Catastrophic Success: Why Foreign-Imposed Regime Change Goes Wrong
Ithaca, N.Y.: Cornell University Press, 2021

Supplementary Materials for Chapter 3, Part 2: Genetic Matching[1]

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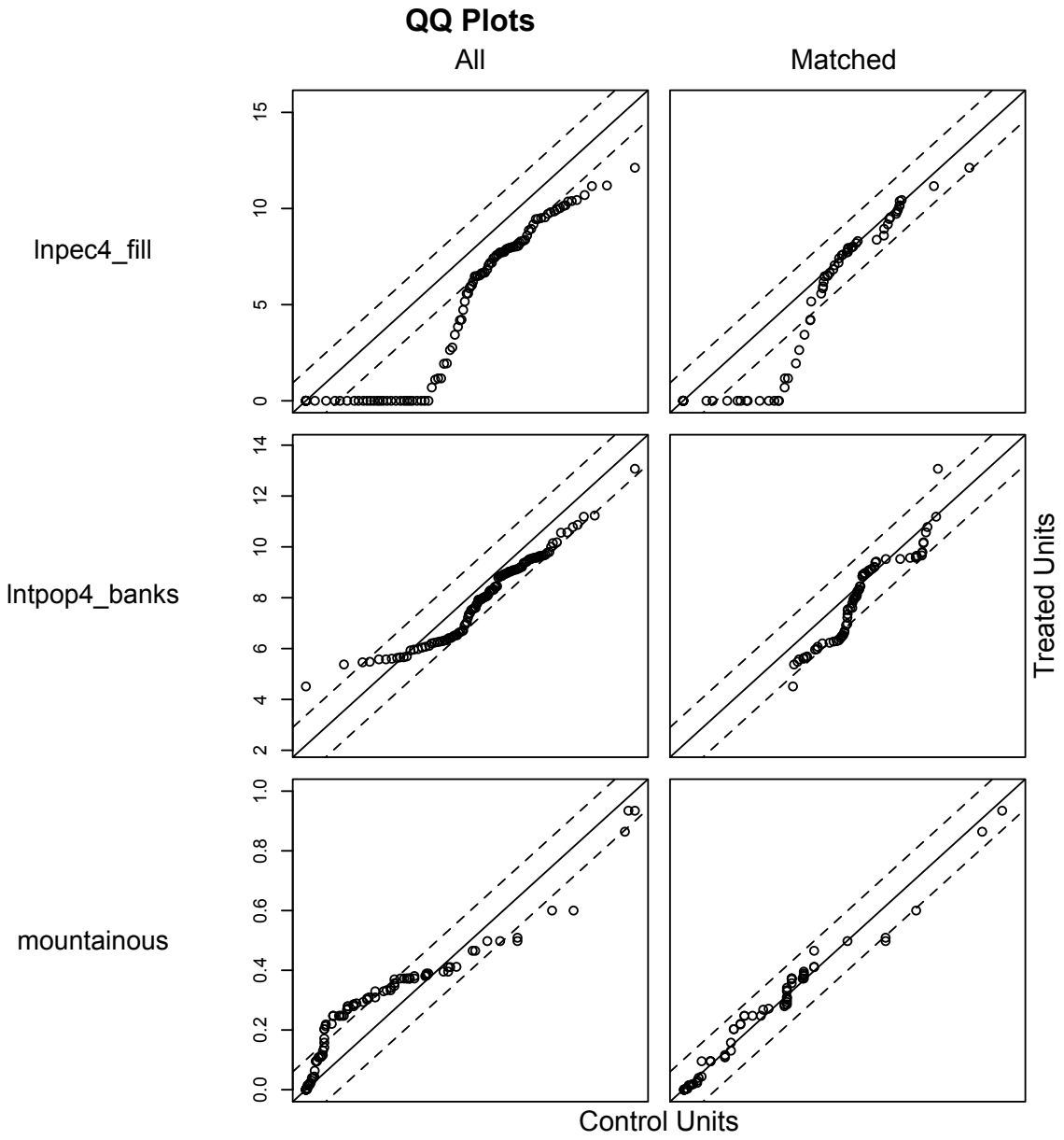
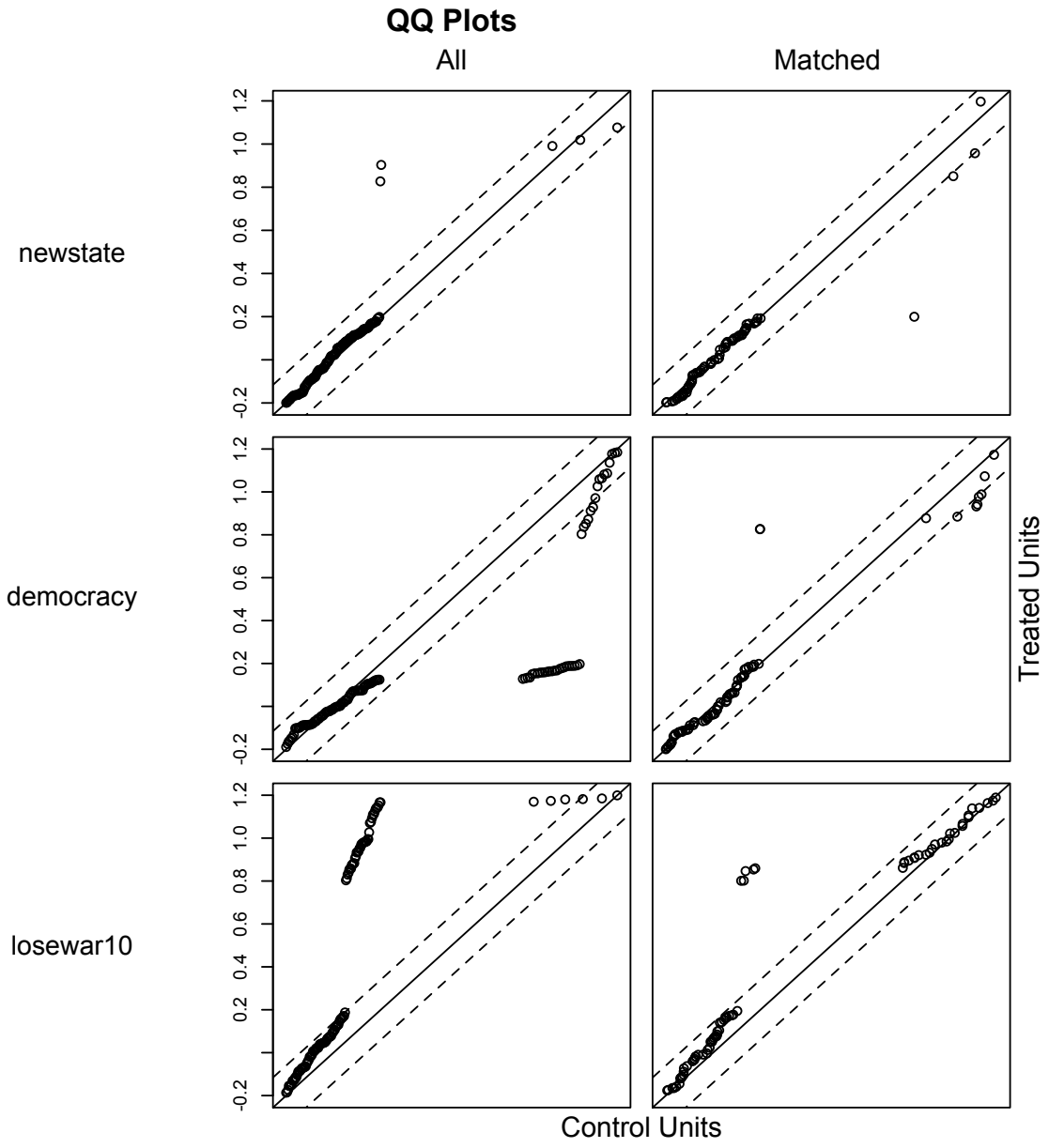
[1] For information on the procedures used to create the matched datasets and perform the subsequent analyses, see pp. 150–51 of the book.

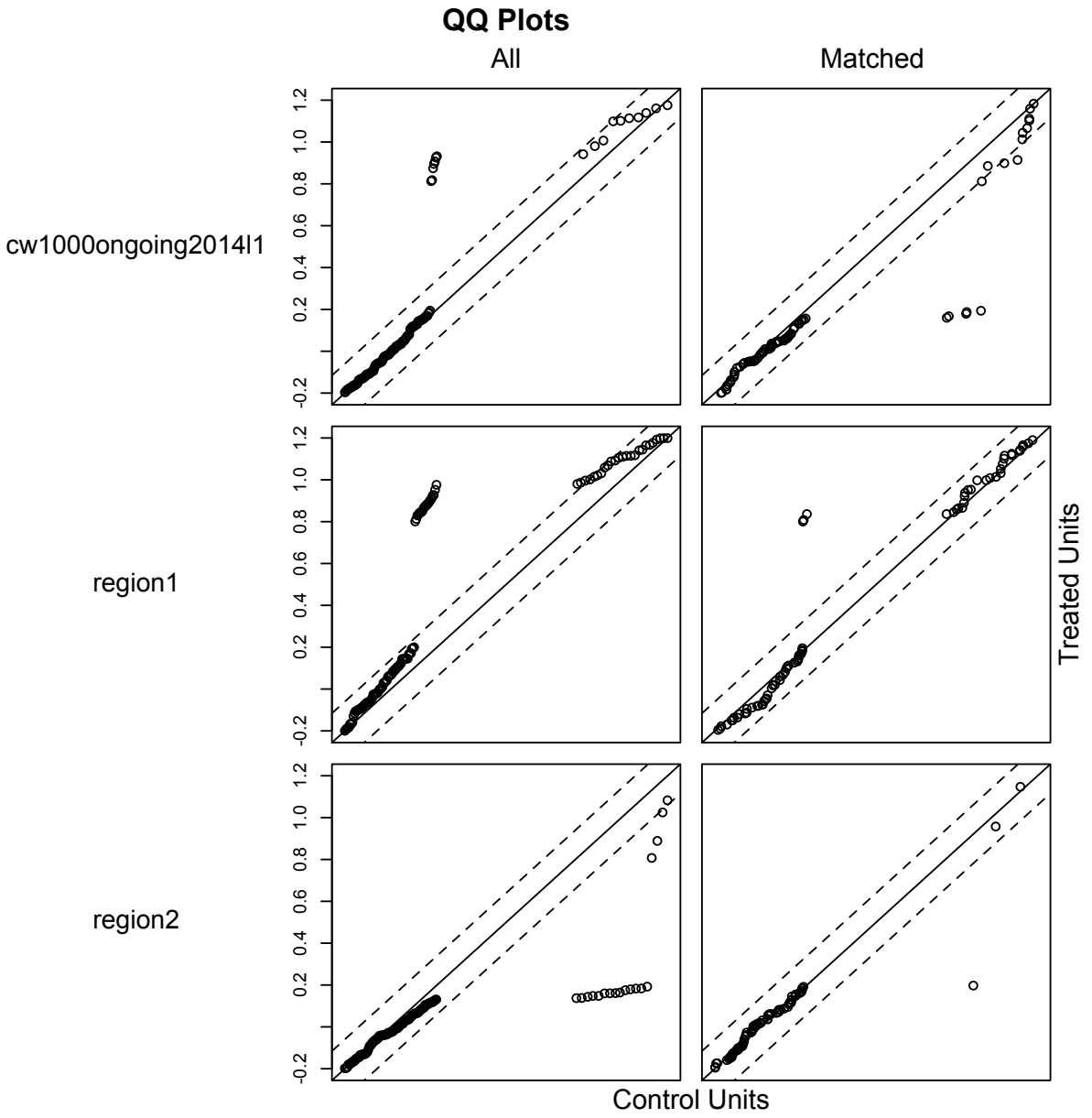
FIRC

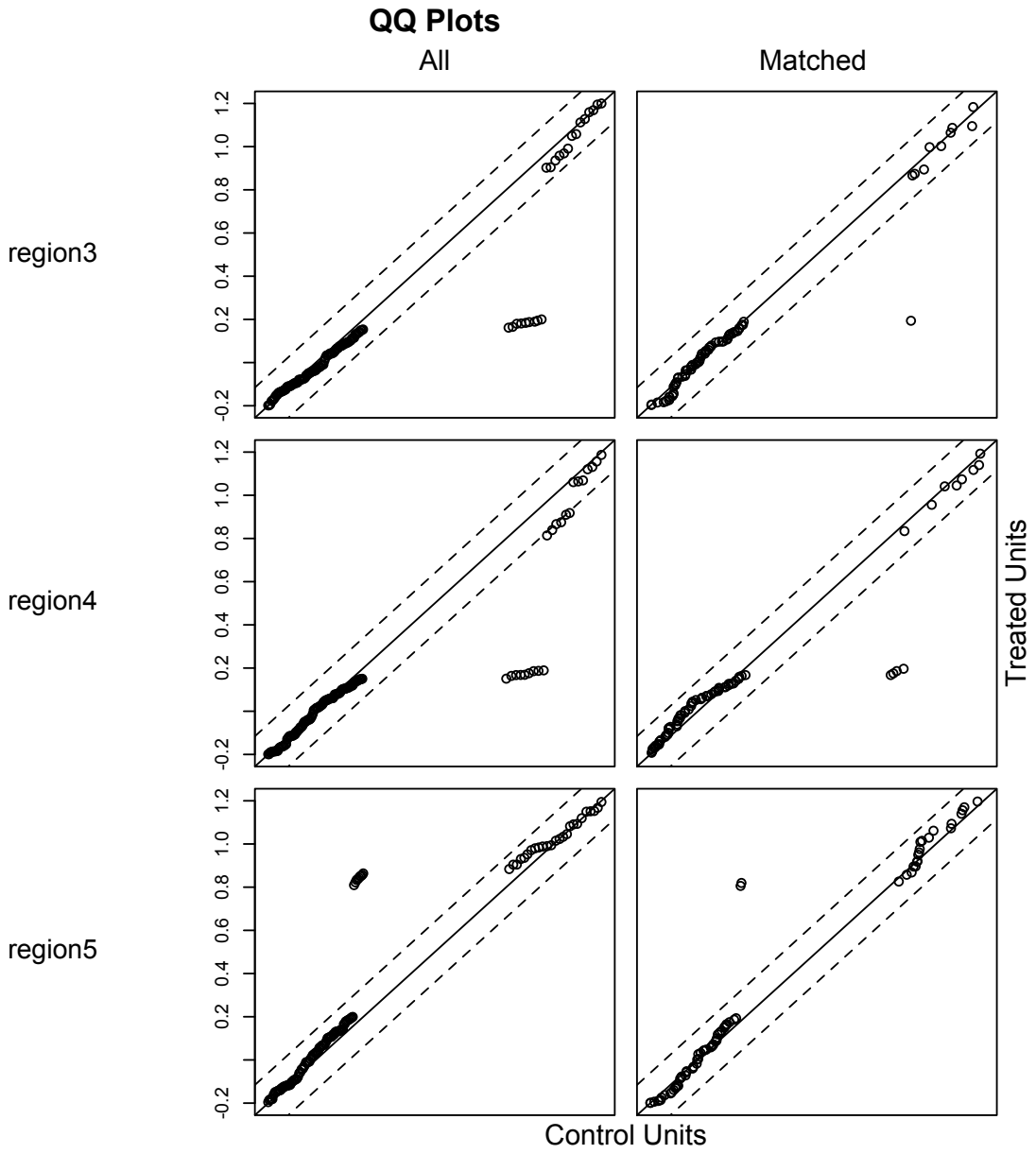
Note: **peaceyrs** is excluded from matching because the balance between treated (33.48) and control (34.50) cases was already very good.

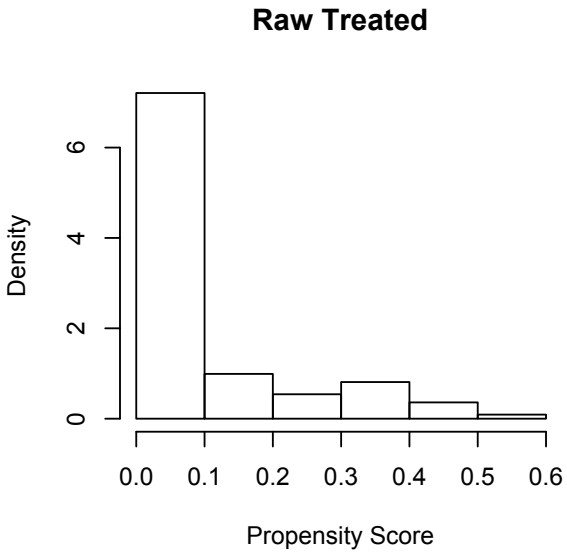
```
summary(firc.out2)

Call:
matchit(formula = abdfirctarg ~ lnpec4_fill + lntpop4_banks +
    mountainous + newstate + democracy + losewar10 + cw1000ongoing2014l1 +
    region1 + region2 + region3 + region4 + region5, data = firc,
    method = "genetic", pop.size = 150)

Summary of balance for all data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0991        0.0120     0.0286    0.0871  0.0336   0.0855  0.3584
lnpec4_fill                4.7369        7.0217     3.8684   -2.2848  1.8751   2.2934  5.7859
lntpop4_banks              8.0128        8.5581     1.8705   -0.5453  0.6369   0.6864  2.3136
mountainous                0.2299        0.1832     0.2210    0.0467  0.0635   0.0663  0.2135
newstate                   0.0450        0.0256     0.1580    0.0194  0.0000   0.0180  1.0000
democracy                  0.1441        0.3557     0.4788   -0.2116  0.0000   0.2162  1.0000
losewar10                  0.4144        0.0518     0.2217    0.3626  0.0000   0.3604  1.0000
cw1000ongoing2014l1        0.1532        0.0908     0.2873    0.0624  0.0000   0.0631  1.0000
region1                    0.4144        0.2224     0.4159    0.1920  0.0000   0.1892  1.0000
region2                    0.0360        0.1566     0.3635   -0.1206  0.0000   0.1261  1.0000
region3                    0.1261        0.2046     0.4034   -0.0785  0.0000   0.0811  1.0000
region4                    0.1171        0.1910     0.3931   -0.0739  0.0000   0.0811  1.0000
region5                    0.3063        0.2253     0.4178    0.0810  0.0000   0.0811  1.0000


Summary of balance for matched data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0991        0.0925     0.1083    0.0066  0.0114   0.0245  0.2528
lnpec4_fill                4.7369        5.1696     3.9045   -0.4327  0.2614   1.0107  4.5218
lntpop4_banks              8.0128        8.2304     1.3015   -0.2177  0.6119   0.6671  1.7792
mountainous                0.2299        0.2191     0.1894    0.0108  0.0139   0.0234  0.1175
newstate                   0.0450        0.0450     0.2089    0.0000  0.0000   0.0139  1.0000
democracy                  0.1441        0.1261     0.3343    0.0180  0.0000   0.0278  1.0000
losewar10                  0.4144        0.4144     0.4961    0.0000  0.0000   0.0694  1.0000
cw1000ongoing2014l1        0.1532        0.1802     0.3870   -0.0270  0.0000   0.0694  1.0000
region1                    0.4144        0.4414     0.5000   -0.0270  0.0000   0.0417  1.0000
region2                    0.0360        0.0360     0.1877    0.0000  0.0000   0.0139  1.0000
region3                    0.1261        0.0901     0.2883    0.0360  0.0000   0.0139  1.0000
region4                    0.1171        0.1171     0.3238    0.0000  0.0000   0.0556  1.0000
region5                    0.3063        0.3153     0.4679   -0.0090  0.0000   0.0278  1.0000

Percent Balance Improvement:
                    Mean Diff. eQQ Med eQQ Mean eQQ Max
distance               92.3728 66.0653  71.4134 29.4532
lnpec4_fill            81.0613 86.0620  55.9303 21.8480
lntpop4_banks          60.0846  3.9251   2.8091 23.0989
mountainous            76.8794 78.1911  64.6260 44.9670
newstate              100.0000  0.0000  22.9167  0.0000
democracy              91.4845  0.0000  87.1528  0.0000
losewar10             100.0000  0.0000  80.7292  0.0000
cw1000ongoing2014l1    56.6778  0.0000 -10.1190  0.0000
region1                85.9238  0.0000  77.9762  0.0000
region2               100.0000  0.0000  88.9881  0.0000
region3                54.0886  0.0000  82.8704  0.0000
region4               100.0000  0.0000  31.4815  0.0000
region5                88.8794  0.0000  65.7407  0.0000

Sample sizes:
          Control Treated
All          8318     111
Matched        72     111
Unmatched    8246       0
Discarded       0       0
```

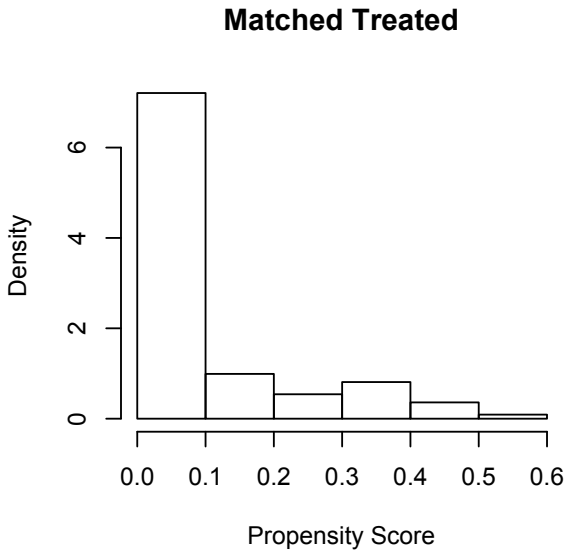

QQ Plots
All
Matched
lnpec4_fill
lntpop4_banks
mountainous
Treated Units
Control Units
0
5
10
15
2
4
6
8
10
12
14
0.0
0.2
0.4
0.6
0.8
1.0

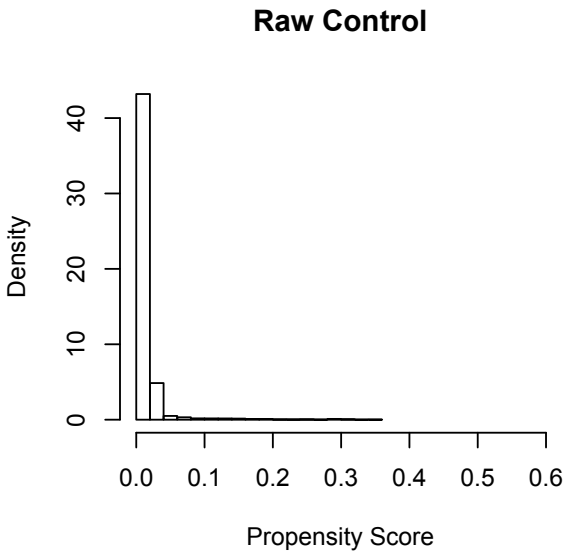

QQ Plots
All
Matched
newstate
democracy
losewar10
Treated Units
Control Units
-0.2
0.2
0.4
0.6
0.8
1.0
1.2

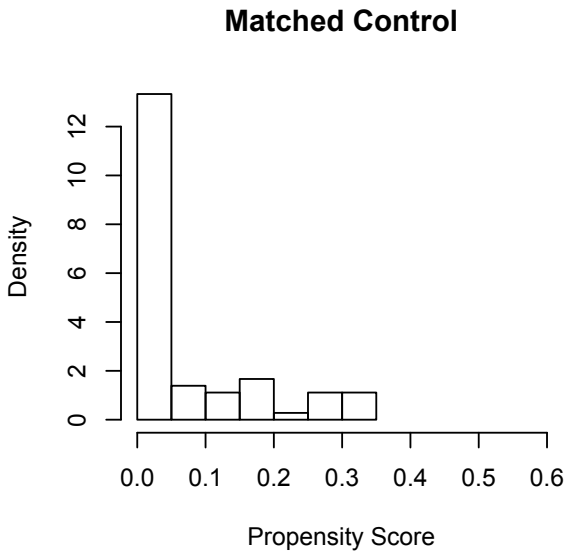

QQ Plots
All
Matched
cw1000ongoing2014l1
region1
region2
Treated Units
Control Units
-0.2
0.2
0.4
0.6
0.8
1.0
1.2


QQ Plots
All
Matched
region3
region4
region5
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units

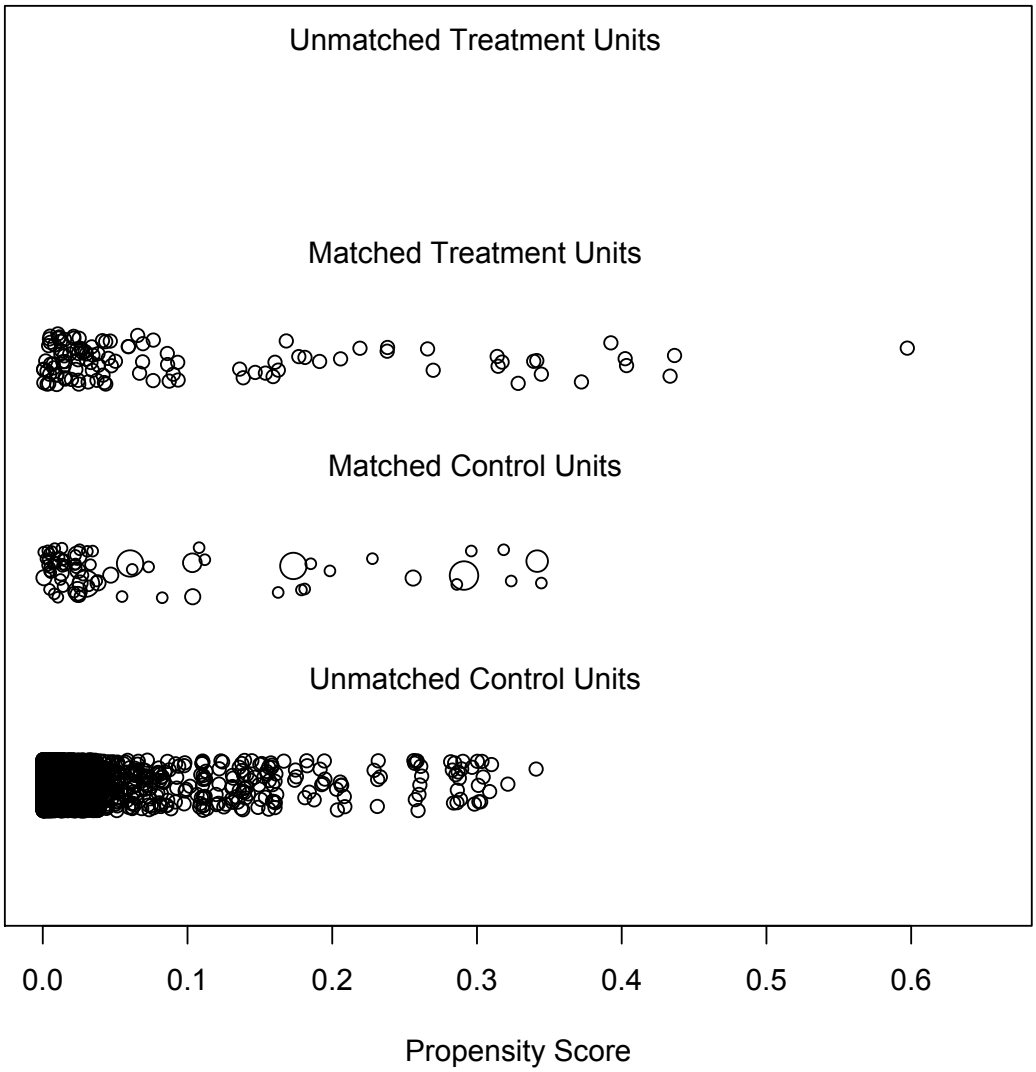

Raw Treated
Density
0
2
4
6
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Propensity Score


Matched Treated
Density
0
2
4
6
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Propensity Score


Raw Control
Density
0
10
20
30
40
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Propensity Score


Matched Control
Density
0
2
4
6
8
10
12
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Propensity Score

Distribution of Propensity Scores



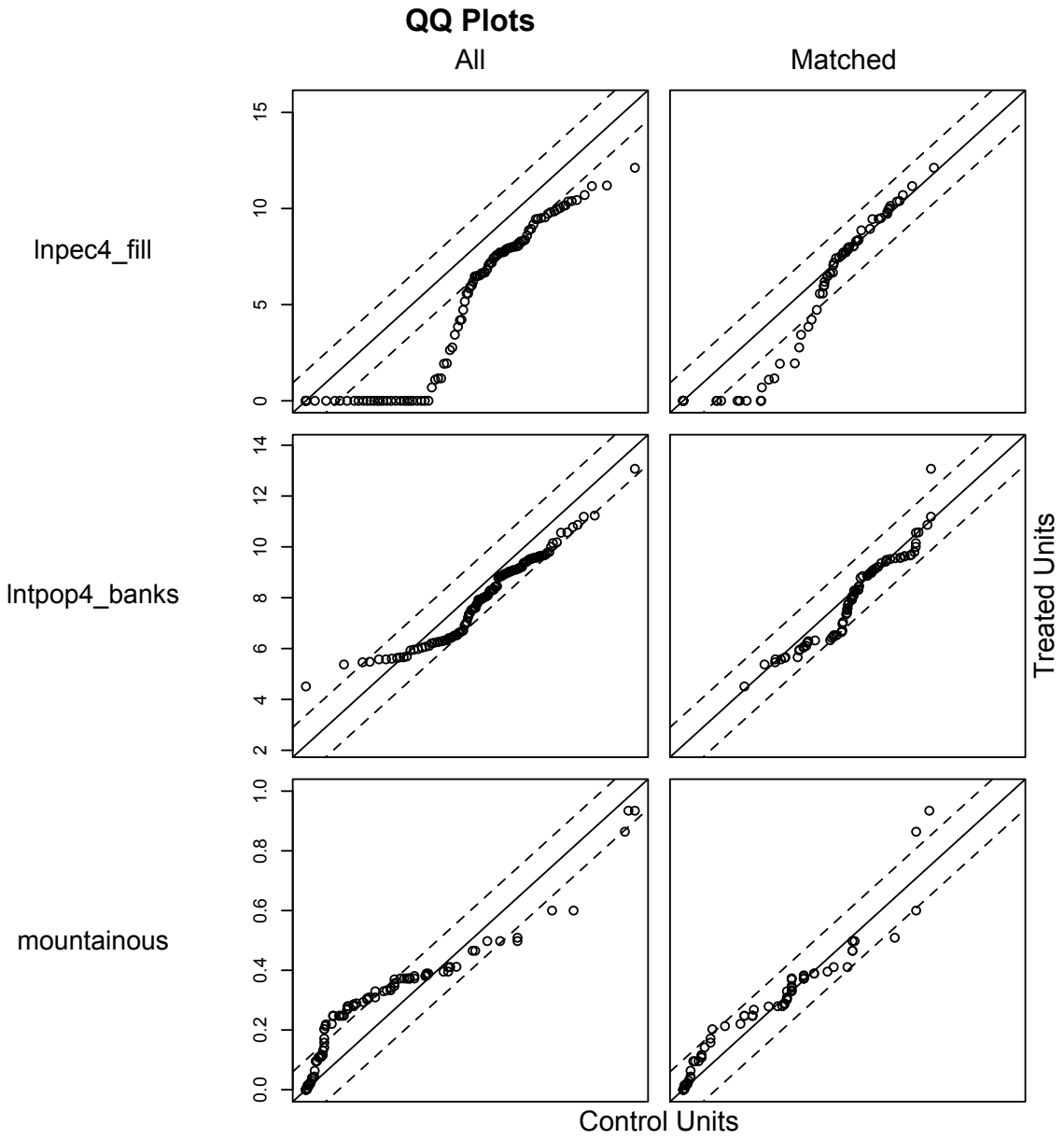
FIRC: MATCHED ANALYSIS

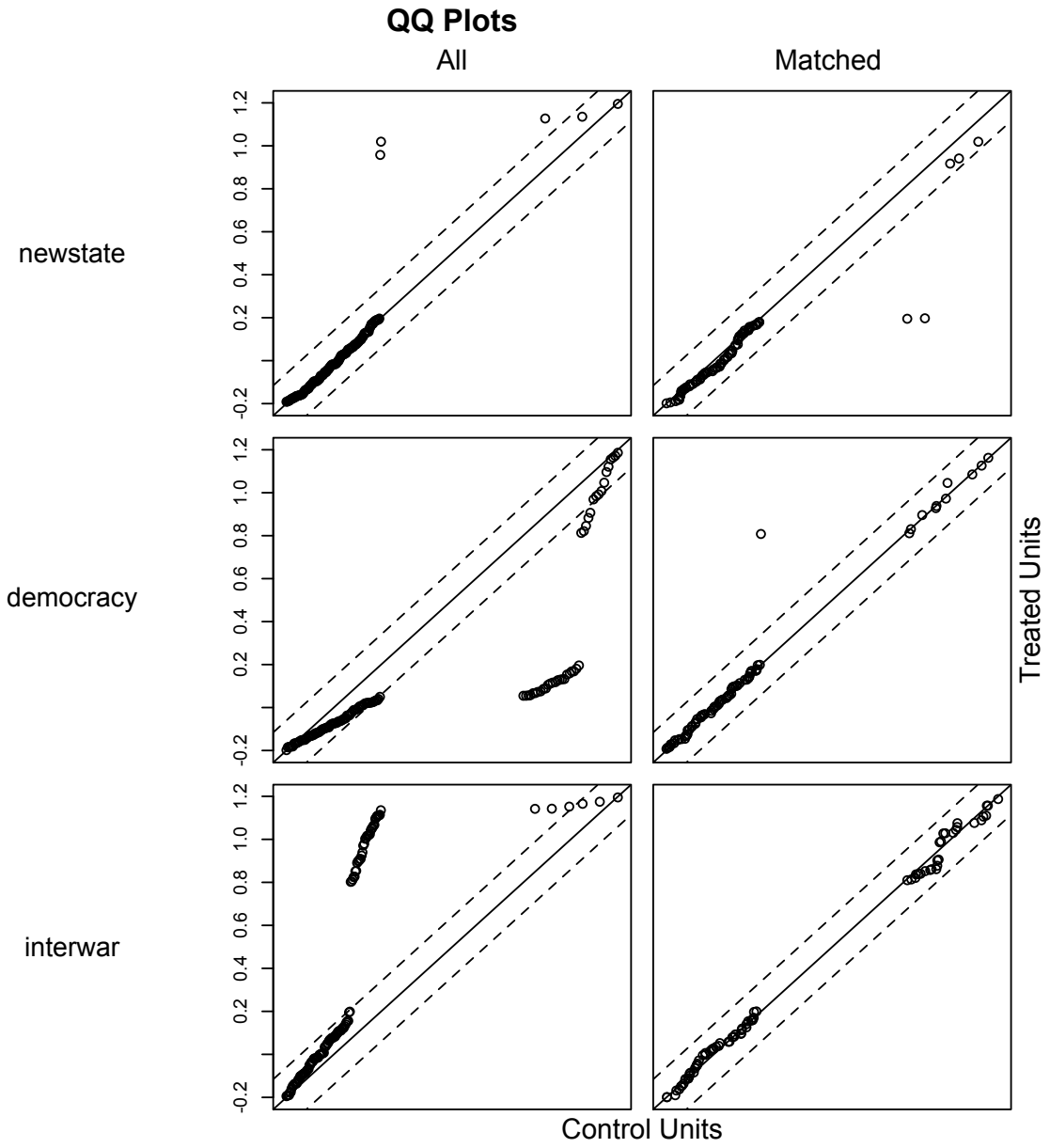
```
tab civwar10_2014 abdfirctarg, col chi2

civwar10_2 |      abdfirctarg
       014 |         0          1 |     Total
-----------+----------------------+----------
         0 |        61         75 |       136
           |     84.72      67.57 |     74.32
-----------+----------------------+----------
         1 |        11         36 |        47
           |     15.28      32.43 |     25.68
-----------+----------------------+----------
     Total |        72        111 |       183
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =   6.7334   Pr = 0.009

tab civwar5_2014 abdfirctarg, col chi2

civwar5_20 |      abdfirctarg
        14 |         0          1 |     Total
-----------+----------------------+----------
         0 |        65         81 |       146
           |     90.28      72.97 |     79.78
-----------+----------------------+----------
         1 |         7         30 |        37
           |      9.72      27.03 |     20.22
-----------+----------------------+----------
     Total |        72        111 |       183
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =   8.1075   Pr = 0.004

ttest civwar10_2014, by(abdfirctarg)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      72    .1527778    .0426972    .3622979    .0676419    .2379136
       1 |     111    .3243243    .0446337    .4702449    .2358709    .4127778
---------+--------------------------------------------------------------------
combined |     183    .2568306    .0323841    .4380838    .1929341    .3207271
---------+--------------------------------------------------------------------
    diff |           -.1715465    .0652395               -.3002744   -.0428187
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -2.6295
Ho: diff = 0                                     degrees of freedom =      181

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0046         Pr(|T| > |t|) = 0.0093          Pr(T > t) = 0.9954

ttest civwar5_2014, by(abdfirctarg)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      72    .0972222    .0351596    .2983392     .027116    .1673285
       1 |     111    .2702703    .0423432    .4461134     .186356    .3541846
---------+--------------------------------------------------------------------
combined |     183    .2021858    .0297708    .4027319    .1434455    .2609261
---------+--------------------------------------------------------------------
    diff |           -.173048    .0597407               -.2909258   -.0551703
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -2.8967
Ho: diff = 0                                     degrees of freedom =      181

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0021         Pr(|T| > |t|) = 0.0042          Pr(T > t) = 0.9979
```

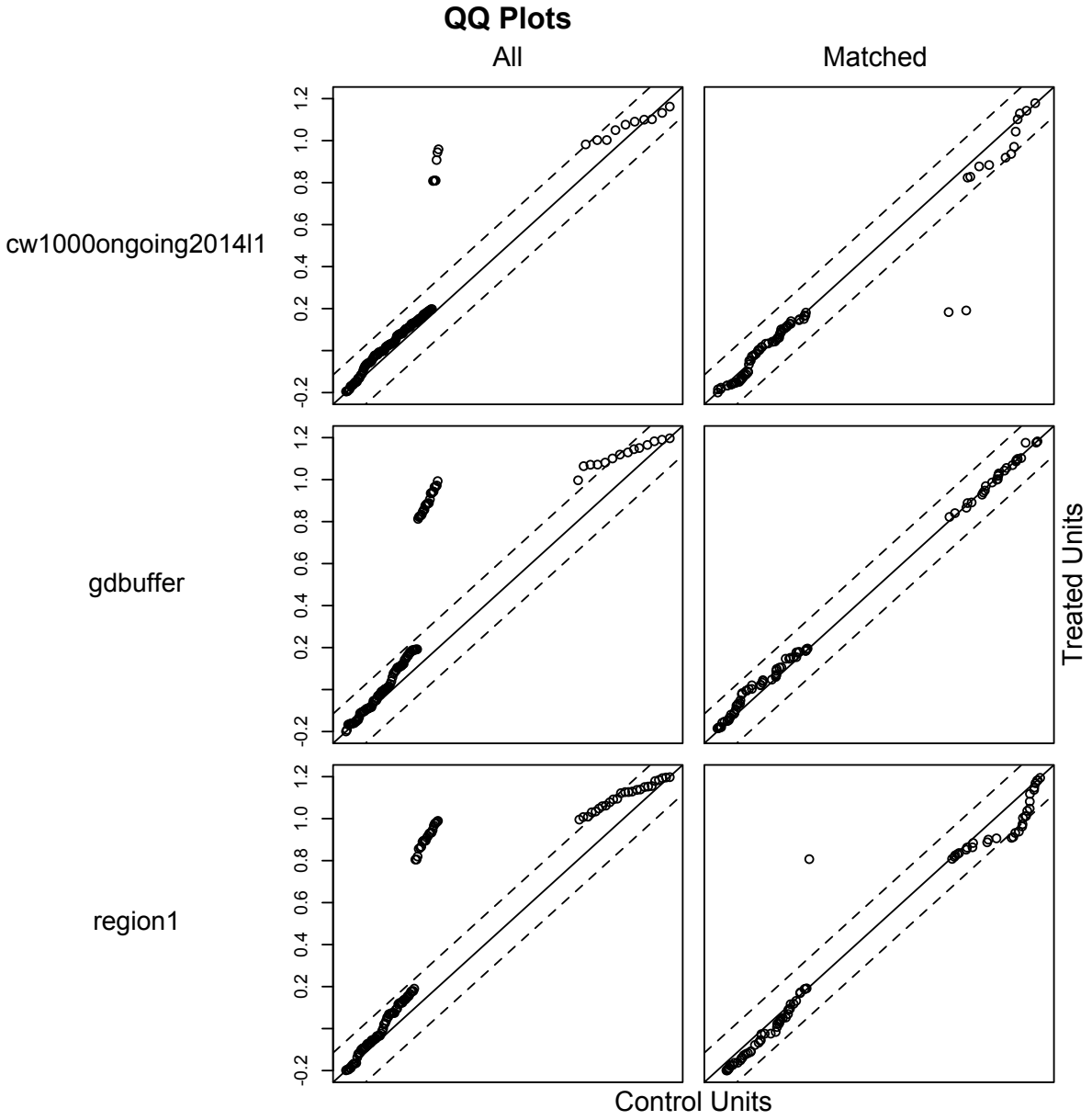
```
probit civwar10_2014 abdfirctarg lnpec4_fill lntpop4_banks mountainous newstate democracy
losewar10 cw1000ongoing2014l1 peaceyrs, robust cluster(ccode2)

Iteration 0:   log pseudolikelihood = -104.25796
Iteration 1:   log pseudolikelihood =  -87.25365
Iteration 2:   log pseudolikelihood = -86.645994
Iteration 3:   log pseudolikelihood = -86.640557
Iteration 4:   log pseudolikelihood = -86.640554

Probit regression                                 Number of obs     =        183
                                                  Wald chi2(9)      =      34.67
                                                  Prob > chi2       =     0.0001
Log pseudolikelihood = -86.640554                 Pseudo R2         =     0.1690

                                    (Std. Err. adjusted for 100 clusters in ccode2)
------------------------------------------------------------------------------
                    |               Robust
      civwar10_2014 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------------+---------------------------------------------------------------
        abdfirctarg |   .7673941   .2385996     3.22   0.001     .2997474    1.235041
        lnpec4_fill |  -.0773049   .0478226    -1.62   0.106    -.1710355    .0164257
      lntpop4_banks |   .3489762   .1197545     2.91   0.004     .1142617    .5836906
        mountainous |  -.1134908   .7388711    -0.15   0.878    -1.561652     1.33467
           newstate |   .7096971   .6484492     1.09   0.274    -.5612399    1.980634
          democracy |  -1.415003   .5966623    -2.37   0.018     -2.58444   -.2455663
          losewar10 |   .2172882   .2977912     0.73   0.466    -.3663719    .8009483
cw1000ongoing2014l1 |   .0803898   .3862691     0.21   0.835    -.6766837    .8374633
           peaceyrs |   -.000795   .0043278    -0.18   0.854    -.0092773    .0076874
              _cons |  -3.648781    .916934    -3.98   0.000    -5.445938   -1.851623
------------------------------------------------------------------------------

probit civwar5_2014 abdfirctarg lnpec4_fill lntpop4_banks mountainous newstate democracy
losewar10 cw1000ongoing2014l1 peaceyrs, robust cluster(ccode2)

Iteration 0:   log pseudolikelihood = -92.125436
Iteration 1:   log pseudolikelihood = -75.099417
Iteration 2:   log pseudolikelihood = -74.388716
Iteration 3:   log pseudolikelihood = -74.382571
Iteration 4:   log pseudolikelihood = -74.382567

Probit regression                                 Number of obs     =        183
                                                  Wald chi2(9)      =      34.47
                                                  Prob > chi2       =     0.0001
Log pseudolikelihood = -74.382567                 Pseudo R2         =     0.1926

                                    (Std. Err. adjusted for 100 clusters in ccode2)
------------------------------------------------------------------------------
                    |               Robust
       civwar5_2014 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------------+---------------------------------------------------------------
        abdfirctarg |   .8709993   .2941845     2.96   0.003     .2944083     1.44759
        lnpec4_fill |  -.0953753   .0512655    -1.86   0.063    -.1958537    .0051032
      lntpop4_banks |    .440586   .1313508     3.35   0.001     .1831432    .6980288
        mountainous |  -.0329312   .7860637    -0.04   0.967    -1.573588    1.507725
           newstate |   .8204673   .6589096     1.25   0.213    -.4709718    2.111906
          democracy |  -1.343529   .6112571    -2.20   0.028    -2.541571   -.1454872
          losewar10 |   .2459155   .3080201     0.80   0.425    -.3577929    .8496239
cw1000ongoing2014l1 |  -.5309528    .442362    -1.20   0.230    -1.397966    .3360609
           peaceyrs |  -.0010507   .0049219    -0.21   0.831    -.0106974     .008596
              _cons |  -4.528212   1.023802    -4.42   0.000    -6.534827   -2.521596
------------------------------------------------------------------------------
```

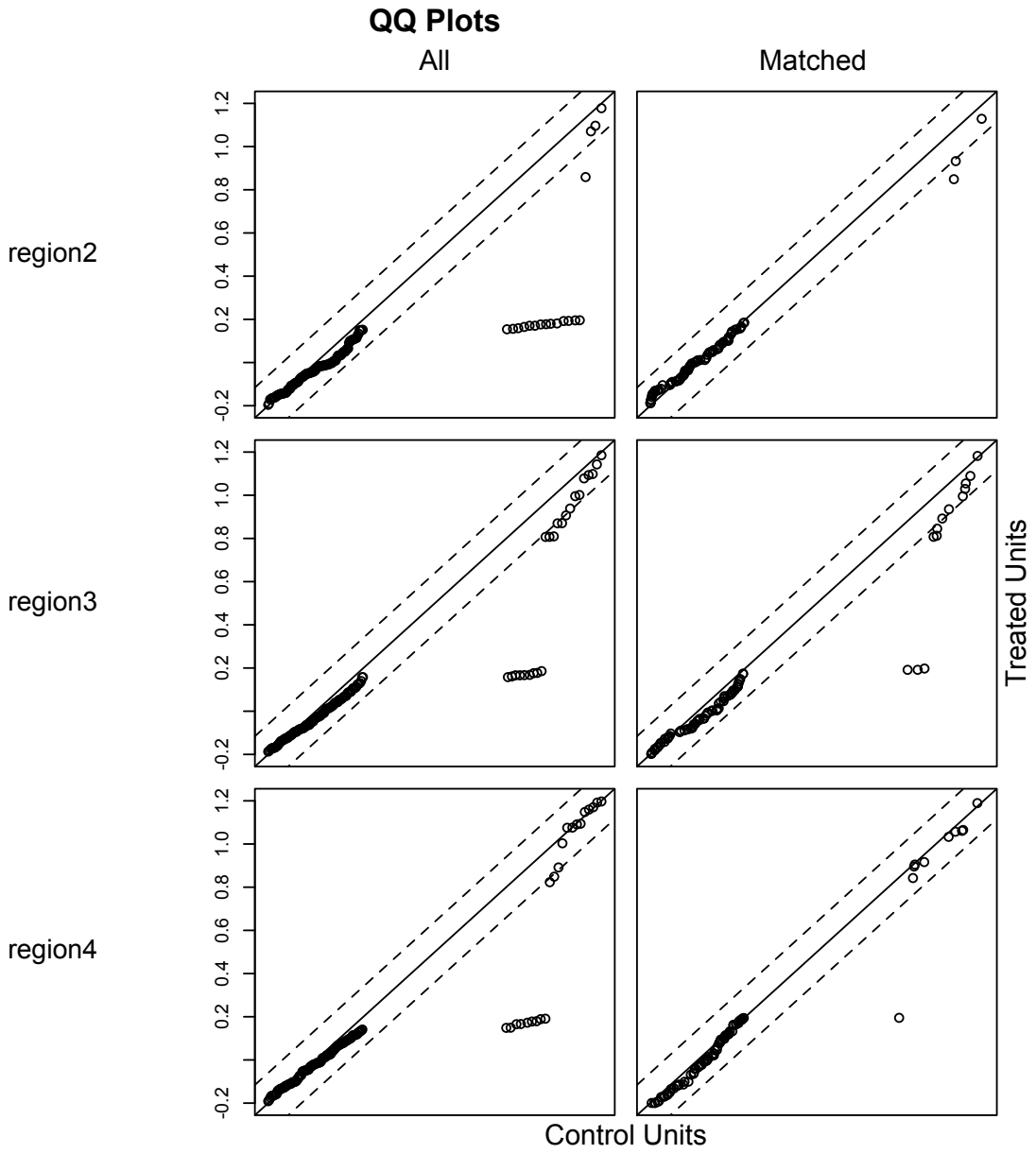
FIRC (using interwar and gdbuffer)

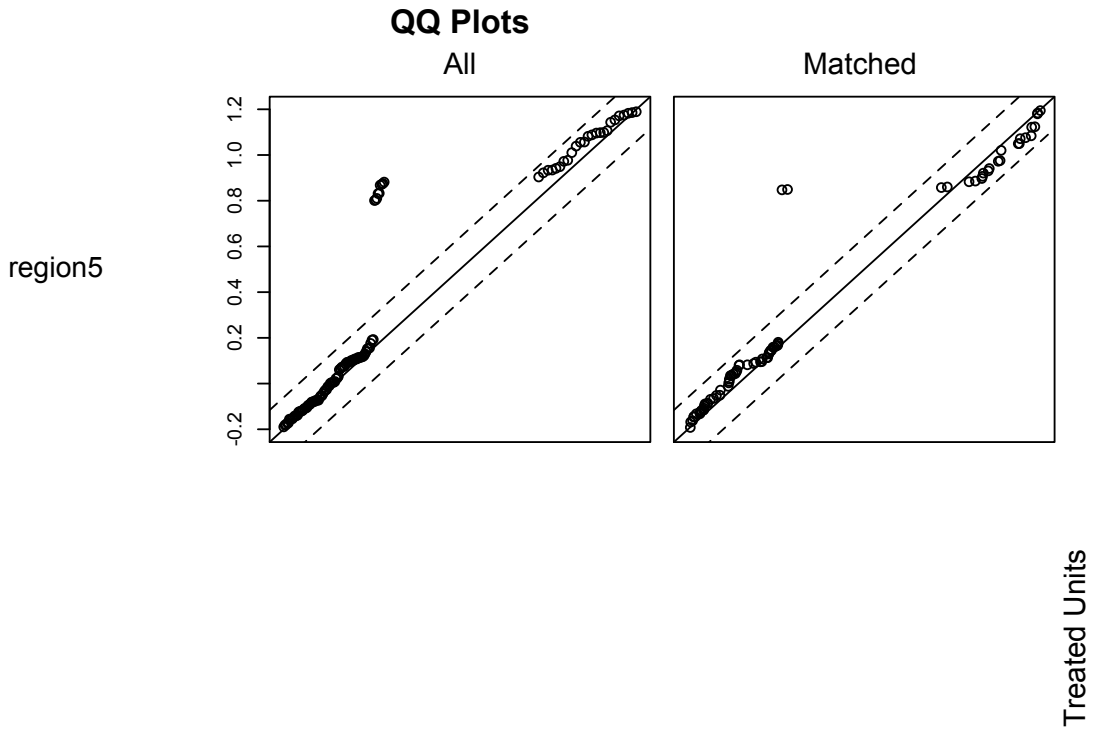
```
summary(firc.out3)

Call:
matchit(formula = abdfirctarg ~ lnpec4_fill + lntpop4_banks +
    mountainous + newstate + democracy + interwar + cw1000ongoing2014l1 +
    gdbuffer + region1 + region2 + region3 + region4 + region5,
    data = firc, method = "genetic", pop.size = 150)

Summary of balance for all data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0791        0.0123     0.0293    0.0668  0.0312   0.0650  0.2947
lnpec4_fill                4.7369        7.0217     3.8684   -2.2848  1.8751   2.2934  5.7859
lntpop4_banks              8.0128        8.5581     1.8705   -0.5453  0.6369   0.6864  2.3136
mountainous                0.2299        0.1832     0.2210    0.0467  0.0635   0.0663  0.2135
newstate                   0.0450        0.0256     0.1580    0.0194  0.0000   0.0180  1.0000
democracy                  0.1441        0.3557     0.4788   -0.2116  0.0000   0.2162  1.0000
interwar                   0.3604        0.0513     0.2207    0.3090  0.0000   0.3063  1.0000
cw1000ongoing2014l1        0.1532        0.0908     0.2873    0.0624  0.0000   0.0631  1.0000
gdbuffer                   0.3243        0.1193     0.3241    0.2051  0.0000   0.1982  1.0000
region1                    0.4144        0.2224     0.4159    0.1920  0.0000   0.1892  1.0000
region2                    0.0360        0.1566     0.3635   -0.1206  0.0000   0.1261  1.0000
region3                    0.1261        0.2046     0.4034   -0.0785  0.0000   0.0811  1.0000
region4                    0.1171        0.1910     0.3931   -0.0739  0.0000   0.0811  1.0000
region5                    0.3063        0.2253     0.4178    0.0810  0.0000   0.0811  1.0000


Summary of balance for matched data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0791        0.0748     0.0901    0.0043  0.0038   0.0085  0.0537
lnpec4_fill                4.7369        4.7874     3.6376   -0.0506  0.2017   0.7675  3.6889
lntpop4_banks              8.0128        8.0524     1.4586   -0.0396  0.2891   0.3893  2.0285
mountainous                0.2299        0.2099     0.1968    0.0200  0.0173   0.0329  0.1862
newstate                   0.0450        0.0450     0.2087    0.0000  0.0000   0.0253  1.0000
democracy                  0.1441        0.1351     0.3441    0.0090  0.0000   0.0127  1.0000
interwar                   0.3604        0.3604     0.4832    0.0000  0.0000   0.0000  0.0000
cw1000ongoing2014l1        0.1532        0.1532     0.3624    0.0000  0.0000   0.0253  1.0000
gdbuffer                   0.3243        0.3243     0.4711    0.0000  0.0000   0.0000  0.0000
region1                    0.4144        0.4144     0.4958    0.0000  0.0000   0.0127  1.0000
region2                    0.0360        0.0360     0.1876    0.0000  0.0000   0.0000  0.0000
region3                    0.1261        0.1261     0.3341    0.0000  0.0000   0.0380  1.0000
region4                    0.1171        0.1171     0.3236    0.0000  0.0000   0.0127  1.0000
region5                    0.3063        0.3063     0.4639    0.0000  0.0000   0.0253  1.0000

Percent Balance Improvement:
                    Mean Diff. eQQ Med eQQ Mean  eQQ Max
distance               93.5313 87.9372  86.8650  81.7699
lnpec4_fill            97.7864 89.2451  66.5343  36.2435
lntpop4_banks          92.7384 54.6068  43.2851  12.3254
mountainous            57.2228 72.8214  50.4117  12.7931
newstate              100.0000  0.0000 -40.5063   0.0000
democracy              95.7422  0.0000  94.1456   0.0000
interwar              100.0000  0.0000 100.0000 100.0000
cw1000ongoing2014l1   100.0000  0.0000  59.8553   0.0000
gdbuffer              100.0000  0.0000 100.0000 100.0000
region1               100.0000  0.0000  93.3092   0.0000
region2               100.0000  0.0000 100.0000 100.0000
region3               100.0000  0.0000  53.1646   0.0000
region4               100.0000  0.0000  84.3882   0.0000
region5               100.0000  0.0000  68.7764   0.0000

Sample sizes:
          Control Treated
All          8318     111
Matched        79     111
Unmatched    8239       0
Discarded       0       0
```

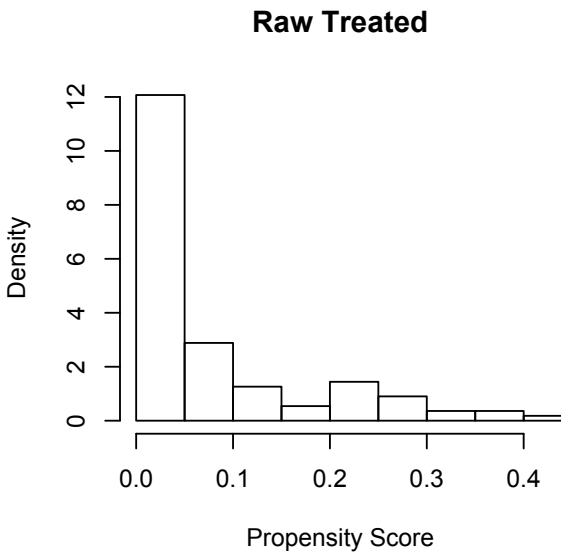

QQ Plots
All
Matched
lnpec4_fill
lntpop4_banks
mountainous
Treated Units
Control Units
0
5
10
15
2
4
6
8
10
12
14
0.0
0.2
0.4
0.6
0.8
1.0

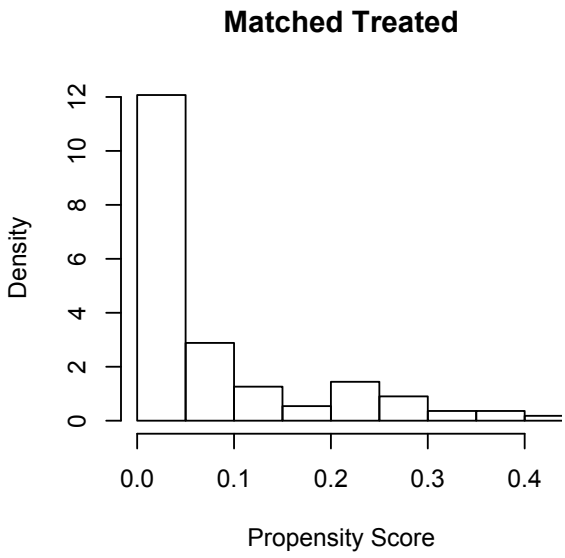

QQ Plots
All
Matched
newstate
democracy
interwar
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units

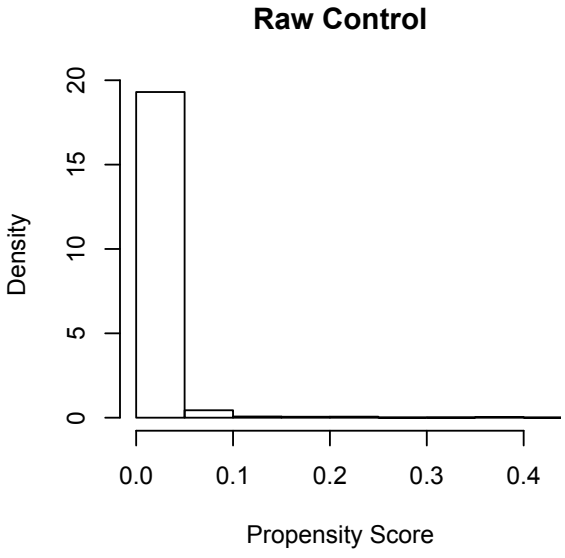

QQ Plots
All
Matched
cw1000ongoing2014l1
gdbuffer
region1
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units

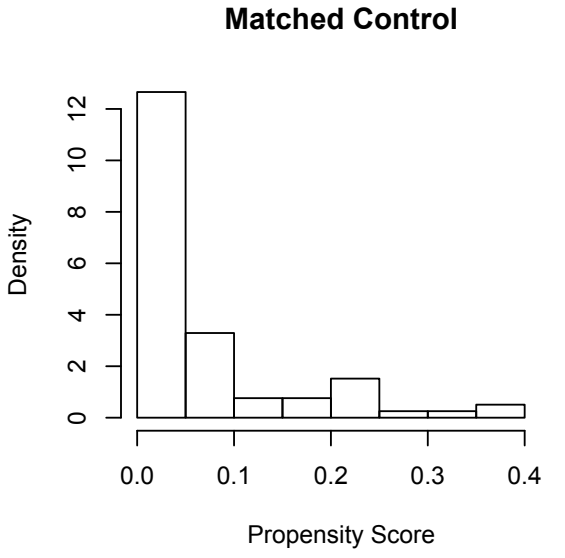

QQ Plots
All
Matched
region2
region3
region4
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units


QQ Plots
All
Matched
region5
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units

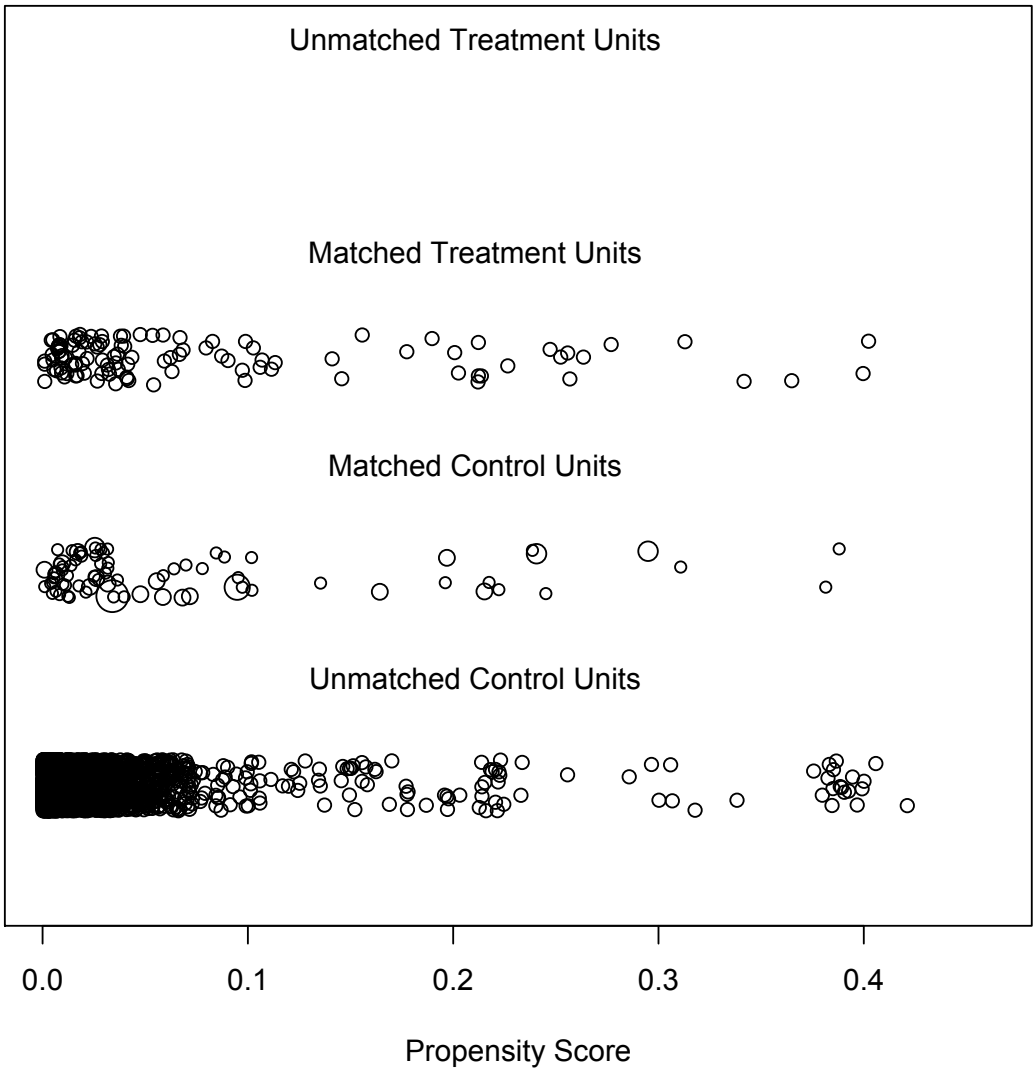

Raw Treated
Density
0
2
4
6
8
10
12
0.0
0.1
0.2
0.3
0.4
Propensity Score


Matched Treated
Density
0
2
4
6
8
10
12
0.0
0.1
0.2
0.3
0.4
Propensity Score


Raw Control
Density
0
5
10
15
20
0.0
0.1
0.2
0.3
0.4
Propensity Score


Matched Control
Density
0
2
4
6
8
10
12
0.0
0.1
0.2
0.3
0.4
Propensity Score

Distribution of Propensity Scores



FIRC: MATCHED ANALYSIS (with interwar, gdbuffer)

```
tab civwar10_2014 abdfirctarg, col chi2

civwar10_2 |      abdfirctarg
       014 |         0          1 |     Total
-----------+----------------------+----------
         0 |        66         75 |       141
           |     83.54      67.57 |     74.21
-----------+----------------------+----------
         1 |        13         36 |        49
           |     16.46      32.43 |     25.79
-----------+----------------------+----------
     Total |        79        111 |       190
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =   6.1555   Pr = 0.013

tab civwar5_2014 abdfirctarg, col chi2

civwar5_20 |      abdfirctarg
        14 |         0          1 |     Total
-----------+----------------------+----------
         0 |        71         81 |       152
           |     89.87      72.97 |     80.00
-----------+----------------------+----------
         1 |         8         30 |        38
           |     10.13      27.03 |     20.00
-----------+----------------------+----------
     Total |        79        111 |       190
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =   8.2390   Pr = 0.004

ttest civwar10_2014, by(abdfirctarg)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      79     .164557    .0419826    .3731494     .080976    .2481379
       1 |     111    .3243243    .0446337    .4702449    .2358709    .4127778
---------+--------------------------------------------------------------------
combined |     190    .2578947    .0318217    .4386316    .1951234     .320666
---------+--------------------------------------------------------------------
    diff |           -.1597674    .0636799               -.2853863   -.0341485
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -2.5089
Ho: diff = 0                                     degrees of freedom =      188

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0065         Pr(|T| > |t|) = 0.0130          Pr(T > t) = 0.9935

ttest civwar5_2014, by(abdfirctarg)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      79    .1012658    .0341586    .3036081    .0332613    .1692703
       1 |     111    .2702703    .0423432    .4461134     .186356    .3541846
---------+--------------------------------------------------------------------
combined |     190          .2    .0290957    .4010568    .1426059    .2573941
---------+--------------------------------------------------------------------
    diff |           -.1690044     .057894               -.2832097   -.0547992
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -2.9192
Ho: diff = 0                                     degrees of freedom =      188

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0020         Pr(|T| > |t|) = 0.0039          Pr(T > t) = 0.9980
```

```
probit civwar10_2014 abdfirctarg lnpec4_fill lntpop4_banks mountainous newstate democracy
losewar10 cw1000ongoing2014l1 peaceyrs, robust cluster(ccode2)

Iteration 0:   log pseudolikelihood = -108.46023
Iteration 1:   log pseudolikelihood = -94.647593
Iteration 2:   log pseudolikelihood =  -94.42875
Iteration 3:   log pseudolikelihood = -94.427999
Iteration 4:   log pseudolikelihood = -94.427999

Probit regression                                 Number of obs     =        190
                                                  Wald chi2(9)      =      25.51
                                                  Prob > chi2       =     0.0025
Log pseudolikelihood = -94.427999                 Pseudo R2         =     0.1294

                                    (Std. Err. adjusted for 101 clusters in ccode2)
------------------------------------------------------------------------------
                    |               Robust
      civwar10_2014 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------------+---------------------------------------------------------------
        abdfirctarg |   .5945861   .2784208     2.14   0.033     .0488914    1.140281
        lnpec4_fill |  -.0767613   .0449534    -1.71   0.088    -.1648684    .0113458
      lntpop4_banks |   .3248819   .1149897     2.83   0.005     .0995062    .5502576
        mountainous |  -.5776904   .7168152    -0.81   0.420    -1.982623    .8272416
           newstate |   .2185289   .5821957     0.38   0.707    -.9225536    1.359611
          democracy |  -.8462577   .4342609    -1.95   0.051    -1.697393     .004878
          losewar10 |  -.0088752   .2876644    -0.03   0.975    -.5726871    .5549367
cw1000ongoing2014l1 |  -.0891387   .3512184    -0.25   0.800    -.7775142    .5992368
           peaceyrs |  -.0040609   .0039916    -1.02   0.309    -.0118843    .0037626
              _cons |  -2.971244    .970023    -3.06   0.002    -4.872454   -1.070034
------------------------------------------------------------------------------

probit civwar5_2014 abdfirctarg lnpec4_fill lntpop4_banks mountainous newstate democracy
losewar10 cw1000ongoing2014l1 peaceyrs, robust cluster(ccode2)

Iteration 0:   log pseudolikelihood =  -95.07646
Iteration 1:   log pseudolikelihood = -81.495052
Iteration 2:   log pseudolikelihood = -81.260096
Iteration 3:   log pseudolikelihood = -81.259233
Iteration 4:   log pseudolikelihood = -81.259233

Probit regression                                 Number of obs     =        190
                                                  Wald chi2(9)      =      27.66
                                                  Prob > chi2       =     0.0011
Log pseudolikelihood = -81.259233                 Pseudo R2         =     0.1453

                                    (Std. Err. adjusted for 101 clusters in ccode2)
------------------------------------------------------------------------------
                    |               Robust
       civwar5_2014 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------------+---------------------------------------------------------------
        abdfirctarg |    .699309   .2801365     2.50   0.013     .1502514    1.248367
        lnpec4_fill |  -.0777516   .0477359    -1.63   0.103    -.1713121     .015809
      lntpop4_banks |   .3580693   .1280446     2.80   0.005     .1071064    .6090322
        mountainous |  -.2607789   .7071371    -0.37   0.712    -1.646742    1.125184
           newstate |    .464935   .5770704     0.81   0.420    -.6661022    1.595972
          democracy |   -.843354   .4570462    -1.85   0.065    -1.739148    .0524401
          losewar10 |   .1083698   .2847724     0.38   0.704    -.4497739    .6665134
cw1000ongoing2014l1 |  -.7617399   .3607466    -2.11   0.035     -1.46879   -.0546894
           peaceyrs |  -.0020477   .0041872    -0.49   0.625    -.0102544     .006159
              _cons |  -3.598536   1.085805    -3.31   0.001    -5.726674   -1.470398
------------------------------------------------------------------------------
```

LEADERSHIP FIRC

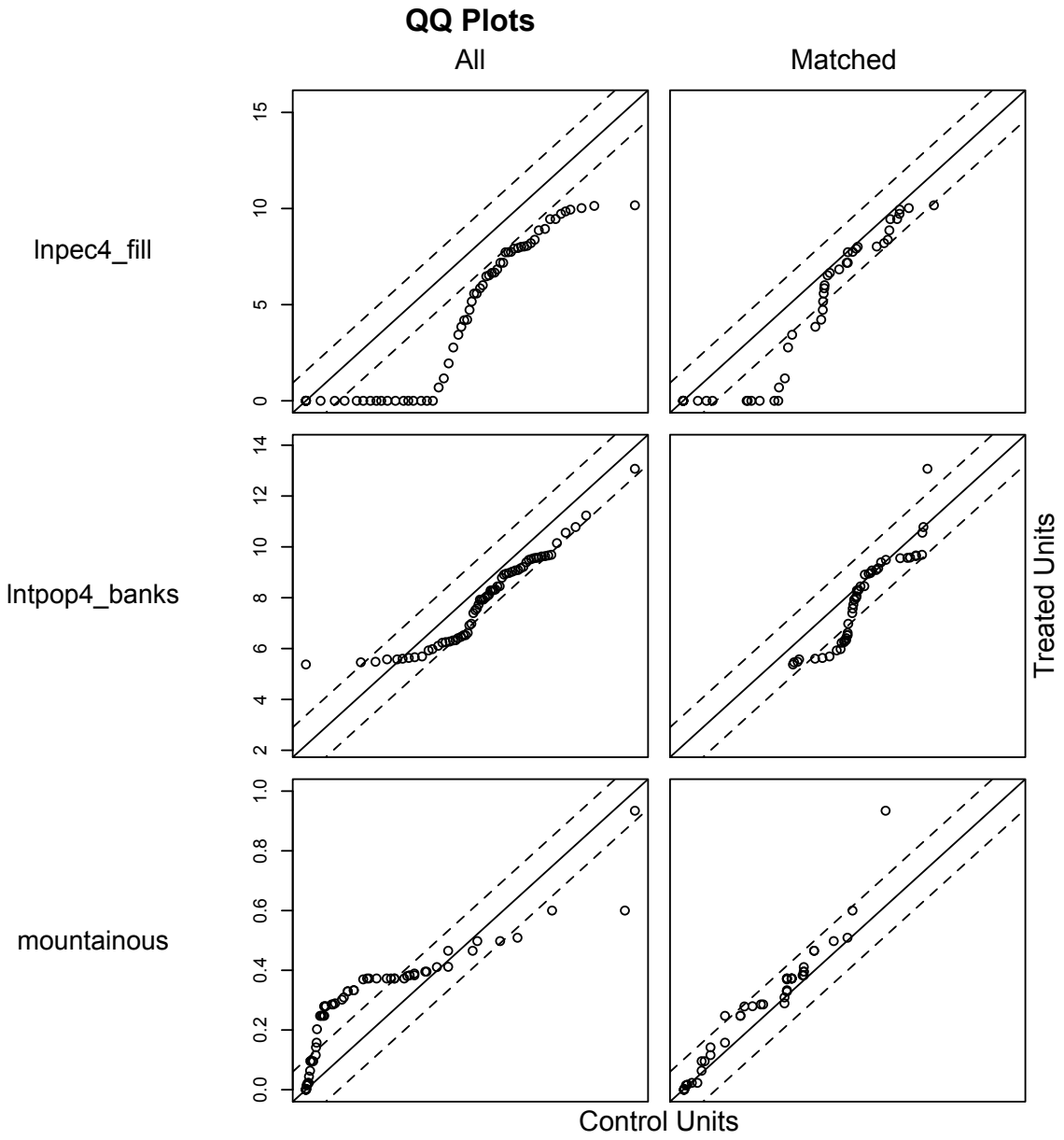
Note: **peaceyrs** is omitted from matching because the balance between treated (32.11) and control (34.50) cases was already very good.

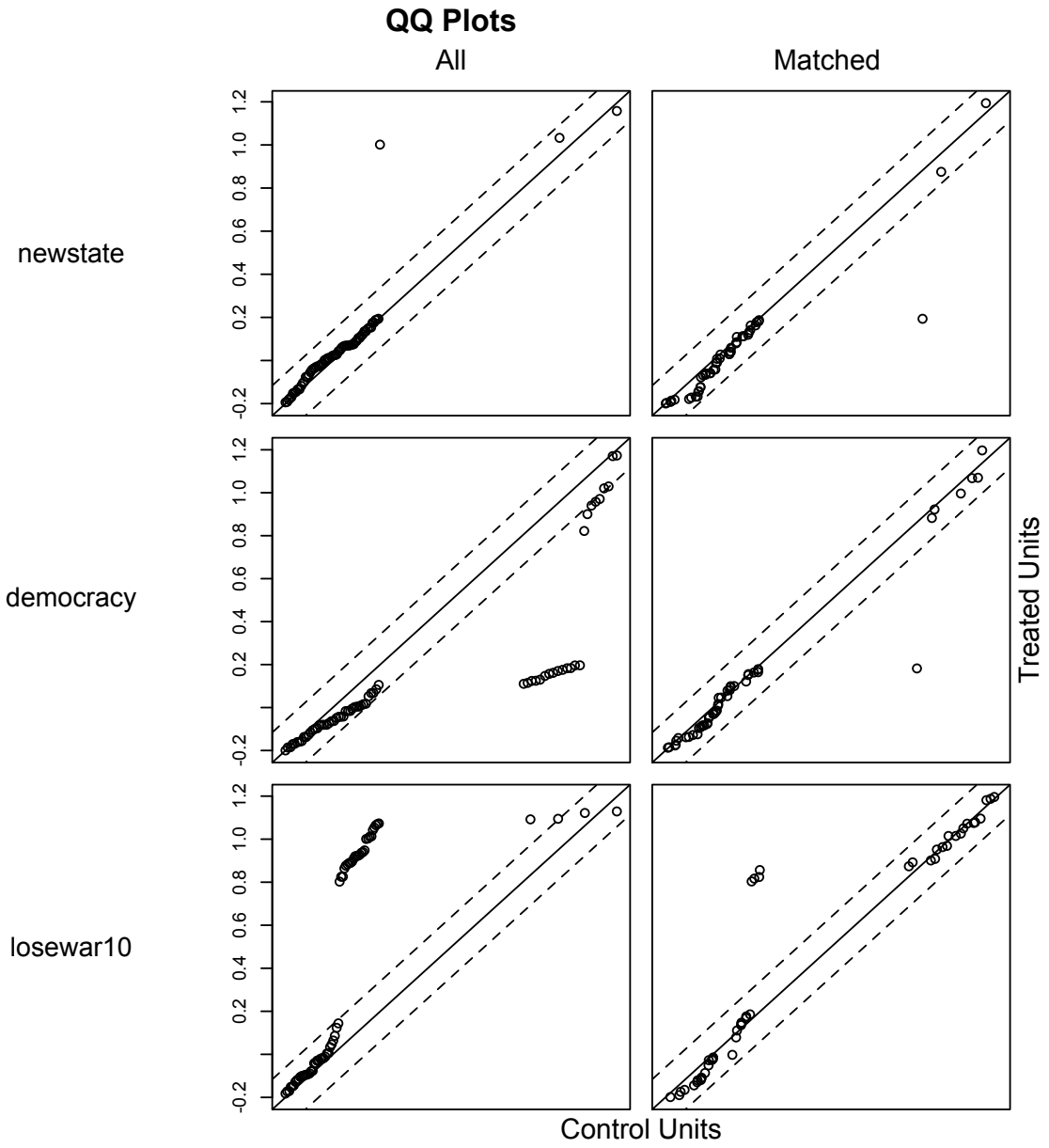
```
summary(leadfirc.out3)

Call:
matchit(formula = abdleaderfirc ~ lnpec4_fill + lntpop4_banks +
    mountainous + newstate + democracy + losewar10 + cw1000ongoing2014l1 +
    region1 + region2 + region3 + region4 + region5, data = leadfirc,
    method = "genetic", pop.size = 150)

Summary of balance for all data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0974        0.0069     0.0208    0.0905  0.0203   0.0878  0.3589
lnpec4_fill                4.3587        7.0217     3.8684   -2.6630  2.3751   2.6810  5.9940
lntpop4_banks              7.9191        8.5581     1.8705   -0.6390  0.7270   0.8145  3.1781
mountainous                0.2629        0.1832     0.2210    0.0797  0.0841   0.1035  0.3695
newstate                   0.0469        0.0256     0.1580    0.0213  0.0000   0.0156  1.0000
democracy                  0.1406        0.3557     0.4788   -0.2151  0.0000   0.2188  1.0000
losewar10                  0.4688        0.0518     0.2217    0.4169  0.0000   0.4062  1.0000
cw1000ongoing2014l1        0.1562        0.0908     0.2873    0.0655  0.0000   0.0625  1.0000
region1                    0.2969        0.2224     0.4159    0.0745  0.0000   0.0625  1.0000
region2                    0.0156        0.1566     0.3635   -0.1410  0.0000   0.1406  1.0000
region3                    0.1250        0.2046     0.4034   -0.0796  0.0000   0.0781  1.0000
region4                    0.1719        0.1910     0.3931   -0.0192  0.0000   0.0312  1.0000
region5                    0.3906        0.2253     0.4178    0.1653  0.0000   0.1562  1.0000


Summary of balance for matched data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0974        0.0858     0.1092    0.0117  0.0092   0.0401  0.2617
lnpec4_fill                4.3587        4.5584     3.8742   -0.1997  0.6931   1.2398  4.4886
lntpop4_banks              7.9191        8.2063     1.2563   -0.2873  0.6953   0.7835  2.1543
mountainous                0.2629        0.2411     0.1660    0.0217  0.0305   0.0406  0.3191
newstate                   0.0469        0.0469     0.2137    0.0000  0.0000   0.0213  1.0000
democracy                  0.1406        0.1406     0.3514    0.0000  0.0000   0.0213  1.0000
losewar10                  0.4688        0.4688     0.5044    0.0000  0.0000   0.0851  1.0000
cw1000ongoing2014l1        0.1562        0.1875     0.3945   -0.0312  0.0000   0.0638  1.0000
region1                    0.2969        0.2812     0.4545    0.0156  0.0000   0.0213  1.0000
region2                    0.0156        0.0156     0.1254    0.0000  0.0000   0.0000  0.0000
region3                    0.1250        0.1250     0.3343    0.0000  0.0000   0.0426  1.0000
region4                    0.1719        0.1406     0.3514    0.0312  0.0000   0.0000  0.0000
region5                    0.3906        0.4375     0.5014   -0.0469  0.0000   0.0638  1.0000

Percent Balance Improvement:
                    Mean Diff. eQQ Med eQQ Mean  eQQ Max
distance               87.0943 54.5567  54.3738  27.0748
lnpec4_fill            92.5023 70.8164  53.7572  25.1140
lntpop4_banks          55.0445  4.3668   3.8009  32.2145
mountainous            72.7543 63.7564  60.8338  13.6309
newstate              100.0000  0.0000 -36.1702   0.0000
democracy             100.0000  0.0000  90.2736   0.0000
losewar10             100.0000  0.0000  79.0507   0.0000
cw1000ongoing2014l1    52.2777  0.0000  -2.1277   0.0000
region1                79.0172  0.0000  65.9574   0.0000
region2               100.0000  0.0000 100.0000 100.0000
region3               100.0000  0.0000  45.5319   0.0000
region4               -63.1300  0.0000 100.0000 100.0000
region5                71.6477  0.0000  59.1489   0.0000

Sample sizes:
          Control Treated
All          8318      64
Matched        47      64
Unmatched    8271       0
Discarded       0       0
```

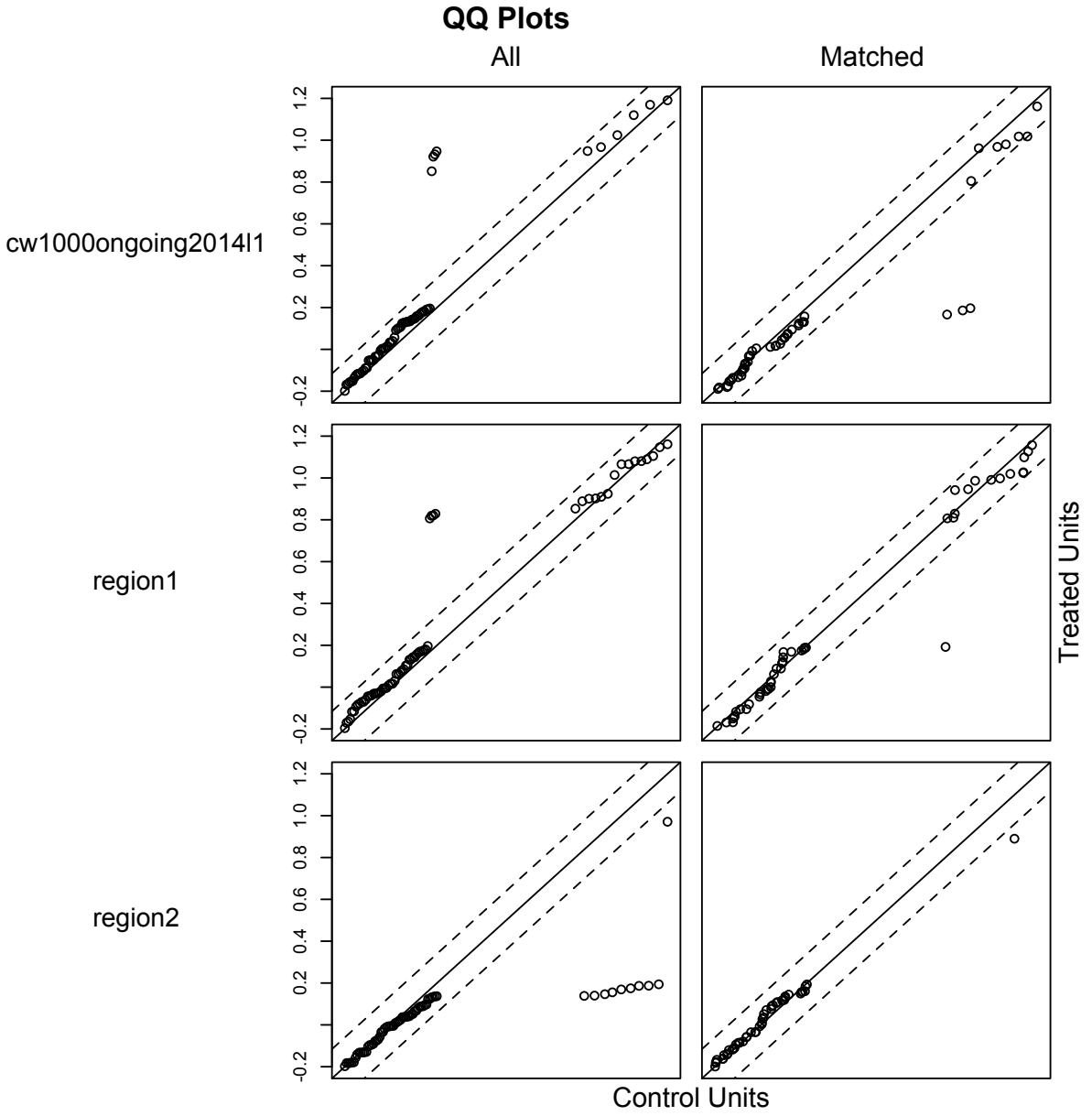
Table 4.5. Balance Statistics for Genetic Matching of Leadership Regime Change

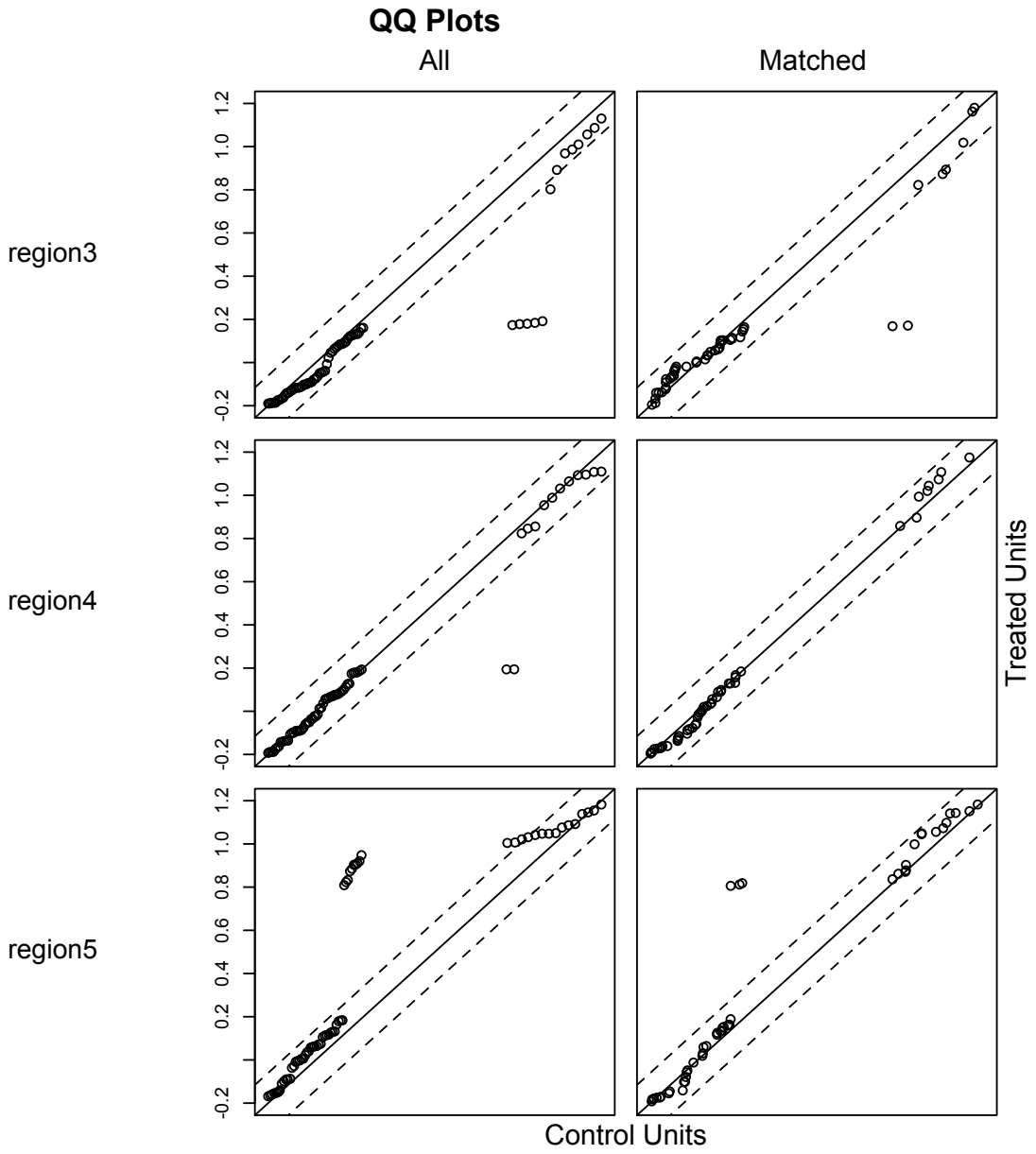
Variable	Mean Treated	Mean Control, before Matching	Mean Control, after Matching	Percent Improvement
Distance	0.0974	0.0069	0.0858	87.0943
Economic Development	4.3587	7.0217	4.5584	92.5023
Population	7.9191	8.5581	8.2063	55.0445
Rough Terrain	0.2629	0.1832	0.2411	72.7543
New State	0.0469	0.0256	0.0469	100
Democracy	0.1406	0.3557	0.1406	100
Lose Interstate War	0.4688	0.0518	0.4688	100
Ongoing Civil War	0.1562	0.0908	0.1875	52.2777
Peace Years	32.1094	34.4999	34.4999	NA
Europe	0.2969	0.2224	0.2812	79.0172
Middle East/North Africa	0.0156	0.1566	0.0156	100
Sub-Saharan Africa	0.1250	0.2046	0.1250	100
Asia	0.1719	0.1910	0.1406	-63.1300
Americas	0.3906	0.2253	0.4375	71.6477

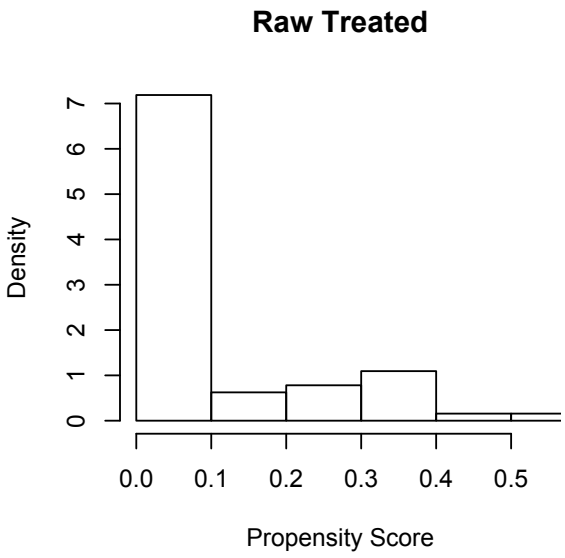
Note: *N* before matching was 8,382 (64 treated, 8,318 control). *N* after matching was 111 (64 treated, 47 control, some of which were matched to more than one case of regime change). The variable for peace years was omitted from matching because balance between treated and control cases was already acceptable and matching consistently worsened balance for this variable.

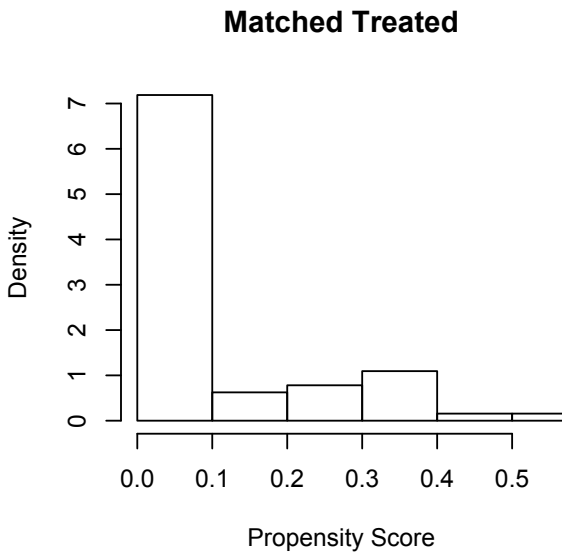

QQ Plots
All
Matched
lnpec4_fill
lntpop4_banks
mountainous
Treated Units
Control Units
0
5
10
15
2
4
6
8
10
12
14
0.0
0.2
0.4
0.6
0.8
1.0

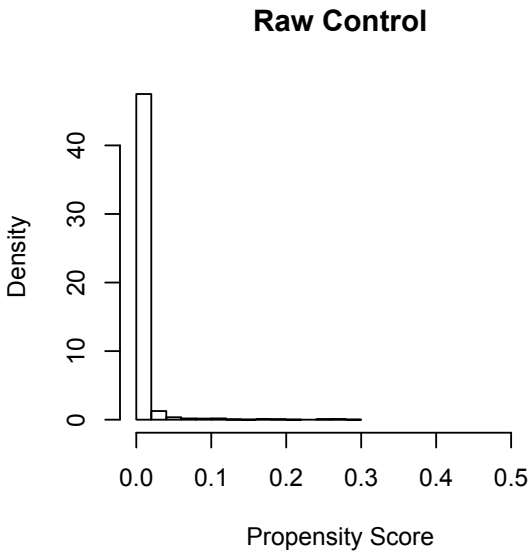

QQ Plots
All
Matched
newstate
democracy
losewar10
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units

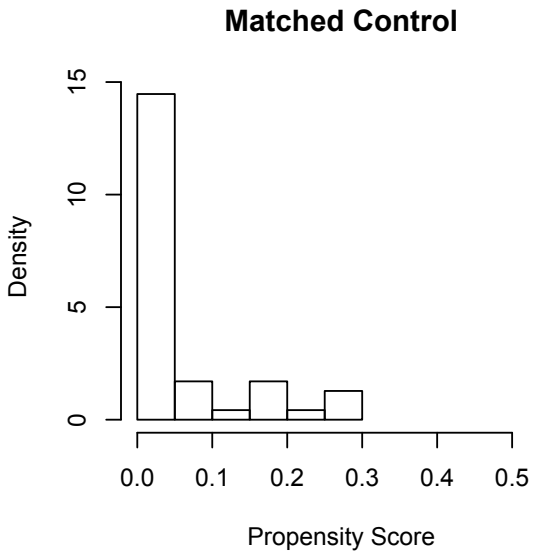

QQ Plots
All
Matched
cw1000ongoing2014l1
region1
region2
Treated Units
Control Units
-0.2
0.2
0.4
0.6
0.8
1.0
1.2


QQ Plots
All
Matched
region3
region4
region5
Treated Units
Control Units
-0.2
0.2
0.4
0.6
0.8
1.0
1.2

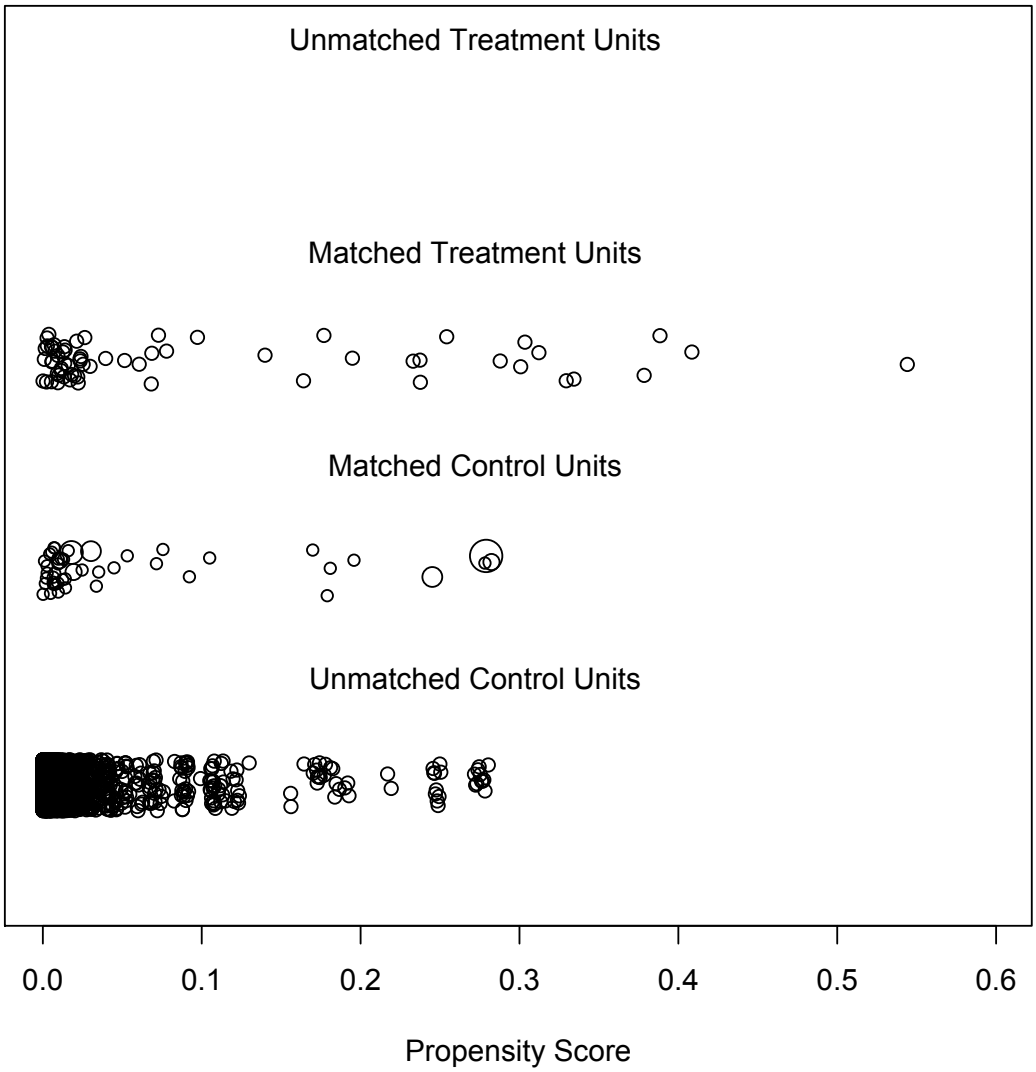

Raw Treated
Density
0
1
2
3
4
5
6
7
0.0
0.1
0.2
0.3
0.4
0.5
Propensity Score


Matched Treated
Density
0
1
2
3
4
5
6
7
0.0
0.1
0.2
0.3
0.4
0.5
Propensity Score


Raw Control
Density
0
10
20
30
40
0.0
0.1
0.2
0.3
0.4
0.5
Propensity Score


Matched Control
Density
0
5
10
15
0.0
0.1
0.2
0.3
0.4
0.5
Propensity Score

Distribution of Propensity Scores



LEADERSHIP FIRC: MATCHED ANALYSIS

```
tab civwar10_2014 abdleaderfirc, col chi2
```

civwar10_2014	abdleaderfirc		
	0	1	Total
0	37	34	71
	78.72	53.12	63.96
1	10	30	40
	21.28	46.88	36.04
Total	47	64	111
	100.00	100.00	100.00

Pearson chi2(1) = 7.7039 Pr = 0.006

```
tab civwar5_2014 abdleaderfirc, col chi2
```

civwar5_2014	abdleaderfirc		
	0	1	Total
0	41	39	80
	87.23	60.94	72.07
1	6	25	31
	12.77	39.06	27.93
Total	47	64	111
	100.00	100.00	100.00

Pearson chi2(1) = 9.3099 Pr = 0.002

```
ttest civwar10_2014, by(abdleaderfirc)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      47     .212766    .0603426    .4136881    .0913026    .3342293
       1 |      64      .46875    .0628709    .5029674    .3431125    .5943875
---------+--------------------------------------------------------------------
combined |     111    .3603604    .0457762    .4822823    .2696427    .4510781
---------+--------------------------------------------------------------------
    diff |           -.255984    .0897816               -.4339283   -.0780397
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -2.8512
Ho: diff = 0                                     degrees of freedom =      109

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0026         Pr(|T| > |t|) = 0.0052          Pr(T > t) = 0.9974

ttest civwar5_2014, by(abdleaderfirc)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      47    .1276596    .0492029    .3373181    .0286193    .2266999
       1 |      64     .390625    .0614684    .4917474    .2677902    .5134598
---------+--------------------------------------------------------------------
combined |     111    .2792793    .0427766    .4506797     .194506    .3640525
---------+--------------------------------------------------------------------
    diff |           -.2629654    .0832437               -.4279518   -.0979791
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -3.1590
Ho: diff = 0                                     degrees of freedom =      109

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0010         Pr(|T| > |t|) = 0.0020          Pr(T > t) = 0.9990
```

```
probit civwar10_2014 abdleaderfirc lnpec4_fill lntpop4_banks mountainous newstate democracy
losewar10 cw1000ongoing2014l1 peaceyrs, robust cluster(ccode2)

Iteration 0:   log pseudolikelihood = -72.552403
Iteration 1:   log pseudolikelihood = -51.608098
Iteration 2:   log pseudolikelihood = -51.159417
Iteration 3:   log pseudolikelihood = -51.155904
Iteration 4:   log pseudolikelihood = -51.155904

Probit regression                                 Number of obs     =        111
                                                  Wald chi2(9)      =      45.95
                                                  Prob > chi2       =     0.0000
Log pseudolikelihood = -51.155904                 Pseudo R2         =     0.2949

                                    (Std. Err. adjusted for 65 clusters in ccode2)
------------------------------------------------------------------------------
                    |               Robust
      civwar10_2014 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------------+---------------------------------------------------------------
      abdleaderfirc |   1.194406   .2885357     4.14   0.000     .6288867    1.759926
        lnpec4_fill |  -.0711215     .07353    -0.97   0.333    -.2152376    .0729946
      lntpop4_banks |   .5185595   .1587329     3.27   0.001     .2074487    .8296702
        mountainous |  -.6699079    1.04339    -0.64   0.521    -2.714916      1.3751
           newstate |   1.084696    .881038     1.23   0.218    -.6421066    2.811499
          democracy |  -2.033215   .6170018    -3.30   0.001    -3.242516   -.8239134
          losewar10 |   .4433647   .4277808     1.04   0.300    -.3950702      1.2818
cw1000ongoing2014l1 |   .3070085    .445886     0.69   0.491    -.5669121    1.180929
           peaceyrs |   .0030175   .0057099     0.53   0.597    -.0081737    .0142087
              _cons |  -5.053041   1.206107    -4.19   0.000    -7.416966   -2.689115
------------------------------------------------------------------------------

probit civwar5_2014 abdleaderfirc lnpec4_fill lntpop4_banks mountainous newstate democracy
losewar10 cw1000ongoing2014l1 peaceyrs, robust cluster(ccode2)

Iteration 0:   log pseudolikelihood = -65.742118
Iteration 1:   log pseudolikelihood =  -44.47135
Iteration 2:   log pseudolikelihood =  -43.88888
Iteration 3:   log pseudolikelihood = -43.885464
Iteration 4:   log pseudolikelihood = -43.885464

Probit regression                                 Number of obs     =        111
                                                  Wald chi2(9)      =      39.93
                                                  Prob > chi2       =     0.0000
Log pseudolikelihood = -43.885464                 Pseudo R2         =     0.3325

                                    (Std. Err. adjusted for 65 clusters in ccode2)
------------------------------------------------------------------------------
                    |               Robust
       civwar5_2014 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------------+---------------------------------------------------------------
      abdleaderfirc |   1.358125   .3472994     3.91   0.000     .6774301    2.038819
        lnpec4_fill |  -.1032862   .0849669    -1.22   0.224    -.2698182    .0632458
      lntpop4_banks |   .6567184   .1820029     3.61   0.000     .2999992    1.013438
        mountainous |   -.515386   1.039244    -0.50   0.620    -2.552268    1.521496
           newstate |   1.391449   .9295197     1.50   0.134    -.4303764    3.213274
          democracy |  -1.866607   .6455007    -2.89   0.004    -3.131765    -.601449
          losewar10 |   .5058095   .4184732     1.21   0.227     -.314383    1.326002
cw1000ongoing2014l1 |  -.3974302    .511234    -0.78   0.437     -1.39943     .60457
           peaceyrs |   .0033948   .0065401     0.52   0.604    -.0094237    .0162132
              _cons |  -6.434545   1.353965    -4.75   0.000    -9.088267   -3.780824
------------------------------------------------------------------------------
```

Rosenbaum Sensitivity Test for Leadership FIRC

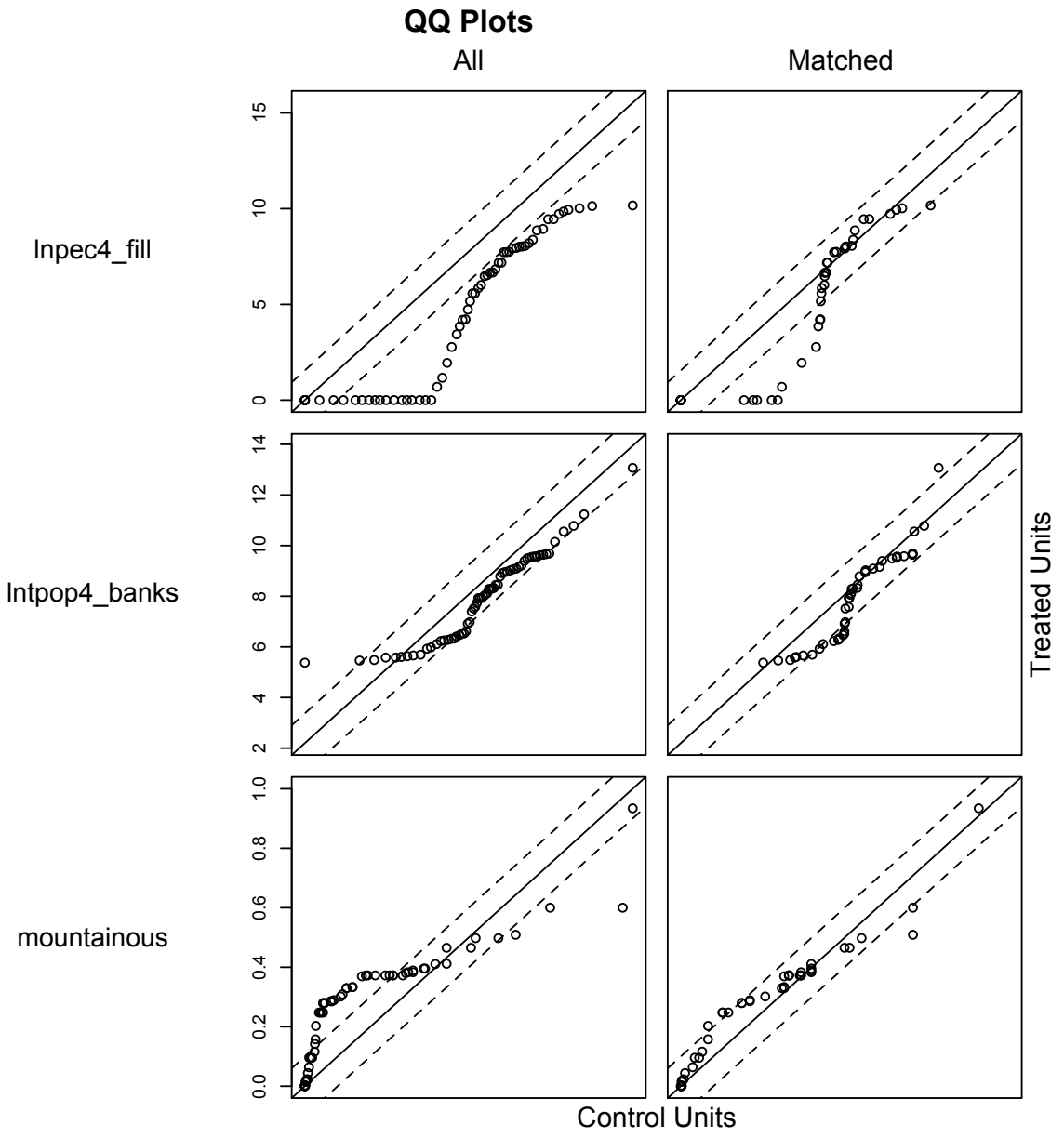
```
#Load rbounds, which automatically loads Matching

library(rbounds)

Loading required package: Matching
Loading required package: MASS
##
##  Matching (Version 4.9-5, Build Date: 2019-03-05)
##  See http://sekhon.berkeley.edu/matching for additional documentation.
##  Please cite software as:
##   Jasjeet S. Sekhon. 2011. ``Multivariate and Propensity Score Matching
##   Software with Automated Balance Optimization: The Matching package for R.''
##   Journal of Statistical Software, 42(7): 1-52.
##

#Load rgenoud

library(rgenoud)
##  rgenoud (Version 5.8-3.0, Build Date: 2019-01-22)
##  See http://sekhon.berkeley.edu/rgenoud for additional documentation.
##  Please cite software as:
##   Walter Mebane, Jr. and Jasjeet S. Sekhon. 2011.
##   ``Genetic Optimization Using Derivatives: The rgenoud package for R.''
##   Journal of Statistical Software, 42(11): 1-26.

#Load foreign, which allows R to read in Stata files

library(foreign)

#Change directory to folder with data in it, then read in the data
#From “Miscellaneous” menu, choose “Change Working Directory,” navigate to folder

lfirc=read.dta("leaderfirc_civwar_formatch12.dta")
attach(lfirc)
summary(lfirc)

#Specify the DV

Y <- lfirc$civwar10_2014

#Specify the Treatment

Tr <- lfirc$abdleaderfirc
#Specify the other variables

X <- cbind(lnpec4_fill, lntpop4_banks, mountainous, newstate, democracy, losewar10,
cw1000ongoing2014l1, gdbuffer, region1, region2, region3, region4, region5, peaceyrs)

#Specify the particular variables on which to match

BalanceMat <- cbind(lnpec4_fill, lntpop4_banks, mountainous, newstate, democracy, losewar10,
cw1000ongoing2014l1, gdbuffer, region1, region2, region3, region4, region5, peaceyrs)

#Genetic Weights (loads rgenoud automatically)

gen1 <- GenMatch(Tr=Tr, X=X, BalanceMat=BalanceMat, pop.size=50, data.type.int=FALSE,
replace=FALSE)

#Match

mgen1 <- Match(Y=Y, Tr=Tr, X=X, Weight.matrix=gen1, replace=FALSE)

#Show treatment effect

summary(mgen1)
```

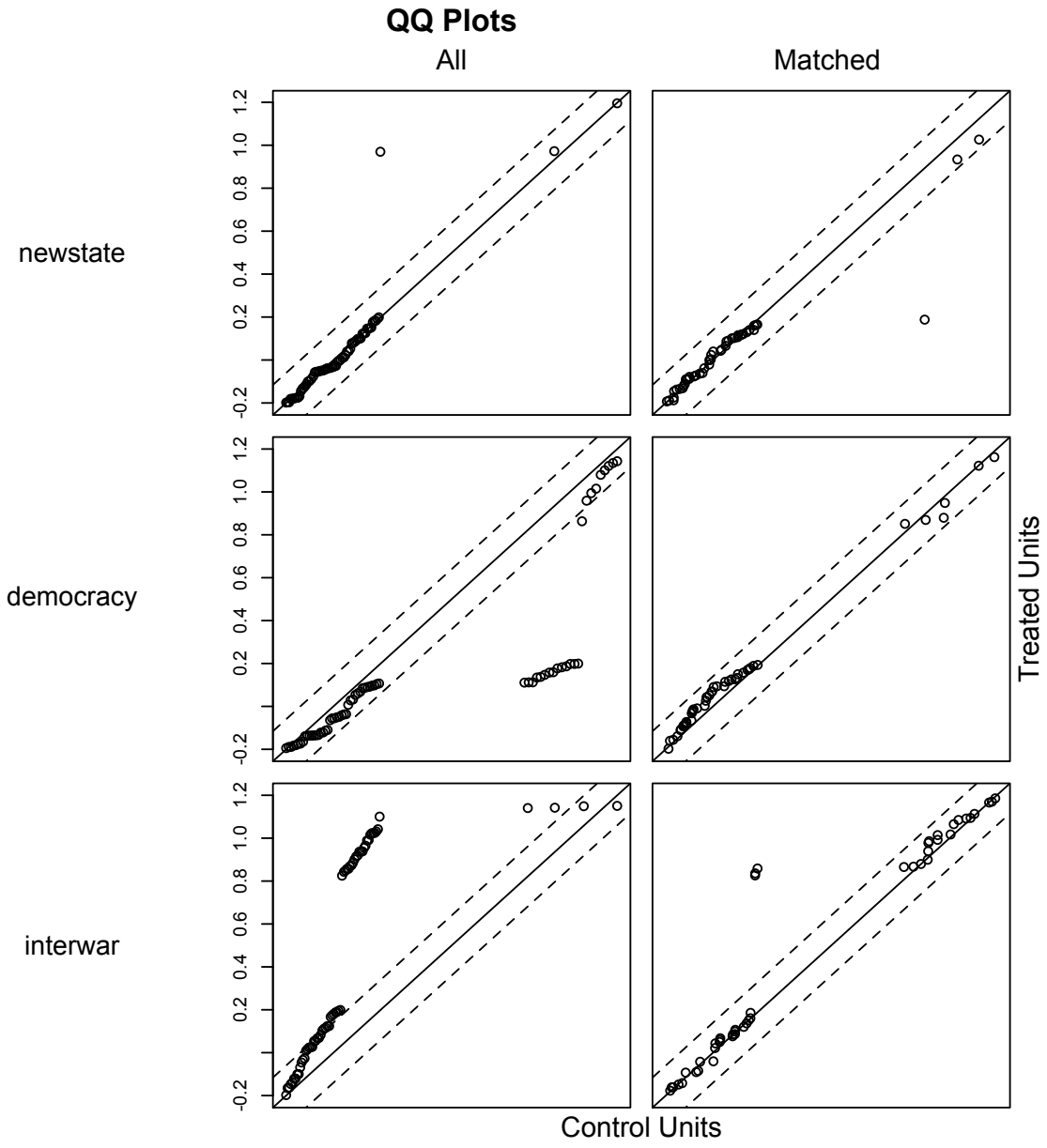
Estimate... 0.26562
SE......... 0.067177
T-stat..... 3.9541
p.val...... 7.6827e-05

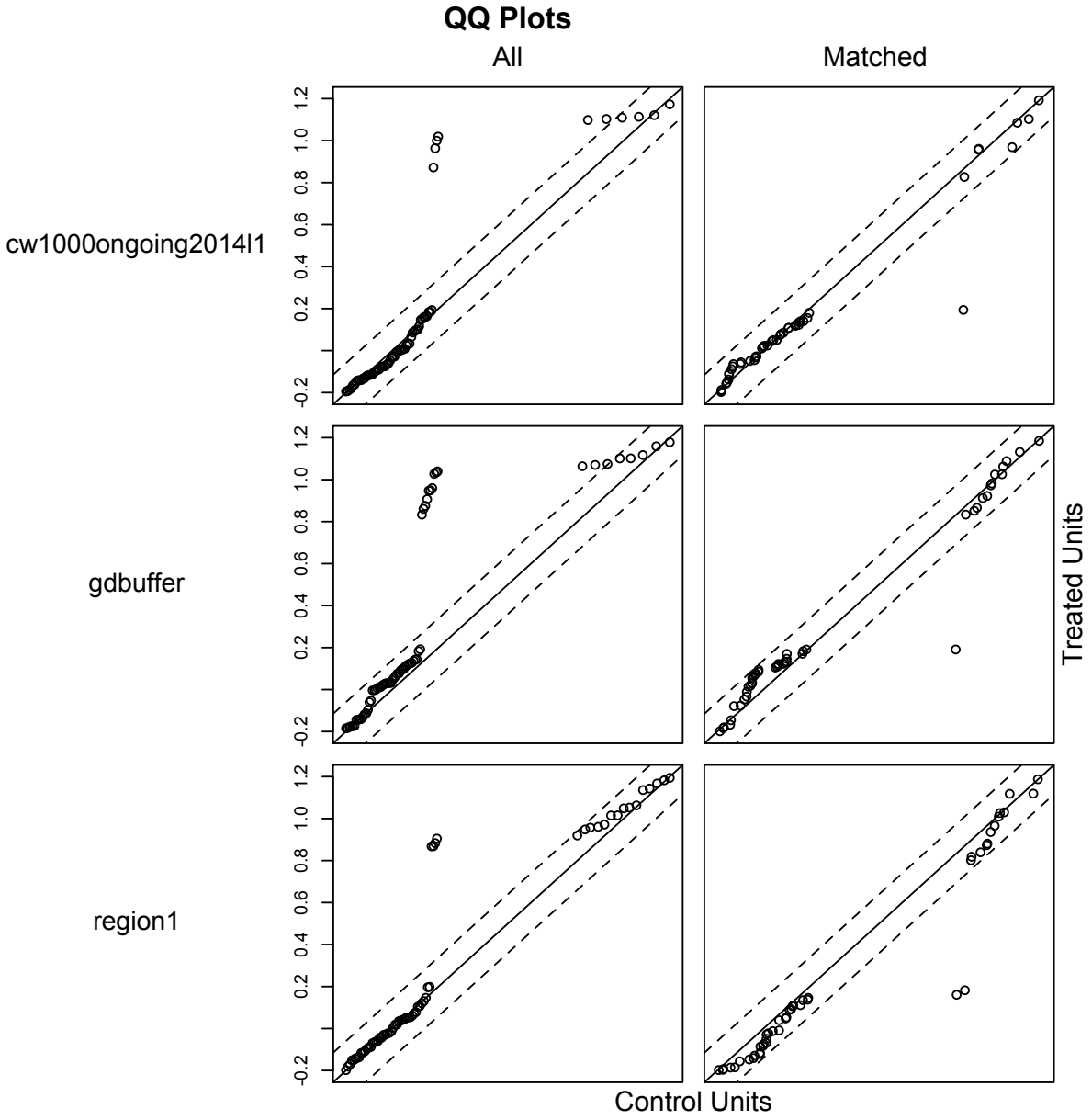
```
Original number of observations..............  8382
Original number of treated obs...............  64
Matched number of observations...............  64
Matched number of observations  (unweighted).  64

#Sensitivity Test

psens(mgen1, Gamma=4.0, GammaInc=.1)

 Rosenbaum Sensitivity Test for Wilcoxon Signed Rank P-Value

Unconfounded estimate ....  2e-04

 Gamma Lower bound Upper bound
   1.0       2e-04      0.0002
   1.1       1e-04      0.0004
   1.2       0e+00      0.0009
   1.3       0e+00      0.0016
   1.4       0e+00      0.0027
   1.5       0e+00      0.0042
   1.6       0e+00      0.0061
   1.7       0e+00      0.0086
   1.8       0e+00      0.0116
   1.9       0e+00      0.0153
   2.0       0e+00      0.0195
   2.1       0e+00      0.0243
   2.2       0e+00      0.0298
   2.3       0e+00      0.0358
   2.4       0e+00      0.0425
   2.5       0e+00      0.0496
   2.6       0e+00      0.0573
   2.7       0e+00      0.0655
   2.8       0e+00      0.0742
   2.9       0e+00      0.0832
   3.0       0e+00      0.0927
   3.1       0e+00      0.1025
   3.2       0e+00      0.1127
   3.3       0e+00      0.1232
   3.4       0e+00      0.1339
   3.5       0e+00      0.1448
   3.6       0e+00      0.1560
   3.7       0e+00      0.1673
   3.8       0e+00      0.1788
   3.9       0e+00      0.1904
   4.0       0e+00      0.2021

 Note: Gamma is Odds of Differential Assignment To
 Treatment Due to Unobserved Factors
```

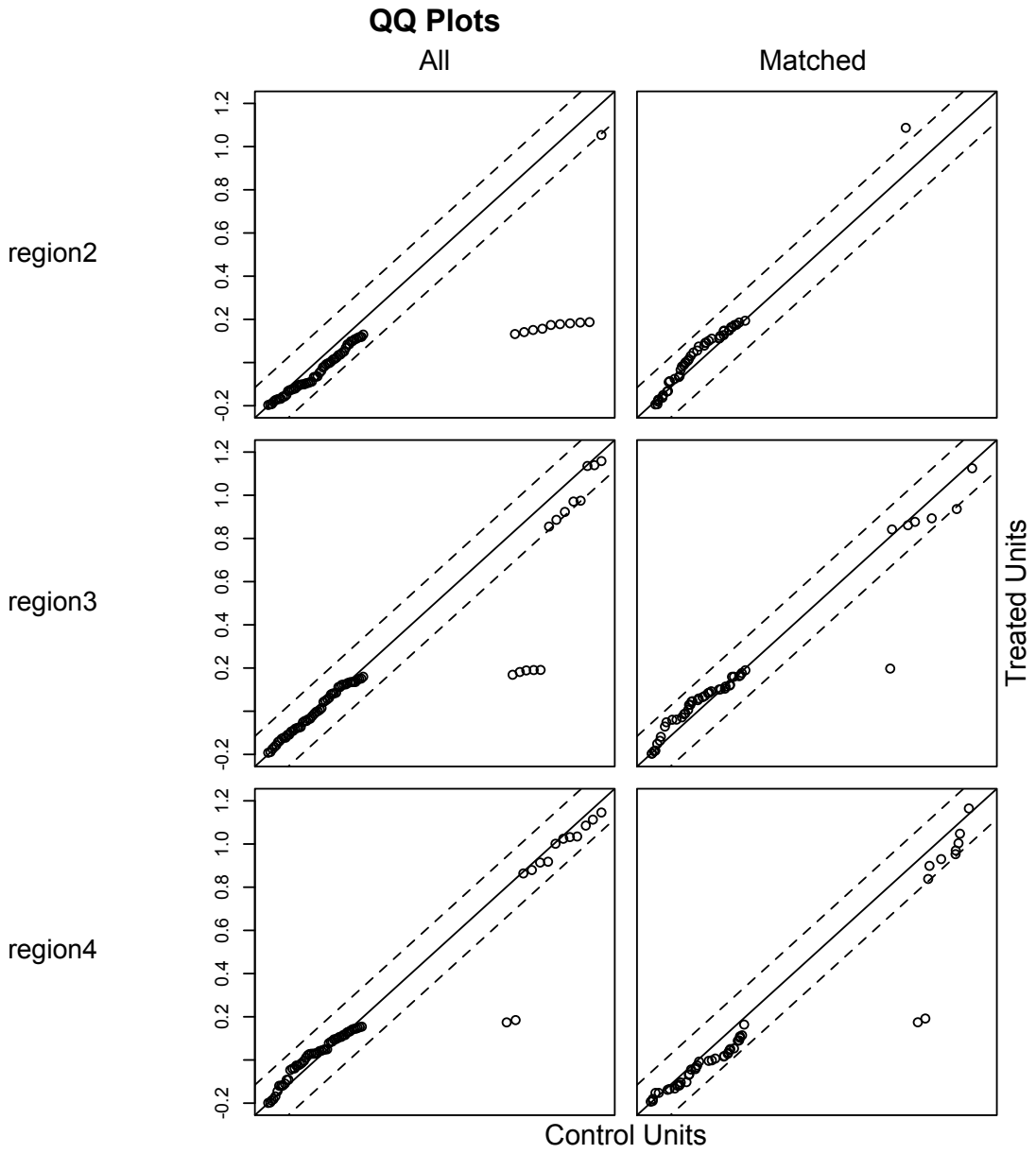
LEADERSHIP FIRC (with interwar and gdbuffer)

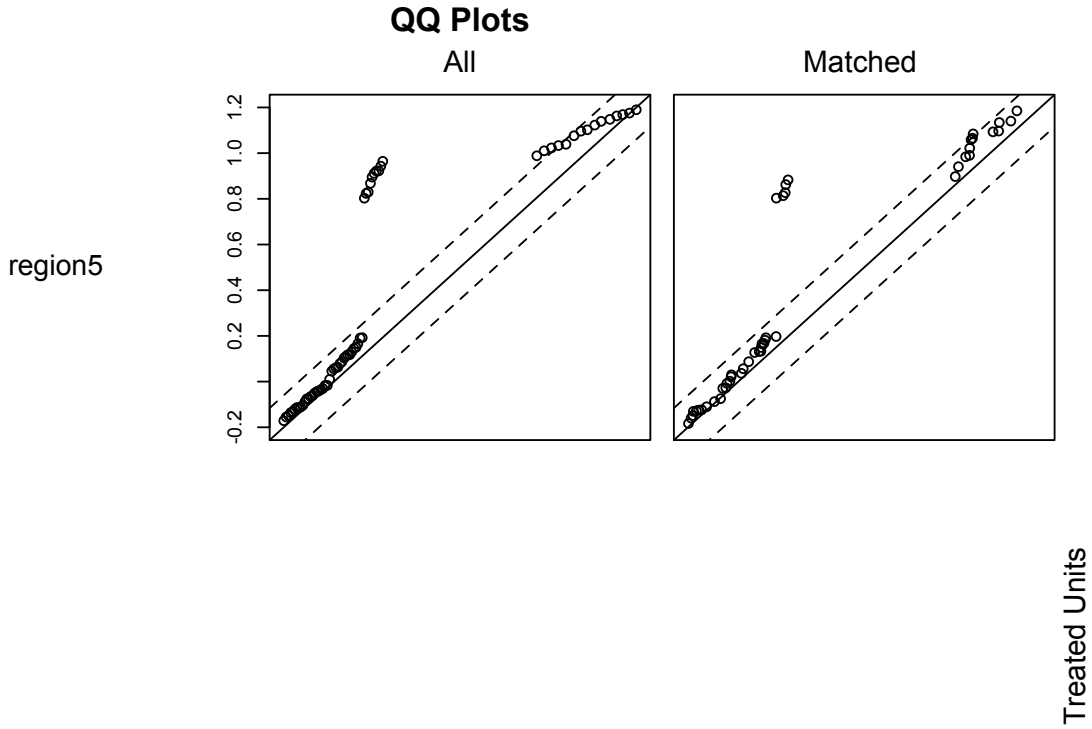
```
summary(leadfirc.out4)

Call:
matchit(formula = abdleaderfirc ~ lnpec4_fill + lntpop4_banks +
    mountainous + newstate + democracy + interwar + cw1000ongoing2014l1 +
    gdbuffer + region1 + region2 + region3 + region4 + region5,
    data = leadfirc, method = "genetic", pop.size = 150)

Summary of balance for all data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0766        0.0071     0.0217    0.0695  0.0258   0.0666  0.2726
lnpec4_fill                4.3587        7.0217     3.8684   -2.6630  2.3751   2.6810  5.9940
lntpop4_banks              7.9191        8.5581     1.8705   -0.6390  0.7270   0.8145  3.1781
mountainous                0.2629        0.1832     0.2210    0.0797  0.0841   0.1035  0.3695
newstate                   0.0469        0.0256     0.1580    0.0213  0.0000   0.0156  1.0000
democracy                  0.1406        0.3557     0.4788   -0.2151  0.0000   0.2188  1.0000
interwar                   0.4531        0.0513     0.2207    0.4018  0.0000   0.3906  1.0000
cw1000ongoing2014l1        0.1562        0.0908     0.2873    0.0655  0.0000   0.0625  1.0000
gdbuffer                   0.2812        0.1193     0.3241    0.1620  0.0000   0.1562  1.0000
region1                    0.2969        0.2224     0.4159    0.0745  0.0000   0.0625  1.0000
region2                    0.0156        0.1566     0.3635   -0.1410  0.0000   0.1406  1.0000
region3                    0.1250        0.2046     0.4034   -0.0796  0.0000   0.0781  1.0000
region4                    0.1719        0.1910     0.3931   -0.0192  0.0000   0.0312  1.0000
region5                    0.3906        0.2253     0.4178    0.1653  0.0000   0.1562  1.0000


Summary of balance for matched data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0766        0.0739     0.0962    0.0026  0.0124   0.0163  0.0673
lnpec4_fill                4.3587        4.4592     3.8517   -0.1005  0.3060   1.0752  4.5951
lntpop4_banks              7.9191        8.0897     1.5001   -0.1707  0.4942   0.6457  1.6389
mountainous                0.2629        0.2491     0.2119    0.0137  0.0293   0.0427  0.1991
newstate                   0.0469        0.0469     0.2137    0.0000  0.0000   0.0217  1.0000
democracy                  0.1406        0.1406     0.3515    0.0000  0.0000   0.0000  0.0000
interwar                   0.4531        0.4531     0.5033    0.0000  0.0000   0.0652  1.0000
cw1000ongoing2014l1        0.1562        0.1562     0.3671    0.0000  0.0000   0.0217  1.0000
gdbuffer                   0.2812        0.2656     0.4465    0.0156  0.0000   0.0217  1.0000
region1                    0.2969        0.2969     0.4619    0.0000  0.0000   0.0435  1.0000
region2                    0.0156        0.0156     0.1254    0.0000  0.0000   0.0000  0.0000
region3                    0.1250        0.1250     0.3344    0.0000  0.0000   0.0217  1.0000
region4                    0.1719        0.1562     0.3671    0.0156  0.0000   0.0435  1.0000
region5                    0.3906        0.4062     0.4966   -0.0156  0.0000   0.1087  1.0000

Percent Balance Improvement:
                    Mean Diff. eQQ Med eQQ Mean  eQQ Max
distance               96.1925 51.9342  75.5507  75.3198
lnpec4_fill            96.2263 87.1156  59.8970  23.3375
lntpop4_banks          73.2930 32.0264  20.7182  48.4307
mountainous            82.7524 65.1800  58.7313  46.1189
newstate              100.0000  0.0000 -39.1304   0.0000
democracy             100.0000  0.0000 100.0000 100.0000
interwar              100.0000  0.0000  83.3043   0.0000
cw1000ongoing2014l1   100.0000  0.0000  65.2174   0.0000
gdbuffer               90.3544  0.0000  86.0870   0.0000
region1               100.0000  0.0000  30.4348   0.0000
region2               100.0000  0.0000 100.0000 100.0000
region3               100.0000  0.0000  72.1739   0.0000
region4                18.4350  0.0000 -39.1304   0.0000
region5                90.5492  0.0000  30.4348   0.0000

Sample sizes:
          Control Treated
All          8318      64
Matched        46      64
Unmatched    8272       0
Discarded       0       0
```

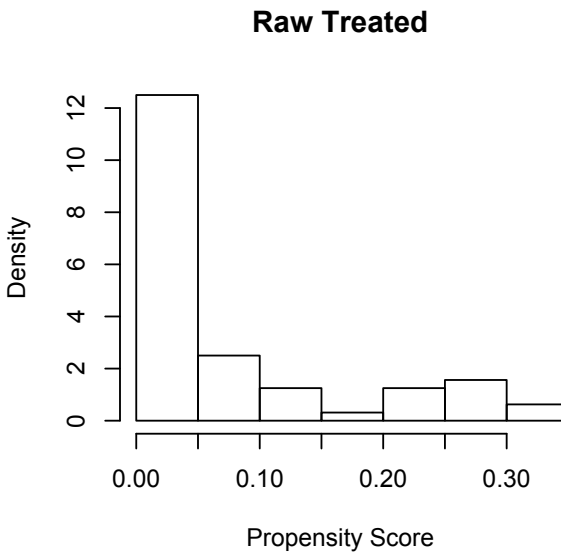

QQ Plots
All
Matched
lnpec4_fill
lntpop4_banks
mountainous
Treated Units
Control Units
0
5
10
15
2
4
6
8
10
12
14
0.0
0.2
0.4
0.6
0.8
1.0

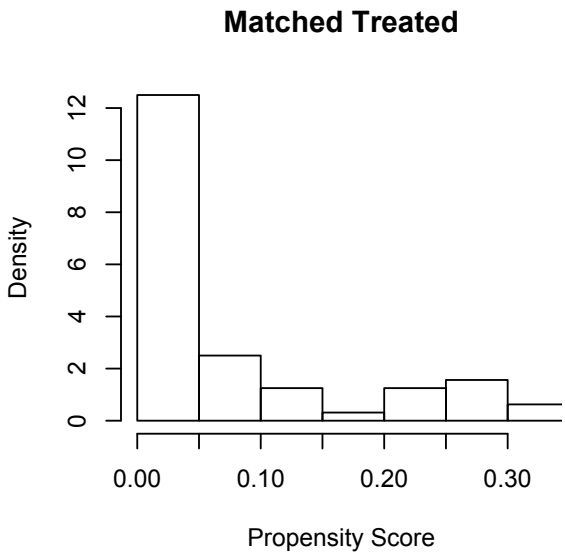

QQ Plots
All
Matched
newstate
democracy
interwar
Treated Units
Control Units
-0.2
0.2
0.4
0.6
0.8
1.0
1.2

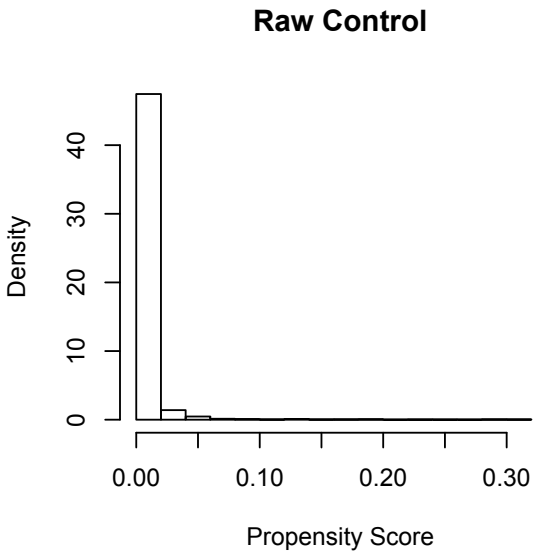

QQ Plots
All
Matched
cw1000ongoing2014l1
gdbuffer
region1
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units

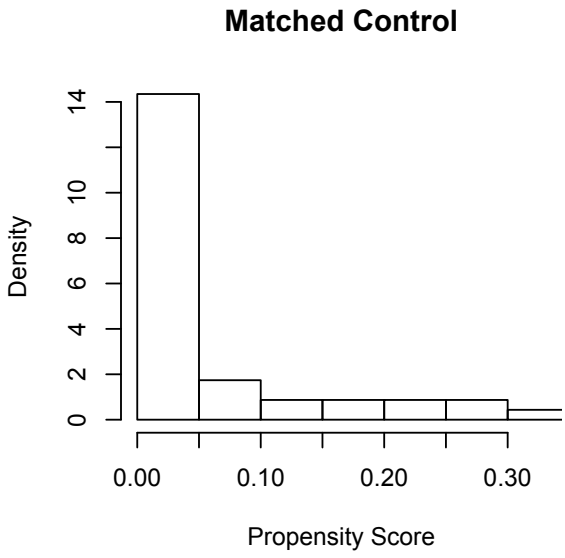

QQ Plots
All
Matched
region2
region3
region4
Treated Units
Control Units
-0.2
0.2
0.4
0.6
0.8
1.0
1.2

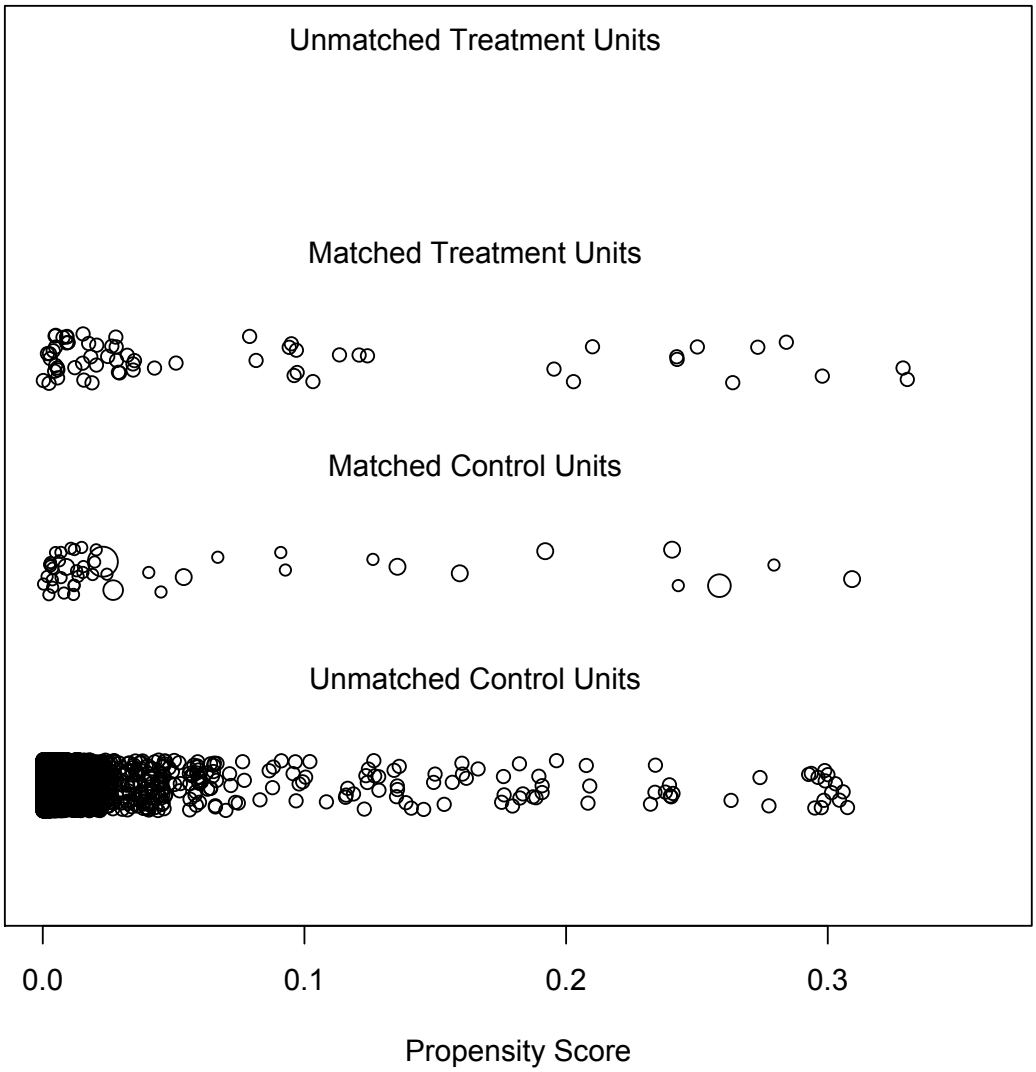

QQ Plots
All
Matched
region5
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units


Raw Treated
Density
0
2
4
6
8
10
12
0.00
0.10
0.20
0.30
Propensity Score


Matched Treated
Density
0
2
4
6
8
10
12
0.00
0.10
0.20
0.30
Propensity Score


Raw Control
Density
0
10
20
30
40
0.00
0.10
0.20
0.30
Propensity Score


Matched Control
Density
0
2
4
6
8
10
14
0.00
0.10
0.20
0.30
Propensity Score


Distribution of Propensity Scores
Unmatched Treatment Units
Matched Treatment Units
Matched Control Units
Unmatched Control Units
0.0
0.1
0.2
0.3
Propensity Score

LEADERSHIP FIRC: MATCHED ANALYSIS (with interwar and gdbuffer)

```
tab civwar10_2014 abdleaderfirc, col chi2
```

civwar10_2014	abdleaderfirc		
	0	1	Total
0	36	34	70
	78.26	53.12	63.64
1	10	30	40
	21.74	46.88	36.36
Total	46	64	110
	100.00	100.00	100.00

Pearson chi2(1) = 7.3074 Pr = 0.007

```
tab civwar5_2014 abdleaderfirc, col chi2
```

civwar5_2014	abdleaderfirc		
	0	1	Total
0	40	39	79
	86.96	60.94	71.82
1	6	25	31
	13.04	39.06	28.18
Total	46	64	110
	100.00	100.00	100.00

Pearson chi2(1) = 8.9521 Pr = 0.003

```
ttest civwar10_2014, by(abdleaderfirc)

Two-sample t test with equal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
0	46	.2173913	.0614875	.4170288	.093549	.3412336
1	64	.46875	.0628709	.5029674	.3431125	.5943875
combined	110	.3636364	.0460758	.4832473	.2723156	.4549571
diff		-.2513587	.0906717		-.4310857	-.0716317

```
    diff = mean(0) - mean(1)                                      t =  -2.7722
Ho: diff = 0                     degrees of freedom =      108

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0033         Pr(|T| > |t|) = 0.0066          Pr(T > t) = 0.9967

ttest civwar5_2014, by(abdleaderfirc)

Two-sample t test with equal variances
```

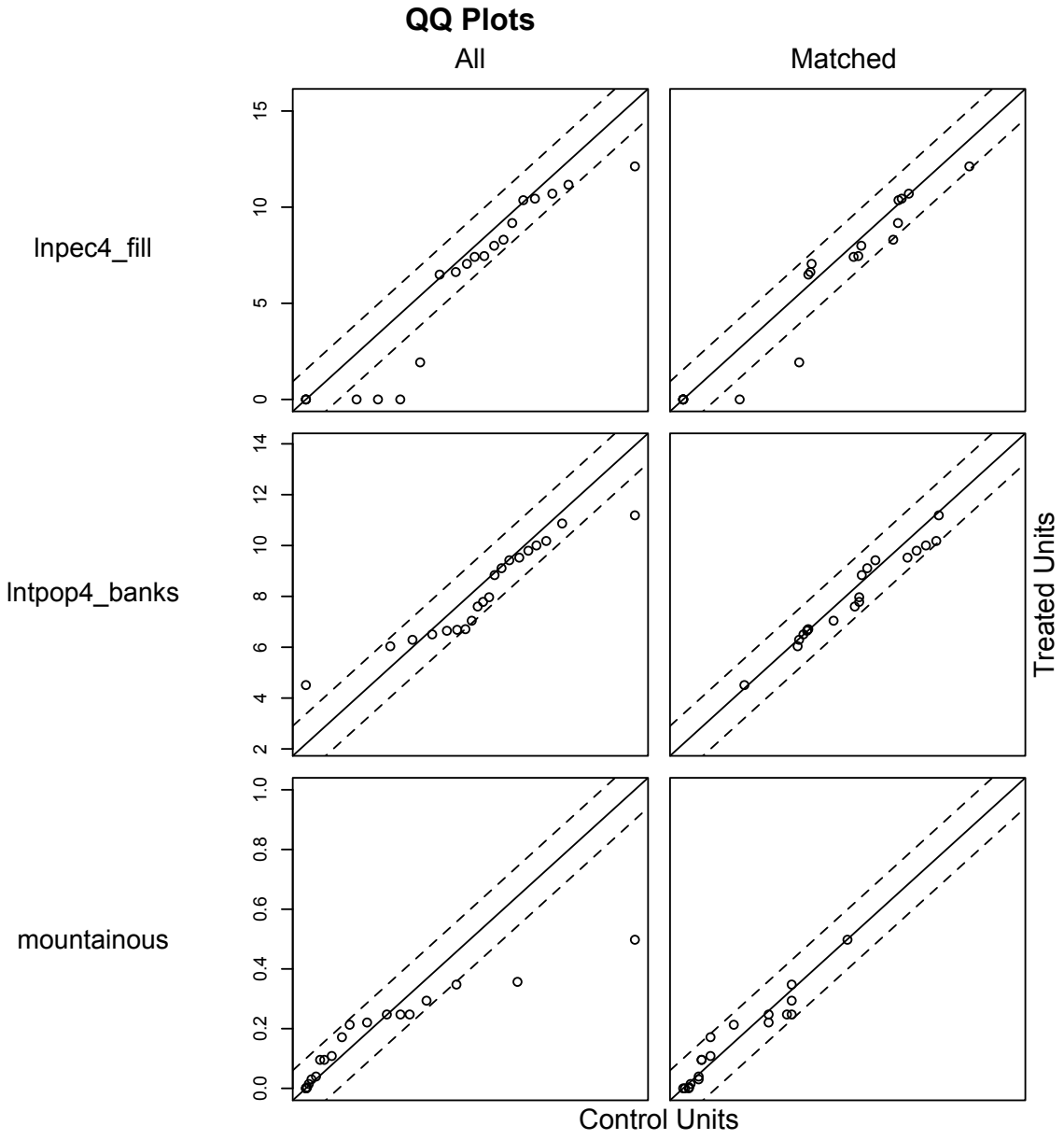
Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
0	46	.1304348	.0502044	.3405026	.029318	.2315516
1	64	.390625	.0614684	.4917474	.2677902	.5134598
combined	110	.2818182	.0430912	.4519442	.1964128	.3672235
diff		-.2601902	.0841165		-.4269236	-.0934568

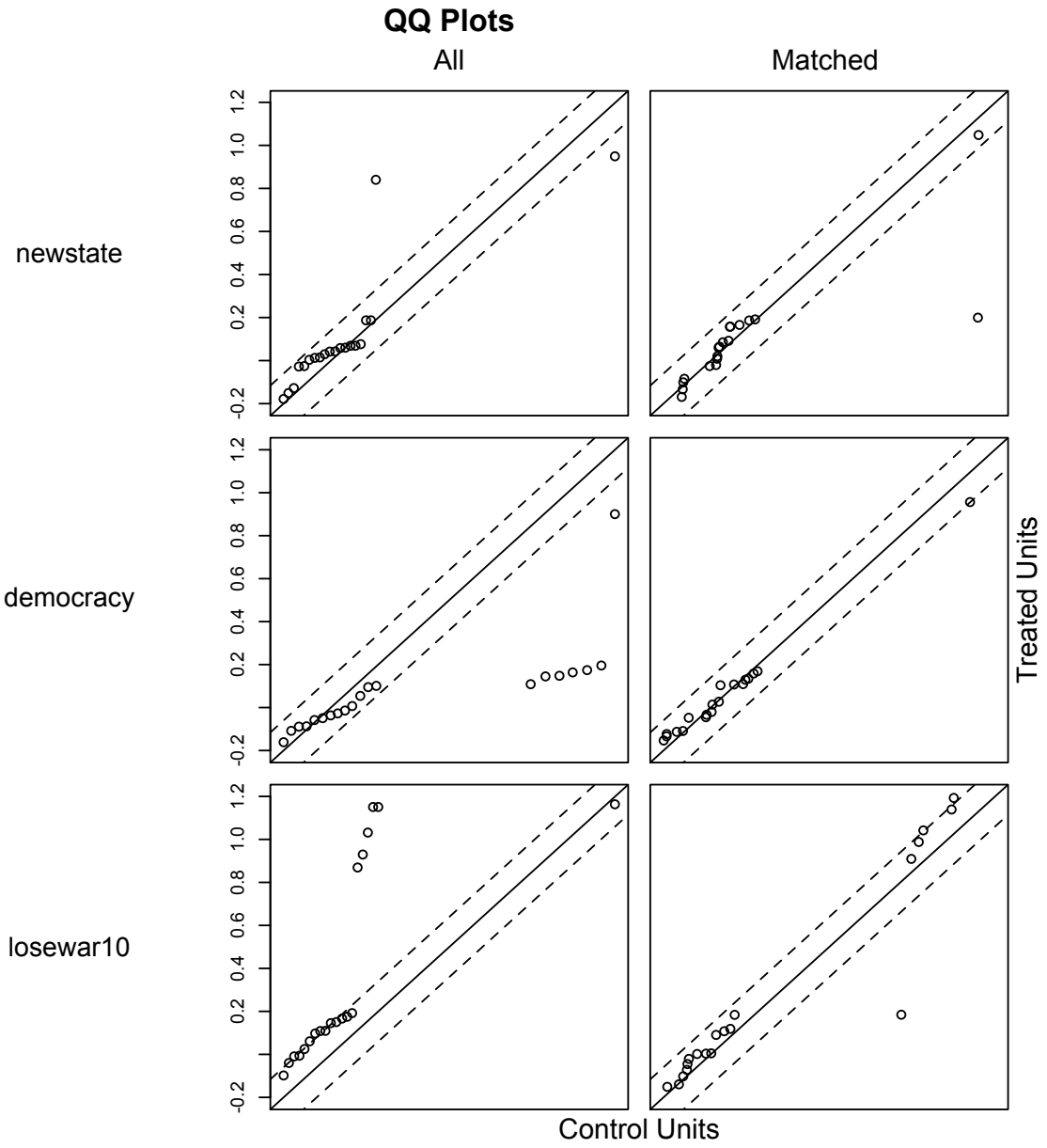
```
    diff = mean(0) - mean(1)                                      t =  -3.0932
Ho: diff = 0                     degrees of freedom =      108

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0013         Pr(|T| > |t|) = 0.0025          Pr(T > t) = 0.9987
```

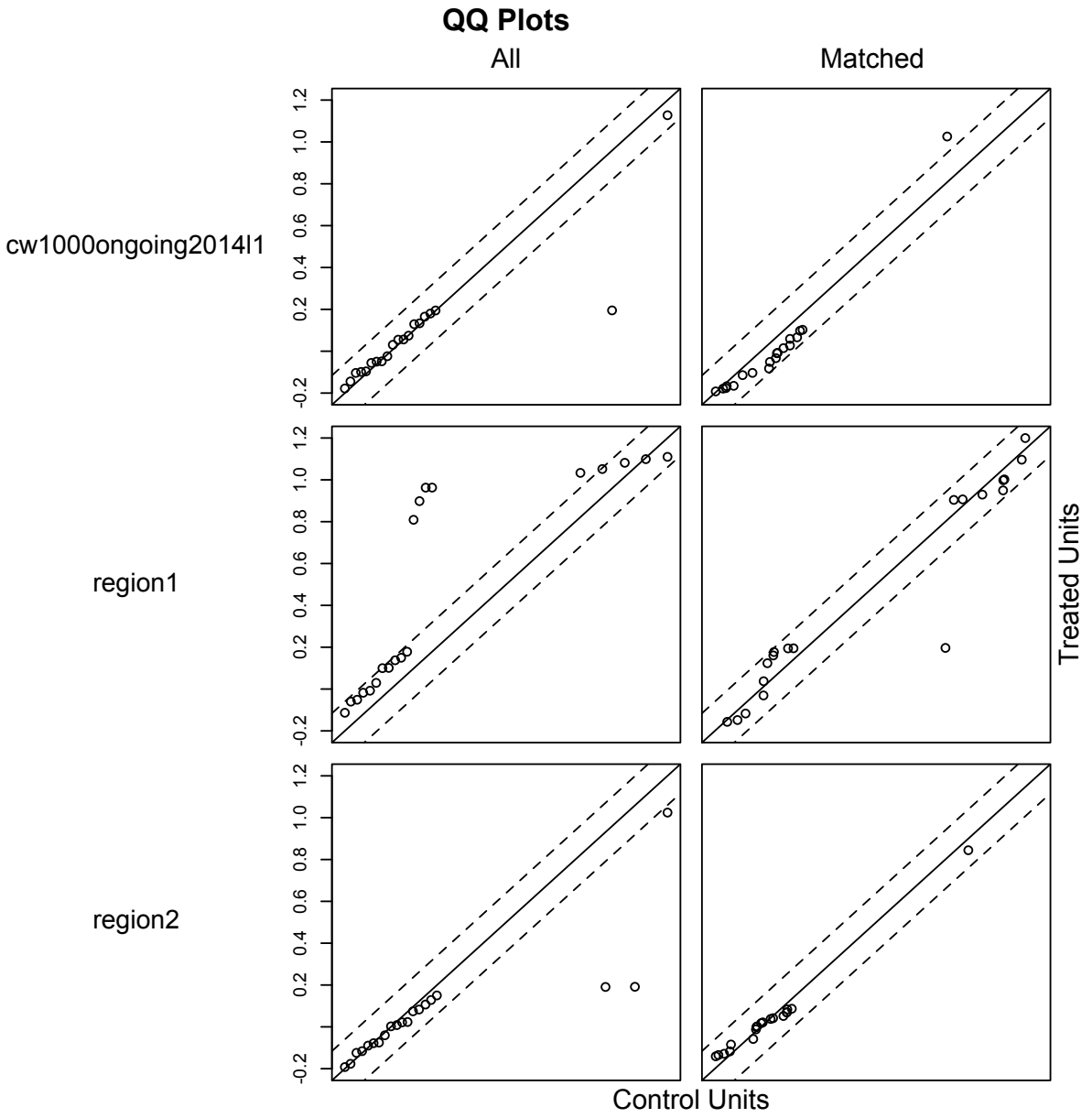
```
probit civwar10_2014 abdleaderfirc lnpec4_fill lntpop4_banks mountainous newstate democracy
losewar10 cw1000ongoing2014l1 peaceyrs, robust cluster(ccode2)

Iteration 0:   log pseudolikelihood = -72.102995
Iteration 1:   log pseudolikelihood = -53.032747
Iteration 2:   log pseudolikelihood = -52.855876
Iteration 3:   log pseudolikelihood = -52.855745
Iteration 4:   log pseudolikelihood = -52.855745

Probit regression                                 Number of obs     =        110
                                                  Wald chi2(9)      =      28.91
                                                  Prob > chi2       =     0.0007
Log pseudolikelihood = -52.855745                 Pseudo R2         =     0.2669

                                    (Std. Err. adjusted for 66 clusters in ccode2)
------------------------------------------------------------------------------
                    |               Robust
      civwar10_2014 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------------+---------------------------------------------------------------
      abdleaderfirc |   1.115155   .3286986     3.39   0.001     .4709177    1.759392
        lnpec4_fill |  -.1360359   .0748944    -1.82   0.069    -.2828262    .0107545
      lntpop4_banks |   .5721227   .1639073     3.49   0.000     .2508702    .8933751
        mountainous |  -.8943848   .8379742    -1.07   0.286    -2.536784    .7480144
           newstate |   1.059034   .7437367     1.42   0.154    -.3986634    2.516731
          democracy |  -1.079782   .5552648    -1.94   0.052    -2.168081    .0085171
          losewar10 |  -.1168867    .375611    -0.31   0.756    -.8530707    .6192973
cw1000ongoing2014l1 |   .3613325   .4793198     0.75   0.451    -.5781171    1.300782
           peaceyrs |   .0037012   .0046154     0.80   0.423    -.0053448    .0127473
              _cons |  -4.923426   1.303676    -3.78   0.000    -7.478583   -2.368268
------------------------------------------------------------------------------

probit civwar5_2014 abdleaderfirc lnpec4_fill lntpop4_banks mountainous newstate democracy
losewar10 cw1000ongoing2014l1 peaceyrs, robust cluster(ccode2)

Iteration 0:   log pseudolikelihood = -65.412857
Iteration 1:   log pseudolikelihood = -44.275644
Iteration 2:   log pseudolikelihood = -43.758972
Iteration 3:   log pseudolikelihood = -43.758151
Iteration 4:   log pseudolikelihood = -43.758151

Probit regression                                 Number of obs     =        110
                                                  Wald chi2(9)      =      38.09
                                                  Prob > chi2       =     0.0000
Log pseudolikelihood = -43.758151                 Pseudo R2         =     0.3310

                                    (Std. Err. adjusted for 66 clusters in ccode2)
------------------------------------------------------------------------------
                    |               Robust
       civwar5_2014 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------------+---------------------------------------------------------------
      abdleaderfirc |   1.264028   .3617422     3.49   0.000     .5550262    1.973029
        lnpec4_fill |  -.1170562   .0840349    -1.39   0.164    -.2817615    .0476491
      lntpop4_banks |   .7153905   .1942773     3.68   0.000     .3346139    1.096167
        mountainous |   .6810191   .8328651     0.82   0.414    -.9513665    2.313405
           newstate |   1.738313   .7289515     2.38   0.017      .309594    3.167031
          democracy |  -1.024804   .6305945    -1.63   0.104    -2.260746    .2111388
          losewar10 |   .1931784   .3671267     0.53   0.599    -.5263767    .9127335
cw1000ongoing2014l1 |  -.3682906    .526378    -0.70   0.484    -1.399973    .6633913
           peaceyrs |   .0079597   .0053511     1.49   0.137    -.0025283    .0184477
              _cons |  -7.187342   1.538027    -4.67   0.000    -10.20182   -4.172865
------------------------------------------------------------------------------
```

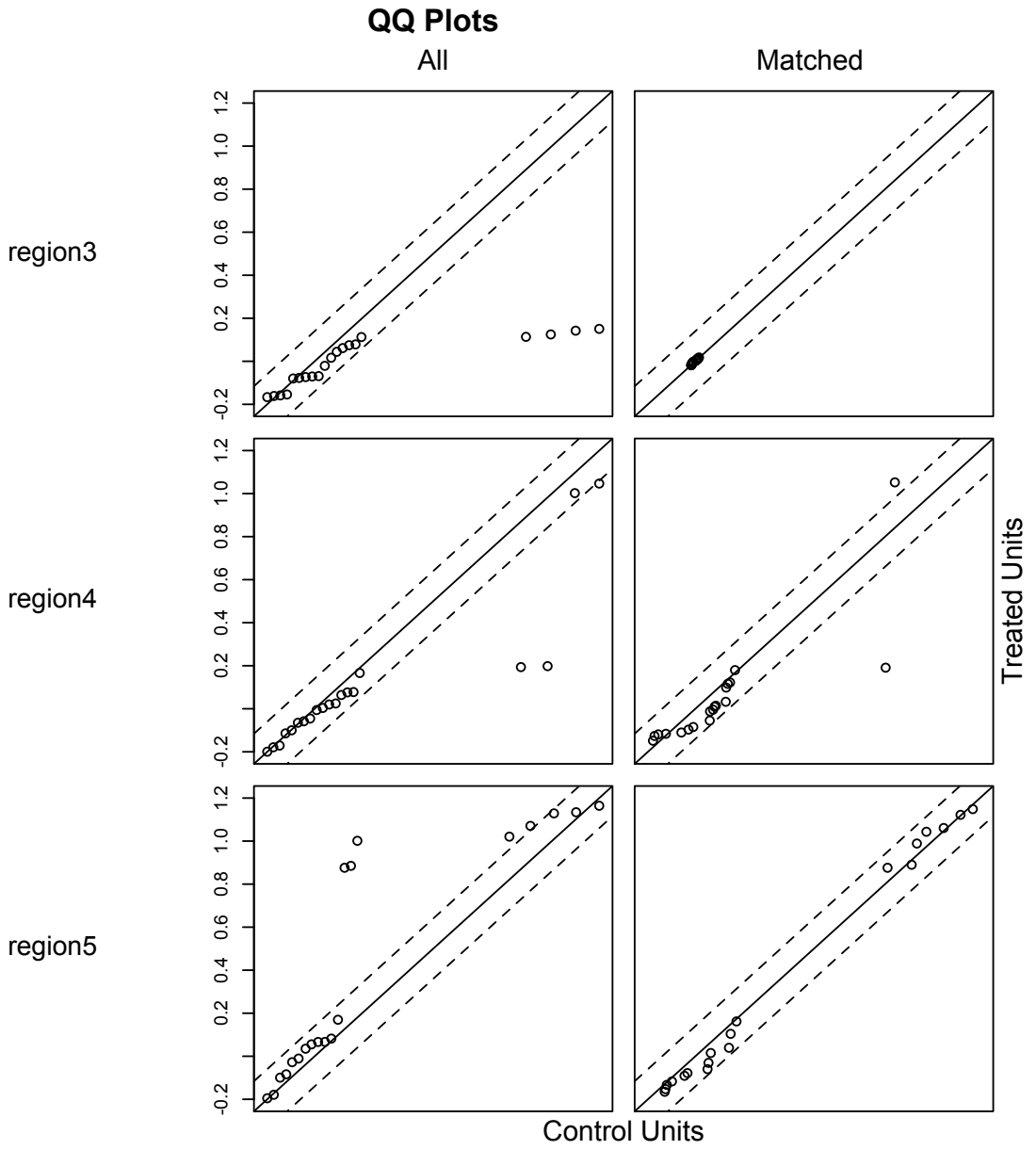
INSTITUTIONAL FIRC

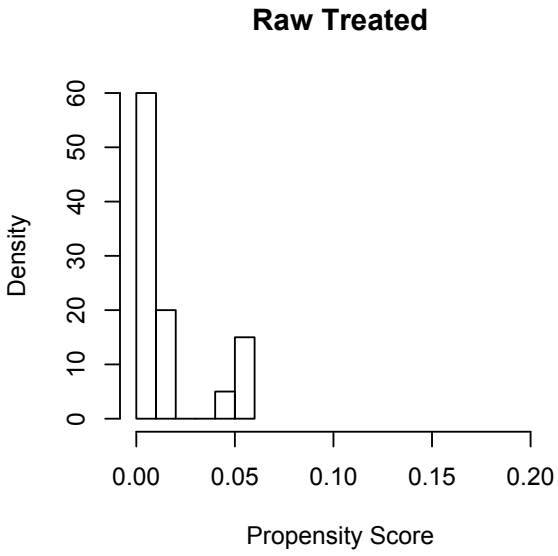
```
summary(instfirc.out2)

Note: peaceyrs is omitted from matching because the balance between treated (34.15) and control
(34.48) cases was already very good.

Call:
matchit(formula = abdinstfirc ~ lnpec4_fill + lntpop4_banks +
    mountainous + newstate + democracy + losewar10 + cw1000ongoing2014l1 +
    region1 + region2 + region3 + region4 + region5, data = instfirc,
    method = "genetic", pop.size = 150)

Summary of balance for all data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0164        0.0024     0.0067    0.0140  0.0073   0.0200  0.1531
lnpec4_fill                5.8619        7.0217     3.8684   -1.1598  0.7282   1.2457  4.4543
lntpop4_banks              8.1346        8.5581     1.8705   -0.4234  0.5903   0.7358  2.7548
mountainous                0.1615        0.1832     0.2210   -0.0216  0.0371   0.0704  0.5023
newstate                   0.1000        0.0256     0.1580    0.0744  0.0000   0.0500  1.0000
democracy                  0.0500        0.3557     0.4788   -0.3057  0.0000   0.3000  1.0000
losewar10                  0.3000        0.0518     0.2217    0.2482  0.0000   0.2500  1.0000
cw1000ongoing2014l1        0.0500        0.0908     0.2873   -0.0408  0.0000   0.0500  1.0000
region1                    0.4500        0.2224     0.4159    0.2276  0.0000   0.2000  1.0000
region2                    0.0500        0.1566     0.3635   -0.1066  0.0000   0.1000  1.0000
region3                    0.0000        0.2046     0.4034   -0.2046  0.0000   0.2000  1.0000
region4                    0.1000        0.1910     0.3931   -0.0910  0.0000   0.1000  1.0000
region5                    0.4000        0.2253     0.4178    0.1747  0.0000   0.1500  1.0000


Summary of balance for matched data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0164        0.0164     0.0188    0.0000  0.0003   0.0027  0.0245
lnpec4_fill                5.8619        5.7760     4.5245    0.0859  0.5857   0.7685  3.5484
lntpop4_banks              8.1346        8.1731     1.9432   -0.0384  0.3405   0.3916  1.0523
mountainous                0.1615        0.1621     0.1528   -0.0006  0.0178   0.0304  0.0883
newstate                   0.1000        0.1000     0.3082    0.0000  0.0000   0.0526  1.0000
democracy                  0.0500        0.0500     0.2239    0.0000  0.0000   0.0000  0.0000
losewar10                  0.3000        0.3000     0.4708    0.0000  0.0000   0.0526  1.0000
cw1000ongoing2014l1        0.0500        0.0500     0.2239    0.0000  0.0000   0.0000  0.0000
region1                    0.4500        0.4500     0.5111    0.0000  0.0000   0.0526  1.0000
region2                    0.0500        0.0500     0.2239    0.0000  0.0000   0.0000  0.0000
region3                    0.0000        0.0000     0.0000    0.0000  0.0000   0.0000  0.0000
region4                    0.1000        0.1000     0.3082    0.0000  0.0000   0.0526  1.0000
region5                    0.4000        0.4000     0.5033    0.0000  0.0000   0.0000  0.0000

Percent Balance Improvement:
                   Mean Diff. eQQ Med eQQ Mean  eQQ Max
distance              99.6527 95.3279  86.4497  84.0051
lnpec4_fill           92.5948 19.5730  38.3051  20.3383
lntpop4_banks         90.9256 42.3236  46.7759  61.8011
mountainous           97.3215 51.9136  56.8106  82.4201
newstate             100.0000  0.0000  -5.2632   0.0000
democracy            100.0000  0.0000 100.0000 100.0000
losewar10            100.0000  0.0000  78.9474   0.0000
cw1000ongoing2014l1  100.0000  0.0000 100.0000 100.0000
region1              100.0000  0.0000  73.6842   0.0000
region2              100.0000  0.0000 100.0000 100.0000
region3              100.0000  0.0000 100.0000 100.0000
region4              100.0000  0.0000  47.3684   0.0000
region5              100.0000  0.0000 100.0000 100.0000

Sample sizes:
          Control Treated
All          8318      20
Matched        19      20
Unmatched    8299       0
Discarded       0       0
```

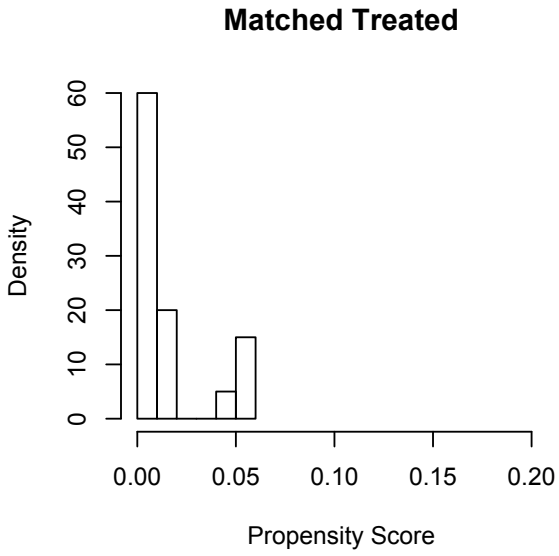

QQ Plots
All
Matched
lnpec4_fill
lntpop4_banks
mountainous
Treated Units
Control Units
0
5
10
15
2
4
6
8
10
12
14
0.0
0.2
0.4
0.6
0.8
1.0

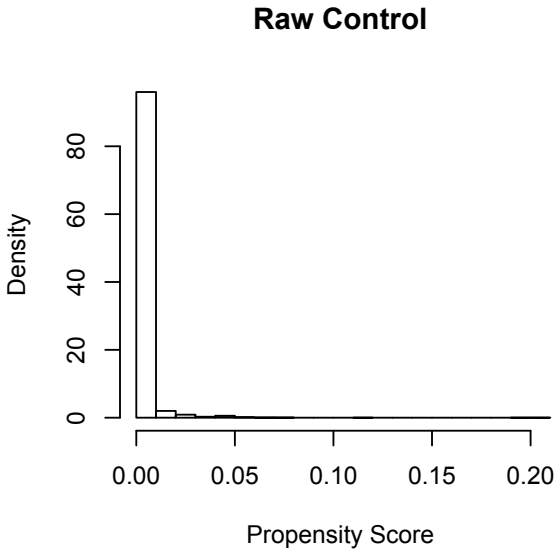

QQ Plots
All
Matched
newstate
democracy
losewar10
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units

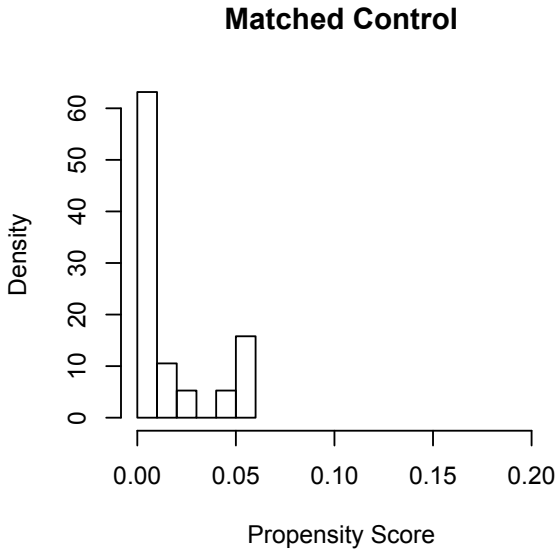

QQ Plots
All
Matched
cw1000ongoing2014l1
region1
region2
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units

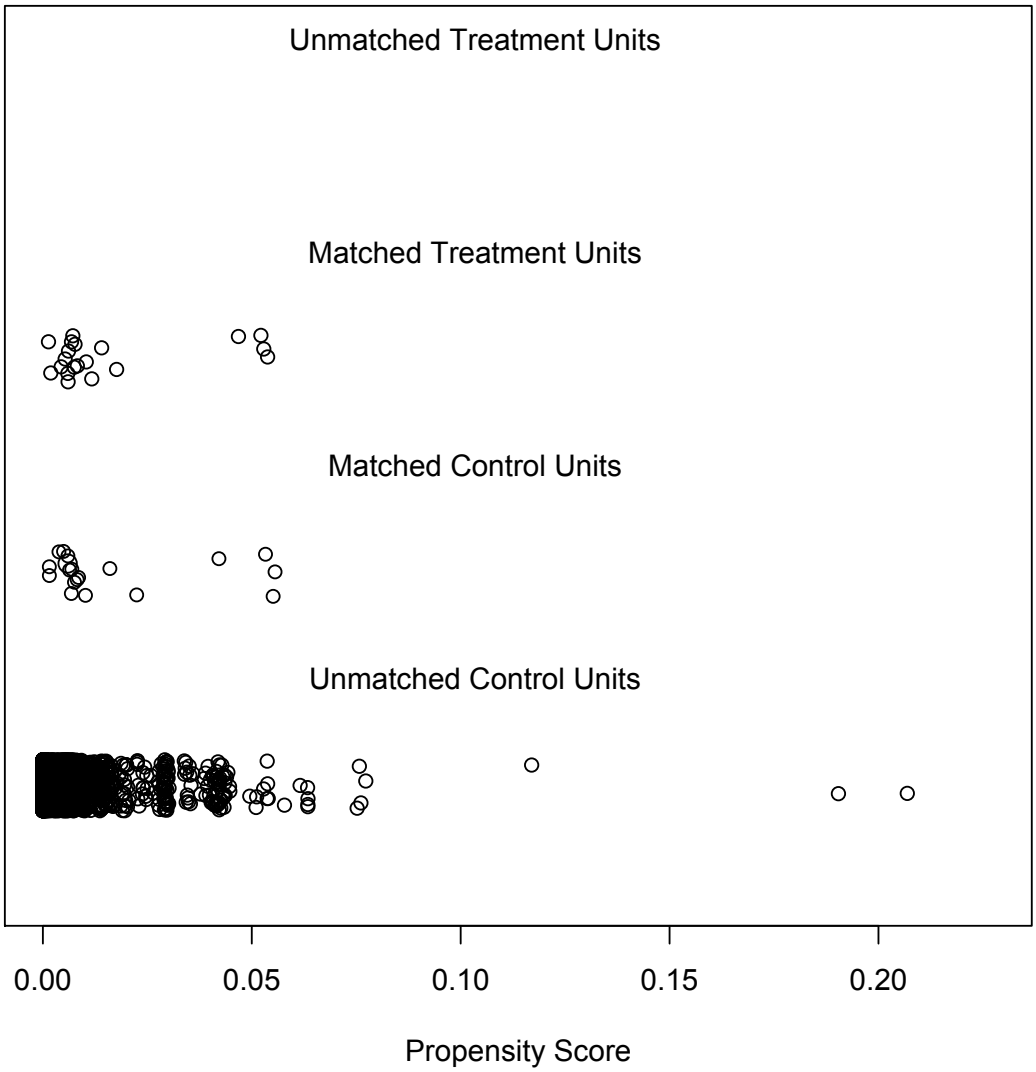

QQ Plots
All
Matched
region3
region4
region5
Treated Units
Control Units
-0.2
0.2
0.4
0.6
0.8
1.0
1.2


Raw Treated
Density
0
10
20
30
40
50
60
0.00
0.05
0.10
0.15
0.20
Propensity Score


Matched Treated
Density
0
10
20
30
40
50
60
0.00
0.05
0.10
0.15
0.20
Propensity Score


Raw Control
Density
0
20
40
60
80
0.00
0.05
0.10
0.15
0.20
Propensity Score


Matched Control
Density
0
10
20
30
40
50
60
0.00
0.05
0.10
0.15
0.20
Propensity Score


Distribution of Propensity Scores
Unmatched Treatment Units
Matched Treatment Units
Matched Control Units
Unmatched Control Units
0.00
0.05
0.10
0.15
0.20
Propensity Score

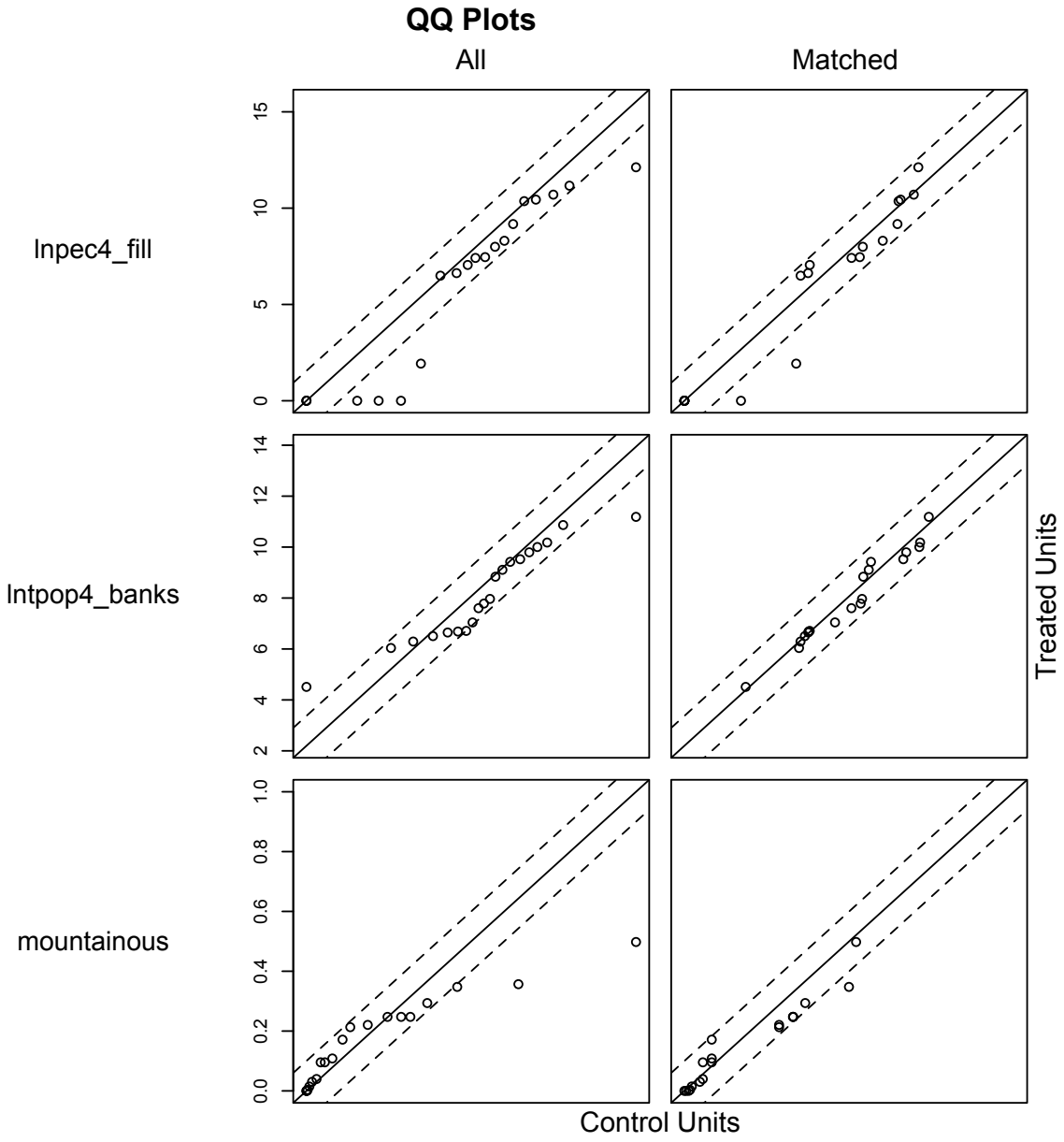
INSTITUTIONAL FIRC: MATCHED ANALYSIS

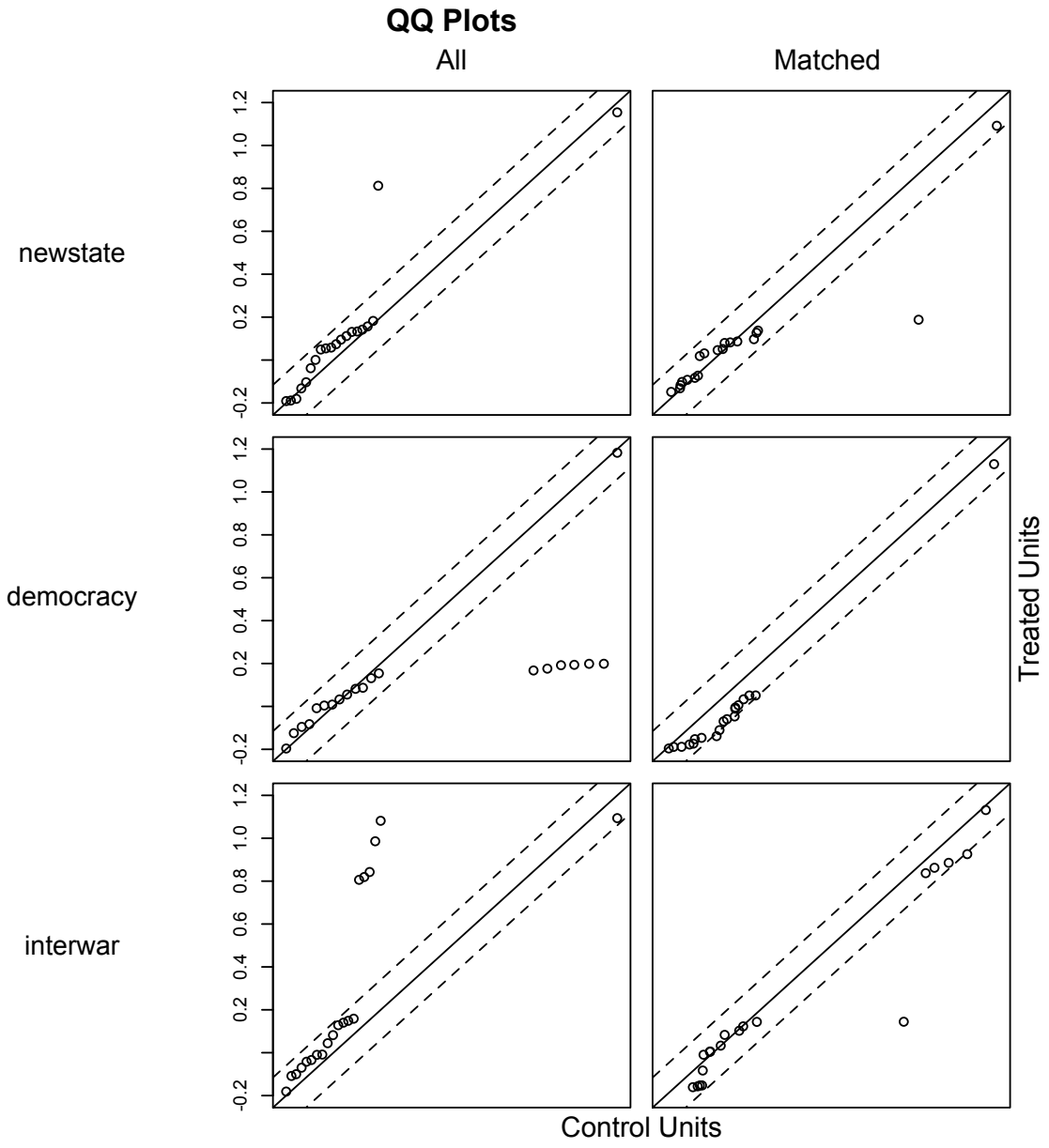
```
tab civwar10_2014 abdinstfirc, col chi2

civwar10_2 |      abdinstfirc
       014 |         0          1 |     Total
-----------+----------------------+----------
         0 |        19         16 |        35
           |    100.00      80.00 |     89.74
-----------+----------------------+----------
         1 |         0          4 |         4
           |      0.00      20.00 |     10.26
-----------+----------------------+----------
     Total |        19         20 |        39
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =   4.2343   Pr = 0.040

tab civwar5_2014 abdinstfirc, col chi2

civwar5_20 |      abdinstfirc
        14 |         0          1 |     Total
-----------+----------------------+----------
         0 |        19         16 |        35
           |    100.00      80.00 |     89.74
-----------+----------------------+----------
         1 |         0          4 |         4
           |      0.00      20.00 |     10.26
-----------+----------------------+----------
     Total |        19         20 |        39
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =   4.2343   Pr = 0.040

ttest civwar10_2014, by(abdinstfirc)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      19           0           0           0           0           0
       1 |      20          .2    .0917663    .4103913    .0079309    .3920691
---------+--------------------------------------------------------------------
combined |      39    .1025641    .0492161    .3073547    .0029312     .202197
---------+--------------------------------------------------------------------
    diff |                -.2    .0942138               -.3908953   -.0091047
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -2.1228
Ho: diff = 0                                     degrees of freedom =       37

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0203         Pr(|T| > |t|) = 0.0405          Pr(T > t) = 0.9797

ttest civwar5_2014, by(abdinstfirc)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      19           0           0           0           0           0
       1 |      20          .2    .0917663    .4103913    .0079309    .3920691
---------+--------------------------------------------------------------------
combined |      39    .1025641    .0492161    .3073547    .0029312     .202197
---------+--------------------------------------------------------------------
    diff |                -.2    .0942138               -.3908953   -.0091047
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -2.1228
Ho: diff = 0                                     degrees of freedom =       37

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0203         Pr(|T| > |t|) = 0.0405          Pr(T > t) = 0.9797
```

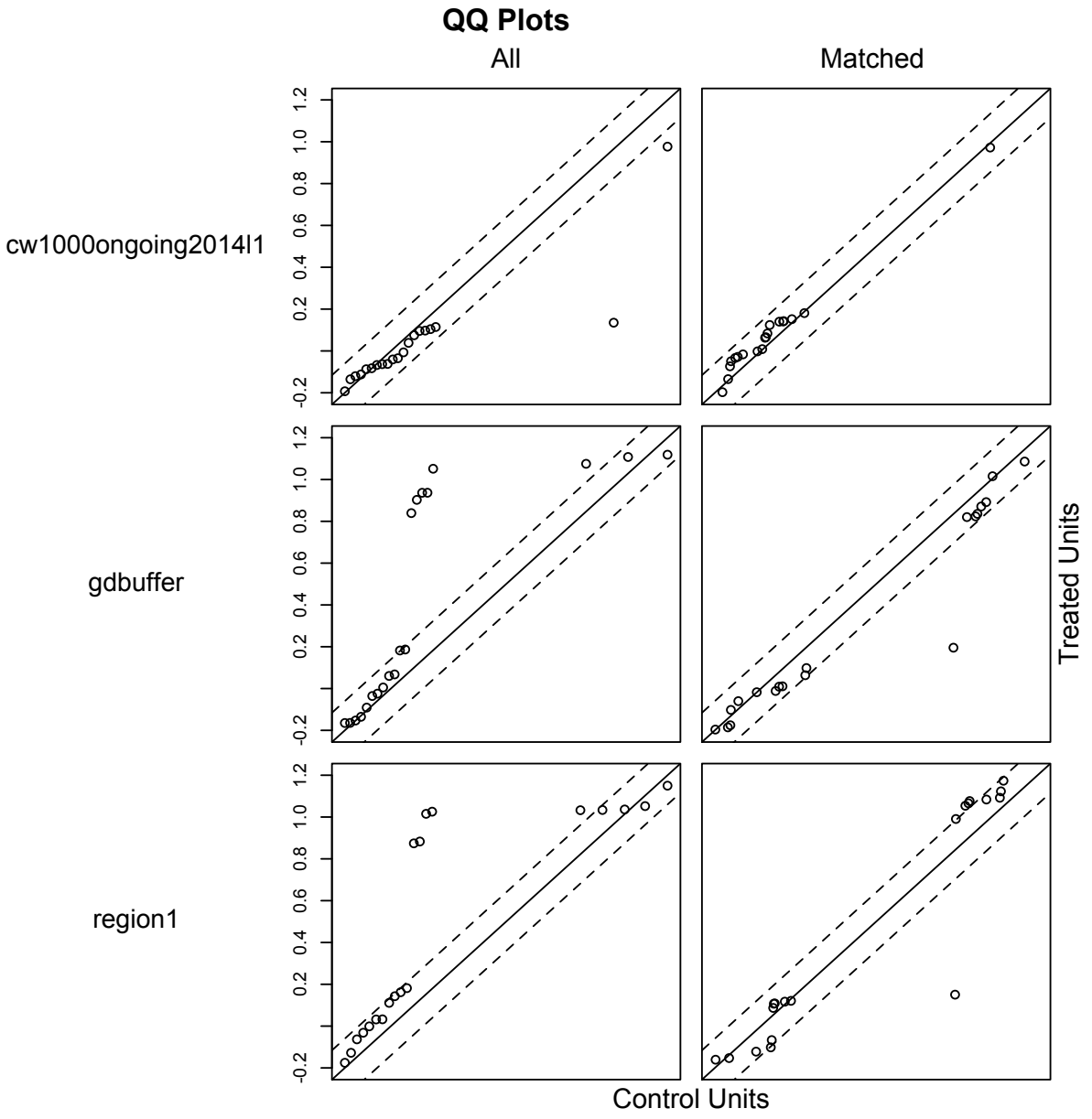
INSTITUTIONAL FIRC (with interwar and gdbuffer)

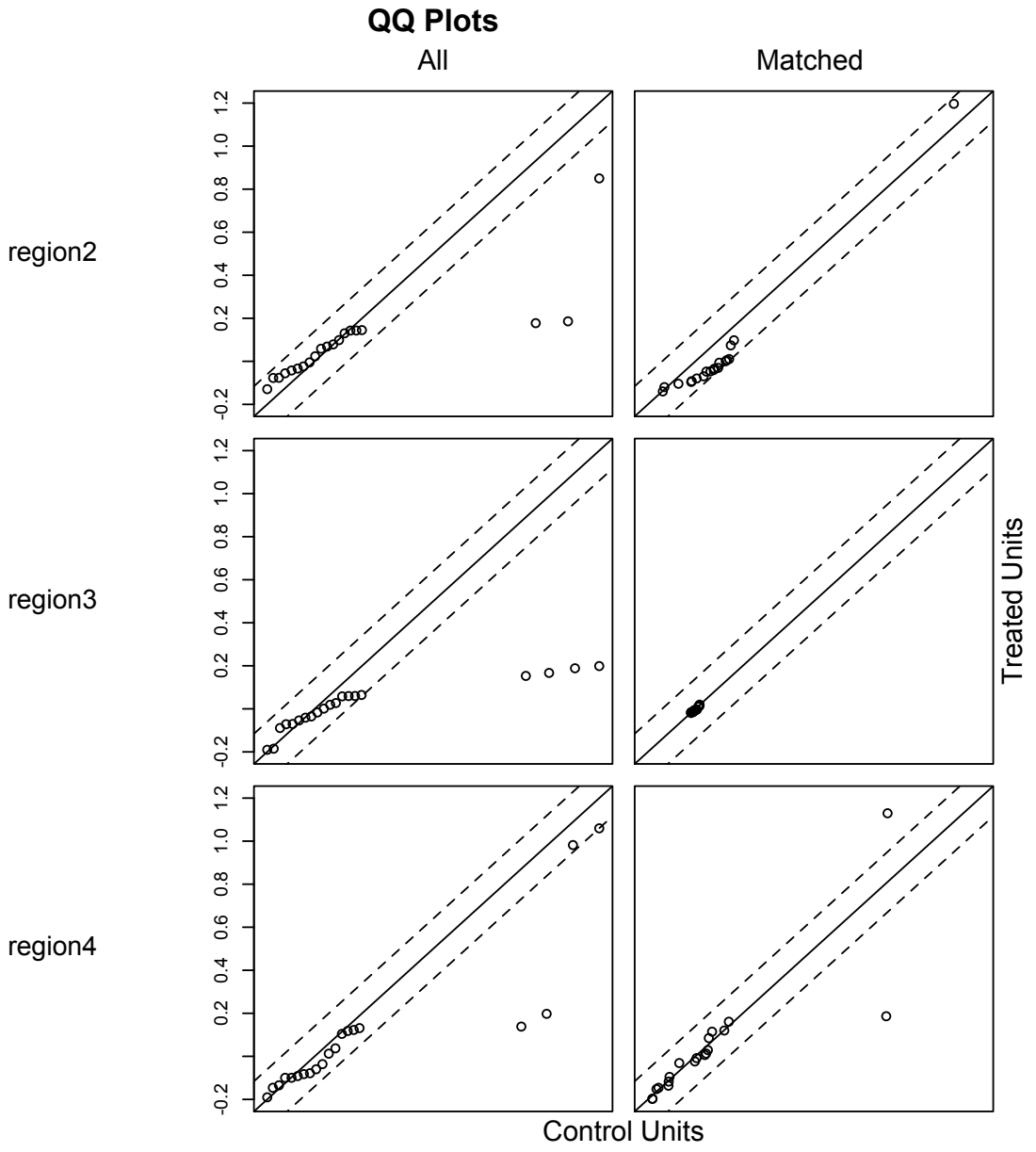
Note: **peaceyrs** is omitted from matching because the balance between treated (34.15) and control (34.48) cases was already very good.

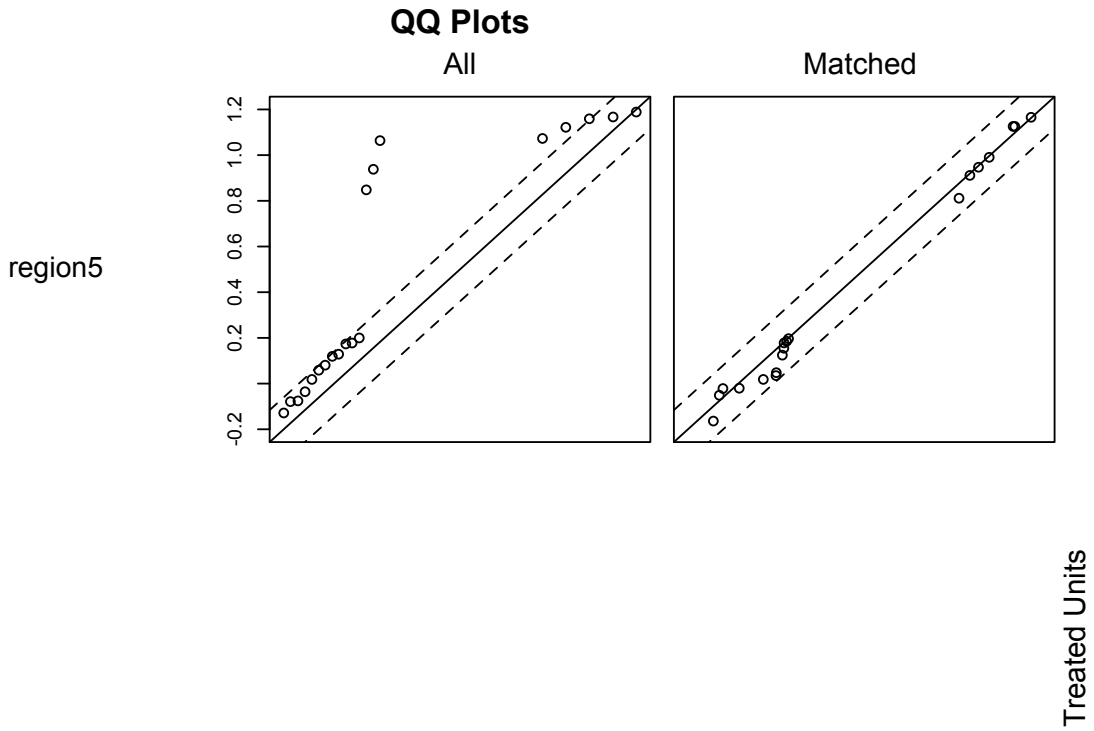
```
summary(instfirc.out3)

Call:
matchit(formula = abdinstfirc ~ lnpec4_fill + lntpop4_banks +
    mountainous + newstate + democracy + interwar + cw1000ongoing2014l1 +
    gdbuffer + region1 + region2 + region3 + region4 + region5,
    data = instfirc, method = "genetic", pop.size = 150)

Summary of balance for all data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0210        0.0024     0.0073    0.0187  0.0076   0.0201  0.0941
lnpec4_fill                5.8619        7.0217     3.8684   -1.1598  0.7282   1.2457  4.4543
lntpop4_banks              8.1346        8.5581     1.8705   -0.4234  0.5903   0.7358  2.7548
mountainous                0.1615        0.1832     0.2210   -0.0216  0.0371   0.0704  0.5023
newstate                   0.1000        0.0256     0.1580    0.0744  0.0000   0.0500  1.0000
democracy                  0.0500        0.3557     0.4788   -0.3057  0.0000   0.3000  1.0000
interwar                   0.3000        0.0513     0.2207    0.2487  0.0000   0.2500  1.0000
cw1000ongoing2014l1        0.0500        0.0908     0.2873   -0.0408  0.0000   0.0500  1.0000
gdbuffer                   0.4000        0.1193     0.3241    0.2807  0.0000   0.2500  1.0000
region1                    0.4500        0.2224     0.4159    0.2276  0.0000   0.2000  1.0000
region2                    0.0500        0.1566     0.3635   -0.1066  0.0000   0.1000  1.0000
region3                    0.0000        0.2046     0.4034   -0.2046  0.0000   0.2000  1.0000
region4                    0.1000        0.1910     0.3931   -0.0910  0.0000   0.1000  1.0000
region5                    0.4000        0.2253     0.4178    0.1747  0.0000   0.1500  1.0000


Summary of balance for matched data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0210        0.0212     0.0287   -0.0001  0.0004   0.0045  0.0528
lnpec4_fill                5.8619        5.5595     4.2897    0.3024  0.4592   0.7517  3.3398
lntpop4_banks              8.1346        8.0565     1.7940    0.0781  0.3077   0.3226  0.6971
mountainous                0.1615        0.1873     0.1755   -0.0258  0.0253   0.0460  0.1517
newstate                   0.1000        0.1000     0.3082    0.0000  0.0000   0.0526  1.0000
democracy                  0.0500        0.0500     0.2239    0.0000  0.0000   0.0000  0.0000
interwar                   0.3000        0.3000     0.4708    0.0000  0.0000   0.0526  1.0000
cw1000ongoing2014l1        0.0500        0.0500     0.2239    0.0000  0.0000   0.0000  0.0000
gdbuffer                   0.4000        0.4000     0.5033    0.0000  0.0000   0.0526  1.0000
region1                    0.4500        0.4500     0.5111    0.0000  0.0000   0.0526  1.0000
region2                    0.0500        0.0500     0.2239    0.0000  0.0000   0.0000  0.0000
region3                    0.0000        0.0000     0.0000    0.0000  0.0000   0.0000  0.0000
region4                    0.1000        0.1000     0.3082    0.0000  0.0000   0.0526  1.0000
region5                    0.4000        0.4000     0.5033    0.0000  0.0000   0.0000  0.0000

Percent Balance Improvement:
                    Mean Diff. eQQ Med eQQ Mean  eQQ Max
distance               99.2969 94.9021  77.6965  43.8966
lnpec4_fill            73.9274 36.9428  39.6566  25.0215
lntpop4_banks          81.5453 47.8685  56.1599  74.6952
mountainous           -19.3395 31.6515  34.6687  69.7931
newstate              100.0000  0.0000  -5.2632   0.0000
democracy             100.0000  0.0000 100.0000 100.0000
interwar              100.0000  0.0000  78.9474   0.0000
cw1000ongoing2014l1   100.0000  0.0000 100.0000 100.0000
gdbuffer              100.0000  0.0000  78.9474   0.0000
region1               100.0000  0.0000  73.6842   0.0000
region2               100.0000  0.0000 100.0000 100.0000
region3               100.0000  0.0000 100.0000 100.0000
region4               100.0000  0.0000  47.3684   0.0000
region5               100.0000  0.0000 100.0000 100.0000

Sample sizes:
          Control Treated
All          8318      20
Matched        19      20
Unmatched    8299       0
Discarded       0       0
```

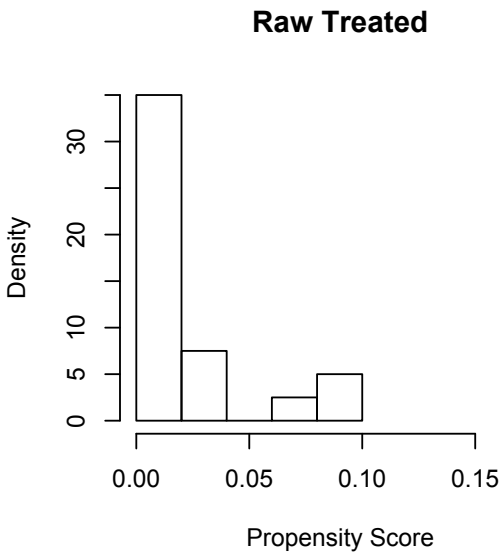

QQ Plots
All
Matched
lnpec4_fill
lntpop4_banks
mountainous
Treated Units
Control Units
0
5
10
15
2
4
6
8
10
12
14
0.0
0.2
0.4
0.6
0.8
1.0

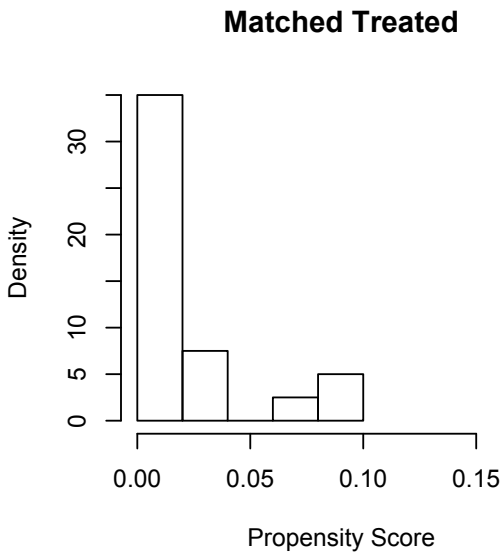

QQ Plots
All
Matched
newstate
democracy
interwar
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units

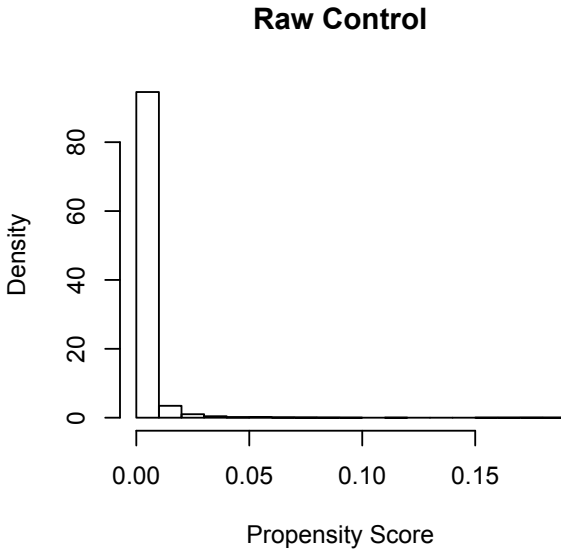

QQ Plots
All
Matched
cw1000ongoing2014l1
gdbuffer
region1
Treated Units
Control Units
-0.2
0.2
0.4
0.6
0.8
1.0
1.2

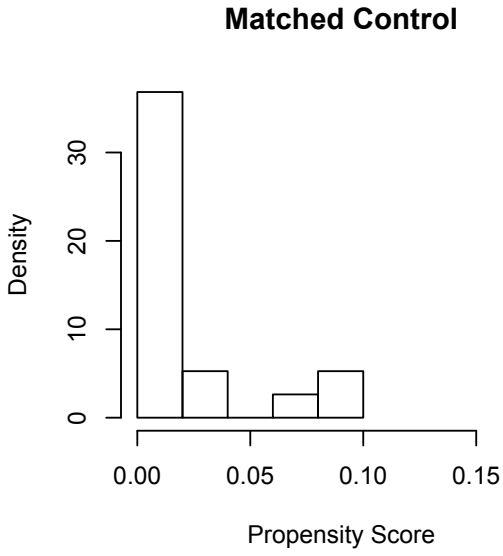

QQ Plots
All
Matched
region2
region3
region4
Treated Units
Control Units
-0.2
0.2
0.4
0.6
0.8
1.0
1.2


QQ Plots
All
Matched
region5
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units

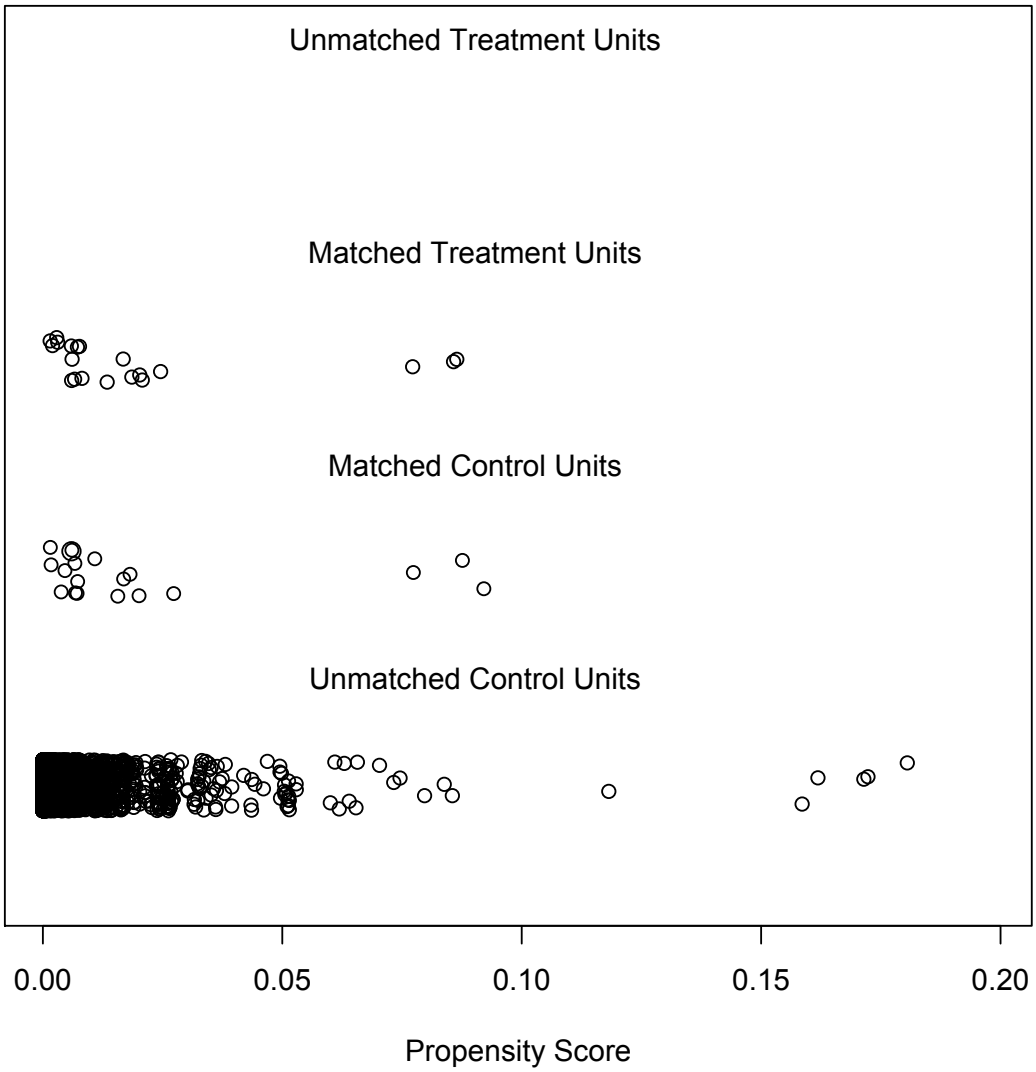

Raw Treated
Density
0
5
10
20
30
0.00
0.05
0.10
0.15
Propensity Score


Matched Treated
Density
0
5
10
20
30
0.00
0.05
0.10
0.15
Propensity Score


Raw Control
Density
0
20
40
60
80
0.00
0.05
0.10
0.15
Propensity Score


Matched Control
Density
0
10
20
30
0.00
0.05
0.10
0.15
Propensity Score

Distribution of Propensity Scores



INSTITUTIONAL FIRC: MATCHED ANALYSIS (with interwar and gdbuffer)

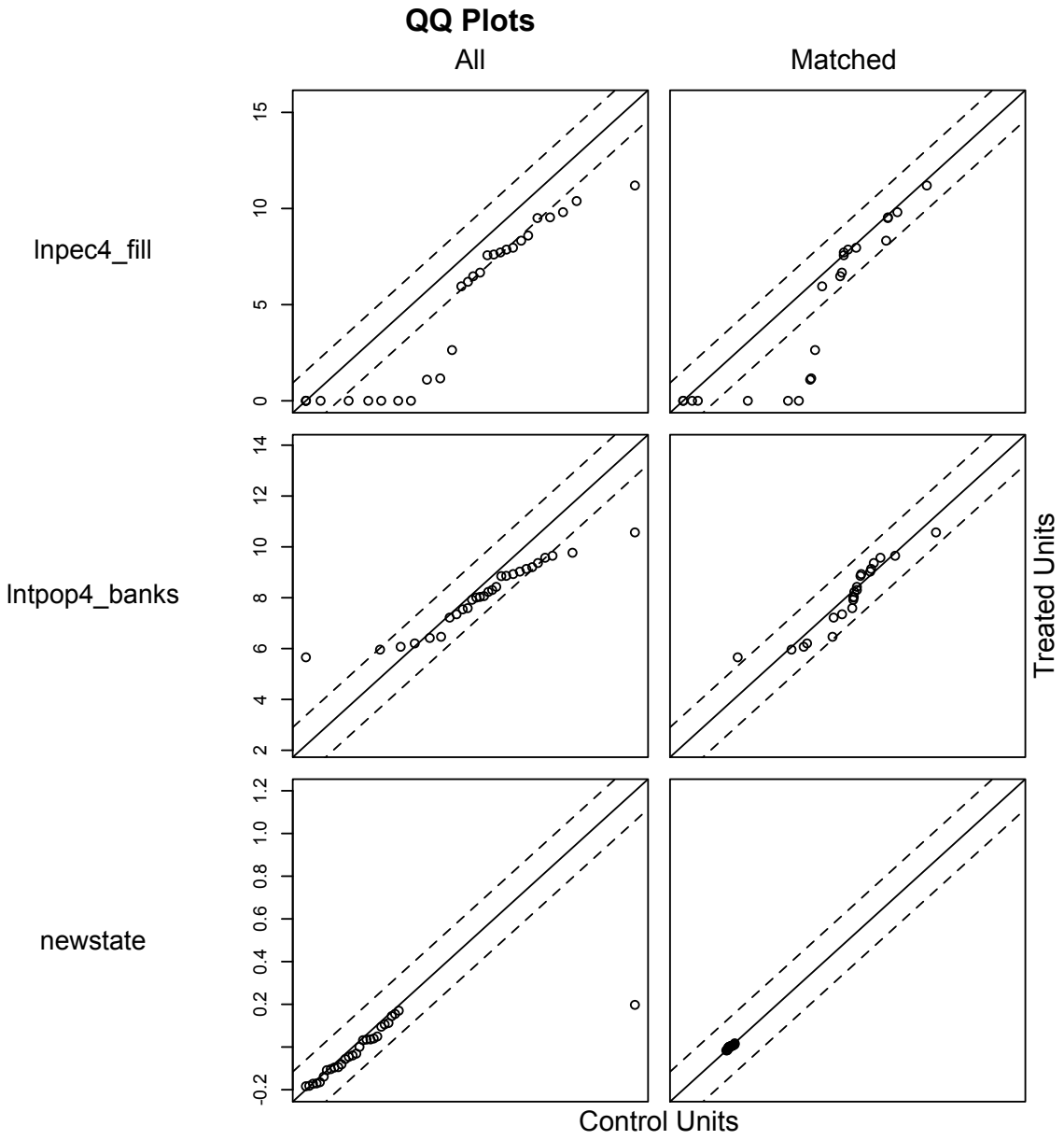
```
tab civwar10_2014 abdinstfirc, col chi2

civwar10_2 |      abdinstfirc
       014 |         0          1 |     Total
-----------+----------------------+----------
         0 |        18         16 |        34
           |     94.74      80.00 |     87.18
-----------+----------------------+----------
         1 |         1          4 |         5
           |      5.26      20.00 |     12.82
-----------+----------------------+----------
     Total |        19         20 |        39
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =   1.8933   Pr = 0.169

tab civwar5_2014 abdinstfirc, col chi2

civwar5_20 |      abdinstfirc
        14 |         0          1 |     Total
-----------+----------------------+----------
         0 |        18         16 |        34
           |     94.74      80.00 |     87.18
-----------+----------------------+----------
         1 |         1          4 |         5
           |      5.26      20.00 |     12.82
-----------+----------------------+----------
     Total |        19         20 |        39
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =   1.8933   Pr = 0.169

ttest civwar10_2014, by(abdinstfirc)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      19    .0526316    .0526316    .2294157   -.0579433    .1632064
       1 |      20          .2    .0917663    .4103913    .0079309    .3920691
---------+--------------------------------------------------------------------
combined |      39    .1282051    .0542336    .3386884     .018415    .2379952
---------+--------------------------------------------------------------------
    diff |           -.1473684    .1072571               -.3646919    .0699551
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -1.3740
Ho: diff = 0                                     degrees of freedom =       37

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0889         Pr(|T| > |t|) = 0.1777          Pr(T > t) = 0.9111

ttest civwar5_2014, by(abdinstfirc)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      19    .0526316    .0526316    .2294157   -.0579433    .1632064
       1 |      20          .2    .0917663    .4103913    .0079309    .3920691
---------+--------------------------------------------------------------------
combined |      39    .1282051    .0542336    .3386884     .018415    .2379952
---------+--------------------------------------------------------------------
    diff |           -.1473684    .1072571               -.3646919    .0699551
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -1.3740
Ho: diff = 0                                     degrees of freedom =       37

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0889         Pr(|T| > |t|) = 0.1777          Pr(T > t) = 0.9111
```

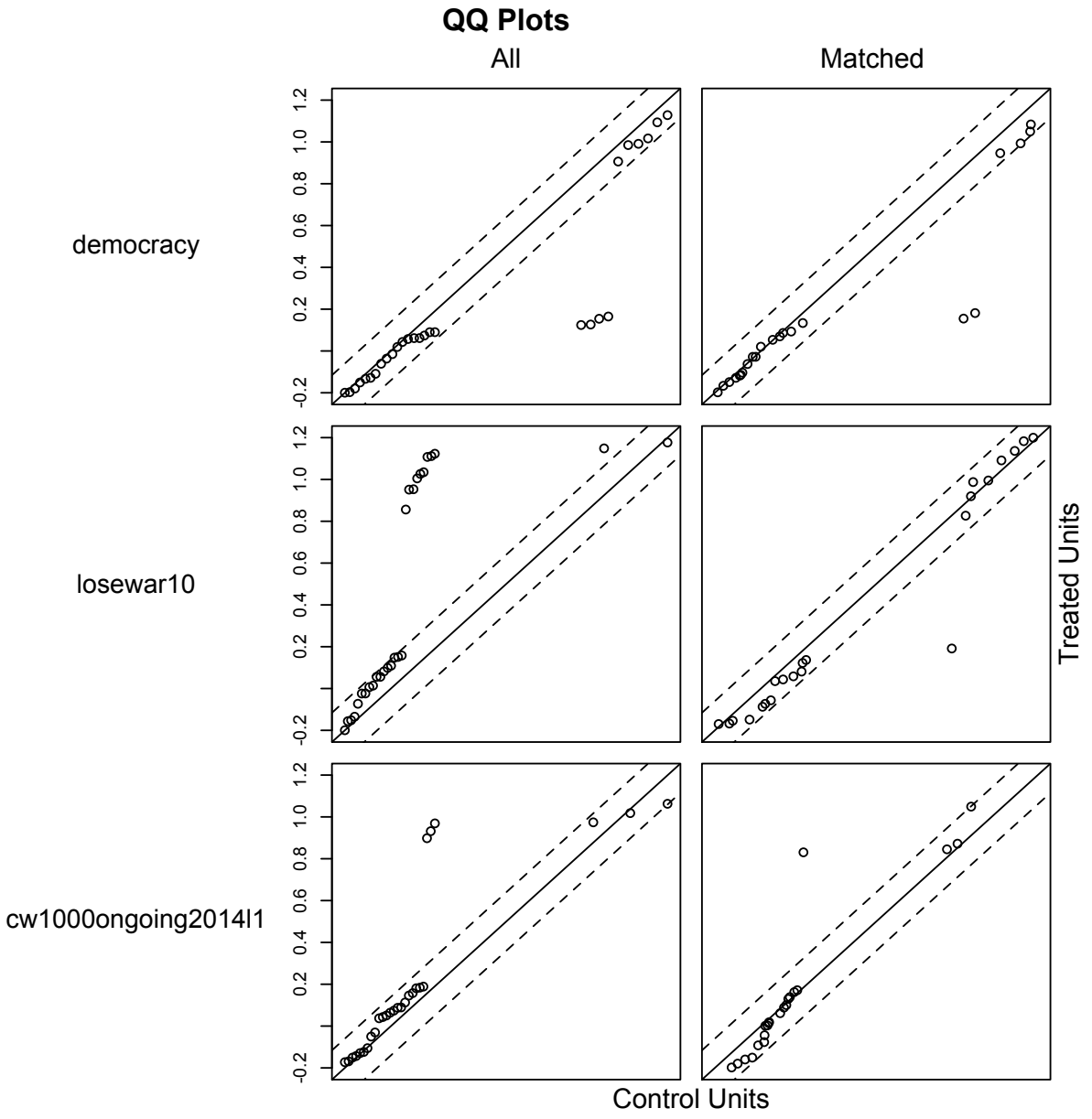
```
probit civwar10_2014 abdinstfirc lnpec4_fill lntpop4_banks mountainous interwar
cw1000ongoing2014l1 peaceyrs, robust cluster(ccode2)

Iteration 0:   log pseudolikelihood = -14.935457
Iteration 1:   log pseudolikelihood = -10.209422
Iteration 2:   log pseudolikelihood = -8.5874219
Iteration 3:   log pseudolikelihood =  -8.168033
Iteration 4:   log pseudolikelihood = -8.1566699
Iteration 5:   log pseudolikelihood = -8.1566325
Iteration 6:   log pseudolikelihood = -8.1566325

Probit regression                                 Number of obs     =         39
                                                  Wald chi2(7)      =      27.91
                                                  Prob > chi2       =     0.0002
Log pseudolikelihood = -8.1566325                 Pseudo R2         =     0.4539

                                    (Std. Err. adjusted for 30 clusters in ccode2)
------------------------------------------------------------------------------
                   |               Robust
      civwar10_2014 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------------+---------------------------------------------------------------
        abdinstfirc |   1.607455   .5661846     2.84   0.005      .497754    2.717157
        lnpec4_fill |  -1.311448    .454811    -2.88   0.004    -2.202861   -.4200344
      lntpop4_banks |   2.947405   1.189082     2.48   0.013     .6168471    5.277963
        mountainous |  -5.164558   3.808584    -1.36   0.175    -12.62924    2.300129
           interwar |   2.040522   .8013267     2.55   0.011     .4699506    3.611094
cw1000ongoing2014l1 |  -1.121623   1.875483    -0.60   0.550    -4.797501    2.554256
           peaceyrs |  -.0378384   .0188165    -2.01   0.044    -.0747181   -.0009588
              _cons |  -18.88148   7.341485    -2.57   0.010    -33.27053   -4.492436
------------------------------------------------------------------------------
Note: 8 failures and 0 successes completely determined.

probit civwar5_2014 abdinstfirc lnpec4_fill lntpop4_banks mountainous interwar
cw1000ongoing2014l1 peaceyrs, robust cluster(ccode2)

Iteration 0:   log pseudolikelihood = -14.935457
Iteration 1:   log pseudolikelihood = -10.209422
Iteration 2:   log pseudolikelihood = -8.5874219
Iteration 3:   log pseudolikelihood =  -8.168033
Iteration 4:   log pseudolikelihood = -8.1566699
Iteration 5:   log pseudolikelihood = -8.1566325
Iteration 6:   log pseudolikelihood = -8.1566325

Probit regression                                 Number of obs     =         39
                                                  Wald chi2(7)      =      27.91
                                                  Prob > chi2       =     0.0002
Log pseudolikelihood = -8.1566325                 Pseudo R2         =     0.4539

                                    (Std. Err. adjusted for 30 clusters in ccode2)
------------------------------------------------------------------------------
                   |               Robust
       civwar5_2014 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------------+---------------------------------------------------------------
        abdinstfirc |   1.607455   .5661846     2.84   0.005      .497754    2.717157
        lnpec4_fill |  -1.311448    .454811    -2.88   0.004    -2.202861   -.4200344
      lntpop4_banks |   2.947405   1.189082     2.48   0.013     .6168471    5.277963
        mountainous |  -5.164558   3.808584    -1.36   0.175    -12.62924    2.300129
           interwar |   2.040522   .8013267     2.55   0.011     .4699506    3.611094
cw1000ongoing2014l1 |  -1.121623   1.875483    -0.60   0.550    -4.797501    2.554256
           peaceyrs |  -.0378384   .0188165    -2.01   0.044    -.0747181   -.0009588
              _cons |  -18.88148   7.341485    -2.57   0.010    -33.27053   -4.492436
------------------------------------------------------------------------------
Note: 8 failures and 0 successes completely determined.
```

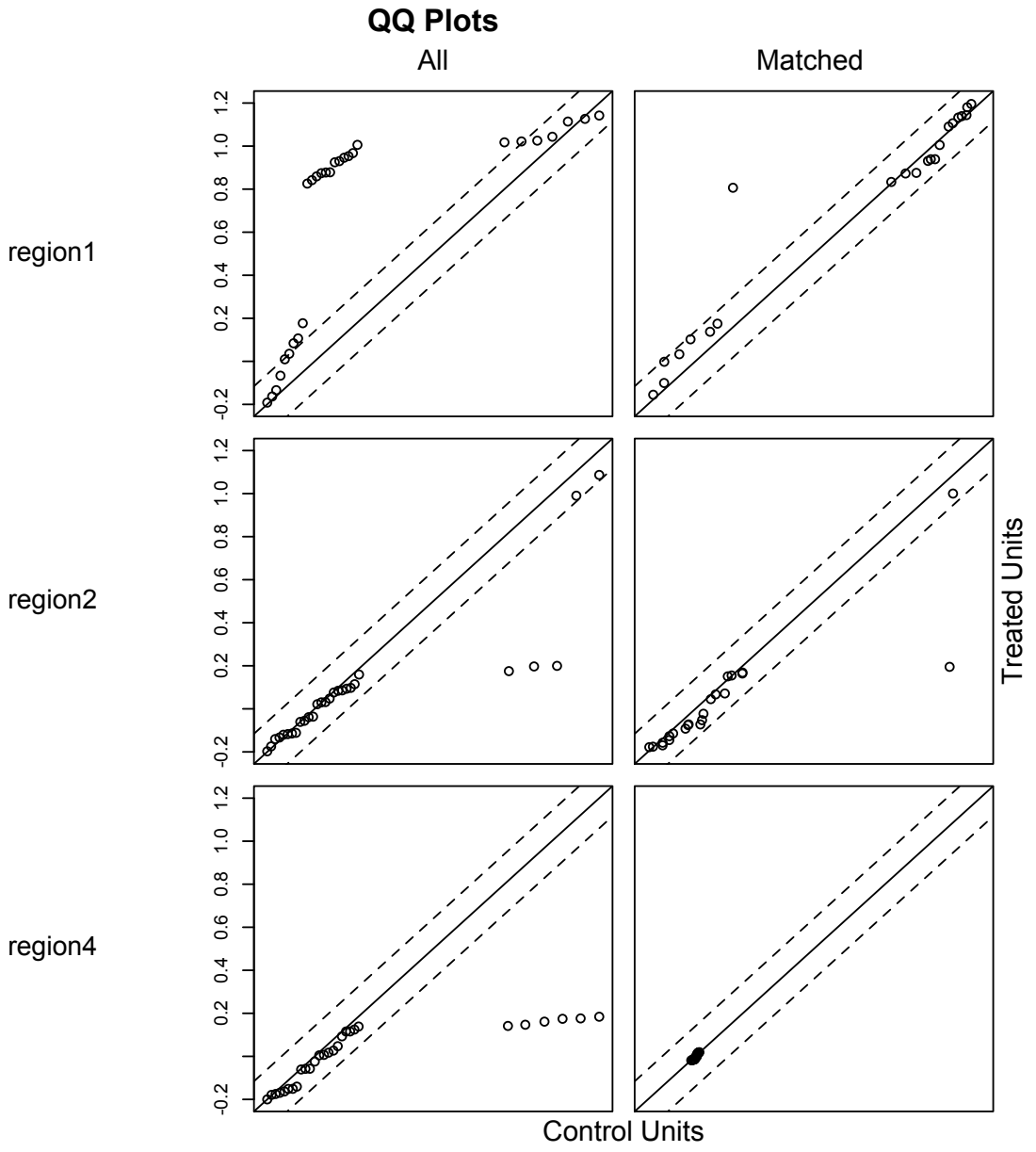
RESTORATION FIRC

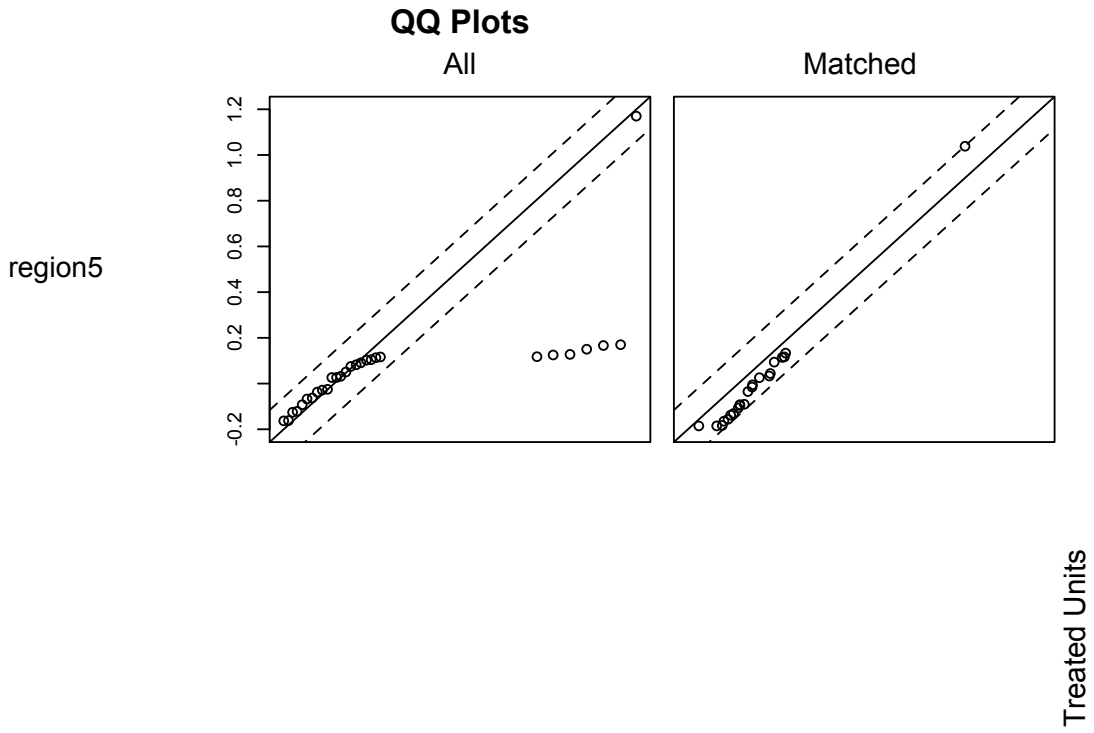
Note: **peaceyrs** (35.43 treated, 34.50 untreated), **mountainous** (.205 treated, .183 untreated), and **region3** (.214 treated, .205 untreated) were omitted because balance was already very good.

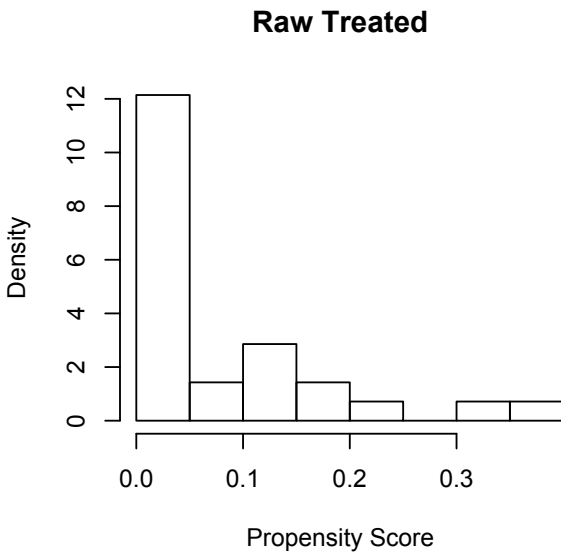
```
summary(restfirc.out3)

Call:
matchit(formula = abdrestleadfirc ~ lnpec4_fill + lntpop4_banks +
    newstate + democracy + losewar10 + cw1000ongoing2014l1 +
    region1 + region2 + region4 + region5, data = restfirc, method = "genetic",
    pop.size = 150)

Summary of balance for all data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0782        0.0031     0.0101    0.0751  0.0365   0.0683  0.3130
lnpec4_fill                4.8666        7.0217     3.8684   -2.1551  1.8249   2.2043  5.1741
lntpop4_banks              8.0846        8.5581     1.8705   -0.4735  0.5175   0.8250  3.4588
newstate                   0.0000        0.0256     0.1580   -0.0256  0.0000   0.0357  1.0000
democracy                  0.2143        0.3557     0.4788   -0.1414  0.0000   0.1429  1.0000
losewar10                  0.3929        0.0518     0.2217    0.3410  0.0000   0.3214  1.0000
cw1000ongoing2014l1        0.2143        0.0908     0.2873    0.1235  0.0000   0.1071  1.0000
region1                    0.6786        0.2224     0.4159    0.4562  0.0000   0.4286  1.0000
region2                    0.0714        0.1566     0.3635   -0.0852  0.0000   0.1071  1.0000
region4                    0.0000        0.1910     0.3931   -0.1910  0.0000   0.2143  1.0000
region5                    0.0357        0.2253     0.4178   -0.1896  0.0000   0.2143  1.0000


Summary of balance for matched data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0782        0.0700     0.0798    0.0082  0.0104   0.0235  0.1613
lnpec4_fill                4.8666        5.2972     3.7251   -0.4306  0.5132   1.4936  5.4596
lntpop4_banks              8.0846        8.2116     1.6938   -0.1270  0.3424   0.3942  1.5129
newstate                   0.0000        0.0000     0.0000    0.0000  0.0000   0.0000  0.0000
democracy                  0.2143        0.2500     0.4432   -0.0357  0.0000   0.0909  1.0000
losewar10                  0.3929        0.3929     0.4999    0.0000  0.0000   0.0455  1.0000
cw1000ongoing2014l1        0.2143        0.2500     0.4432   -0.0357  0.0000   0.0455  1.0000
region1                    0.6786        0.7143     0.4624   -0.0357  0.0000   0.0455  1.0000
region2                    0.0714        0.0714     0.2636    0.0000  0.0000   0.0455  1.0000
region4                    0.0000        0.0000     0.0000    0.0000  0.0000   0.0000  0.0000
region5                    0.0357        0.0357     0.1899    0.0000  0.0000   0.0000  0.0000

Percent Balance Improvement:
                   Mean Diff. eQQ Med eQQ Mean  eQQ Max
distance              89.1050 71.4067  65.5683  48.4885
lnpec4_fill           80.0177 71.8801  32.2404  -5.5177
lntpop4_banks         73.1802 33.8390  52.2210  56.2602
newstate             100.0000  0.0000 100.0000 100.0000
democracy             74.7511  0.0000  36.3636   0.0000
losewar10            100.0000  0.0000  85.8586   0.0000
cw1000ongoing2014l1   71.0859  0.0000  57.5758   0.0000
region1               92.1707  0.0000  89.3939   0.0000
region2              100.0000  0.0000  57.5758   0.0000
region4              100.0000  0.0000 100.0000 100.0000
region5              100.0000  0.0000 100.0000 100.0000

Sample sizes:
          Control Treated
All          8318      28
Matched        22      28
Unmatched    8296       0
Discarded       0       0
```

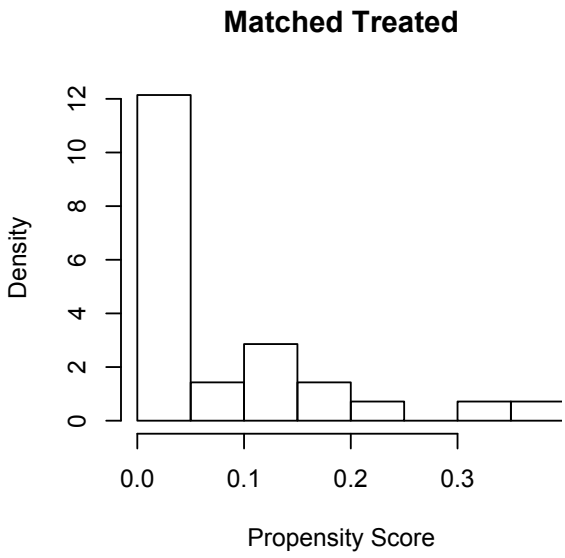

QQ Plots
All
Matched
lnpec4_fill
lntpop4_banks
newstate
Treated Units
Control Units
0
5
10
15
2
4
6
8
10
12
14
-0.2
0.2
0.4
0.6
0.8
1.0
1.2

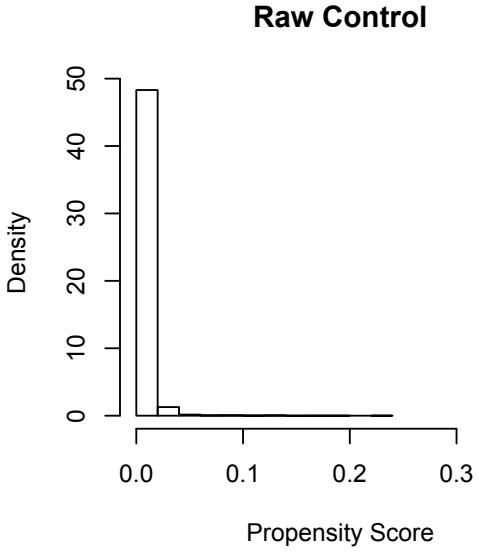

QQ Plots
All
Matched
democracy
losewar10
cw1000ongoing2014l1
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units

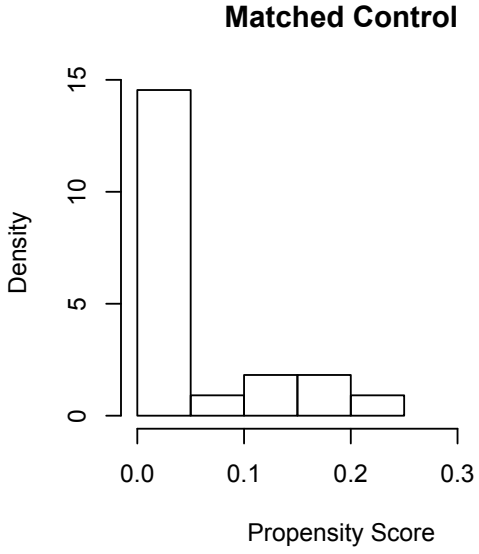

QQ Plots
All
Matched
region1
region2
region4
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units

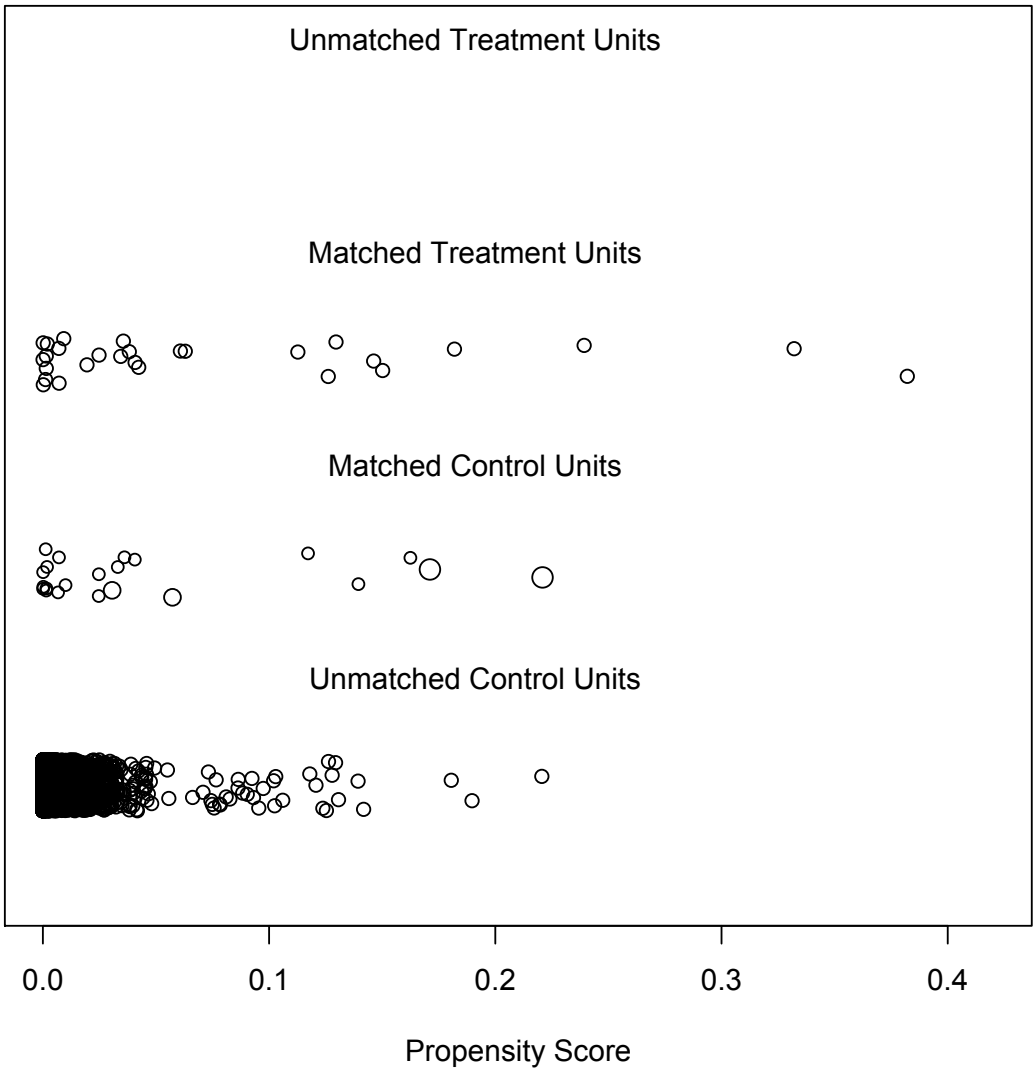

QQ Plots
All
Matched
region5
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units


Raw Treated
Density
0
2
4
6
8
10
12
0.0
0.1
0.2
0.3
Propensity Score


Matched Treated
Density
0
2
4
6
8
10
12
0.0
0.1
0.2
0.3
Propensity Score


Raw Control
Density
0
10
20
30
40
50
0.0
0.1
0.2
0.3
Propensity Score


Matched Control
Density
0
5
10
15
0.0
0.1
0.2
0.3
Propensity Score


Distribution of Propensity Scores
Unmatched Treatment Units
Matched Treatment Units
Matched Control Units
Unmatched Control Units
0.0
0.1
0.2
0.3
0.4
Propensity Score

RESTORATION FIRC: MATCHED ANALYSIS

```
tab civwar10_2014 abdrestleadfirc, col chi2

civwar10_2 |    abdrestleadfirc
       014 |         0          1 |     Total
-----------+----------------------+----------
         0 |        20         25 |        45
           |     90.91      89.29 |     90.00
-----------+----------------------+----------
         1 |         2          3 |         5
           |      9.09      10.71 |     10.00
-----------+----------------------+----------
     Total |        22         28 |        50
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =   0.0361   Pr = 0.849

tab civwar5_2014 abdrestleadfirc, col chi2

civwar5_20 |    abdrestleadfirc
        14 |         0          1 |     Total
-----------+----------------------+----------
         0 |        20         26 |        46
           |     90.91      92.86 |     92.00
-----------+----------------------+----------
         1 |         2          2 |         4
           |      9.09       7.14 |      8.00
-----------+----------------------+----------
     Total |        22         28 |        50
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =   0.0635   Pr = 0.801

ttest civwar10_2014, by(abdrestleadfirc)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      22    .0909091    .0627332    .2942449   -.0395518      .22137
       1 |      28    .1071429    .0595238    .3149704   -.0149899    .2292756
---------+--------------------------------------------------------------------
combined |      50          .1    .0428571    .3030458    .0138753    .1861247
---------+--------------------------------------------------------------------
    diff |           -.0162338    .0872014               -.191564    .1590964
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -0.1862
Ho: diff = 0                                     degrees of freedom =       48

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.4266         Pr(|T| > |t|) = 0.8531          Pr(T > t) = 0.5734

ttest civwar5_2014, by(abdrestleadfirc)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      22    .0909091    .0627332    .2942449   -.0395518      .22137
       1 |      28    .0714286    .0495635    .2622653   -.0302673    .1731244
---------+--------------------------------------------------------------------
combined |      50         .08    .0387562    .2740475    .0021166    .1578834
---------+--------------------------------------------------------------------
    diff |            .0194805    .0788355               -.1390289    .1779899
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =   0.2471
Ho: diff = 0                                     degrees of freedom =       48

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.5971         Pr(|T| > |t|) = 0.8059          Pr(T > t) = 0.4029
```

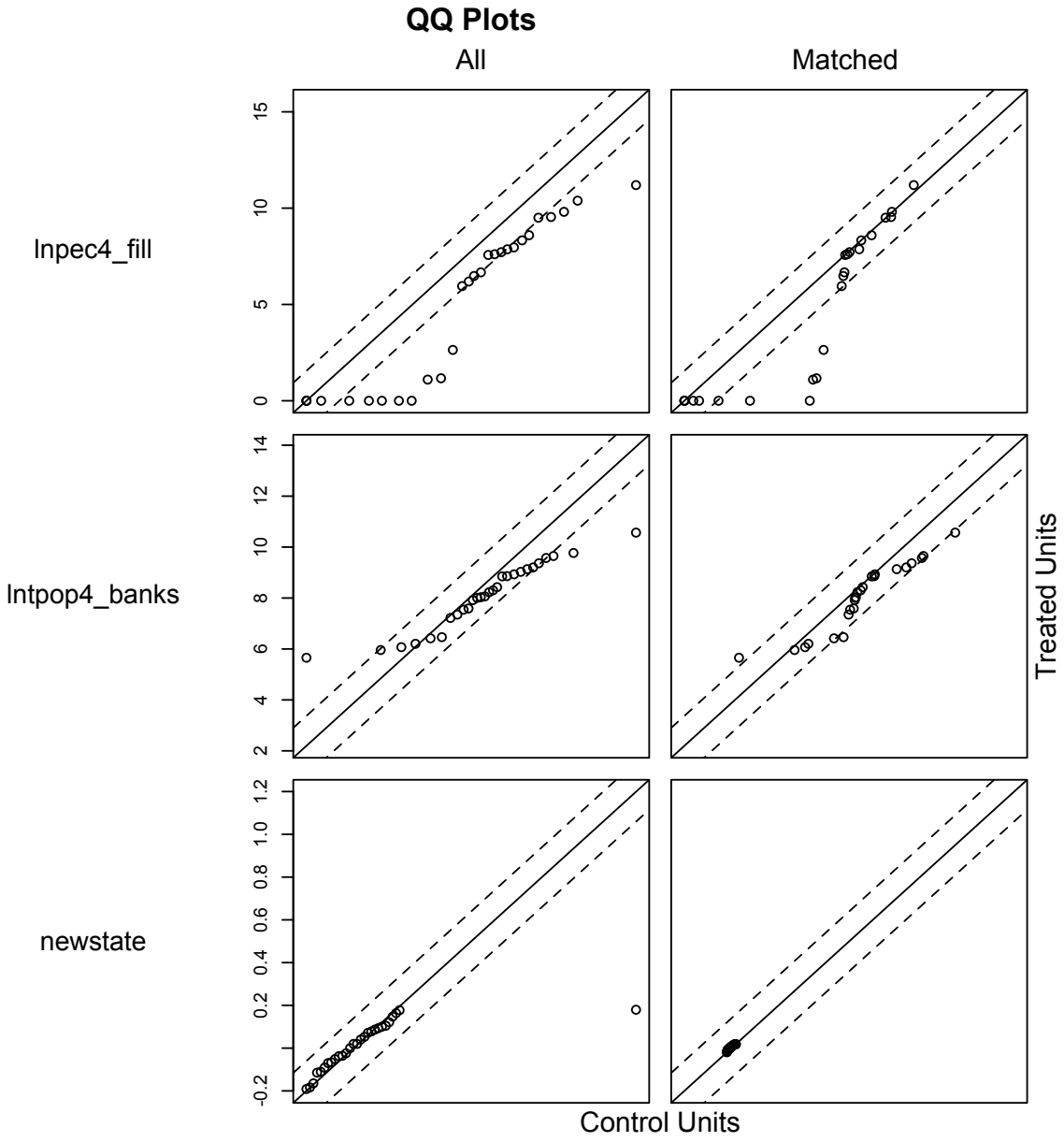
```
probit civwar10_2014 abdrestleadfirc lnpec4_fill lntpop4_banks mountainous losewar10
cw1000ongoing2014l1 peaceyrs, robust cluster(ccode2)[2]

Iteration 0:   log pseudolikelihood = -16.254149
Iteration 1:   log pseudolikelihood = -14.483816
Iteration 2:   log pseudolikelihood = -14.174599
Iteration 3:   log pseudolikelihood = -14.154855
Iteration 4:   log pseudolikelihood = -14.154747
Iteration 5:   log pseudolikelihood = -14.154747

Probit regression                                 Number of obs     =         50
                                                  Wald chi2(7)      =       8.86
                                                  Prob > chi2       =     0.2628
Log pseudolikelihood = -14.154747                 Pseudo R2         =     0.1292

                                    (Std. Err. adjusted for 45 clusters in ccode2)
------------------------------------------------------------------------------
                    |               Robust
      civwar10_2014 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------------+---------------------------------------------------------------
    abdrestleadfirc |   .3633197   .4671643     0.78   0.437    -.5523056    1.278945
        lnpec4_fill |   .0321027   .0867641     0.37   0.711    -.1379518    .2021571
      lntpop4_banks |  -.0115332   .2916026    -0.04   0.968    -.5830639    .5599974
        mountainous |   .2139078   .8010791     0.27   0.789    -1.356178    1.783994
          losewar10 |  -.4945199   .6205026    -0.80   0.425    -1.710683    .7216429
cw1000ongoing2014l1 |   .1479212   1.119809     0.13   0.895    -2.046864    2.342707
           peaceyrs |  -.0248071   .0215422    -1.15   0.250    -.0670291    .0174149
              _cons |  -1.028859   1.620424    -0.63   0.525    -4.204832    2.147114
------------------------------------------------------------------------------

probit civwar5_2014 abdrestleadfirc lnpec4_fill lntpop4_banks mountainous losewar10
cw1000ongoing2014l1 peaceyrs, robust cluster(ccode2)[3]

Iteration 0:   log pseudolikelihood = -13.938469
Iteration 1:   log pseudolikelihood = -12.708493
Iteration 2:   log pseudolikelihood = -12.512444
Iteration 3:   log pseudolikelihood = -12.505932
Iteration 4:   log pseudolikelihood =  -12.50592
Iteration 5:   log pseudolikelihood =  -12.50592

Probit regression                                 Number of obs     =         50
                                                  Wald chi2(7)      =       9.70
                                                  Prob > chi2       =     0.2061
Log pseudolikelihood =  -12.50592                 Pseudo R2         =     0.1028

                                    (Std. Err. adjusted for 45 clusters in ccode2)
------------------------------------------------------------------------------
                    |               Robust
       civwar5_2014 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------------+---------------------------------------------------------------
    abdrestleadfirc |   .1497225   .4823063     0.31   0.756    -.7955804    1.095025
        lnpec4_fill |   .0829101    .103733     0.80   0.424    -.1204027     .286223
      lntpop4_banks |  -.1426631    .302191    -0.47   0.637    -.7349467    .4496204
        mountainous |   .3340779   .7974965     0.42   0.675    -1.228987    1.897142
          losewar10 |  -.3976242   .6136534    -0.65   0.517    -1.600363    .8051144
cw1000ongoing2014l1 |   .0089424   1.175955     0.01   0.994    -2.295887    2.313772
           peaceyrs |  -.0211729   .0188662    -1.12   0.262    -.0581501    .0158042
              _cons |  -.3270458   1.526685    -0.21   0.830    -3.319293    2.665202
------------------------------------------------------------------------------
```

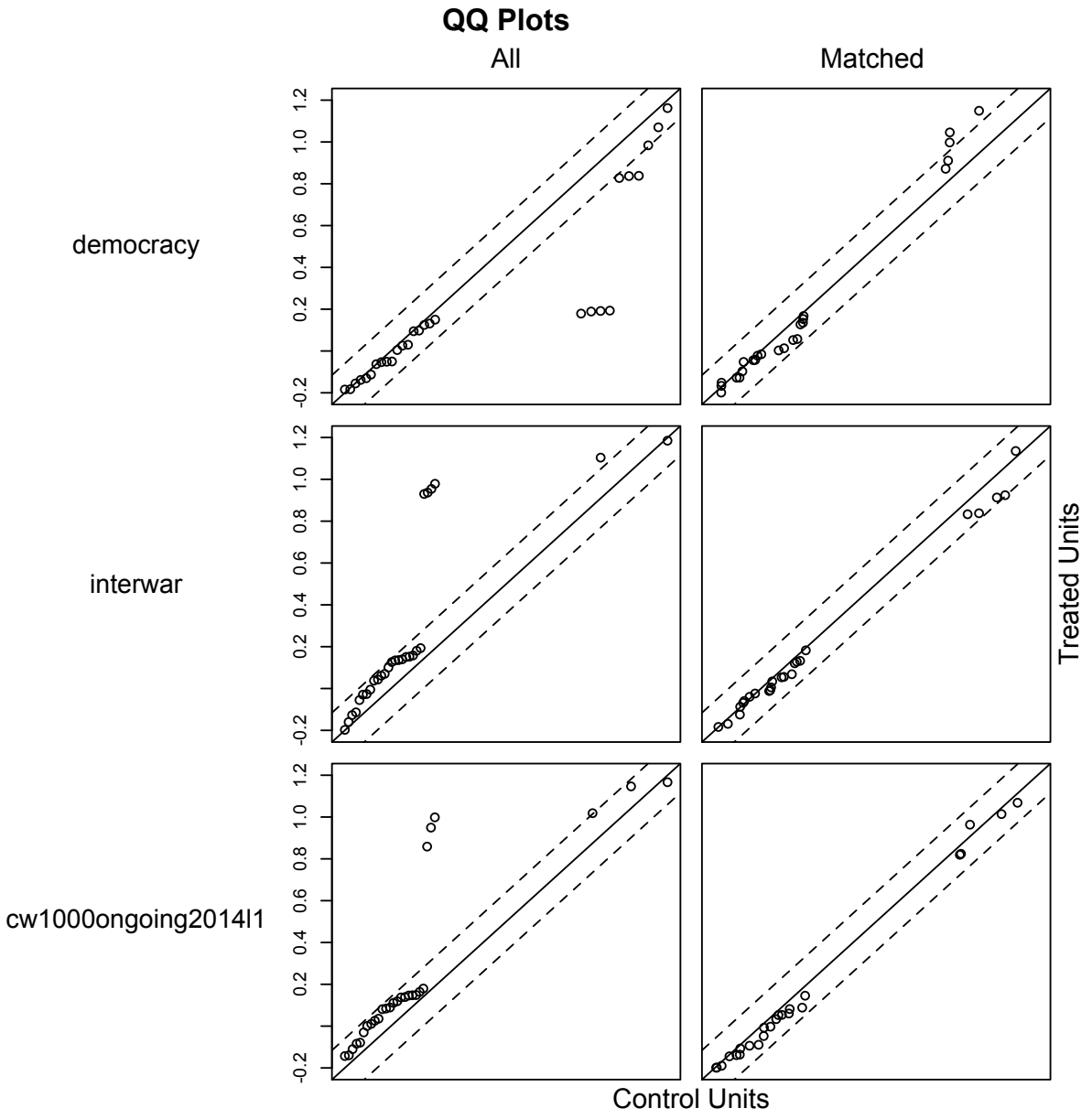
[2] Newstate and democracy omitted because they perfectly predict zero.
[3] Newstate and democracy omitted because they perfectly predict zero.

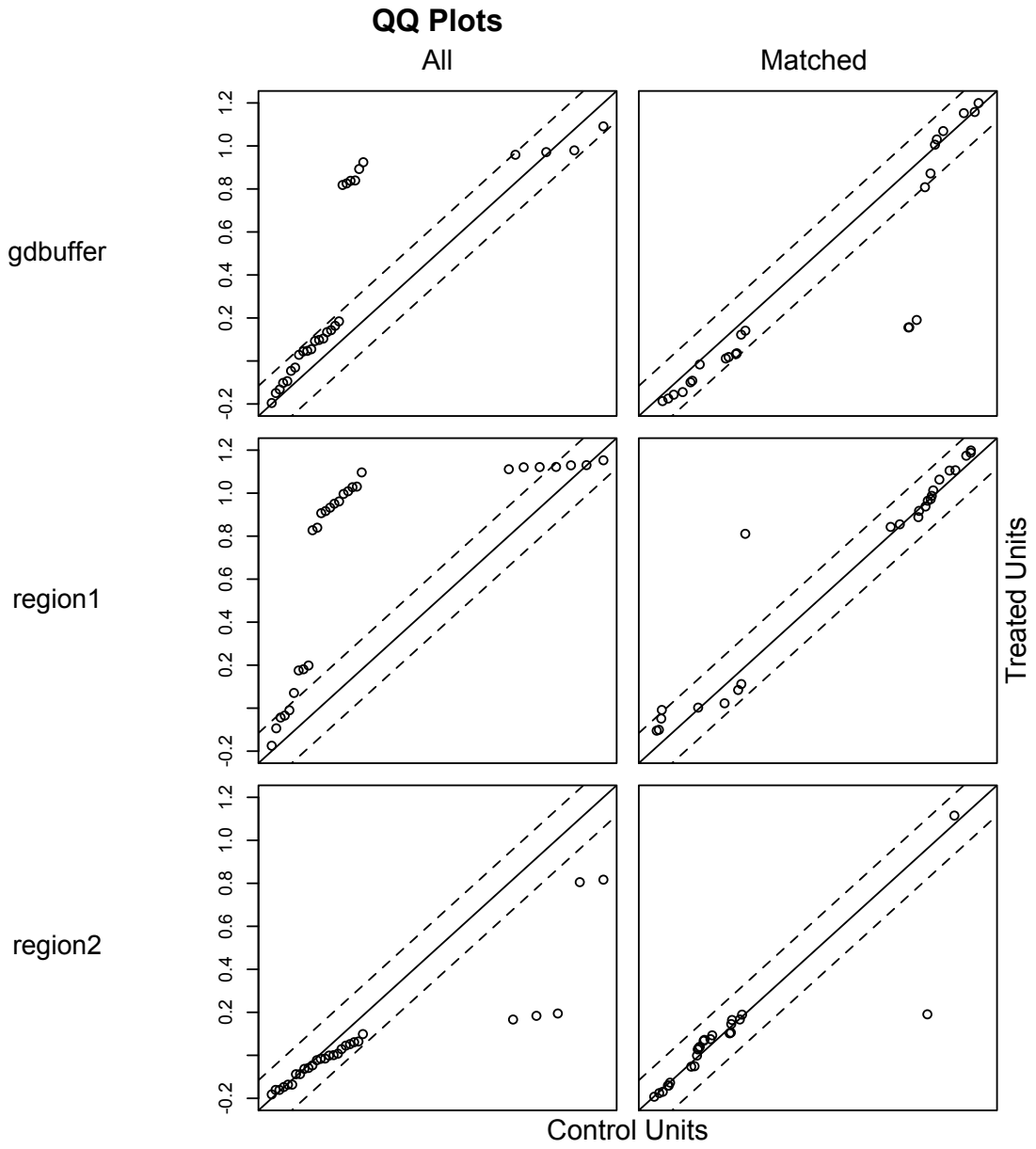
RESTORATION FIRC (with interwar and gdbuffer)

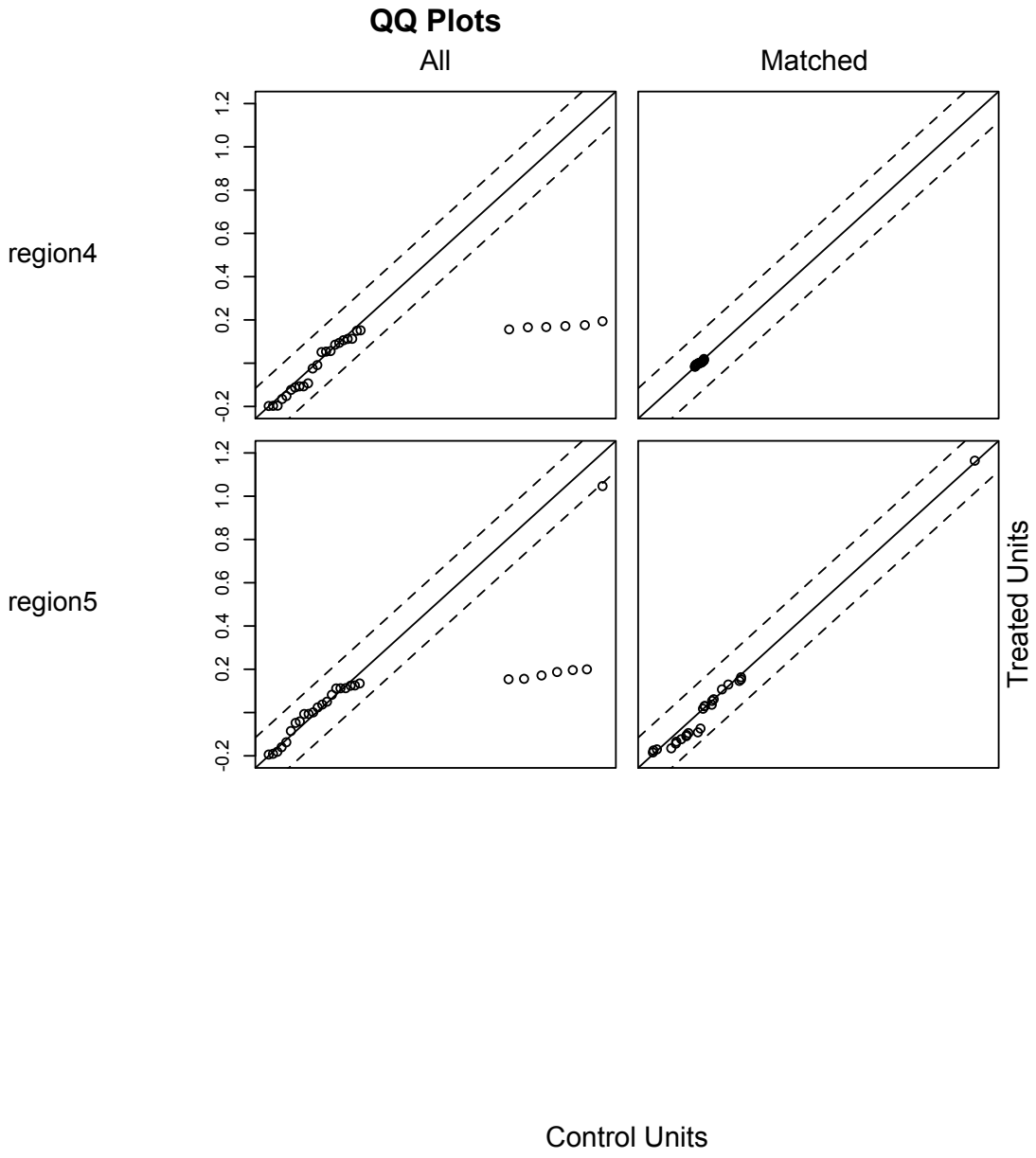
Note: **peaceyrs** (35.43 treated, 34.50 untreated), **mountainous** (.205 treated, .183 untreated), and **region3** (.214 treated, .205 untreated) are omitted because the balance between treated and control cases was already very good.

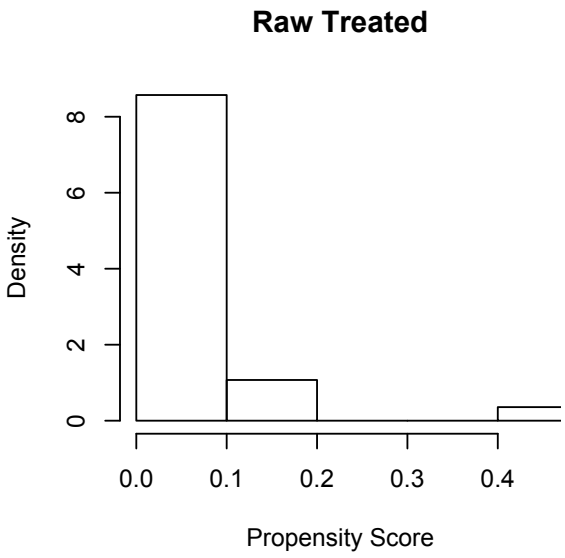
```
summary(restfirc.out4)

Call:
matchit(formula = abdrestleadfirc ~ lnpec4_fill + lntpop4_banks +
    newstate + democracy + interwar + cw1000ongoing2014l1 + gdbuffer +
    region1 + region2 + region4 + region5, data = restfirc, method = "genetic",
    pop.size = 150)

Summary of balance for all data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0527        0.0032     0.0084    0.0496  0.0204   0.0436  0.2570
lnpec4_fill                4.8666        7.0217     3.8684   -2.1551  1.8249   2.2043  5.1741
lntpop4_banks              8.0846        8.5581     1.8705   -0.4735  0.5175   0.8250  3.4588
newstate                   0.0000        0.0256     0.1580   -0.0256  0.0000   0.0357  1.0000
democracy                  0.2143        0.3557     0.4788   -0.1414  0.0000   0.1429  1.0000
interwar                   0.2143        0.0513     0.2207    0.1630  0.0000   0.1429  1.0000
cw1000ongoing2014l1        0.2143        0.0908     0.2873    0.1235  0.0000   0.1071  1.0000
gdbuffer                   0.3571        0.1193     0.3241    0.2379  0.0000   0.2143  1.0000
region1                    0.6786        0.2224     0.4159    0.4562  0.0000   0.4286  1.0000
region2                    0.0714        0.1566     0.3635   -0.0852  0.0000   0.1071  1.0000
region4                    0.0000        0.1910     0.3931   -0.1910  0.0000   0.2143  1.0000
region5                    0.0357        0.2253     0.4178   -0.1896  0.0000   0.2143  1.0000


Summary of balance for matched data:
                    Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance                   0.0527        0.0431     0.0566    0.0097  0.0023   0.0182  0.2570
lnpec4_fill                4.8666        5.0744     3.8734   -0.2078  0.3813   1.2669  5.9081
lntpop4_banks              8.0846        8.1601     1.9082   -0.0755  0.4935   0.5982  1.5129
newstate                   0.0000        0.0000     0.0000    0.0000  0.0000   0.0000  0.0000
democracy                  0.2143        0.2500     0.4423   -0.0357  0.0000   0.0000  0.0000
interwar                   0.2143        0.1786     0.3912    0.0357  0.0000   0.0000  0.0000
cw1000ongoing2014l1        0.2143        0.2500     0.4423   -0.0357  0.0000   0.0000  0.0000
gdbuffer                   0.3571        0.3929     0.4989   -0.0357  0.0000   0.1250  1.0000
region1                    0.6786        0.6786     0.4771    0.0000  0.0000   0.0417  1.0000
region2                    0.0714        0.0714     0.2631    0.0000  0.0000   0.0417  1.0000
region4                    0.0000        0.0000     0.0000    0.0000  0.0000   0.0000  0.0000
region5                    0.0357        0.0357     0.1896    0.0000  0.0000   0.0000  0.0000

Percent Balance Improvement:
                    Mean Diff. eQQ Med eQQ Mean  eQQ Max
distance               80.4337 88.9282  58.2605   0.0000
lnpec4_fill            90.3574 79.1081  42.5262 -14.1858
lntpop4_banks          84.0454  4.6419  27.4931  56.2602
newstate              100.0000  0.0000 100.0000 100.0000
democracy              74.7511  0.0000 100.0000 100.0000
interwar               78.0828  0.0000 100.0000 100.0000
cw1000ongoing2014l1    71.0859  0.0000 100.0000 100.0000
gdbuffer               84.9866  0.0000  41.6667   0.0000
region1               100.0000  0.0000  90.2778   0.0000
region2               100.0000  0.0000  61.1111   0.0000
region4               100.0000  0.0000 100.0000 100.0000
region5               100.0000  0.0000 100.0000 100.0000

Sample sizes:
          Control Treated
All          8318      28
Matched        24      28
Unmatched    8294       0
Discarded       0       0
```

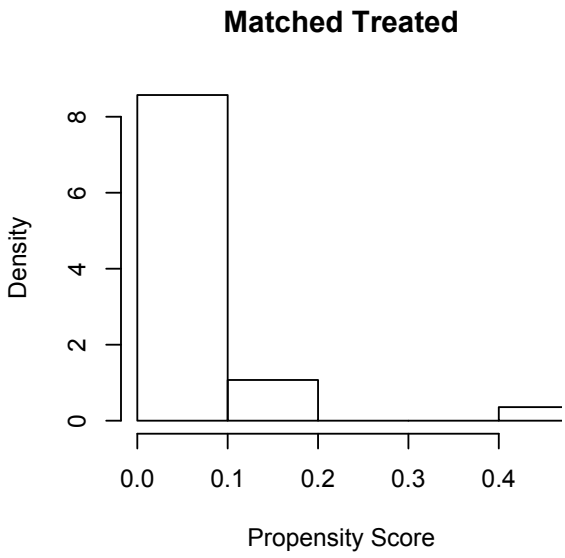

QQ Plots
All
Matched
lnpec4_fill
lntpop4_banks
newstate
Treated Units
Control Units
0
5
10
15
2
4
6
8
10
12
14
-0.2
0.2
0.4
0.6
0.8
1.0
1.2

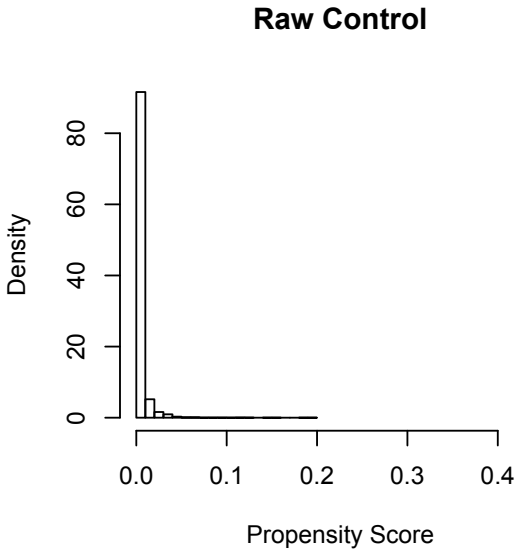

QQ Plots
All
Matched
democracy
interwar
cw1000ongoing2014l1
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units

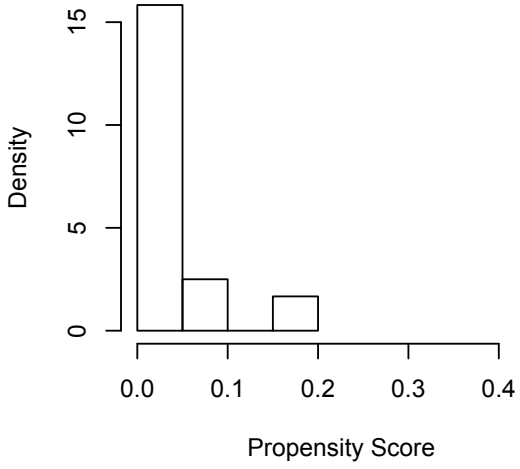

QQ Plots
All
Matched
gdbuffer
region1
region2
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units


QQ Plots
All
Matched
region4
region5
-0.2
0.2
0.4
0.6
0.8
1.0
1.2
Treated Units
Control Units

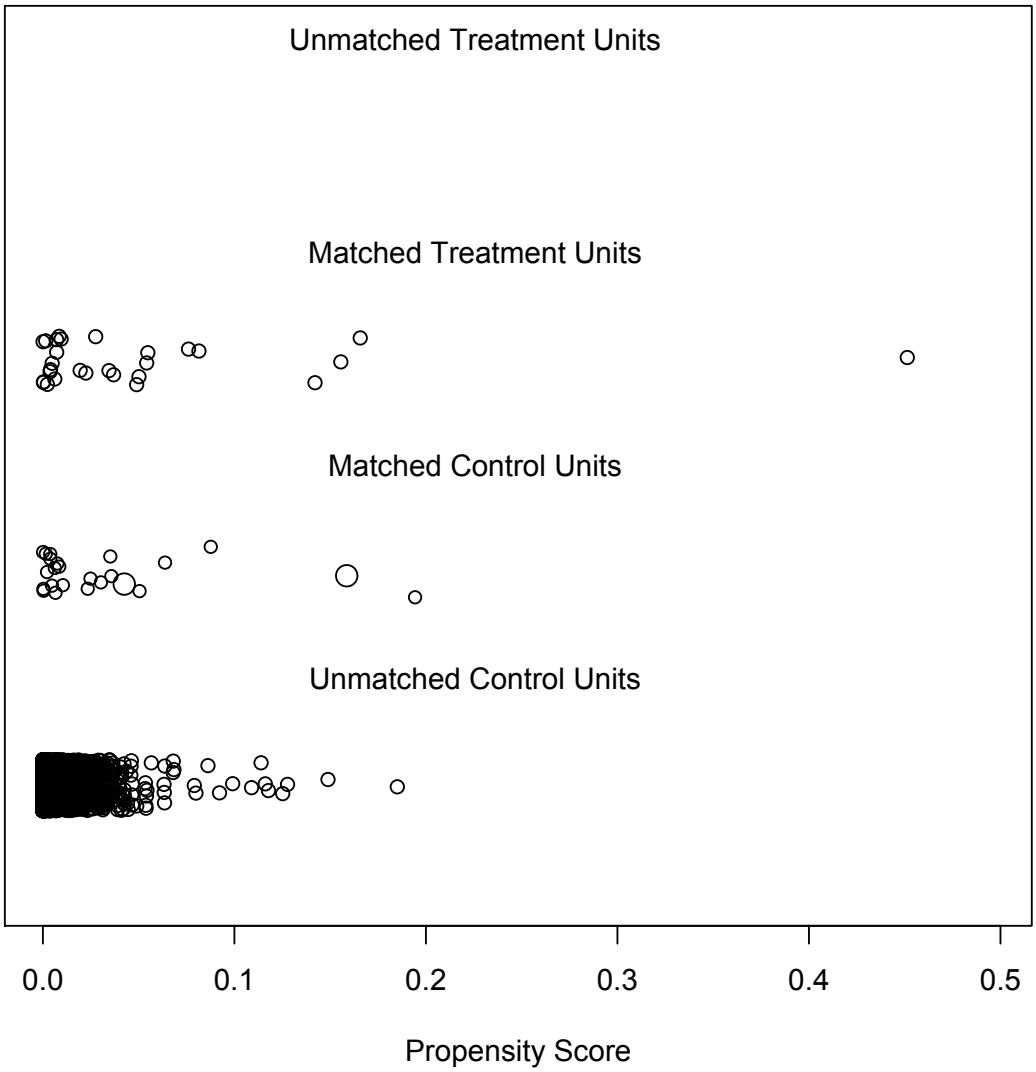

Raw Treated
Density
0
2
4
6
8
0.0
0.1
0.2
0.3
0.4
Propensity Score


Matched Treated
Density
0
2
4
6
8
0.0
0.1
0.2
0.3
0.4
Propensity Score


Raw Control
Density
0
20
40
60
80
0.0
0.1
0.2
0.3
0.4
Propensity Score


Matched Control
Density
0
5
10
15
0.0
0.1
0.2
0.3
0.4
Propensity Score

Distribution of Propensity Scores



RESTORATION FIRC, MATCHED ANALYSIS (with interwar and gdbuffer)

```
tab civwar10_2014 abdrestleadfirc, col chi2

civwar10_2 |    abdrestleadfirc
       014 |         0          1 |     Total
-----------+----------------------+----------
         0 |        20         25 |        45
           |     83.33      89.29 |     86.54
-----------+----------------------+----------
         1 |         4          3 |         7
           |     16.67      10.71 |     13.46
-----------+----------------------+----------
     Total |        24         28 |        52
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =   0.3930   Pr = 0.531

tab civwar5_2014 abdrestleadfirc, col chi2

civwar5_20 |    abdrestleadfirc
        14 |         0          1 |     Total
-----------+----------------------+----------
         0 |        21         26 |        47
           |     87.50      92.86 |     90.38
-----------+----------------------+----------
         1 |         3          2 |         5
           |     12.50       7.14 |      9.62
-----------+----------------------+----------
     Total |        24         28 |        52
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =   0.4267   Pr = 0.514

ttest civwar10_2014, by(abdrestleadfirc)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      24    .1666667    .0777087    .3806935    .0059139    .3274194
       1 |      28    .1071429    .0595238    .3149704   -.0149899    .2292756
---------+--------------------------------------------------------------------
combined |      52    .1346154    .0477933    .3446423    .0386664    .2305644
---------+--------------------------------------------------------------------
    diff |            .0595238     .096458               -.1342177    .2532653
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =   0.6171
Ho: diff = 0                                     degrees of freedom =       50

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.7300         Pr(|T| > |t|) = 0.5400          Pr(T > t) = 0.2700


ttest civwar5_2014, by(abdrestleadfirc)

Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      24        .125    .0689597     .337832   -.0176539    .2676539
       1 |      28    .0714286    .0495635    .2622653   -.0302673    .1731244
---------+--------------------------------------------------------------------
combined |      52    .0961538    .0412806    .2976783    .0132797     .179028
---------+--------------------------------------------------------------------
    diff |            .0535714    .0832866               -.1137145    .2208574
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =   0.6432
Ho: diff = 0                                     degrees of freedom =       50

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.7385         Pr(|T| > |t|) = 0.5230          Pr(T > t) = 0.2615
```

```
probit civwar10_2014 abdrestleadfirc lnpec4_fill lntpop4_banks mountainous interwar gdbuffer
cw1000ongoing2014l1 peaceyrs, robust cluster(ccode2)[4]

Iteration 0:   log pseudolikelihood =  -20.54349
Iteration 1:   log pseudolikelihood = -14.826787
Iteration 2:   log pseudolikelihood = -14.041563
Iteration 3:   log pseudolikelihood =   -14.0225
Iteration 4:   log pseudolikelihood = -14.022492
Iteration 5:   log pseudolikelihood = -14.022492

Probit regression                                 Number of obs     =         52
                                                  Wald chi2(8)      =      14.77
                                                  Prob > chi2       =     0.0638
Log pseudolikelihood = -14.022492                 Pseudo R2         =     0.3174

                                    (Std. Err. adjusted for 43 clusters in ccode2)
------------------------------------------------------------------------------
                    |               Robust
      civwar10_2014 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------------+---------------------------------------------------------------
    abdrestleadfirc |  -.7483393   .5068315    -1.48   0.140    -1.741711    .2450322
        lnpec4_fill |   .0430599   .1027936     0.42   0.675    -.1584119    .2445317
      lntpop4_banks |    .079497   .2628422     0.30   0.762    -.4356643    .5946583
        mountainous |   .3325251   .8755298     0.38   0.704    -1.383482    2.048532
           interwar |   1.757382   .6901552     2.55   0.011     .4047032    3.110062
           gdbuffer |  -2.338681   .6823067    -3.43   0.001    -3.675978   -1.001385
cw1000ongoing2014l1 |    .076263   .8490302     0.09   0.928    -1.587806    1.740332
           peaceyrs |   .0061459   .0048268     1.27   0.203    -.0033144    .0156063
              _cons |  -1.943371   1.601133    -1.21   0.225    -5.081534    1.194791
------------------------------------------------------------------------------


probit civwar5_2014 abdrestleadfirc lnpec4_fill lntpop4_banks mountainous interwar
cw1000ongoing2014l1 peaceyrs, robust cluster(ccode2)[5]

Iteration 0:   log pseudolikelihood = -16.460547
Iteration 1:   log pseudolikelihood = -13.669215
Iteration 2:   log pseudolikelihood = -13.192877
Iteration 3:   log pseudolikelihood = -13.158189
Iteration 4:   log pseudolikelihood =  -13.15815
Iteration 5:   log pseudolikelihood =  -13.15815

Probit regression                                 Number of obs     =         52
                                                  Wald chi2(7)      =       7.75
                                                  Prob > chi2       =     0.3552
Log pseudolikelihood =  -13.15815                 Pseudo R2         =     0.2006

                                    (Std. Err. adjusted for 43 clusters in ccode2)
------------------------------------------------------------------------------
                    |               Robust
       civwar5_2014 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------------+---------------------------------------------------------------
    abdrestleadfirc |  -.2673409   .3952514    -0.68   0.499    -1.042019    .5073375
        lnpec4_fill |   .1099664   .0903902     1.22   0.224    -.0671952     .287128
      lntpop4_banks |  -.0887208    .223352    -0.40   0.691    -.5264827     .349041
        mountainous |   .1352117   .7532291     0.18   0.858     -1.34109    1.611514
           interwar |   .5635163   .7053763     0.80   0.424    -.8189958    1.946028
cw1000ongoing2014l1 |  -.2108878   .9433509    -0.22   0.823    -2.059822    1.638046
           peaceyrs |  -.0277252   .0175746    -1.58   0.115    -.0621707    .0067203
              _cons |  -.5504556   1.270326    -0.43   0.665    -3.040248    1.939337
------------------------------------------------------------------------------
```

[4] Newstate and democracy omitted because they perfectly predict zero.
[5] Newstate, democracy, and gdbuffer omitted because they perfectly predict zero.