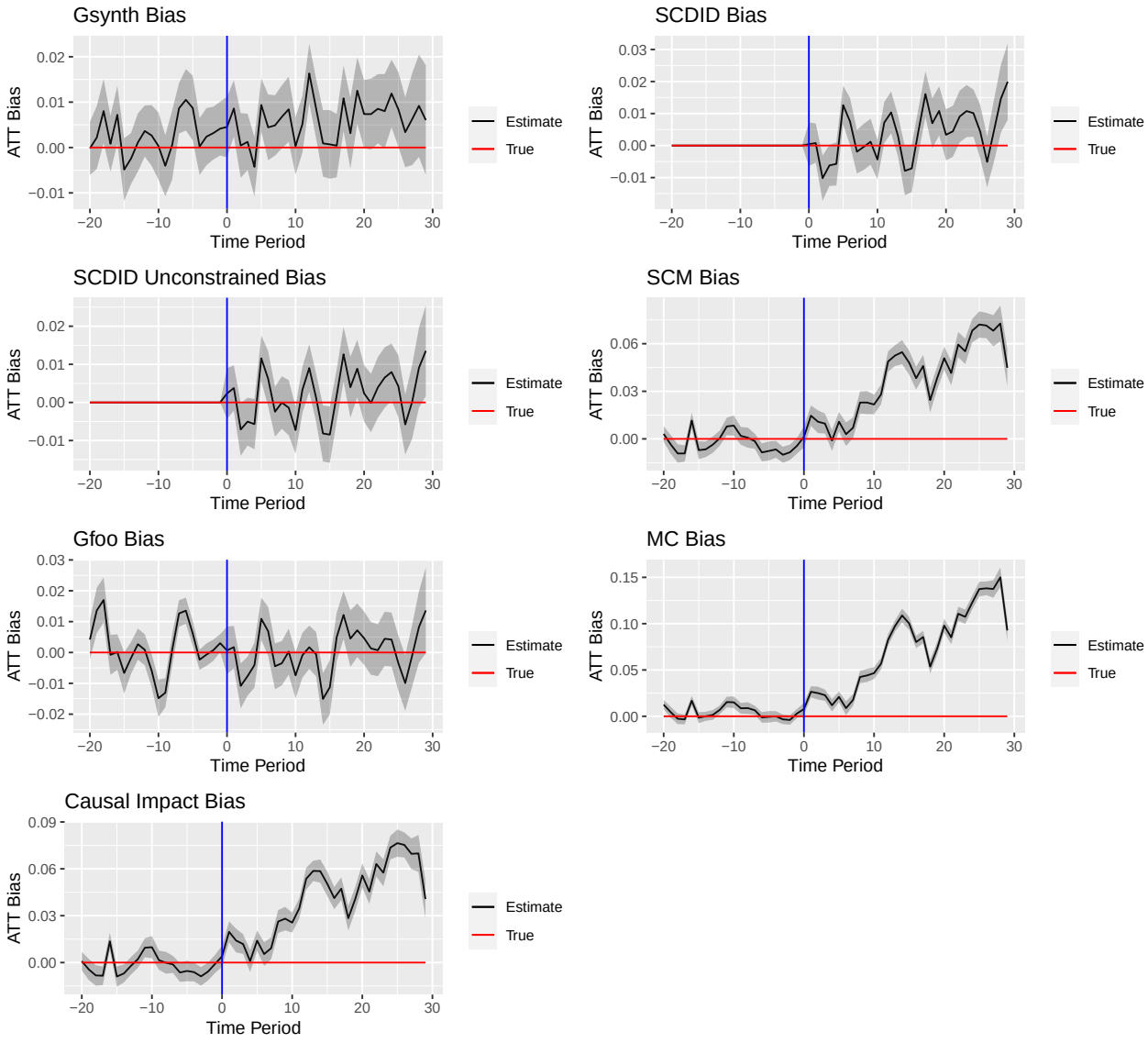
aa_high_acf

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

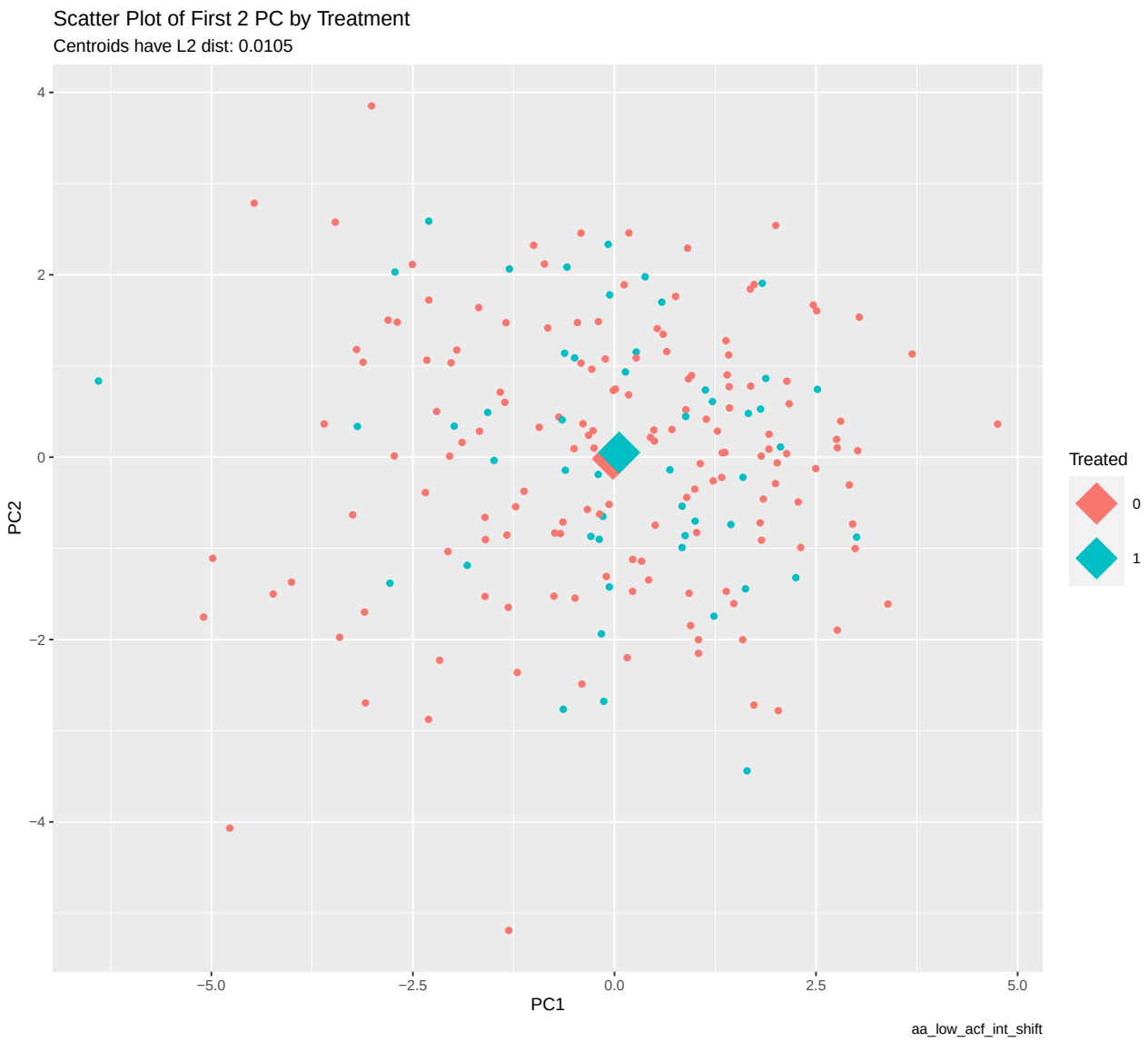
0	0.973	0.920	0.893	0.587	0.960	0.040	0.920
1	0.920	0.907	0.893	0.640	0.933	0.000	0.933
2	0.840	0.773	0.707	0.400	0.813	0.013	0.827
3	0.933	0.840	0.800	0.493	0.840	0.000	0.920
4	0.920	0.787	0.747	0.520	0.720	0.013	0.920
rmse							
0	0.221	0.238	0.236	0.239	0.245	0.329	0.237
1	0.228	0.250	0.247	0.250	0.257	0.359	0.244
2	0.228	0.250	0.246	0.249	0.260	0.381	0.240
3	0.238	0.260	0.255	0.261	0.272	0.419	0.251
4	0.233	0.256	0.252	0.253	0.269	0.414	0.242
bias							
0	0.007	0.024	0.027	0.059	0.016	0.143	0.026
1	0.010	0.031	0.031	0.060	0.025	0.156	0.021
2	0.026	0.046	0.048	0.076	0.044	0.183	0.034
3	0.024	0.047	0.051	0.075	0.049	0.201	0.032
4	0.021	0.045	0.050	0.066	0.052	0.190	0.017

Notes:

```
## [1] "aa_low_acf_int_shift"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df      p p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>  <dbl> <dbl> <chr>
## 1 curvature    150    50    -0.967  83.1 0.336  0.605 ns
## 2 diff1_acf1   150    50    -0.333  84.3 0.74   0.812 ns
## 3 diff2_acf1   150    50    -1.49   82.6 0.14   0.42  ns
## 4 e_acf1       150    50     1.11   85.1 0.272  0.605 ns
## 5 entropy      150    50    -1.79   98.1 0.0765 0.42  ns
## 6 linearity    150    50     1.49   92.8 0.139  0.42  ns
## 7 spike        150    50     0.397 108.  0.692  0.812 ns
## 8 trend        150    50    -0.238  93.5 0.812  0.812 ns
## 9 x_acf1       150    50     0.607  92.3 0.545  0.812 ns
```

Metrics by Method

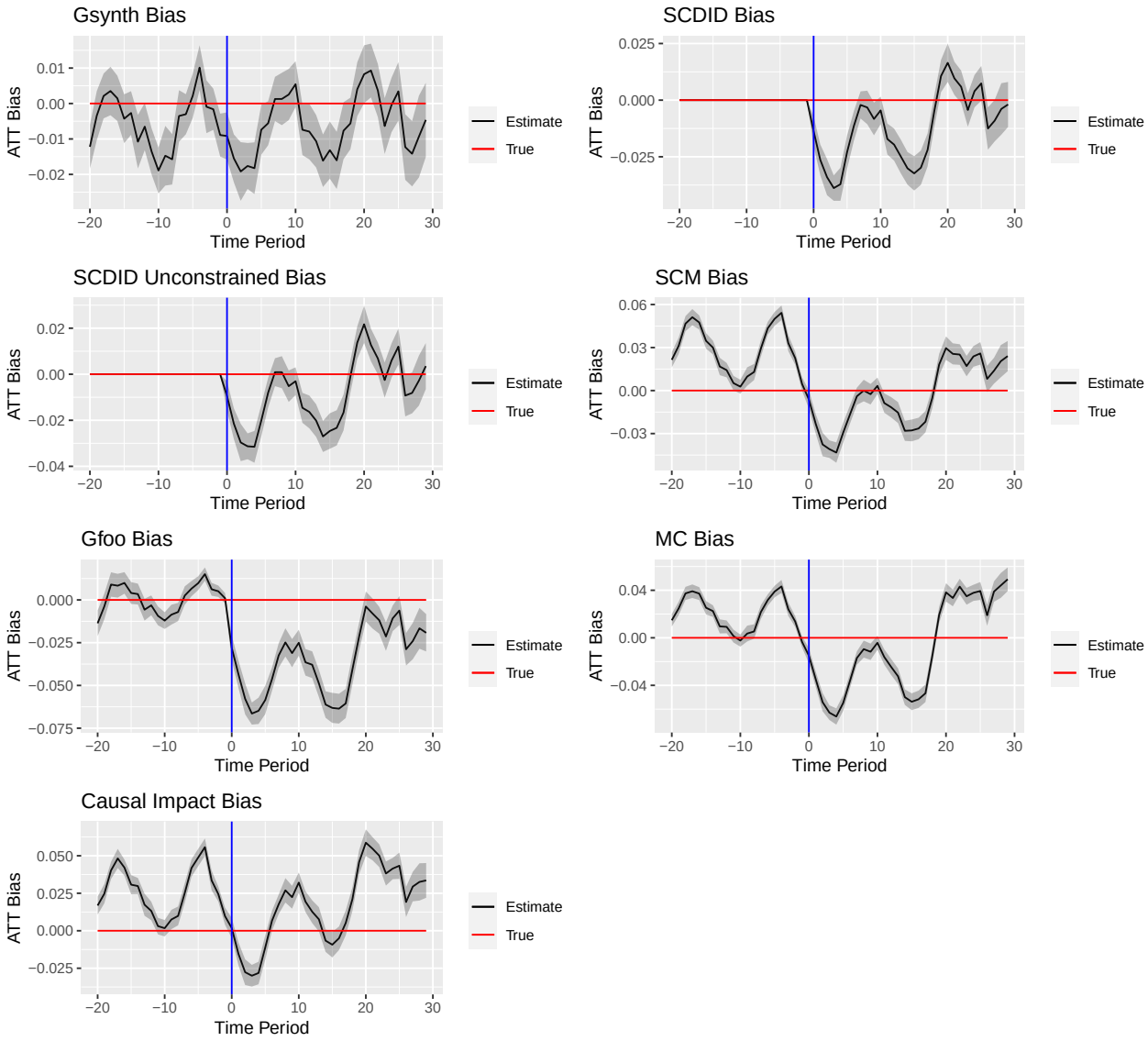
aa_low_acf_int_shift

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

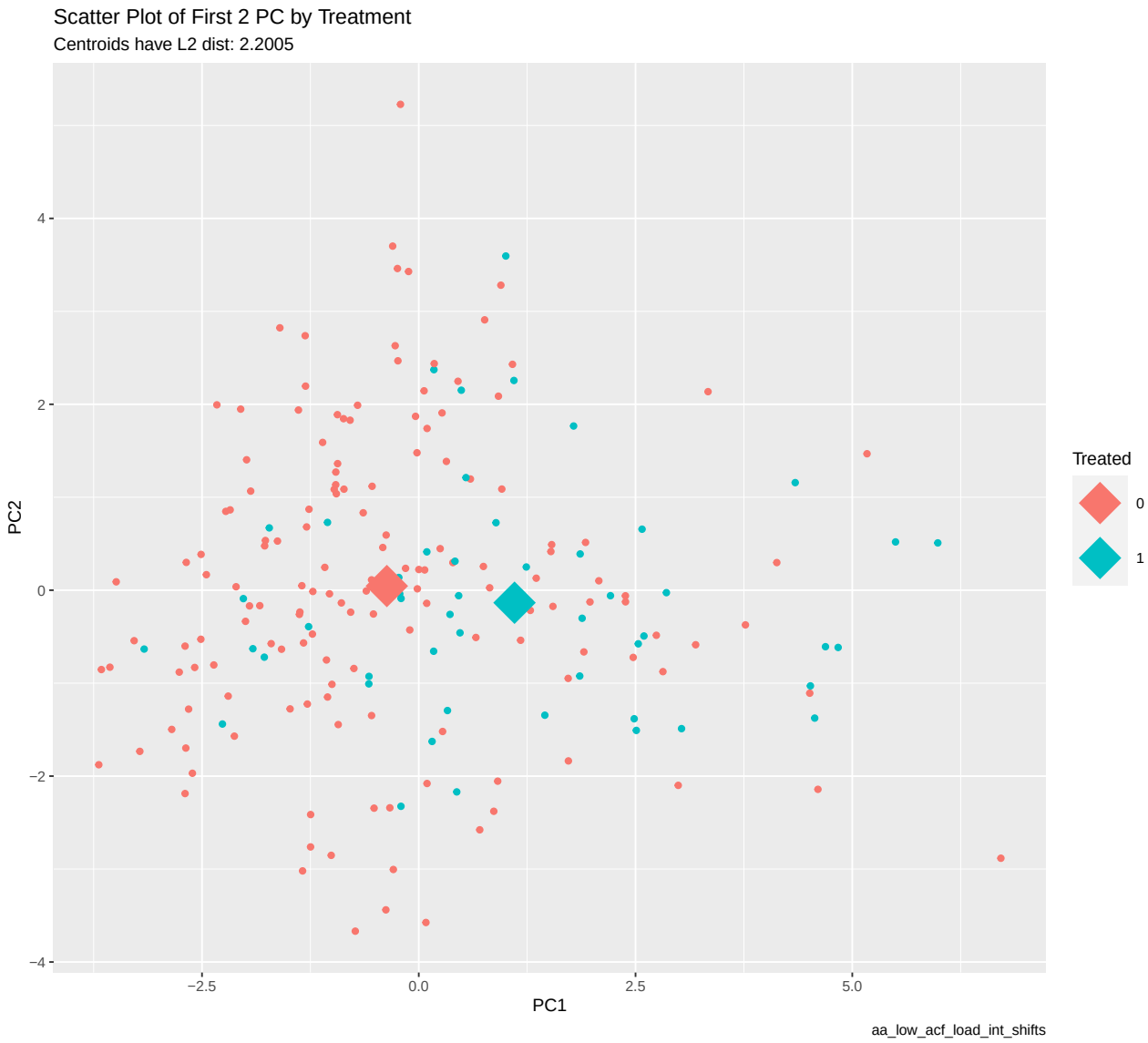
0	0.960	0.933	0.933	0.960	0.907	0.973	0.973
1	0.947	0.973	0.973	0.947	0.960	0.893	0.920
2	0.947	0.960	0.960	0.907	0.960	0.867	0.893
3	0.973	0.960	0.973	0.987	0.973	0.920	0.973
4	0.960	0.987	0.973	0.987	0.947	0.947	0.973
rmse							
0	0.209	0.212	0.211	0.216	0.227	0.214	0.222
1	0.211	0.213	0.211	0.215	0.230	0.216	0.221
2	0.209	0.211	0.210	0.217	0.229	0.217	0.224
3	0.210	0.215	0.213	0.219	0.230	0.221	0.227
4	0.209	0.214	0.212	0.218	0.231	0.220	0.225
bias							
0	0.005	0.000	0.002	0.001	0.001	0.008	0.004
1	0.009	0.001	0.004	0.015	0.002	0.026	0.020
2	0.000	−0.010	−0.007	0.011	−0.011	0.025	0.014
3	0.001	−0.006	−0.005	0.010	−0.008	0.023	0.012
4	−0.004	−0.006	−0.006	−0.001	−0.004	0.012	0.001

Notes:

```
## [1] "aa_low_acf_load_int_shifts"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df          p     p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>      <dbl>     <dbl> <chr>
## 1 curvature    150    50      1.18   97.6 0.239      0.307     ns
## 2 diff1_acf1   150    50     -2.55   87.3 0.0127     0.0229    *
## 3 diff2_acf1   150    50     -0.870  88.9 0.387      0.387     ns
## 4 e_acf1       150    50     -2.07  104.  0.0407     0.0610    ns
## 5 entropy      150    50      3.05   77.4 0.00311    0.00700   **
## 6 linearity    150    50     -0.951 109.  0.344      0.387     ns
## 7 spike        150    50      4.74   95.6 0.0000074  0.0000222 ****
## 8 trend        150    50     -4.93   77.1 0.00000452 0.0000222 ****
## 9 x_acf1       150    50     -4.86   78.5 0.0000058  0.0000222 ****
```

Metrics by Method

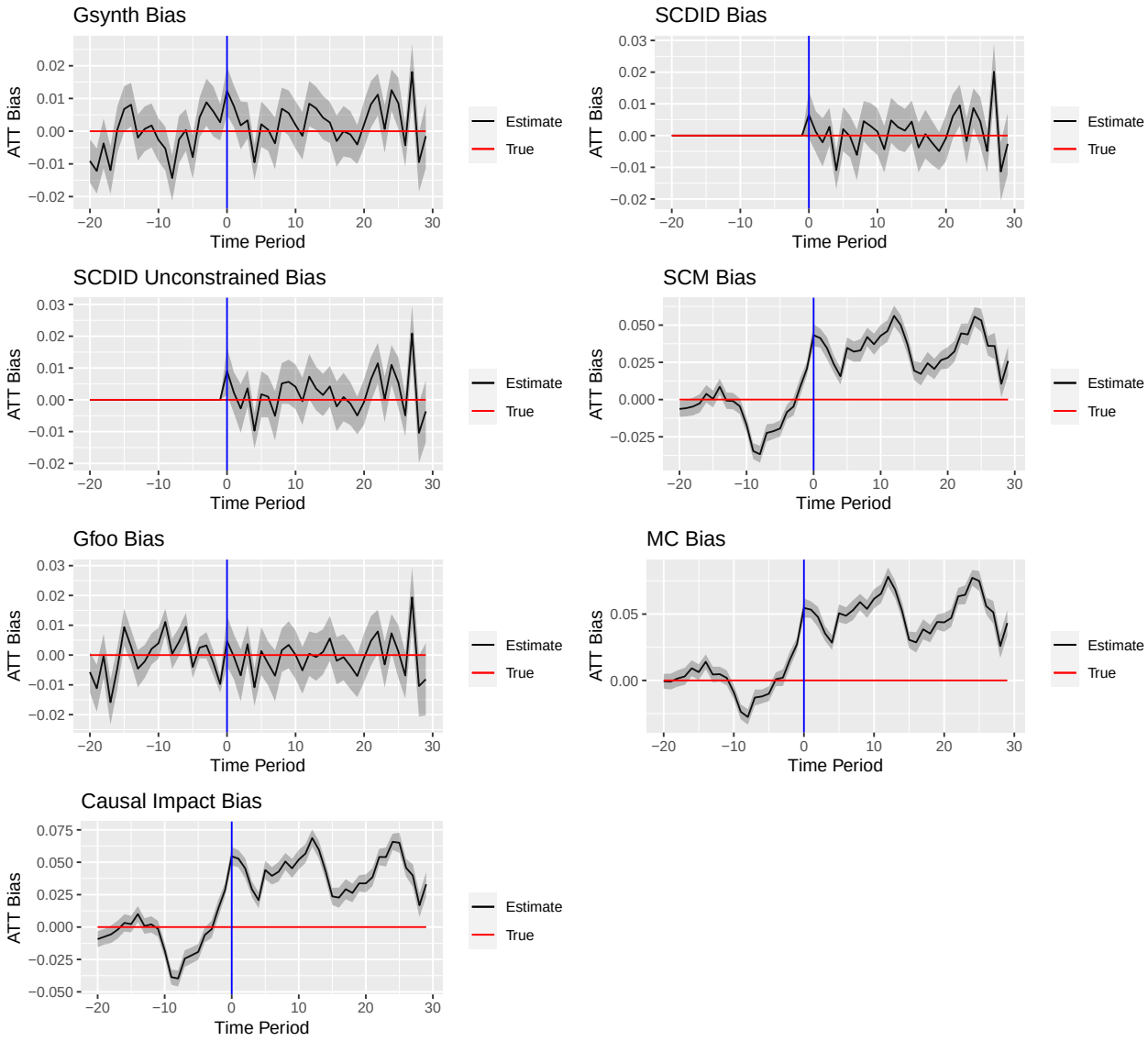
aa_low_acf_load_int_shifts

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

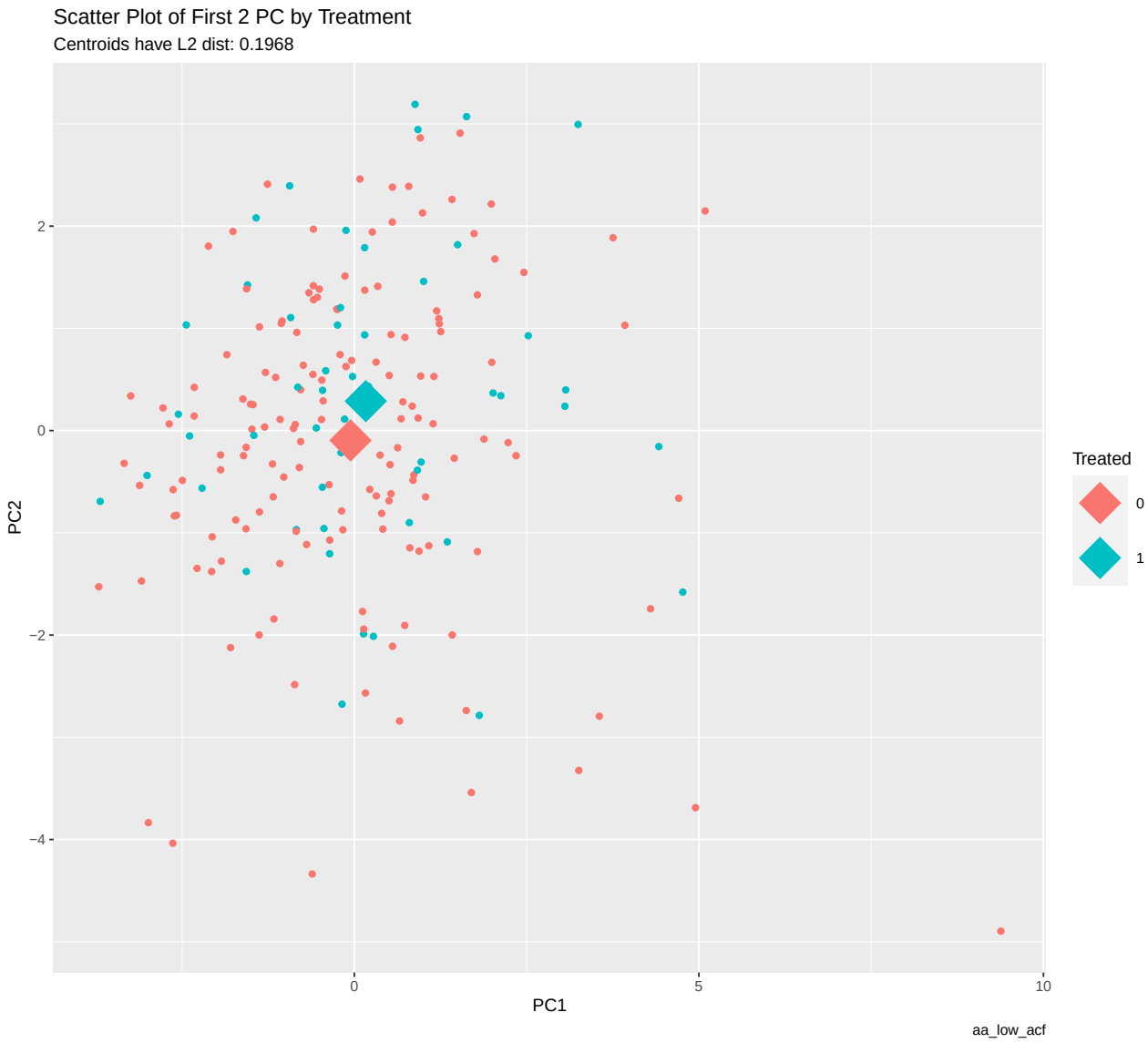
0	0.933	0.960	0.947	0.933	0.907	0.960	0.973
1	0.920	0.840	0.907	0.907	0.680	0.787	0.933
2	0.880	0.787	0.827	0.747	0.693	0.613	0.840
3	0.880	0.800	0.840	0.787	0.600	0.480	0.827
4	0.880	0.800	0.840	0.747	0.627	0.427	0.867
rmse							
0	0.212	0.216	0.214	0.217	0.243	0.216	0.228
1	0.214	0.219	0.215	0.220	0.250	0.219	0.231
2	0.217	0.225	0.220	0.225	0.260	0.227	0.235
3	0.212	0.221	0.216	0.220	0.268	0.225	0.231
4	0.213	0.223	0.219	0.222	0.273	0.229	0.230
bias							
0	−0.009	−0.014	−0.009	−0.006	−0.028	−0.015	0.002
1	−0.015	−0.026	−0.021	−0.023	−0.043	−0.035	−0.015
2	−0.019	−0.034	−0.030	−0.038	−0.058	−0.054	−0.028
3	−0.018	−0.039	−0.031	−0.041	−0.066	−0.063	−0.030
4	−0.018	−0.037	−0.032	−0.043	−0.065	−0.066	−0.028

Notes:

```
## [1] "aa_low_acf"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df      p p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>  <dbl> <dbl> <chr>
## 1 curvature    150    50     0.748  90.0 0.457  0.686 ns
## 2 diff1_acf1   150    50    -1.33   82.7 0.188  0.686 ns
## 3 diff2_acf1   150    50    -0.979  81.1 0.33   0.686 ns
## 4 e_acf1       150    50    -1.92   91.7 0.0573 0.516 ns
## 5 entropy      150    50     0.356  87.5 0.722  0.722 ns
## 6 linearity    150    50     0.483  83.3 0.63   0.709 ns
## 7 spike        150    50    -0.876  74.9 0.384  0.686 ns
## 8 trend        150    50     0.510 106.  0.611  0.709 ns
## 9 x_acf1       150    50    -0.921 105.  0.359  0.686 ns
```

Metrics by Method

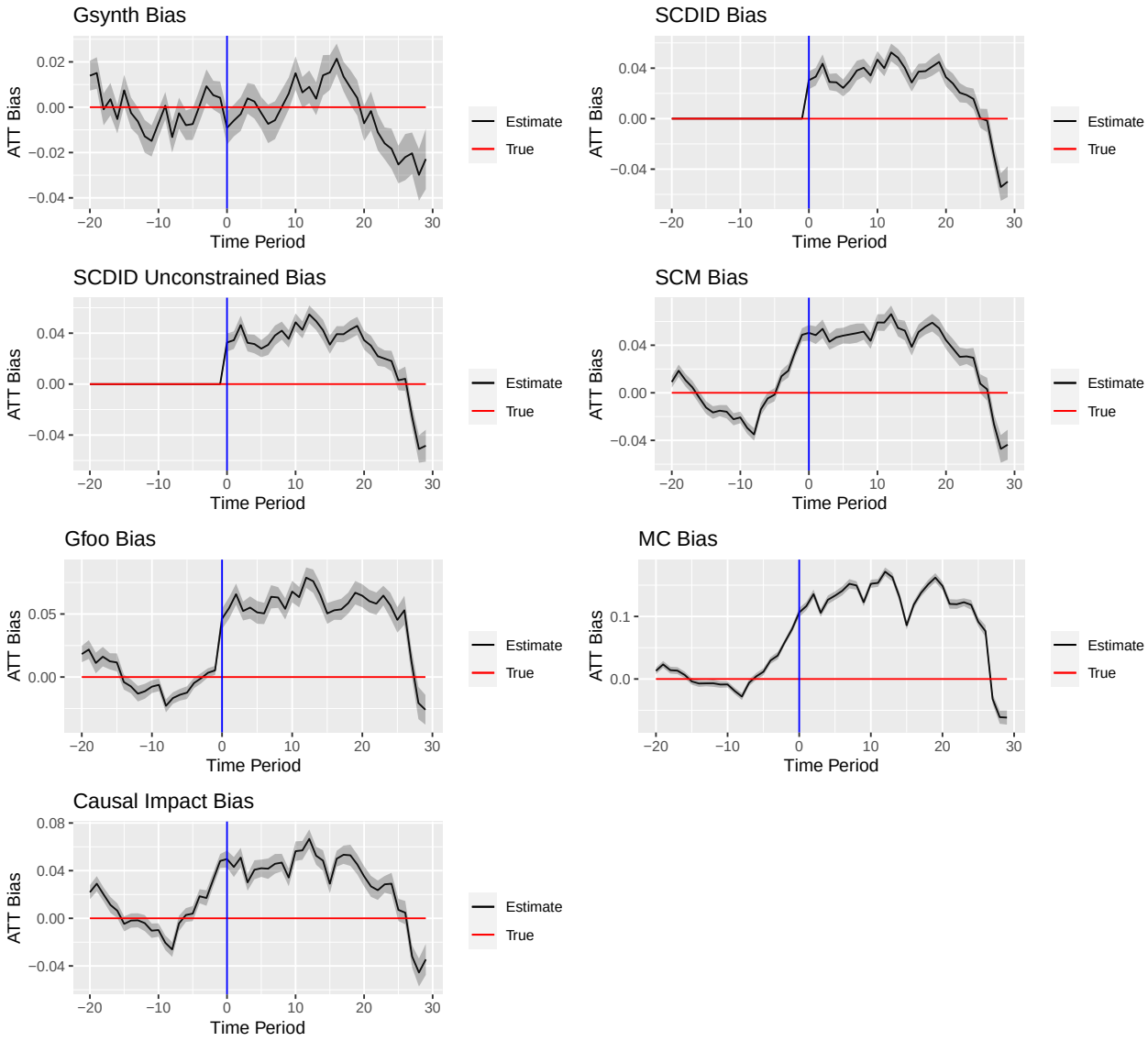
aa_low_acf

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

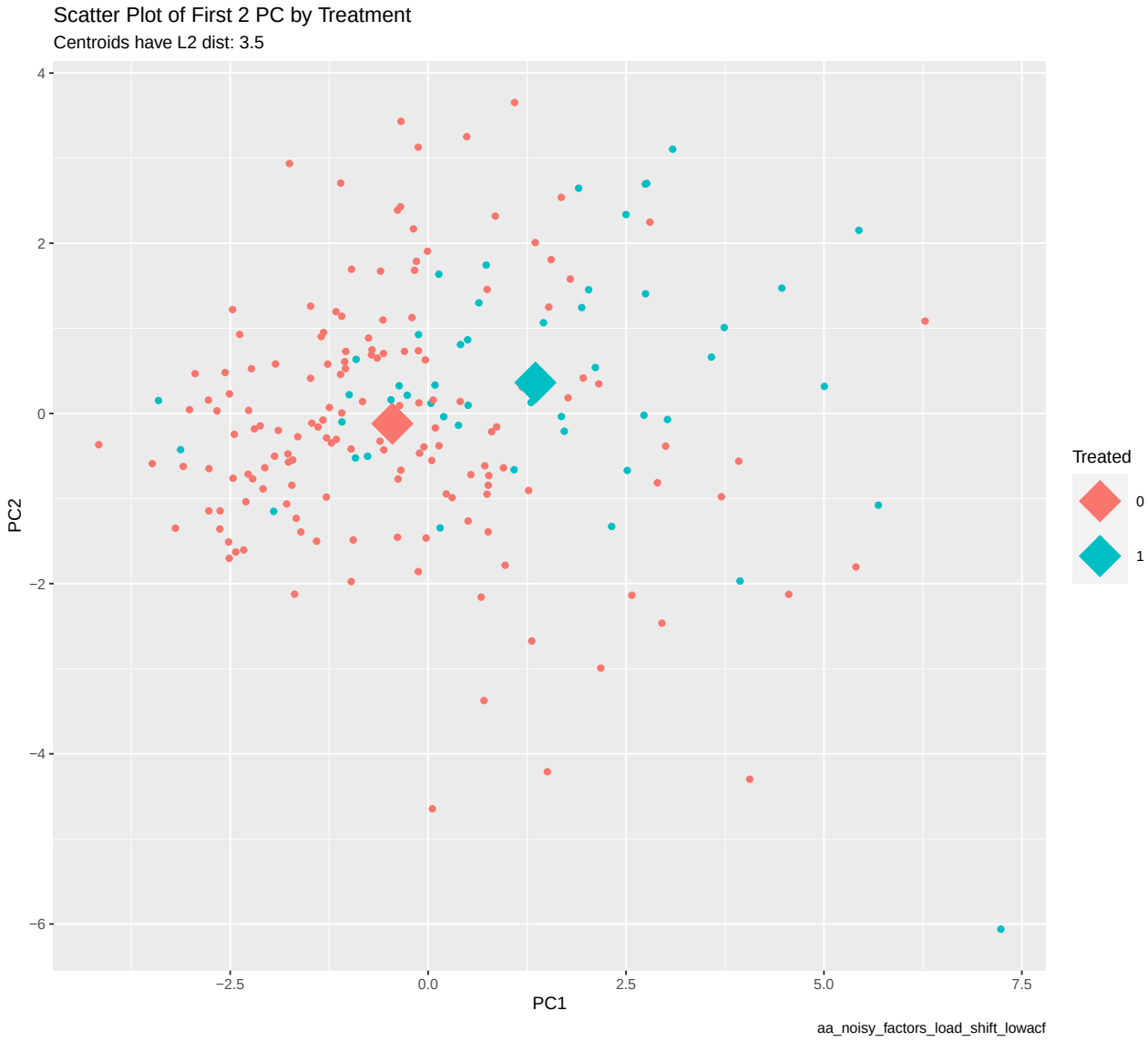
0	0.947	0.947	0.947	0.733	0.907	0.587	0.653
1	0.960	0.947	0.960	0.707	0.960	0.560	0.613
2	0.947	0.920	0.920	0.773	0.907	0.600	0.707
3	0.987	0.987	0.987	0.920	0.987	0.840	0.893
4	0.973	0.960	0.960	0.973	0.973	0.947	0.973
rmse							
0	0.210	0.211	0.209	0.218	0.229	0.218	0.226
1	0.209	0.210	0.208	0.217	0.233	0.216	0.224
2	0.206	0.207	0.205	0.213	0.227	0.214	0.219
3	0.208	0.211	0.209	0.213	0.230	0.212	0.218
4	0.206	0.209	0.206	0.210	0.228	0.208	0.215
bias							
0	0.012	0.007	0.009	0.043	0.005	0.055	0.055
1	0.008	0.001	0.002	0.041	−0.001	0.053	0.053
2	0.002	−0.002	−0.003	0.035	−0.007	0.048	0.045
3	0.003	0.003	0.004	0.024	0.004	0.036	0.029
4	−0.010	−0.011	−0.010	0.016	−0.011	0.029	0.021

Notes:

```
## [1] "aa_noisy_factors_load_shift_lowacf"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df          p      p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>      <dbl>      <dbl> <chr>
## 1 curvature    150    50    -0.978  75.7 0.331      0.331      ns
## 2 diff1_acf1   150    50    -5.18   78.1 0.00000169 0.00000507 ****
## 3 diff2_acf1   150    50    -3.54   86.8 0.000654   0.00118    **
## 4 e_acf1       150    50    -5.24   74.7 0.00000144 0.00000507 ****
## 5 entropy      150    50     4.19   69.0 0.00008    0.00018    ***
## 6 linearity    150    50    -2.00   83.4 0.0489     0.0550     ns
## 7 spike        150    50     2.67   90.9 0.00903    0.0116     *
## 8 trend        150    50    -3.14   77.0 0.00237    0.00356    **
## 9 x_acf1       150    50    -5.23   78.8 0.00000137 0.00000507 ****
```

Metrics by Method

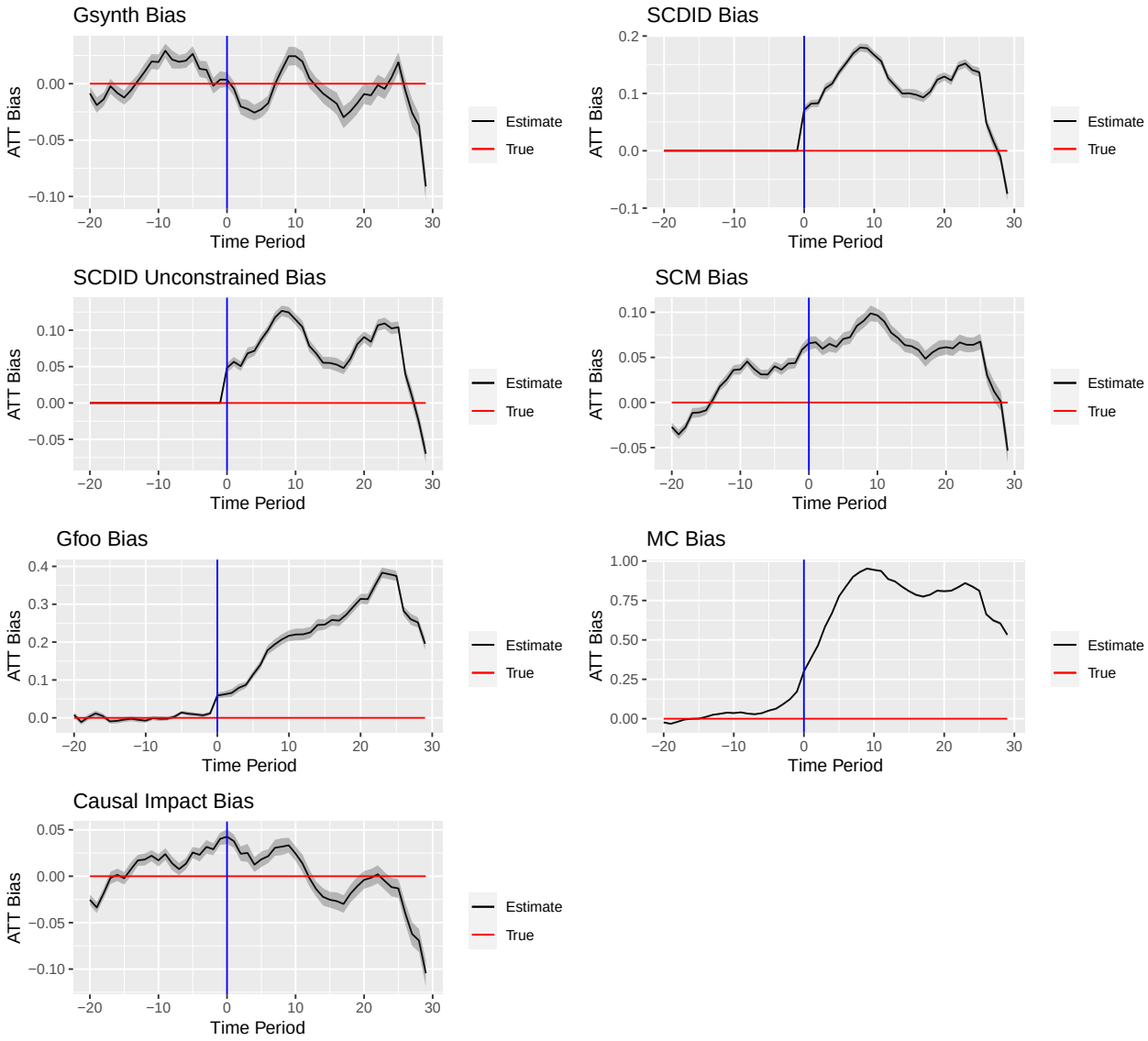
aa_noisy_factors_load_shift_lowacf

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

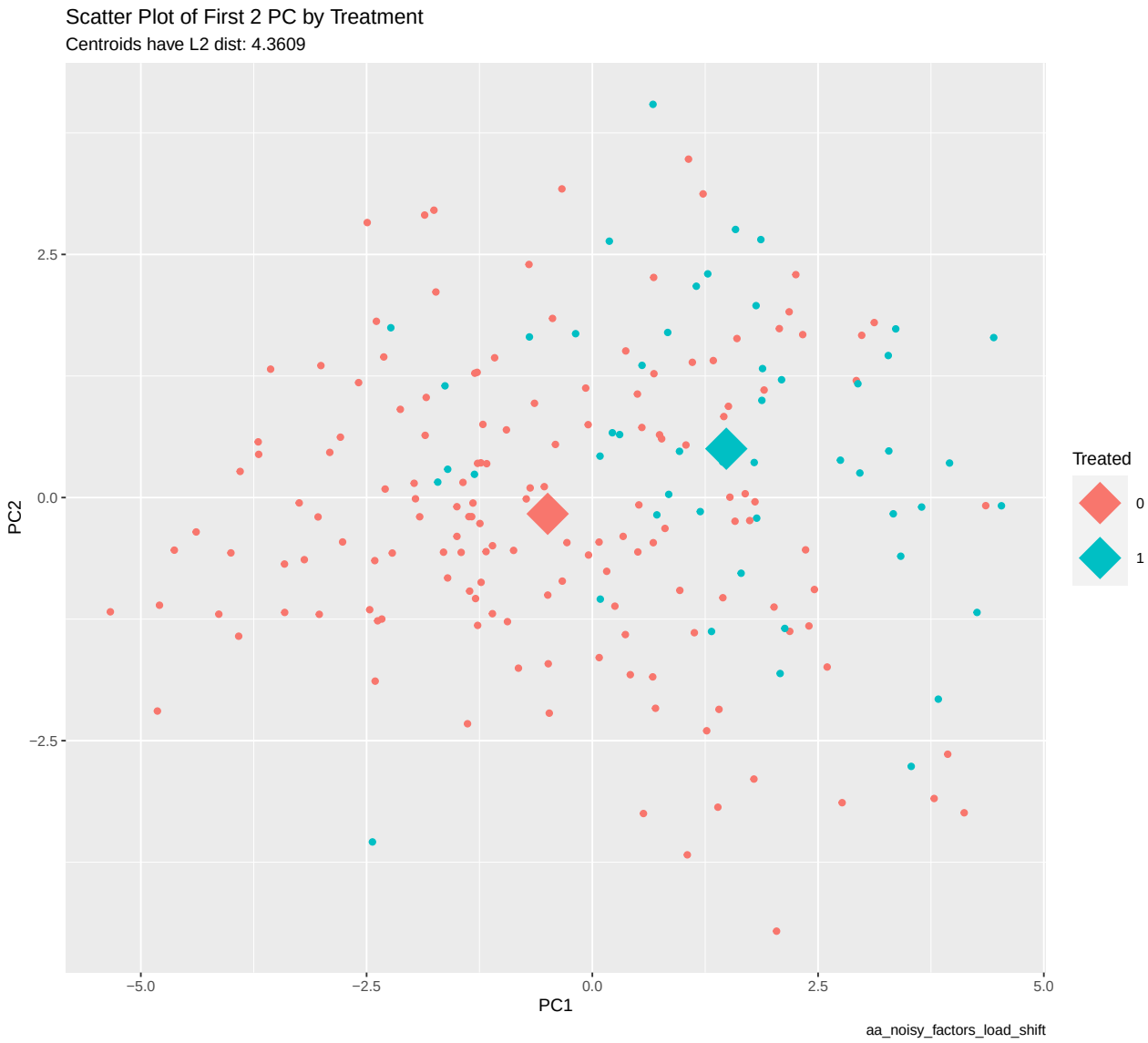
0	0.933	0.933	0.880	0.680	0.800	0.107	0.693
1	0.933	0.840	0.827	0.667	0.680	0.027	0.760
2	0.933	0.813	0.800	0.720	0.760	0.027	0.787
3	0.987	0.960	0.880	0.787	0.800	0.107	0.947
4	0.933	0.893	0.853	0.733	0.680	0.027	0.813
rmse							
0	0.223	0.230	0.228	0.235	0.261	0.252	0.247
1	0.227	0.237	0.234	0.241	0.271	0.268	0.254
2	0.231	0.249	0.248	0.250	0.287	0.292	0.264
3	0.239	0.252	0.250	0.251	0.277	0.274	0.262
4	0.238	0.245	0.243	0.247	0.261	0.271	0.256
bias							
0	−0.009	0.030	0.033	0.050	0.046	0.106	0.050
1	−0.006	0.033	0.035	0.048	0.055	0.117	0.043
2	−0.003	0.044	0.046	0.054	0.066	0.136	0.051
3	0.004	0.029	0.032	0.043	0.052	0.106	0.030
4	0.002	0.029	0.031	0.047	0.055	0.127	0.041

Notes:

```
## [1] "aa_noisy_factors_load_shift"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df        p         p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>    <dbl>         <dbl> <chr>
## 1 curvature    150    50   -1.98    72.5 5.14e- 2 0.0578        ns
## 2 diff1_acf1   150    50   -6.37    80.1 1.13e- 8 0.0000000254  ****
## 3 diff2_acf1   150    50    0.0541  94.0 9.57e- 1 0.957         ns
## 4 e_acf1       150    50   -7.03    78.1 7.00e-10 0.00000000315 ****
## 5 entropy      150    50    4.21    80.0 6.63e- 5 0.0000994     ****
## 6 linearity    150    50   -3.10    92.6 2.60e- 3 0.00334       **
## 7 spike        150    50    6.00   178.  1.07e- 8 0.0000000254  ****
## 8 trend        150    50   -5.97   111.  2.86e- 8 0.0000000515  ****
## 9 x_acf1       150    50   -6.88   117.  3.21e-10 0.00000000289 ****
```

Metrics by Method

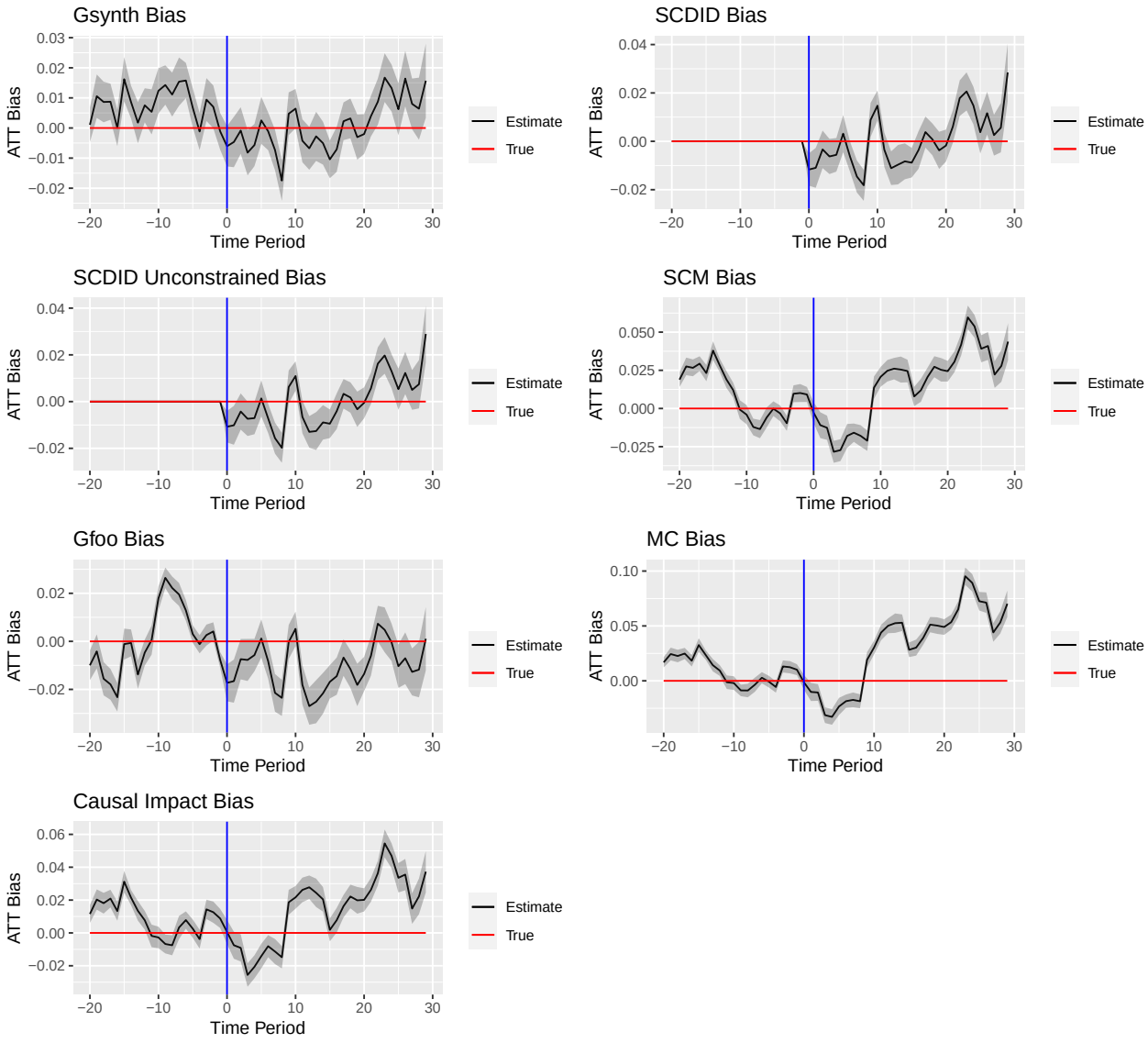
aa_noisy_factors_load_shift

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

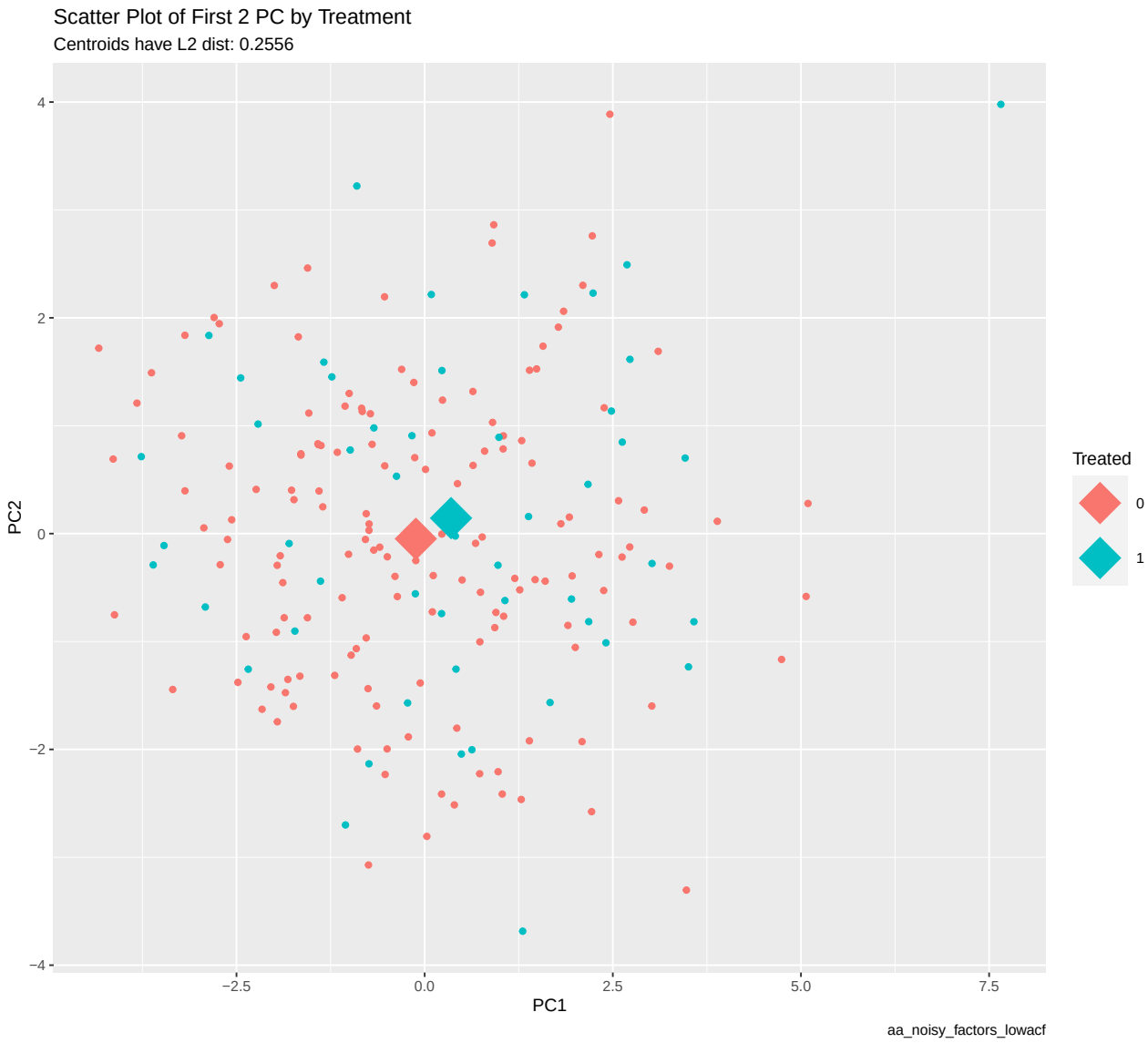
0	0.987	0.520	0.667	0.467	0.627	0.000	0.773
1	0.987	0.480	0.693	0.600	0.747	0.000	0.853
2	0.933	0.520	0.760	0.653	0.707	0.000	0.907
3	0.907	0.347	0.640	0.533	0.693	0.000	0.893
4	0.947	0.253	0.693	0.627	0.787	0.000	0.987
rmse							
0	0.236	0.261	0.239	0.242	0.280	0.490	0.257
1	0.250	0.285	0.258	0.258	0.304	0.588	0.265
2	0.252	0.301	0.268	0.255	0.336	0.686	0.266
3	0.266	0.349	0.302	0.268	0.373	0.843	0.273
4	0.272	0.371	0.316	0.273	0.413	0.935	0.278
bias							
0	0.004	0.071	0.048	0.066	0.059	0.300	0.043
1	−0.004	0.082	0.057	0.067	0.062	0.383	0.038
2	−0.020	0.083	0.051	0.060	0.066	0.465	0.024
3	−0.022	0.109	0.068	0.065	0.079	0.583	0.025
4	−0.026	0.117	0.072	0.062	0.087	0.670	0.013

Notes:

```
## [1] "aa_noisy_factors_lowacf"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df      p p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>  <dbl> <dbl> <chr>
## 1 curvature    150    50   -0.552   71.7 0.583  0.750 ns
## 2 diff1_acf1   150    50   -0.627   85.9 0.532  0.750 ns
## 3 diff2_acf1   150    50    0.0828  88.7 0.934  0.934 ns
## 4 e_acf1       150    50   -0.558   78.5 0.579  0.750 ns
## 5 entropy      150    50    1.98    59.6 0.0518 0.466 ns
## 6 linearity    150    50   -0.357   78.6 0.722  0.812 ns
## 7 spike        150    50    0.640   75.3 0.524  0.750 ns
## 8 trend        150    50   -1.47    70.8 0.145  0.612 ns
## 9 x_acf1       150    50   -1.28    73.9 0.204  0.612 ns
```

Metrics by Method

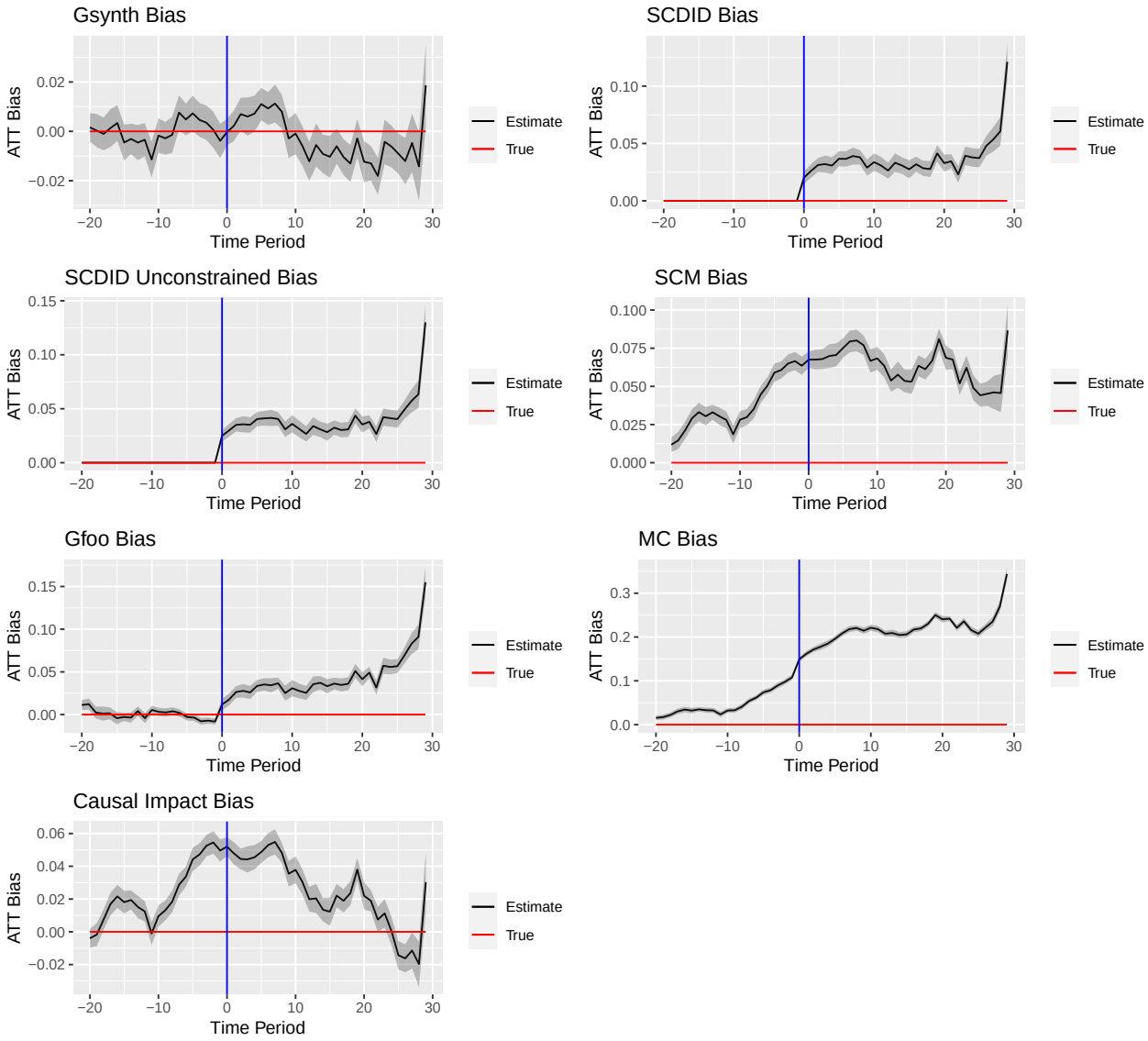
aa_noisy_factors_lowacf

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

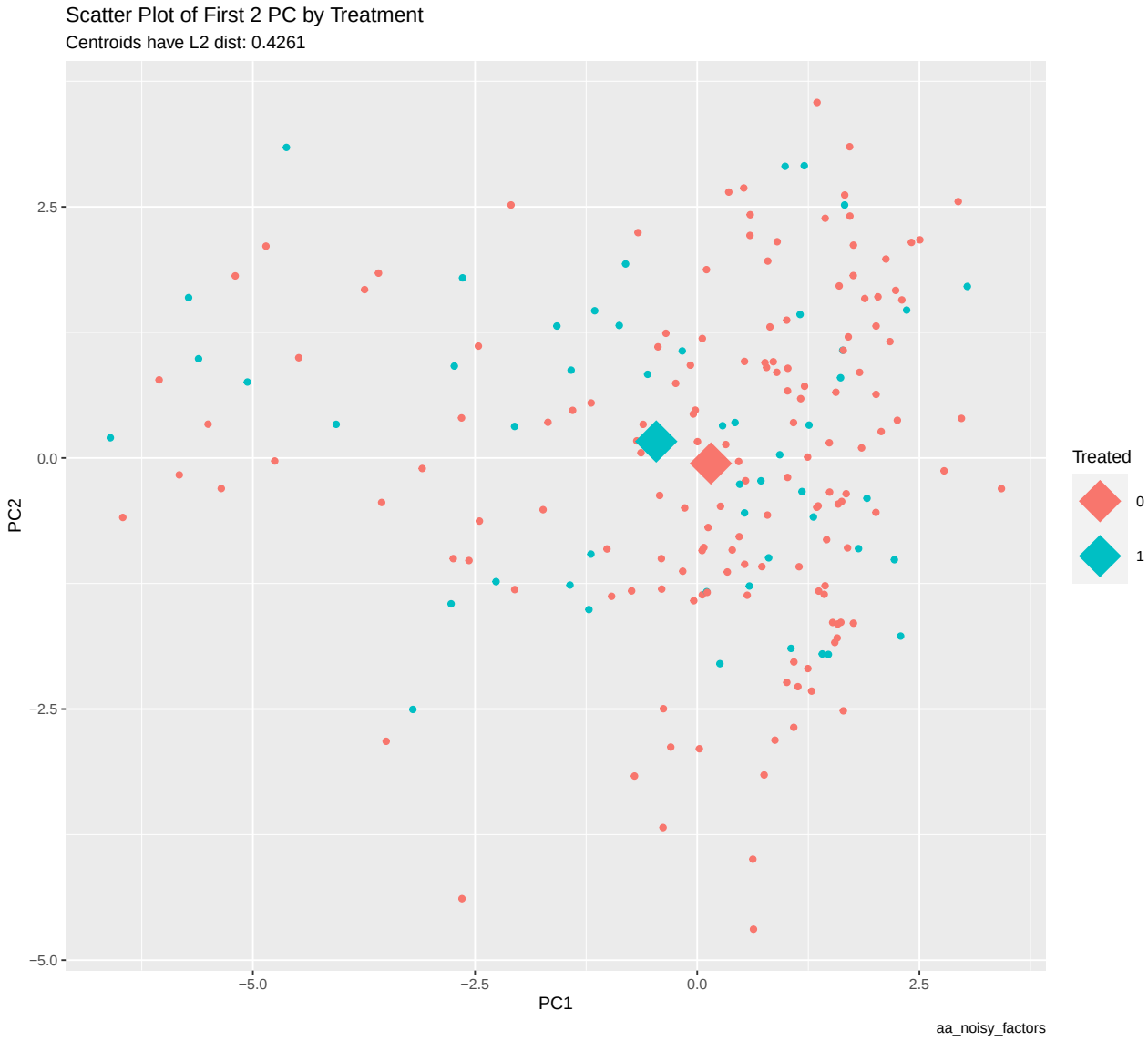
0	0.933	0.907	0.893	0.920	0.907	0.933	0.933
1	0.840	0.867	0.840	0.880	0.880	0.867	0.880
2	0.947	0.933	0.933	0.867	0.933	0.880	0.907
3	0.907	0.933	0.920	0.827	0.867	0.787	0.907
4	0.960	0.960	0.947	0.853	1.000	0.800	0.933
rmse							
0	0.209	0.209	0.208	0.213	0.243	0.211	0.223
1	0.212	0.213	0.211	0.218	0.245	0.215	0.228
2	0.210	0.212	0.210	0.215	0.242	0.214	0.224
3	0.207	0.211	0.210	0.216	0.236	0.215	0.224
4	0.212	0.215	0.213	0.221	0.237	0.222	0.231
bias							
0	−0.006	−0.012	−0.011	−0.003	−0.017	−0.001	0.001
1	−0.005	−0.011	−0.010	−0.011	−0.017	−0.010	−0.008
2	−0.001	−0.003	−0.004	−0.013	−0.007	−0.011	−0.009
3	−0.008	−0.006	−0.007	−0.028	−0.008	−0.031	−0.026
4	−0.006	−0.006	−0.007	−0.027	−0.006	−0.033	−0.021

Notes:

```
## [1] "aa_noisy_factors"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df      p p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>  <dbl> <dbl> <chr>
## 1 curvature    150    50   0.00564  86.3 0.996  0.996 ns
## 2 diff1_acf1   150    50   0.992    98.3 0.324  0.486 ns
## 3 diff2_acf1   150    50   0.548    90.1 0.585  0.752 ns
## 4 e_acf1       150    50   0.368    87.4 0.714  0.803 ns
## 5 entropy      150    50   1.40     69.2 0.167  0.301 ns
## 6 linearity    150    50  -1.90     75.5 0.0612 0.295 ns
## 7 spike        150    50   1.64     76.8 0.105  0.295 ns
## 8 trend        150    50  -1.57     73.1 0.12   0.295 ns
## 9 x_acf1       150    50  -1.53     75.2 0.131  0.295 ns
```

Metrics by Method

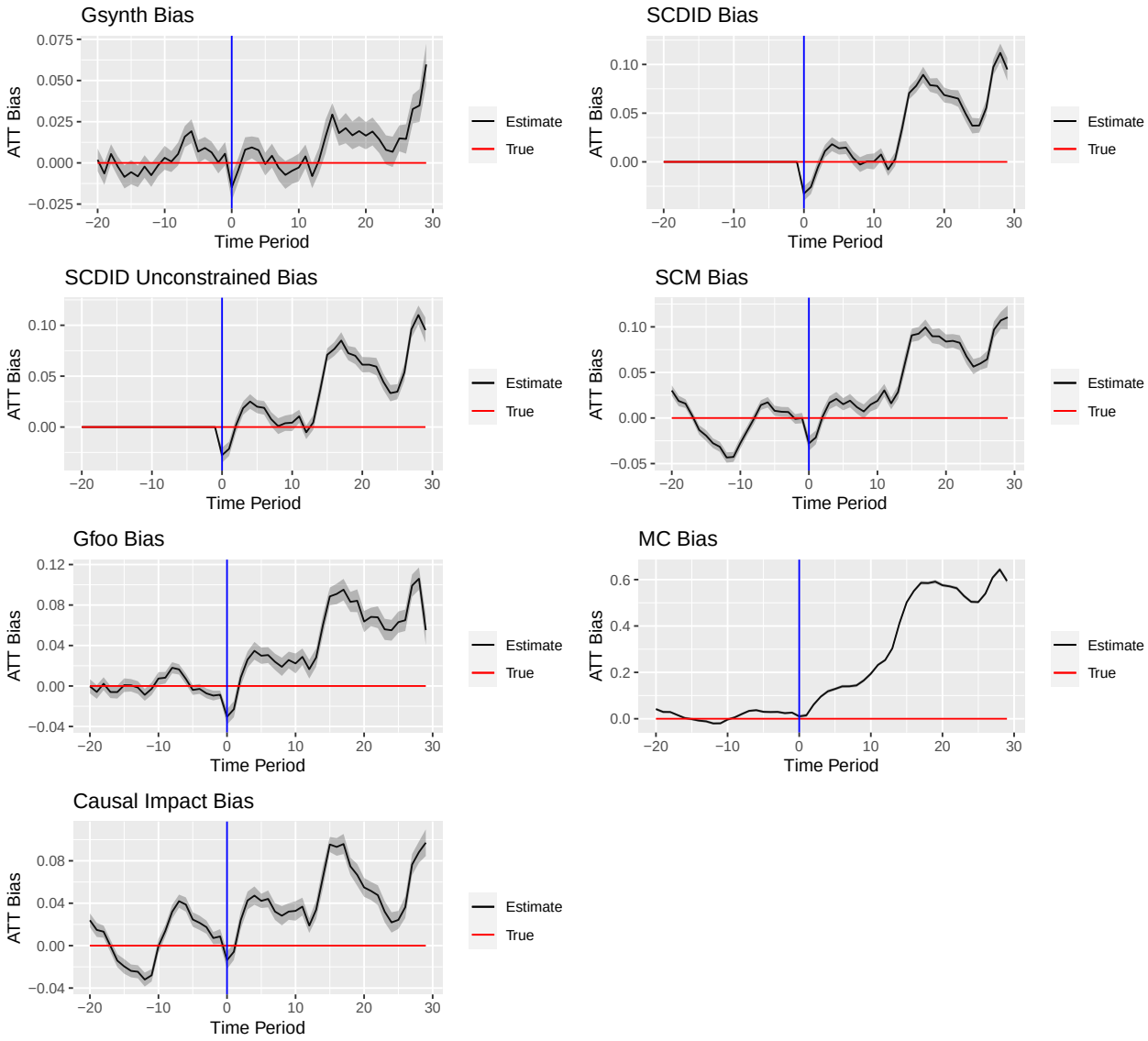
aa_noisy_factors

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

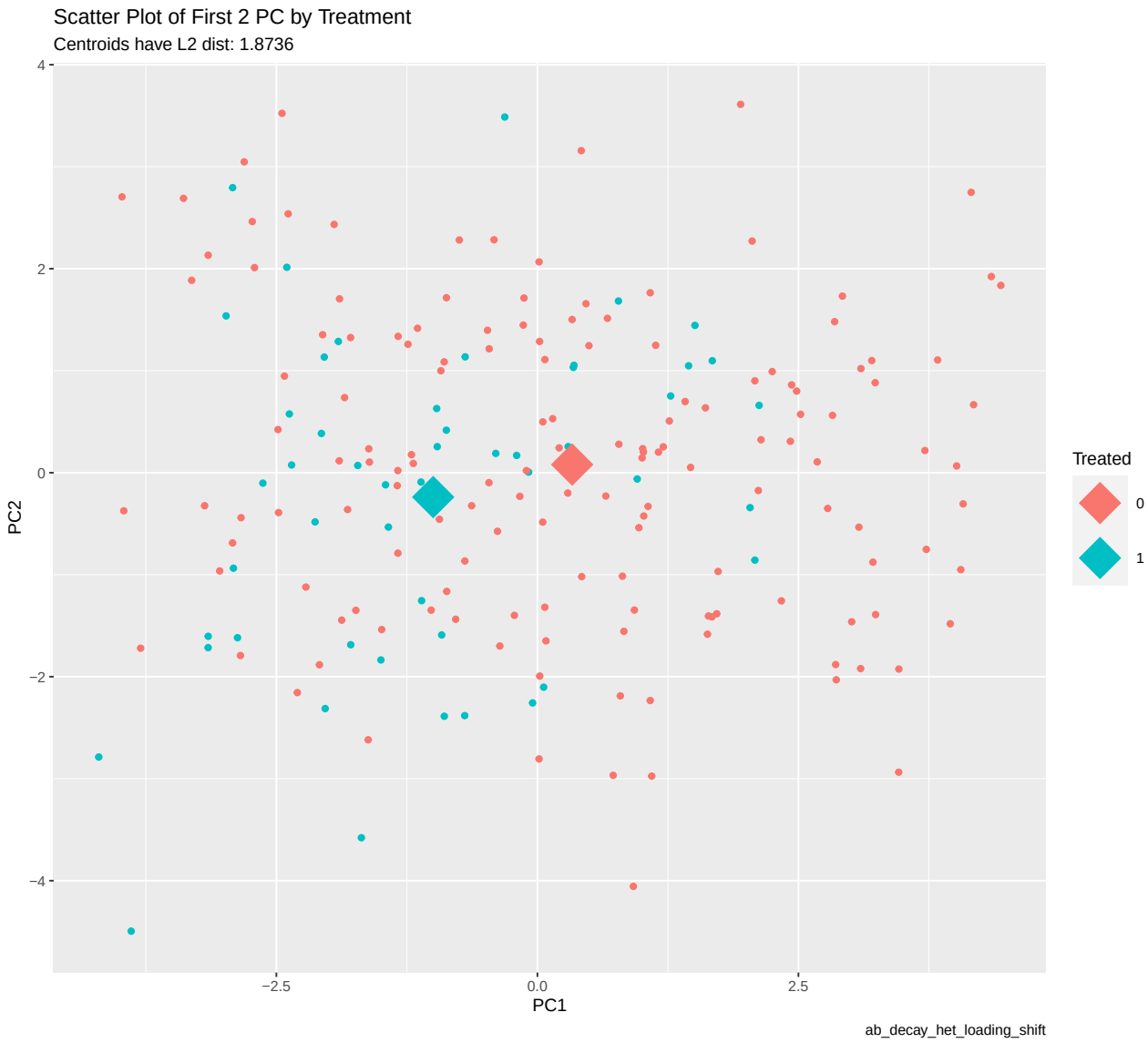
0	0.987	0.960	0.947	0.360	0.947	0.000	0.667
1	0.947	0.960	0.920	0.440	0.933	0.013	0.693
2	0.987	0.840	0.800	0.467	0.920	0.000	0.707
3	0.920	0.893	0.787	0.400	0.853	0.000	0.693
4	0.947	0.813	0.773	0.427	0.907	0.000	0.693
rmse							
0	0.213	0.227	0.223	0.228	0.232	0.301	0.226
1	0.221	0.234	0.231	0.238	0.242	0.327	0.235
2	0.216	0.231	0.228	0.232	0.241	0.331	0.228
3	0.214	0.233	0.228	0.230	0.243	0.340	0.226
4	0.217	0.233	0.229	0.233	0.248	0.344	0.229
bias							
0	−0.000	0.020	0.025	0.067	0.012	0.149	0.052
1	0.002	0.026	0.030	0.068	0.018	0.162	0.048
2	0.007	0.031	0.035	0.068	0.026	0.172	0.044
3	0.006	0.032	0.036	0.070	0.028	0.178	0.044
4	0.007	0.031	0.035	0.071	0.026	0.185	0.045

Notes:

```
## [1] "ab_decay_het_loading_shift"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df          p      p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>      <dbl>      <dbl> <chr>
## 1 curvature    150    50     -3.09  115.  0.00253    0.00569    **
## 2 diff1_acf1   150    50     -2.88   70.3 0.00522    0.00783    **
## 3 diff2_acf1   150    50      0.377  81.7 0.707      0.707      ns
## 4 e_acf1       150    50     -2.92   80.5 0.0045     0.00783    **
## 5 entropy      150    50      2.32  103.  0.0226     0.0291     *
## 6 linearity    150    50     -1.13  111.  0.26       0.292      ns
## 7 spike        150    50      5.30  151.  0.0000004  0.0000036  ****
## 8 trend        150    50     -4.72  111.  0.00000702 0.0000211  ****
## 9 x_acf1       150    50     -4.99  113.  0.00000218 0.00000981 ****
```

Metrics by Method

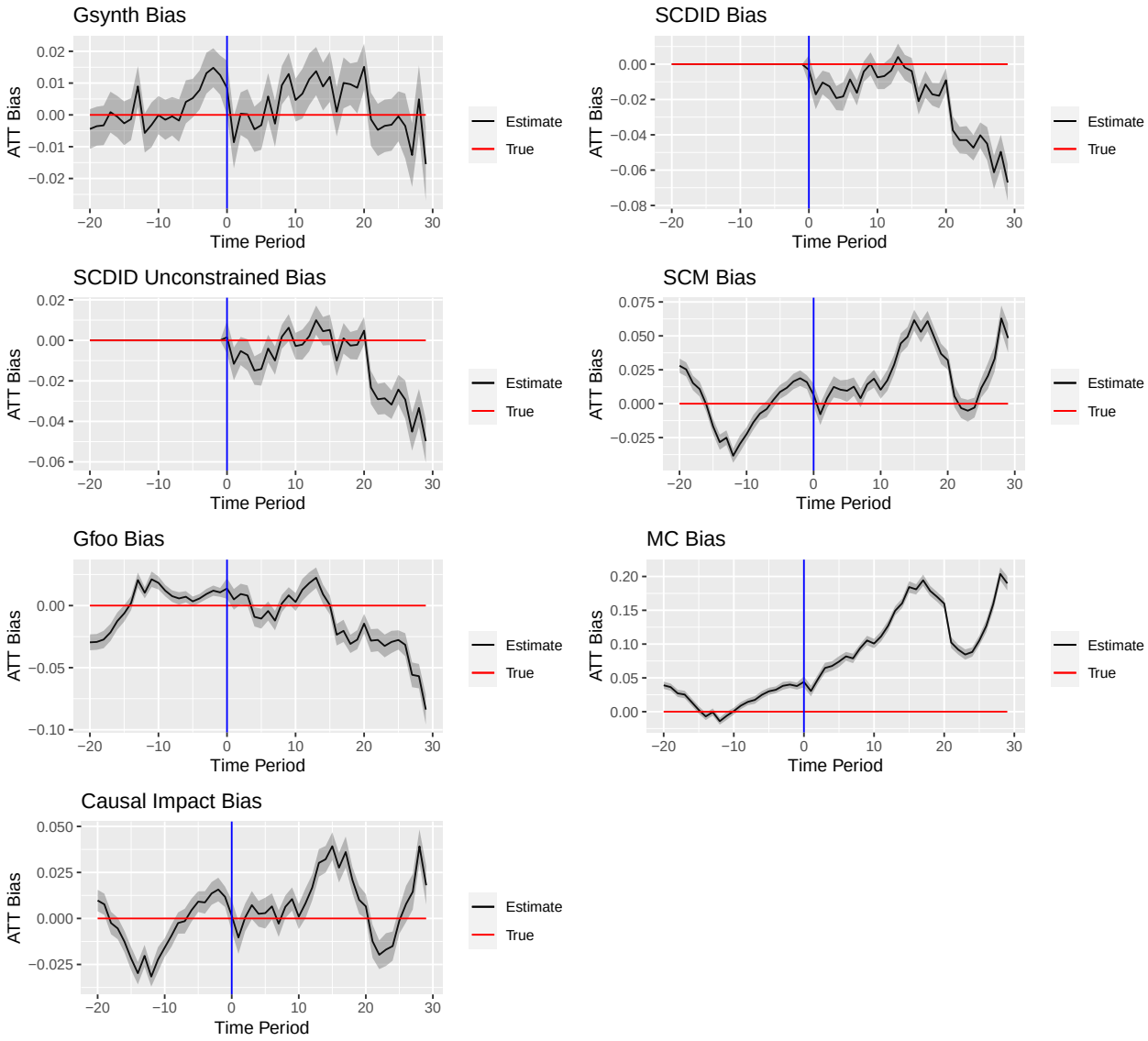
ab_decay_het_loading_shift

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

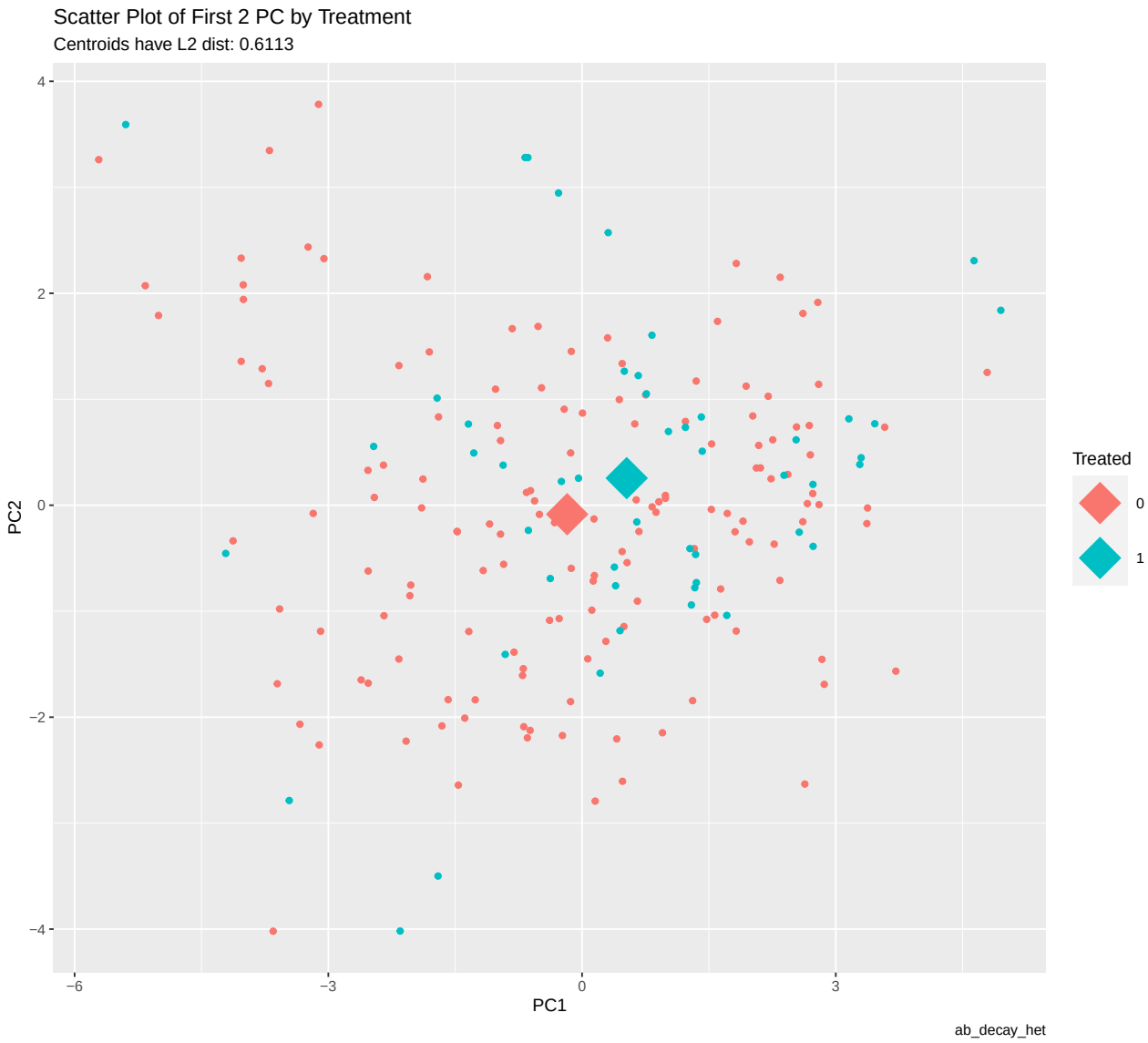
0	0.933	0.867	0.880	0.867	0.867	0.960	0.933
1	0.960	0.947	0.973	0.920	0.973	0.920	0.987
2	0.947	0.987	0.987	0.987	0.960	0.680	0.880
3	0.973	0.973	0.947	0.947	0.933	0.187	0.760
4	0.933	0.933	0.880	0.920	0.893	0.133	0.760
rmse							
0	0.220	0.239	0.231	0.229	0.250	0.241	0.241
1	0.223	0.243	0.236	0.229	0.260	0.255	0.245
2	0.219	0.250	0.241	0.232	0.271	0.270	0.246
3	0.219	0.249	0.238	0.229	0.280	0.280	0.245
4	0.220	0.255	0.242	0.233	0.292	0.300	0.252
bias							
0	−0.015	−0.033	−0.028	−0.028	−0.030	0.010	−0.014
1	−0.004	−0.026	−0.021	−0.021	−0.023	0.015	−0.006
2	0.008	−0.005	0.002	0.001	0.008	0.061	0.024
3	0.009	0.011	0.019	0.017	0.026	0.095	0.043
4	0.008	0.018	0.025	0.021	0.035	0.118	0.047

Notes:

```
## [1] "ab_decay_het"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df       p  p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>   <dbl>  <dbl> <chr>
## 1 curvature    150    50    -0.117  87.7 0.907   0.907  ns
## 2 diff1_acf1   150    50     2.28   78.9 0.025   0.112  ns
## 3 diff2_acf1   150    50     1.69   79.7 0.0945  0.170  ns
## 4 e_acf1       150    50     2.73   79.3 0.00778 0.0700 ns
## 5 entropy      150    50    -1.45  102.  0.151   0.226  ns
## 6 linearity    150    50     1.93   85.8 0.057   0.170  ns
## 7 spike        150    50    -0.823  76.7 0.413   0.465  ns
## 8 trend        150    50     0.958  90.7 0.341   0.438  ns
## 9 x_acf1       150    50     1.74   85.9 0.0857  0.170  ns
```

Metrics by Method

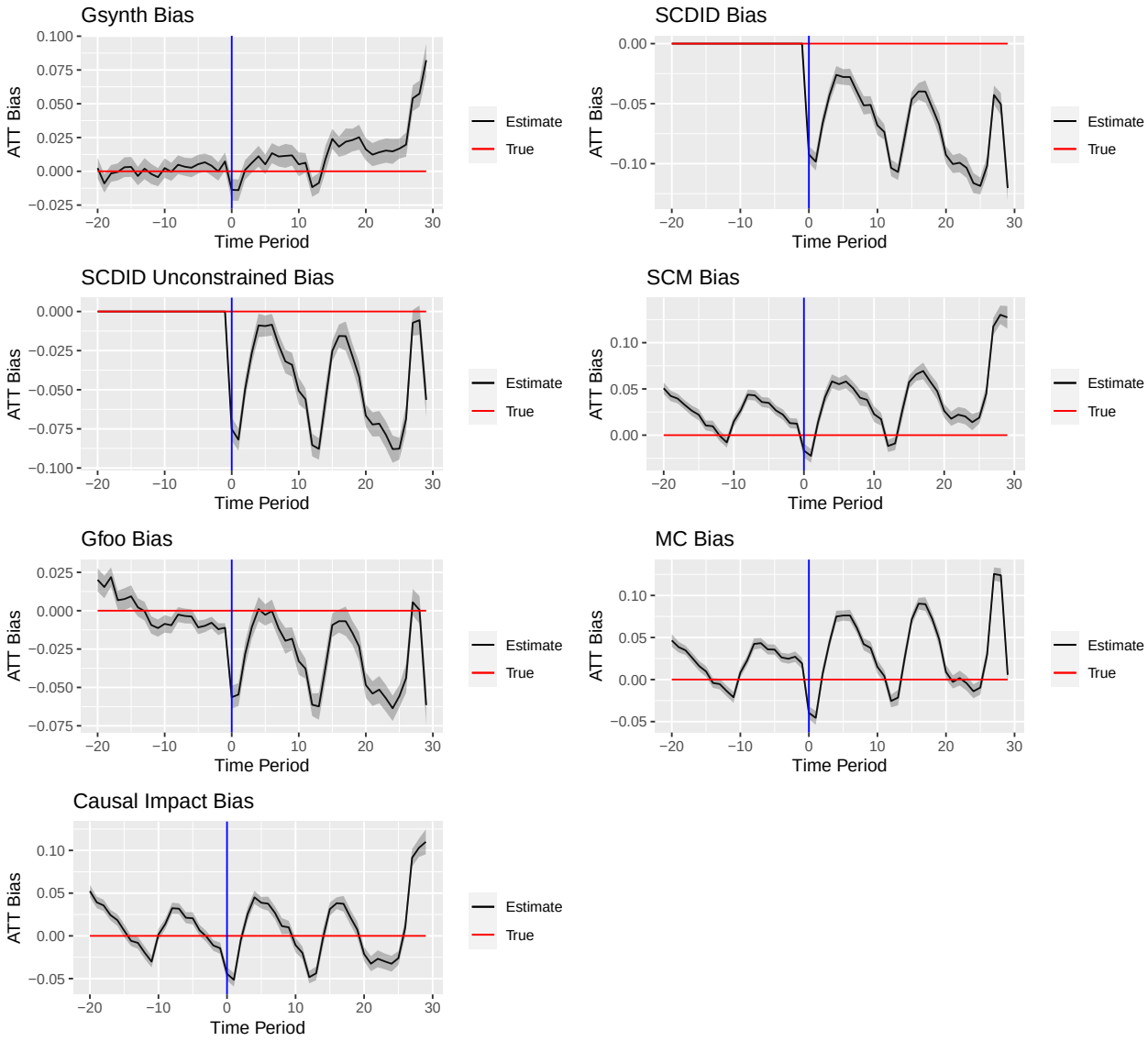
ab_decay_het

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

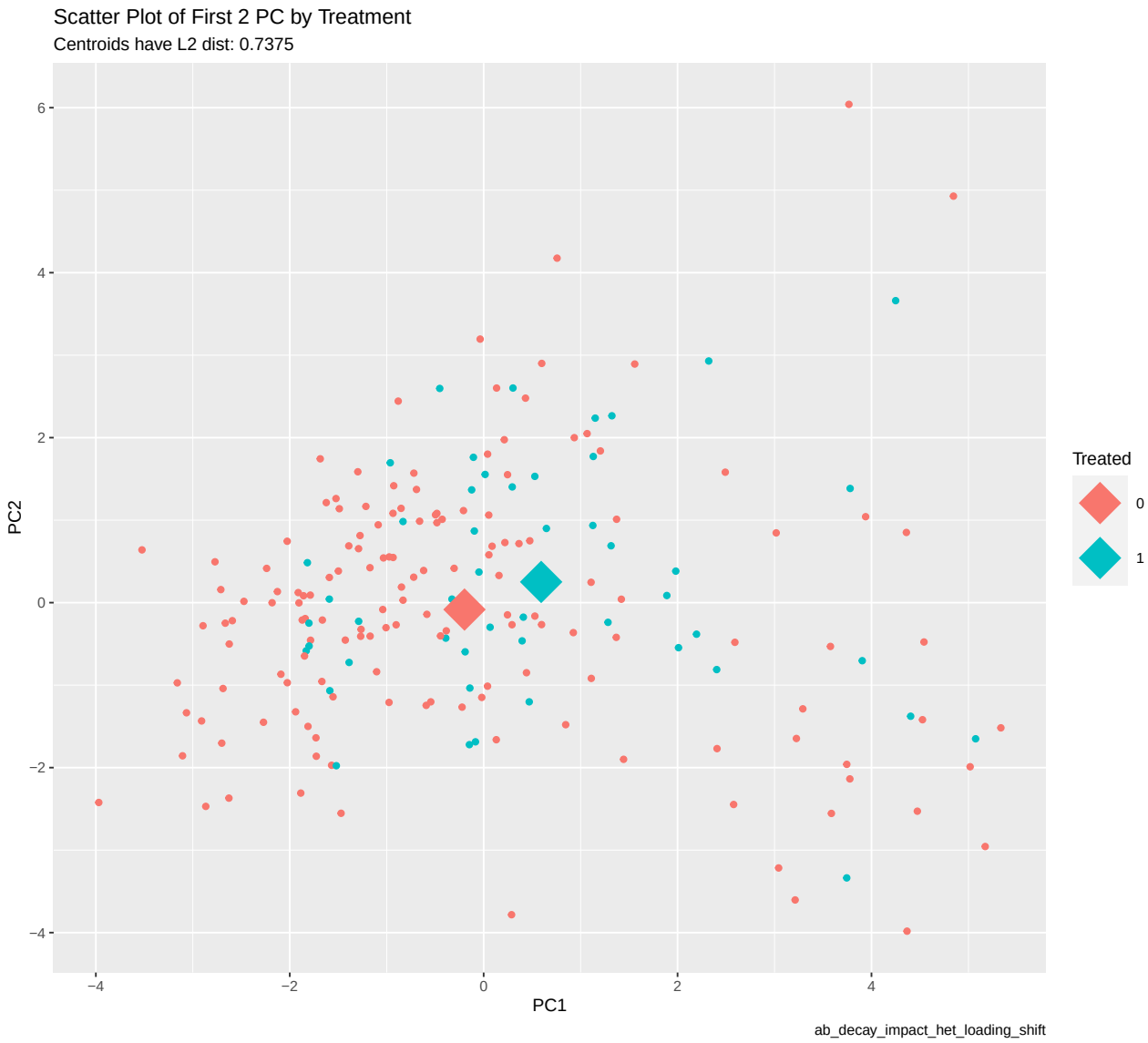
0	0.920	0.920	0.920	0.907	0.933	0.813	0.933
1	0.907	0.920	0.933	0.960	0.947	0.907	0.920
2	0.947	0.960	0.973	0.973	0.933	0.853	0.973
3	0.960	0.907	0.907	0.907	0.920	0.653	0.920
4	0.973	0.960	0.987	0.973	0.973	0.640	0.973
rmse							
0	0.217	0.240	0.236	0.230	0.240	0.272	0.236
1	0.223	0.245	0.242	0.232	0.242	0.276	0.237
2	0.219	0.244	0.242	0.232	0.240	0.278	0.236
3	0.222	0.244	0.243	0.233	0.236	0.286	0.235
4	0.223	0.249	0.249	0.234	0.239	0.298	0.238
bias							
0	0.008	−0.003	0.002	0.007	0.014	0.044	0.002
1	−0.009	−0.017	−0.012	−0.008	0.005	0.031	−0.010
2	0.000	−0.010	−0.005	0.004	0.009	0.048	0.001
3	0.000	−0.013	−0.007	0.012	0.008	0.065	0.007
4	−0.005	−0.019	−0.015	0.010	−0.009	0.068	0.003

Notes:

```
## [1] "ab_decay_impact_het_loading_shift"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df        p   p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>    <dbl>   <dbl> <chr>
## 1 curvature    150    50     0.373 137.  0.71     0.71    ns
## 2 diff1_acf1   150    50    -2.20   90.2 0.0302   0.0906  ns
## 3 diff2_acf1   150    50    -0.590  87.4 0.557    0.627   ns
## 4 e_acf1       150    50    -3.74   95.8 0.000309 0.00278 **
## 5 entropy      150    50     1.20   81.8 0.234    0.301   ns
## 6 linearity    150    50    -1.47   80.6 0.146    0.219   ns
## 7 spike        150    50     2.02  102.  0.0464   0.104   ns
## 8 trend        150    50    -1.85   91.1 0.0669   0.120   ns
## 9 x_acf1       150    50    -2.59   94.4 0.0112   0.0504  ns
```

Metrics by Method

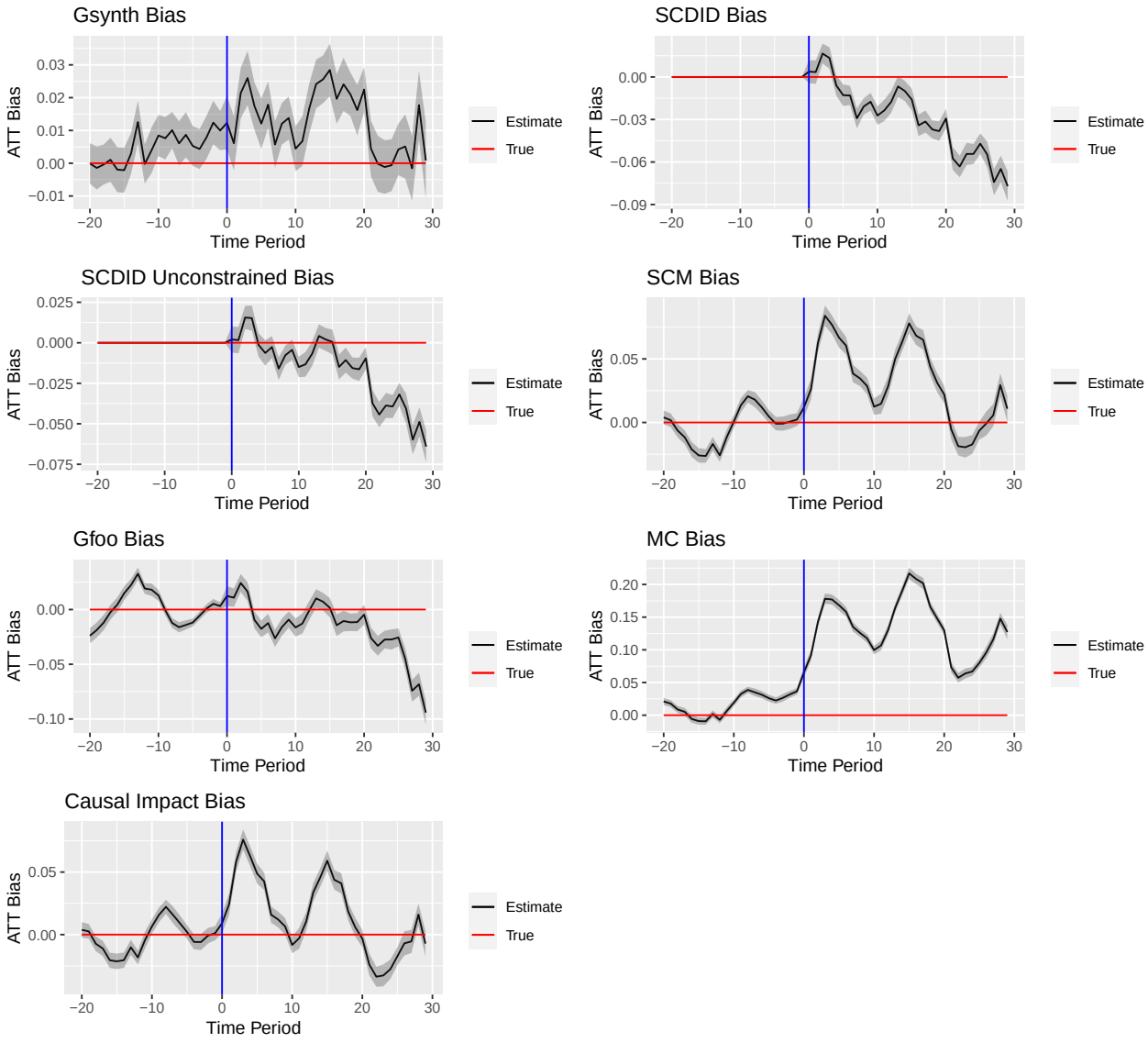
ab_decay_impact_het_loading_shift

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

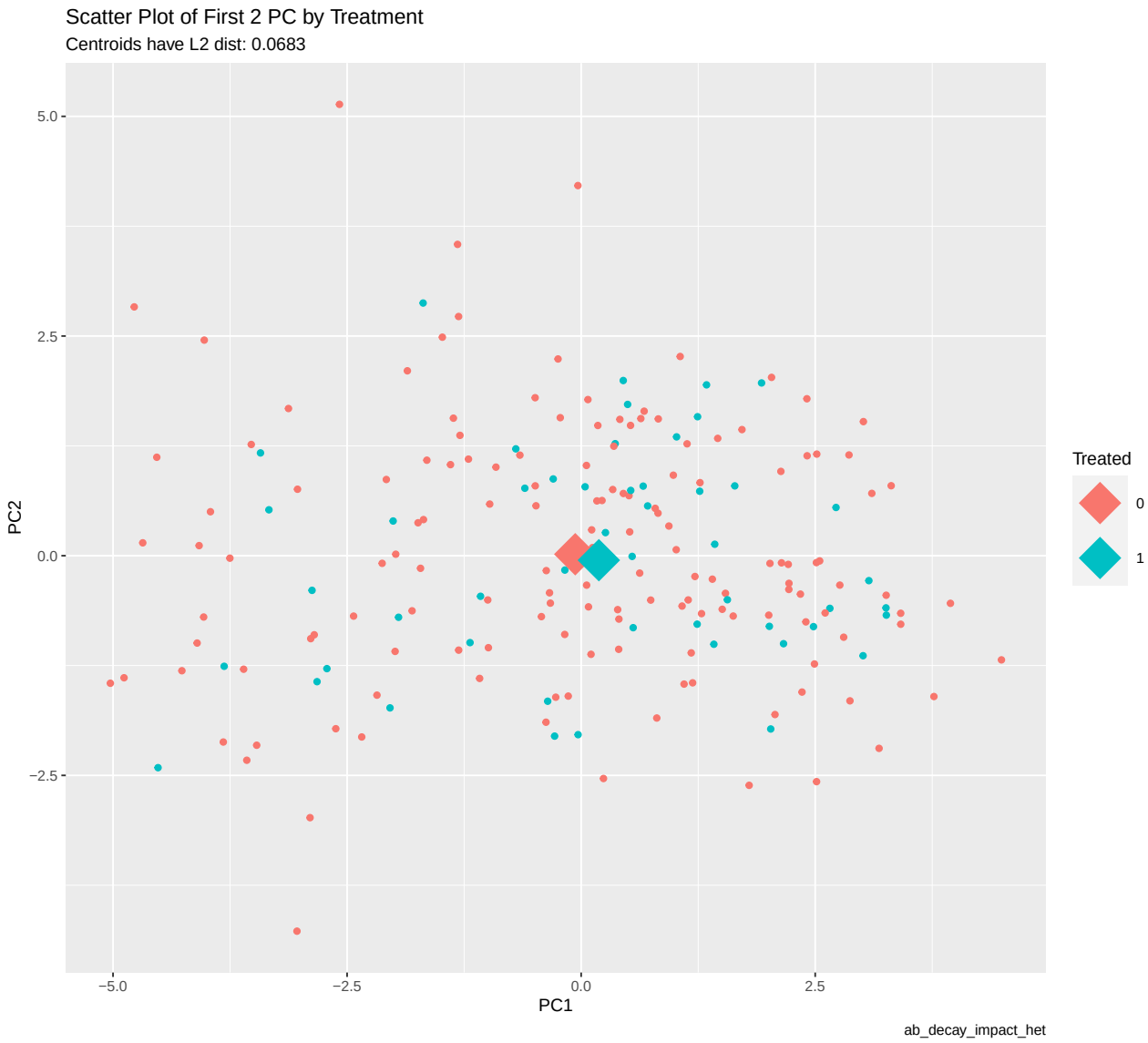
0	0.947	0.800	0.680	0.947	0.653	1.000	0.787
1	0.947	0.907	0.773	0.907	0.667	1.000	0.733
2	0.973	0.987	0.920	0.947	0.920	1.000	0.960
3	0.973	1.000	0.973	0.773	0.960	1.000	0.893
4	0.920	1.000	0.987	0.587	0.987	1.000	0.813
rmse							
0	0.230	0.424	0.326	0.227	0.256	0.536	0.247
1	0.226	0.493	0.383	0.236	0.259	0.618	0.257
2	0.236	0.465	0.362	0.237	0.275	0.642	0.254
3	0.231	0.434	0.335	0.228	0.275	0.634	0.243
4	0.236	0.410	0.311	0.235	0.284	0.629	0.249
bias							
0	−0.014	−0.092	−0.075	−0.017	−0.056	−0.040	−0.044
1	−0.014	−0.098	−0.082	−0.022	−0.055	−0.046	−0.051
2	0.001	−0.066	−0.050	0.014	−0.028	0.007	−0.005
3	0.006	−0.043	−0.026	0.041	−0.011	0.044	0.025
4	0.011	−0.026	−0.009	0.058	0.001	0.075	0.045

Notes:

```
## [1] "ab_decay_impact_het"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df     p p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl> <dbl> <dbl> <chr>
## 1 curvature    150    50     0.332  88.8 0.74  0.912 ns
## 2 diff1_acf1   150    50     0.748  99.0 0.456 0.912 ns
## 3 diff2_acf1   150    50     0.110  99.7 0.912 0.912 ns
## 4 e_acf1       150    50     1.18   79.6 0.24  0.912 ns
## 5 entropy      150    50    -0.992  84.5 0.324 0.912 ns
## 6 linearity    150    50     1.20   78.4 0.233 0.912 ns
## 7 spike        150    50    -0.229  85.8 0.82  0.912 ns
## 8 trend        150    50     0.221  89.4 0.825 0.912 ns
## 9 x_acf1       150    50     0.471  88.7 0.639 0.912 ns
```

Metrics by Method

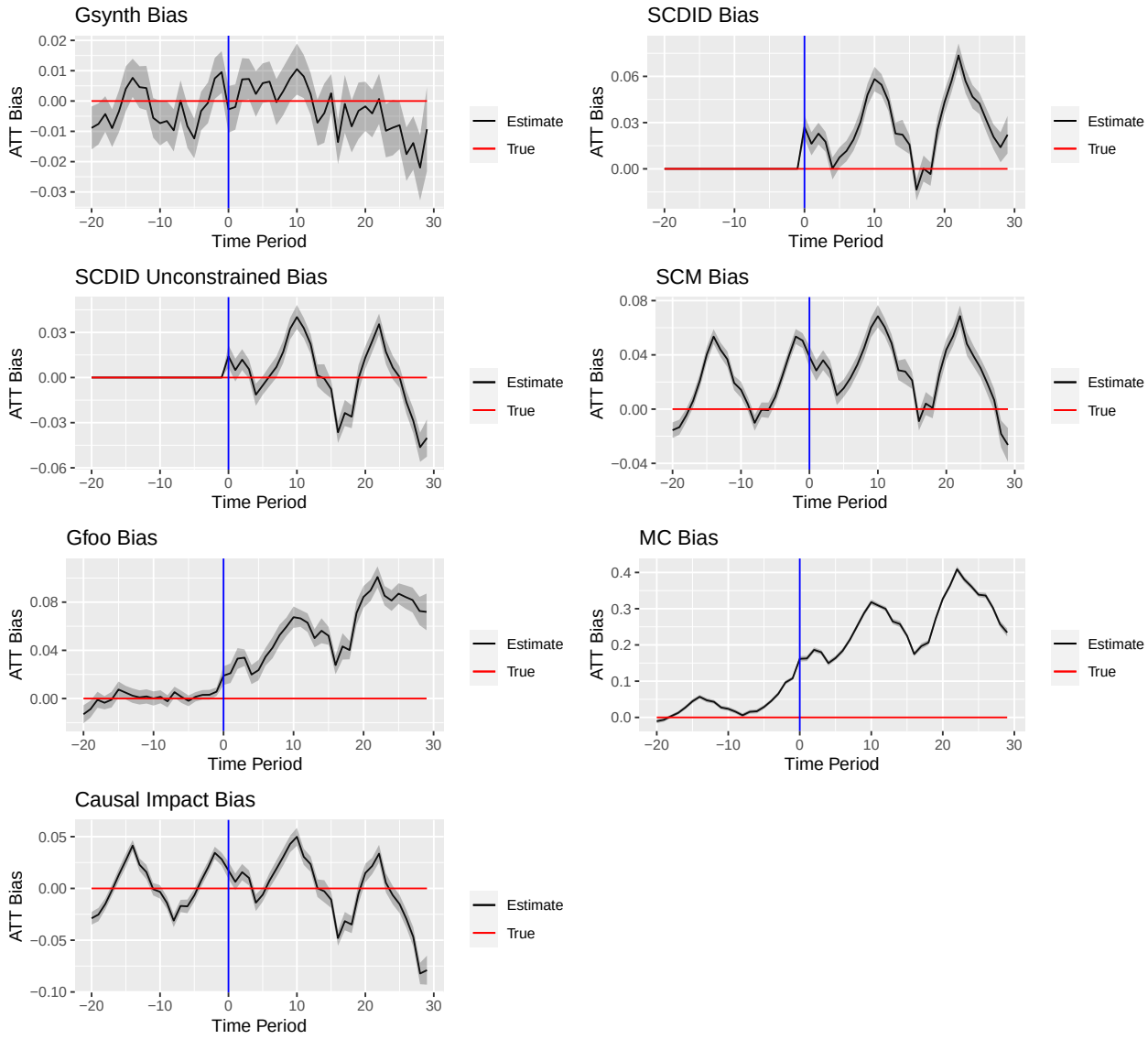
ab_decay_impact_het

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

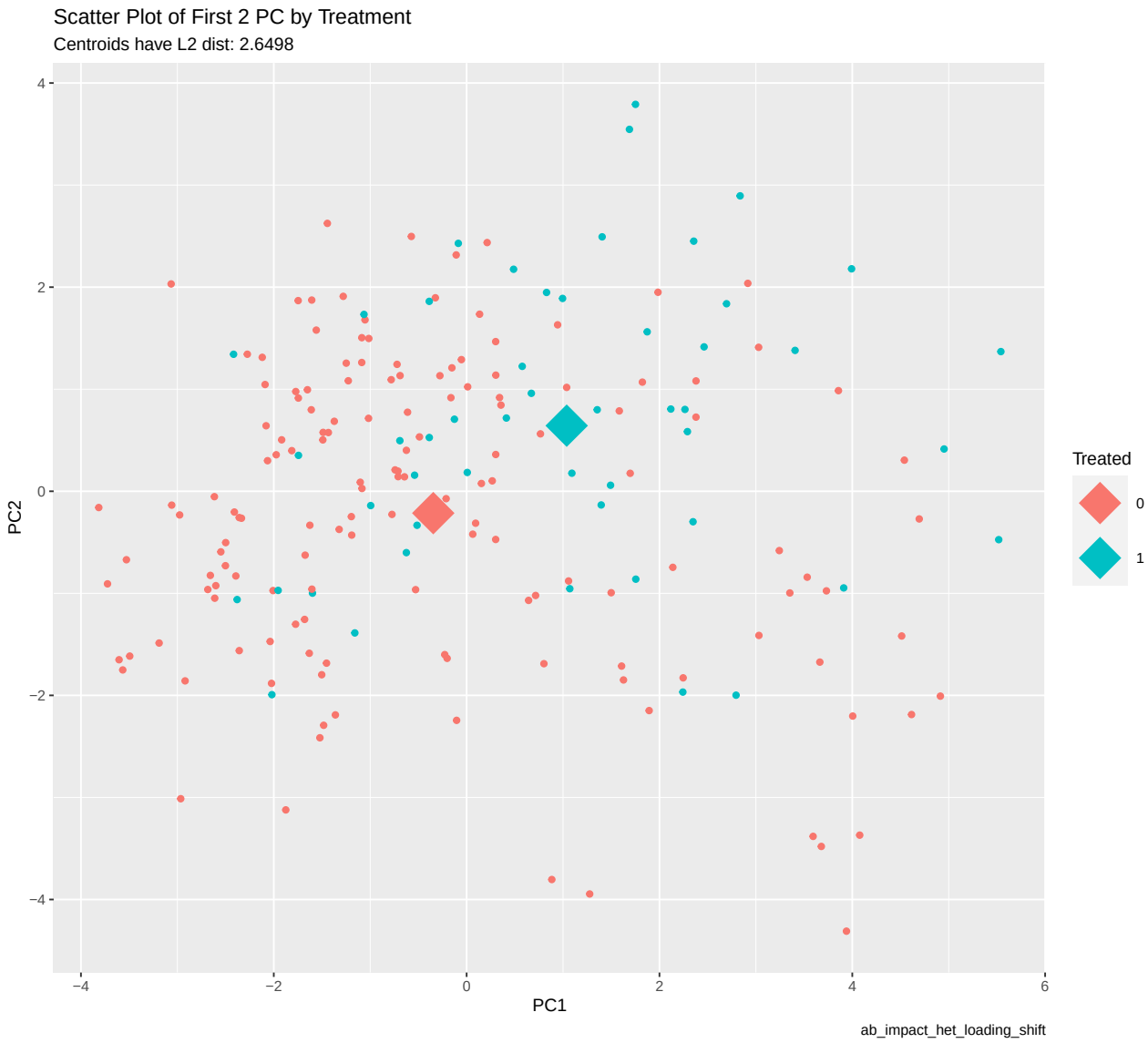
0	0.920	0.947	0.947	0.880	0.907	0.667	0.933
1	0.920	0.960	0.973	0.853	0.947	0.387	0.853
2	0.867	1.000	0.987	0.507	0.933	0.027	0.587
3	0.867	0.973	0.947	0.333	0.933	0.000	0.413
4	0.920	0.987	0.987	0.387	0.987	0.000	0.547
rmse							
0	0.221	0.243	0.238	0.233	0.243	0.276	0.239
1	0.229	0.254	0.249	0.240	0.260	0.287	0.245
2	0.229	0.256	0.252	0.249	0.269	0.309	0.254
3	0.234	0.258	0.254	0.259	0.277	0.332	0.261
4	0.232	0.259	0.254	0.251	0.277	0.330	0.250
bias							
0	0.012	0.004	0.002	0.012	0.012	0.065	0.009
1	0.006	0.003	0.002	0.026	0.011	0.092	0.024
2	0.021	0.017	0.016	0.063	0.024	0.143	0.058
3	0.026	0.013	0.015	0.084	0.016	0.178	0.076
4	0.017	−0.006	−0.001	0.077	−0.009	0.177	0.063

Notes:

```
## [1] "ab_impact_het_loading_shift"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df            p       p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>        <dbl>       <dbl> <chr>
## 1 curvature    150    50      1.45 129.  0.149        0.149       ns
## 2 diff1_acf1   150    50     -5.49  71.7 0.000000566  0.00000255  ****
## 3 diff2_acf1   150    50     -2.53  77.1 0.0134       0.0201      *
## 4 e_acf1       150    50     -6.17  79.3 0.0000000274 0.000000247 ****
## 5 entropy      150    50      2.41 100.  0.0178       0.0229      *
## 6 linearity    150    50     -1.68  98.6 0.0958       0.108       ns
## 7 spike        150    50      3.70 119.  0.000334     0.000752    ***
## 8 trend        150    50     -2.63  95.6 0.00999      0.0180      *
## 9 x_acf1       150    50     -3.91  97.7 0.000172     0.000516    ***
```

Metrics by Method

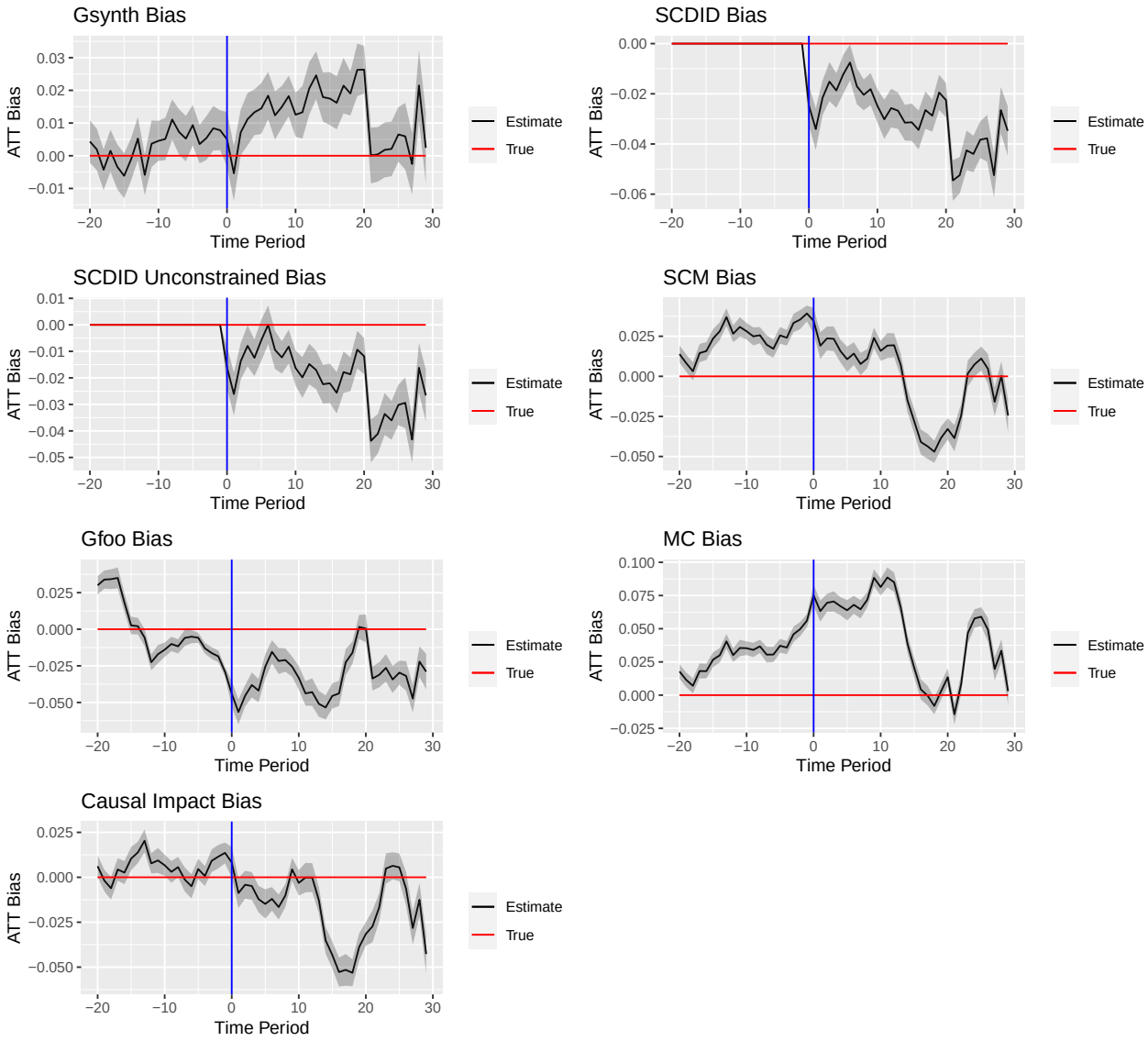
ab_impact_het_loading_shift

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

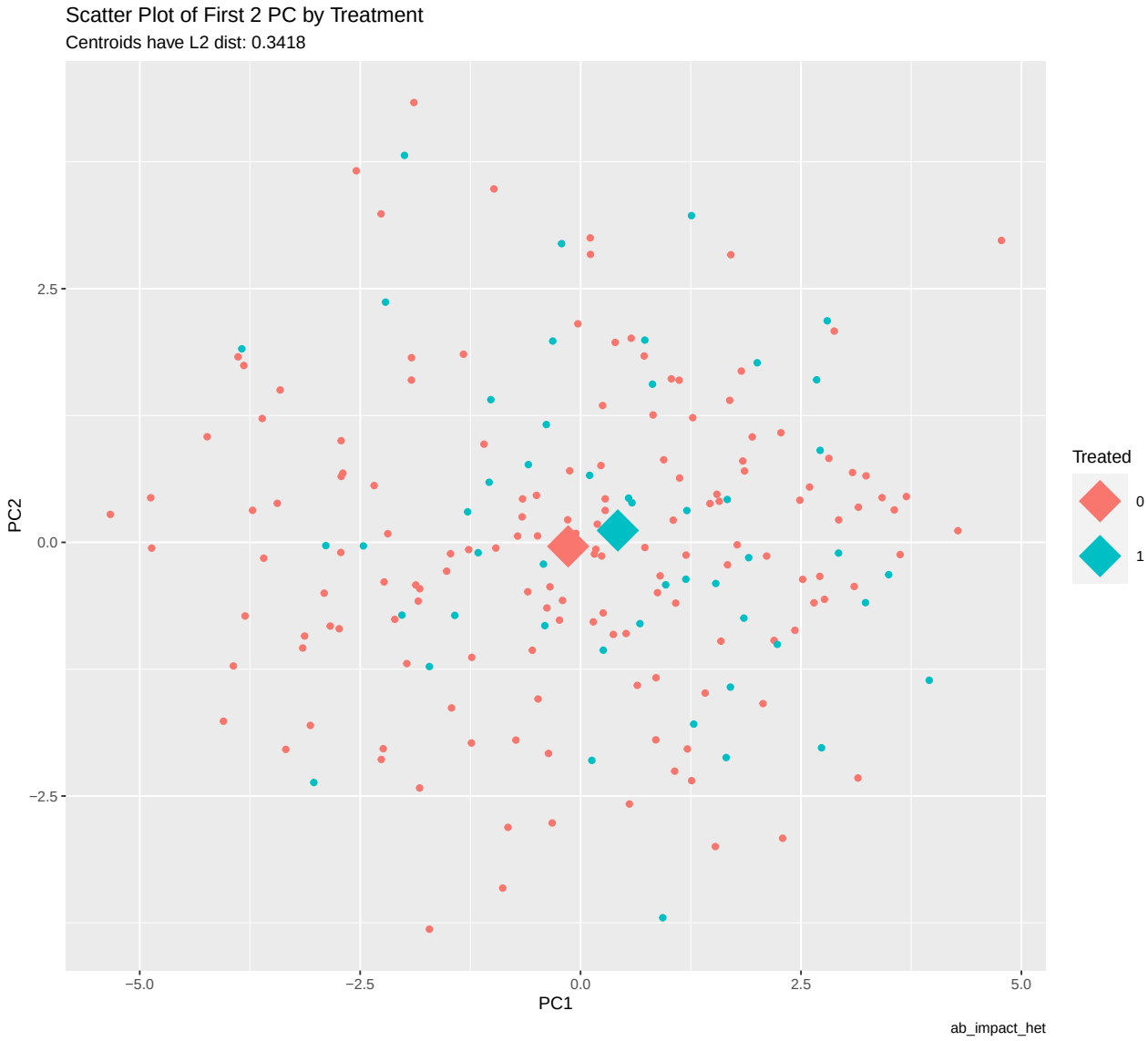
0	0.933	0.907	0.893	0.800	0.933	0.027	0.893
1	0.947	0.960	0.973	0.853	0.920	0.013	0.933
2	0.920	0.933	0.933	0.800	0.800	0.000	0.893
3	0.987	0.987	0.987	0.880	0.933	0.027	0.960
4	0.880	0.987	0.933	0.907	0.920	0.093	0.933
rmse							
0	0.212	0.250	0.220	0.225	0.243	0.375	0.236
1	0.217	0.258	0.224	0.226	0.255	0.395	0.233
2	0.215	0.262	0.223	0.225	0.256	0.438	0.236
3	0.215	0.264	0.224	0.227	0.261	0.446	0.237
4	0.218	0.259	0.224	0.225	0.266	0.419	0.237
bias							
0	−0.003	0.027	0.014	0.039	0.019	0.162	0.017
1	−0.002	0.016	0.005	0.028	0.021	0.163	0.006
2	0.007	0.023	0.012	0.036	0.033	0.186	0.016
3	0.007	0.018	0.006	0.029	0.034	0.180	0.010
4	0.002	0.000	−0.011	0.010	0.020	0.150	−0.014

Notes:

```
## [1] "ab_impact_het"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df       p  p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>   <dbl>  <dbl> <chr>
## 1 curvature    150    50     0.580  83.7 0.563   0.625  ns
## 2 diff1_acf1   150    50     1.39   94.7 0.169   0.380  ns
## 3 diff2_acf1   150    50     0.491 102.  0.625   0.625  ns
## 4 e_acf1       150    50     1.95   78.9 0.0545  0.235  ns
## 5 entropy      150    50    -1.78  119.  0.0782  0.235  ns
## 6 linearity    150    50     2.88   82.2 0.00511 0.0460 *
## 7 spike        150    50    -1.01   79.8 0.315   0.514  ns
## 8 trend        150    50     0.846  89.3 0.4     0.514  ns
## 9 x_acf1       150    50     0.923  96.1 0.358   0.514  ns
```

Metrics by Method

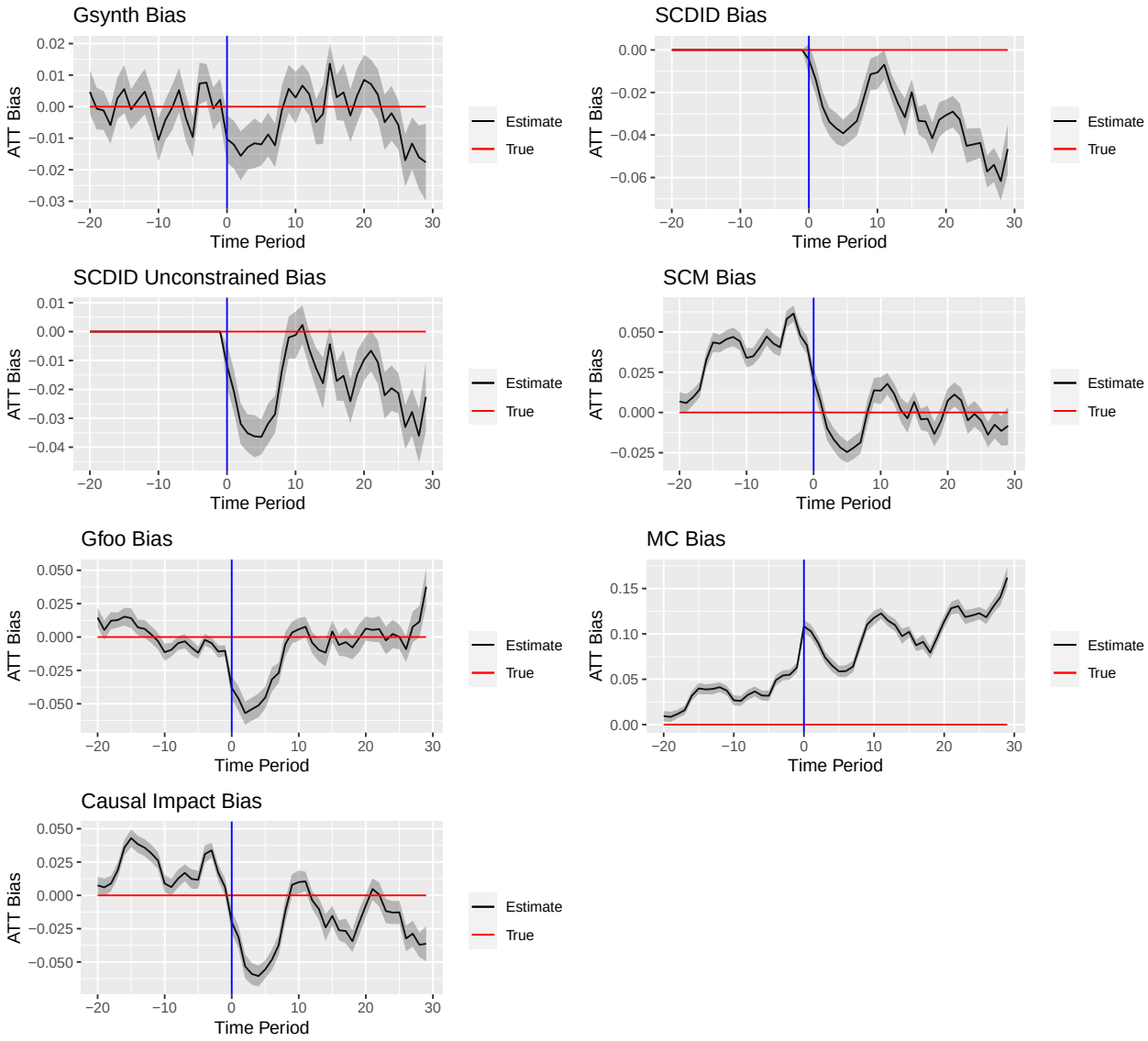
ab_impact_het

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

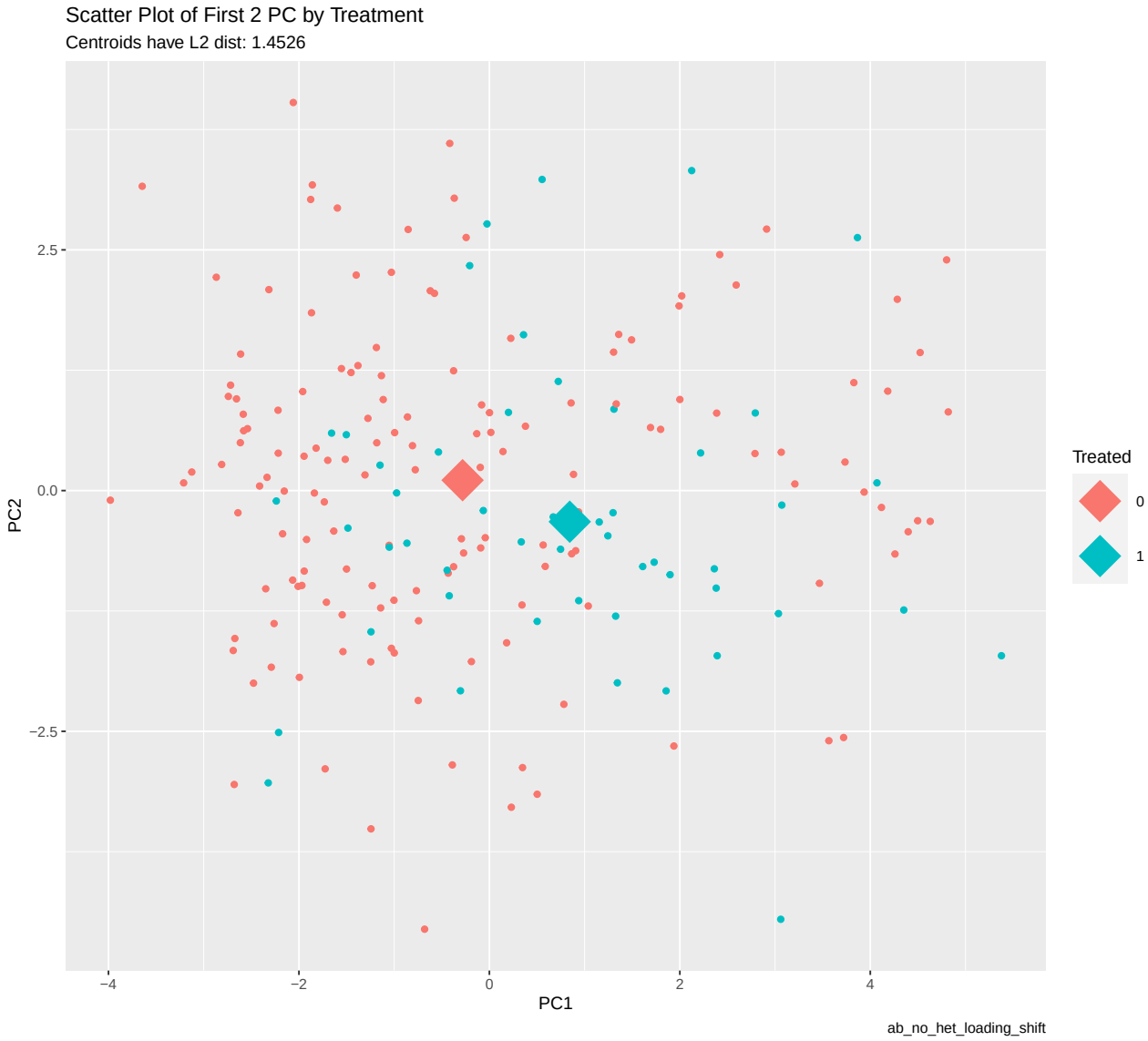
0	0.920	0.867	0.893	0.787	0.800	0.560	0.907
1	0.920	0.787	0.867	0.867	0.587	0.667	0.907
2	0.960	0.893	0.933	0.893	0.773	0.667	0.907
3	0.907	0.907	0.933	0.867	0.813	0.573	0.947
4	0.947	0.947	0.960	0.960	0.787	0.747	0.960
rmse							
0	0.217	0.231	0.227	0.226	0.247	0.284	0.229
1	0.224	0.232	0.229	0.227	0.256	0.287	0.232
2	0.218	0.227	0.225	0.224	0.251	0.292	0.227
3	0.220	0.226	0.222	0.225	0.251	0.294	0.229
4	0.225	0.233	0.227	0.230	0.264	0.311	0.233
bias							
0	0.005	−0.025	−0.016	0.035	−0.044	0.075	0.008
1	−0.005	−0.034	−0.026	0.019	−0.057	0.063	−0.009
2	0.007	−0.022	−0.014	0.024	−0.045	0.070	−0.004
3	0.011	−0.015	−0.008	0.023	−0.038	0.071	−0.005
4	0.013	−0.019	−0.012	0.016	−0.042	0.067	−0.012

Notes:

```
## [1] "ab_no_het_loading_shift"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df         p    p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>     <dbl>    <dbl> <chr>
## 1 curvature    150    50      3.77  102.  0.000278  0.000626 ***
## 2 diff1_acf1   150    50     -2.16   85.7 0.0338    0.0608   ns
## 3 diff2_acf1   150    50      0.111 102.  0.912     0.912    ns
## 4 e_acf1       150    50     -1.71   85.4 0.0908    0.136    ns
## 5 entropy      150    50      1.30   94.2 0.196     0.220    ns
## 6 linearity    150    50     -1.31  113.  0.193     0.220    ns
## 7 spike        150    50      4.20  105.  0.0000555 0.000203 ***
## 8 trend        150    50     -4.17   94.3 0.0000677 0.000203 ***
## 9 x_acf1       150    50     -4.46   97.5 0.0000217 0.000195 ***
```

Metrics by Method

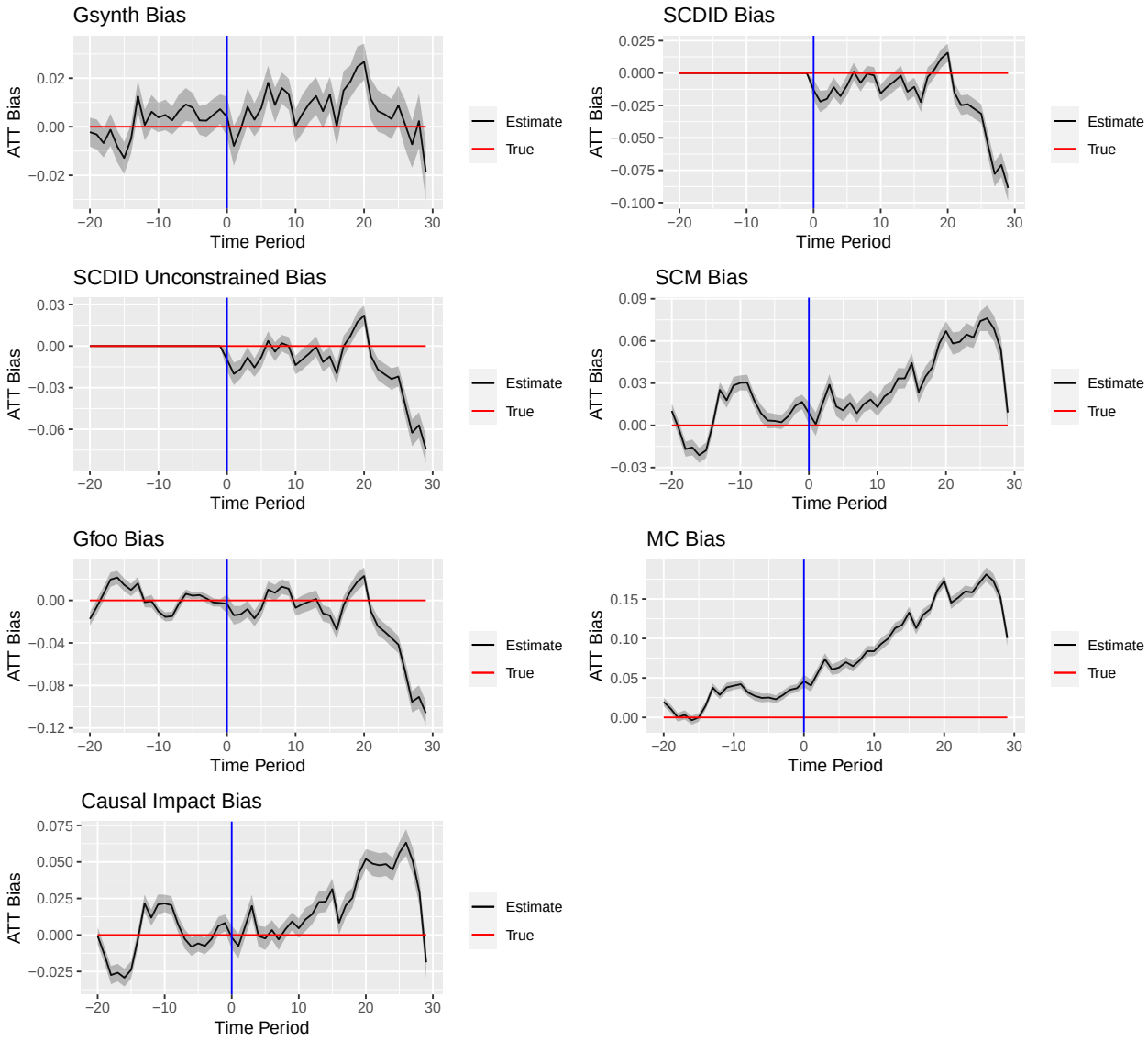
ab_no_het_loading_shift

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

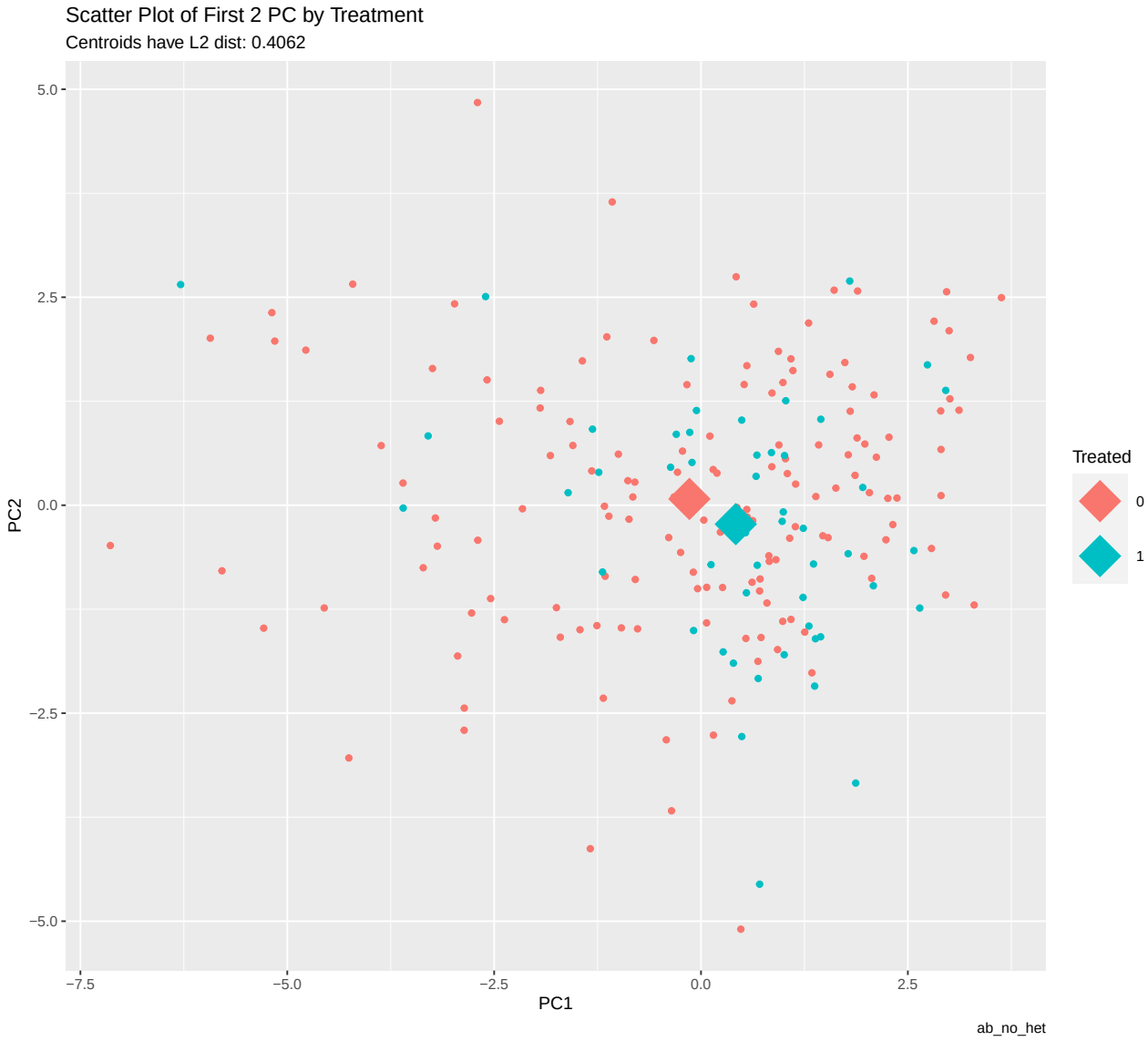
0	0.907	0.987	0.960	0.893	0.880	0.747	0.880
1	0.960	1.000	0.973	0.960	0.773	0.880	0.827
2	0.920	0.947	0.853	0.960	0.813	0.947	0.680
3	0.947	0.920	0.867	0.973	0.840	1.000	0.573
4	0.920	0.933	0.867	0.920	0.867	1.000	0.613
rmse							
0	0.219	0.275	0.242	0.235	0.270	0.471	0.240
1	0.225	0.287	0.250	0.241	0.294	0.509	0.247
2	0.225	0.292	0.251	0.241	0.310	0.540	0.256
3	0.224	0.283	0.244	0.240	0.324	0.533	0.251
4	0.225	0.278	0.245	0.238	0.340	0.521	0.255
bias							
0	−0.010	−0.004	−0.012	0.021	−0.038	0.108	−0.020
1	−0.012	−0.014	−0.021	0.007	−0.046	0.103	−0.031
2	−0.016	−0.027	−0.032	−0.010	−0.057	0.090	−0.053
3	−0.013	−0.034	−0.035	−0.017	−0.054	0.074	−0.059
4	−0.012	−0.037	−0.036	−0.022	−0.051	0.065	−0.061

Notes:

```
## [1] "ab_no_het"
```




```
## `summarise()` ungrouping output (override with `.groups` argument)
```




```
## # A tibble: 9 x 8
##   vars          n1    n2 statistic    df      p p.adj p.adj.signif
##   <chr>      <int> <int>     <dbl> <dbl>  <dbl> <dbl> <chr>
## 1 curvature    150    50   -0.492   89.3 0.624  0.702 ns
## 2 diff1_acf1   150    50   -0.505  101.  0.614  0.702 ns
## 3 diff2_acf1   150    50   -1.16    91.2 0.247  0.370 ns
## 4 e_acf1       150    50   -0.0119 107.  0.991  0.991 ns
## 5 entropy      150    50   -1.75   106.  0.0835 0.162 ns
## 6 linearity    150    50    2.05    83.4 0.043  0.162 ns
## 7 spike        150    50   -1.77    94.8 0.0797 0.162 ns
## 8 trend        150    50    2.07    94.7 0.0408 0.162 ns
## 9 x_acf1       150    50    1.71   102.  0.09   0.162 ns
```

Metrics by Method

ab_no_het

Method	gsynth	scdid	scdid_uncon	scm	gfoo	mc	causalimpact
coverage							

0	0.893	0.920	0.920	0.920	0.880	0.800	0.907
1	0.920	0.880	0.880	0.933	0.933	0.813	0.920
2	0.960	0.947	0.960	0.933	0.893	0.693	0.947
3	0.933	0.933	0.933	0.867	0.973	0.520	0.893
4	0.987	0.960	0.973	0.973	0.947	0.733	0.960
rmse							
0	0.217	0.233	0.231	0.224	0.231	0.263	0.227
1	0.222	0.236	0.233	0.226	0.237	0.269	0.227
2	0.220	0.236	0.233	0.226	0.233	0.275	0.226
3	0.221	0.238	0.236	0.229	0.239	0.278	0.228
4	0.224	0.245	0.242	0.231	0.245	0.288	0.232
bias							
0	0.004	−0.013	−0.010	0.009	−0.003	0.046	−0.002
1	−0.008	−0.022	−0.020	0.001	−0.014	0.040	−0.008
2	−0.001	−0.020	−0.016	0.016	−0.013	0.057	0.006
3	0.008	−0.011	−0.008	0.029	−0.008	0.074	0.020
4	0.003	−0.018	−0.016	0.013	−0.017	0.061	−0.001

Notes: