Behavioural Economics Experiment

Group 9

2025-12-09

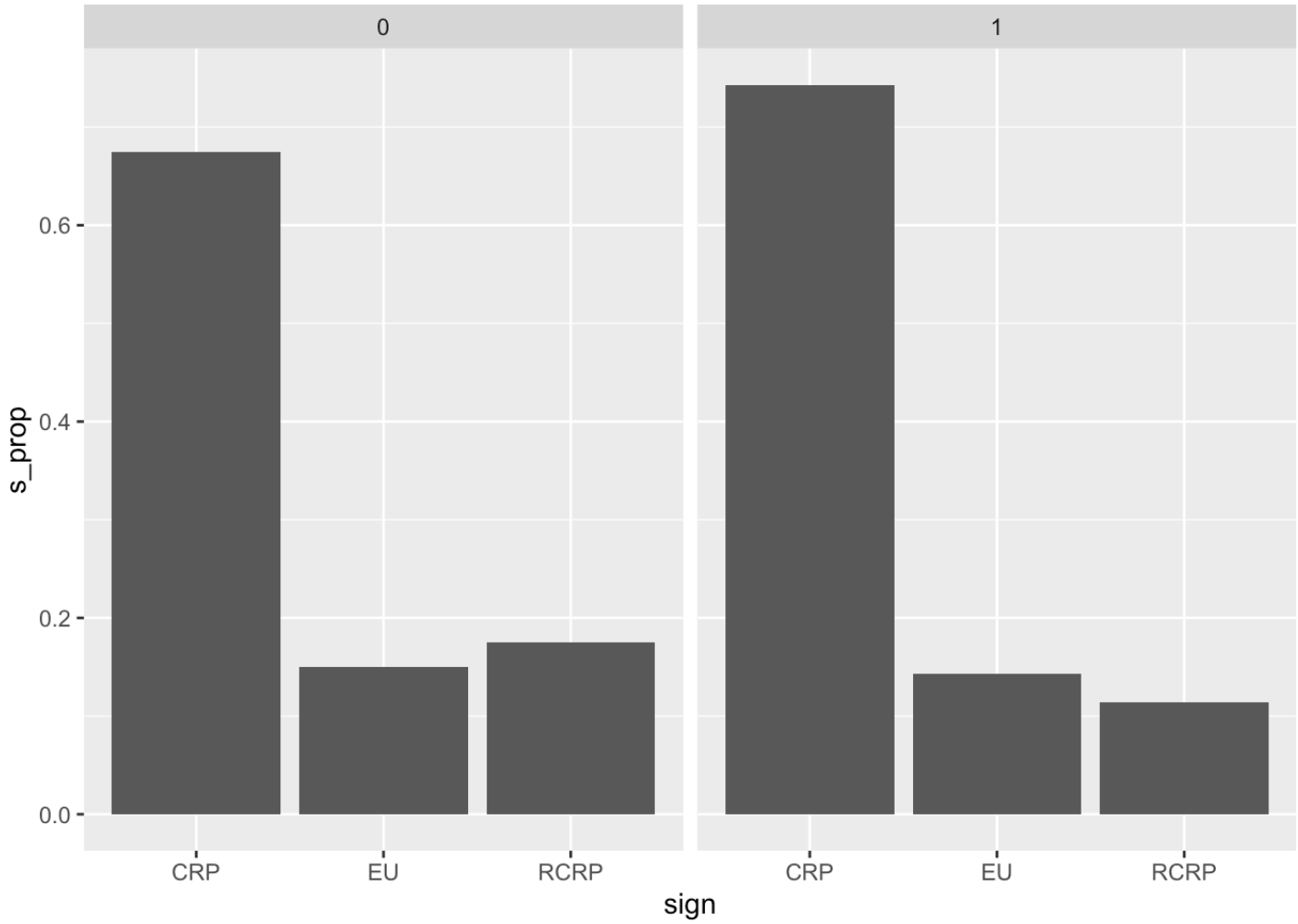
```
## # A tibble: 1 × 8
##   estimate statistic     p.value parameter conf.low conf.high method alternativ
e
##      <dbl>     <dbl>       <dbl>     <dbl>    <dbl>     <dbl> <chr>  <chr>
## 1     3.61      6.47     9.31e-9        74     2.50      4.73 One S… two.sided
```

```
## # A tibble: 2 × 2
##   treatment    p_value
##       <dbl>      <dbl>
## 1         0 0.000659
## 2         1 0.00000308
```

```
##
##  2-sample test for equality of proportions without continuity correction
##
## data:  c(12, 17) out of c(40, 35)
## X-squared = 2.7147, df = 1, p-value = 0.04971
## alternative hypothesis: less
## 95 percent confidence interval:
##  -1.000000000 -0.002646982
## sample estimates:
##    prop 1    prop 2
## 0.3000000 0.4857143
```

```
##
## Call:
## lm_robust(formula = d_m ~ treatment, data = dat, se_type = "HC3")
##
## Standard error type:  HC3
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|) CI Lower CI Upper DF
## (Intercept)    2.650     0.7248   3.656  0.00048   1.2054    4.095 73
## treatment      2.064     1.1232   1.838  0.07016  -0.1743    4.303 73
##
## Multiple R-squared:  0.04598 ,   Adjusted R-squared:  0.03292
## F-statistic: 3.378 on 1 and 73 DF,  p-value: 0.07016
```

```
##             Estimate Std. Error  t value     Pr(>|t|)   CI Lower CI Upper DF
## (Intercept) 2.650000  0.7248297 3.656031 0.0004800253  1.2054166 4.094583 73
## treatment   2.064286  1.1232367 1.837801 0.0701606940 -0.1743219 4.302893 73
```




```
## # A tibble: 2 × 4
##   treatment n_pos     n   p_value
##       <dbl> <int> <int>     <dbl>
## 1         0    27    34 0.000821
## 2         1    26    30 0.0000595
```

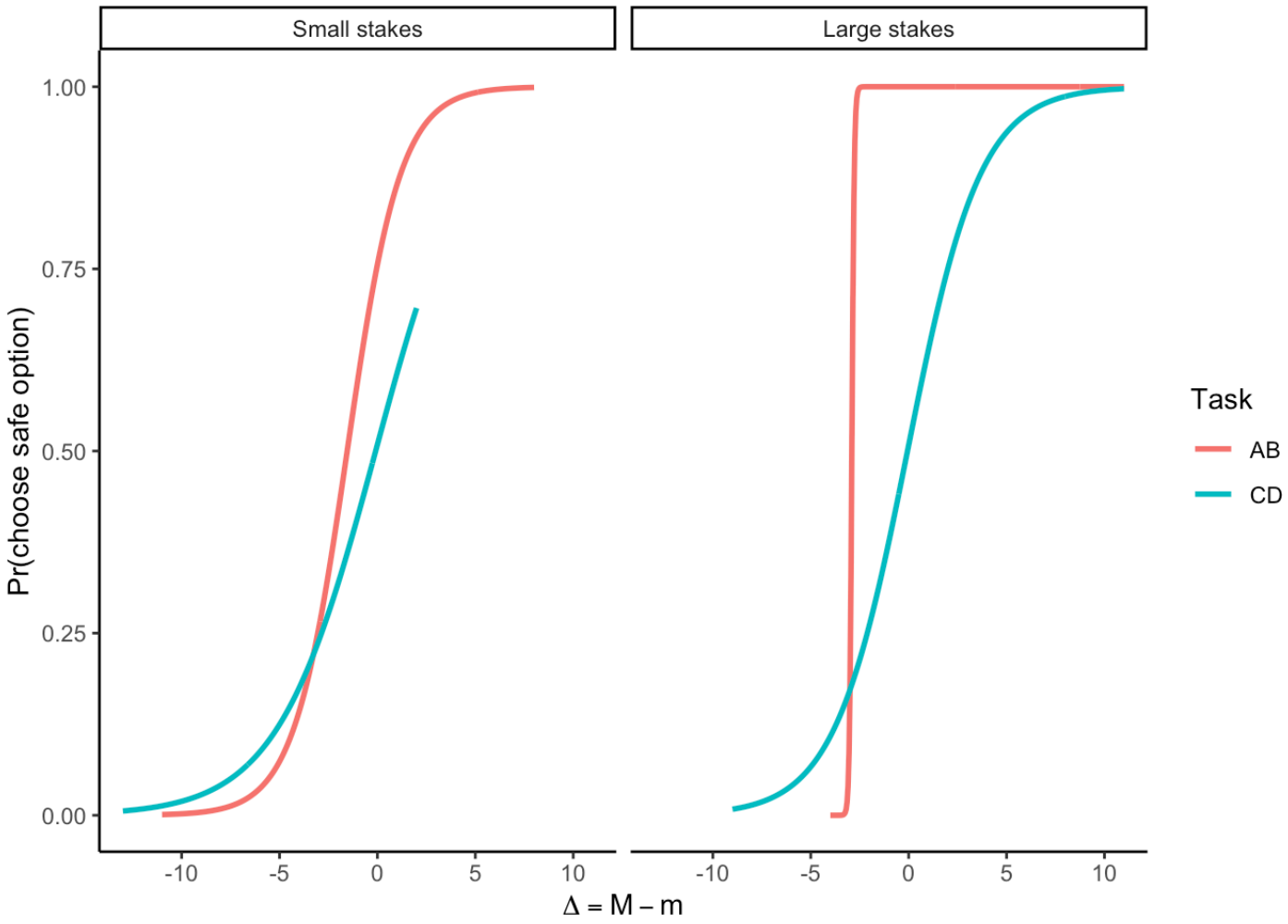
```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  x and y
## W = 526.5, p-value = 0.03248
## alternative hypothesis: true location shift is less than 0
## 95 percent confidence interval:
##          -Inf -1.704893e-05
## sample estimates:
## difference in location
##              -2.000009
```

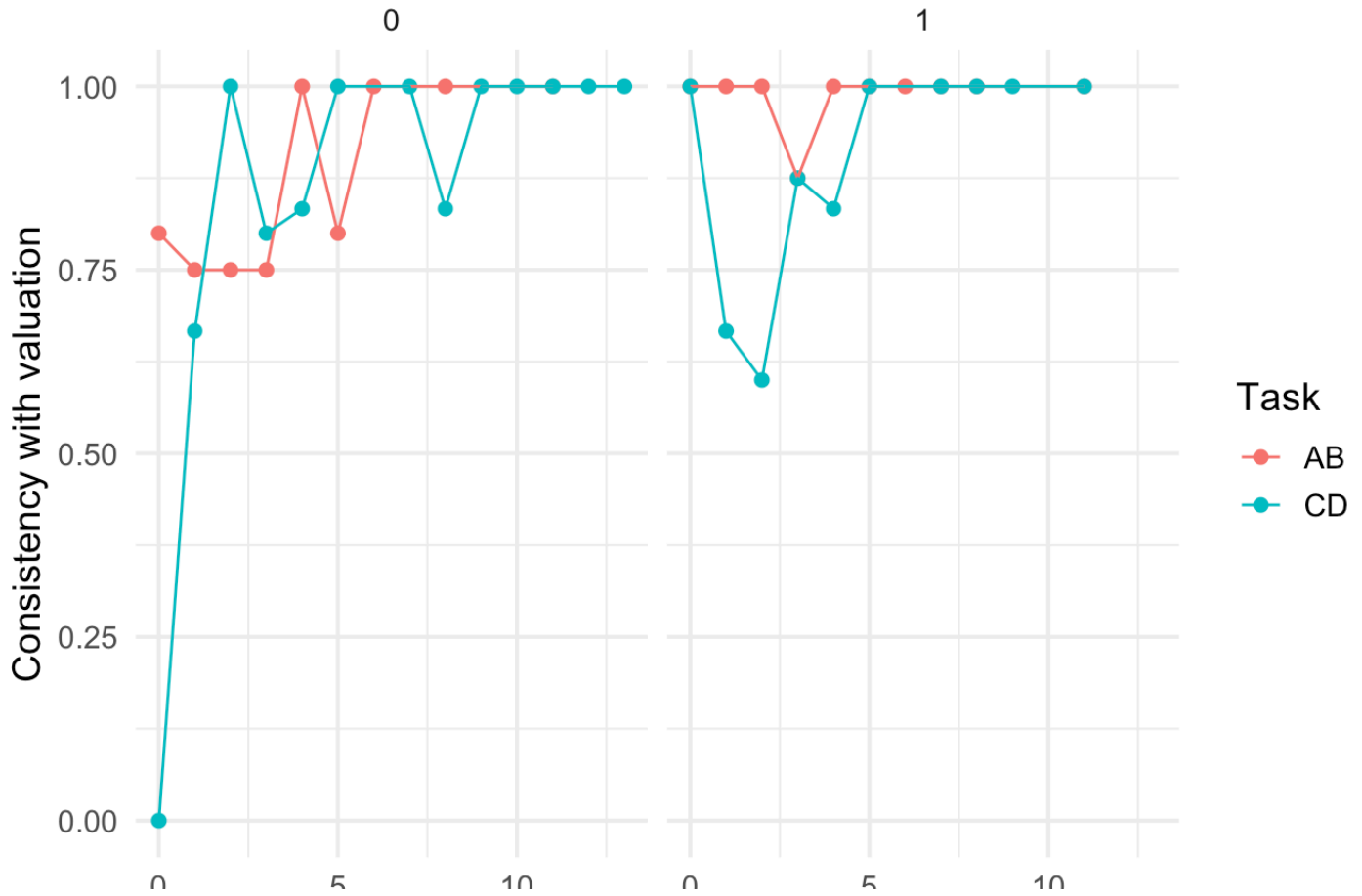
```
## # A tibble: 2 × 5
##   term        estimate std.error statistic p.value
##   <chr>          <dbl>     <dbl>     <dbl>   <dbl>
## 1 (Intercept)    1.13      0.674      1.68 0.0937
## 2 dist_AB        0.732     0.245      2.98 0.00286
```

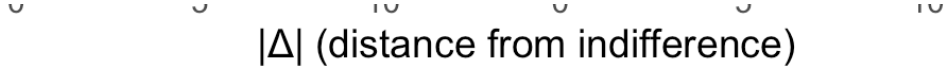
```
## # A tibble: 2 × 5
##   term        estimate std.error statistic p.value
##   <chr>          <dbl>     <dbl>     <dbl>   <dbl>
## 1 (Intercept)   0.0358     0.629    0.0570  0.955
## 2 dist_CD       0.397      0.167    2.38    0.0175
```

```
## # A tibble: 2 × 5
##   term        estimate std.error statistic p.value
##   <chr>          <dbl>     <dbl>     <dbl>   <dbl>
## 1 (Intercept)     47.5    14567.   0.00326   0.997
## 2 dist_AB         16.4     4856.   0.00337   0.997
```

```
## # A tibble: 2 × 5
##   term        estimate std.error statistic p.value
##   <chr>          <dbl>     <dbl>     <dbl>   <dbl>
## 1 (Intercept)   0.0324     0.527    0.0615 0.951
## 2 dist_CD       0.535      0.174    3.07   0.00214
```


Small stakes
Large stakes
1.00
0.75
0.50
0.25
0.00
Pr(choose safe option)
-10
-5
0
5
10
Δ = M – m
Task
AB
CD

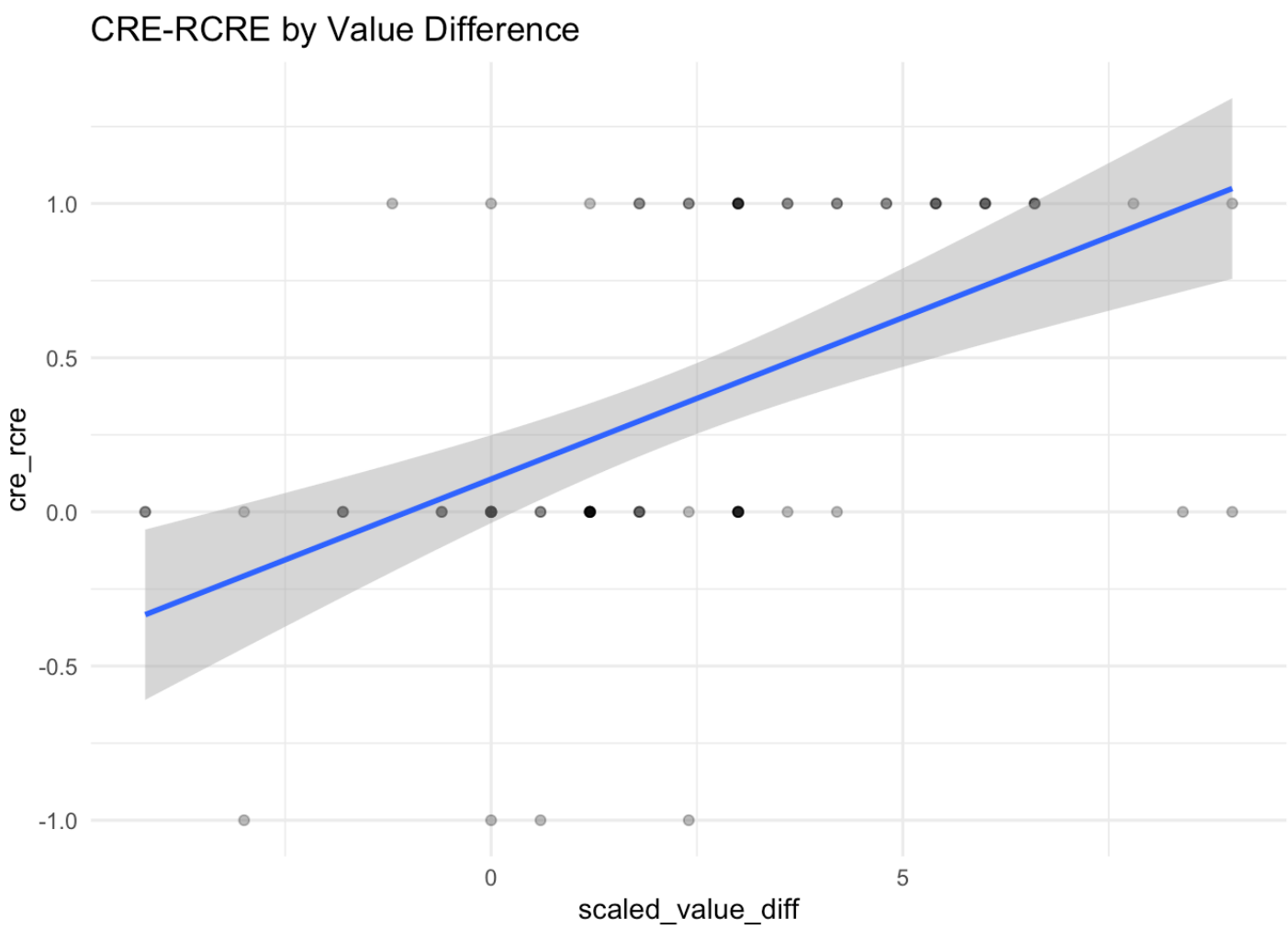

0
1
1.00
0.75
0.50
0.25
0.00
Consistency with valuation
0
5
10
Task
AB
CD

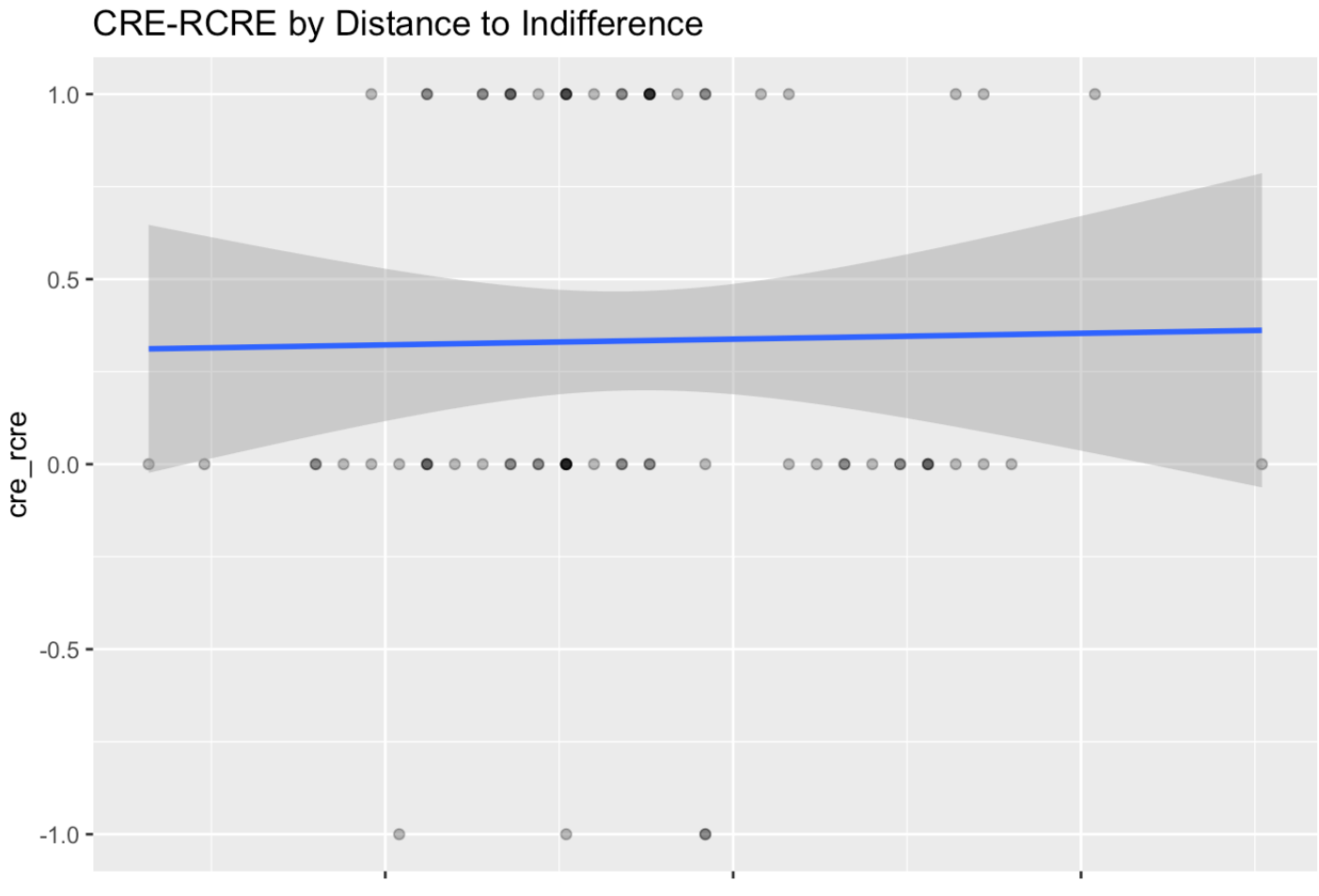


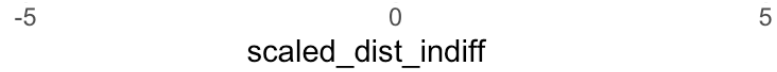

```
##
## Call:
## glm(formula = cons_AB ~ treatment, family = binomial(link = "probit"),
##     data = dat)
##
## Coefficients:
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept)   0.5978     0.2116   2.825  0.00473 **
## treatment     0.6063     0.3496   1.734  0.08287 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 75.06  on 74  degrees of freedom
## Residual deviance: 71.93  on 73  degrees of freedom
## AIC: 75.93
##
## Number of Fisher Scoring iterations: 4
```


```
##
## Call:
## glm(formula = cons_AB ~ treatment, family = binomial(link = "probit"),
##     data = dat)
##
## Coefficients:
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept)   0.5978     0.2116   2.825  0.00473 **
## treatment     0.6063     0.3496   1.734  0.08287 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 75.06  on 74  degrees of freedom
## Residual deviance: 71.93  on 73  degrees of freedom
## AIC: 75.93
##
## Number of Fisher Scoring iterations: 4
```

```
## OLS estimation, Dep. Var.: cre_rcre
## Observations: 75
## Fixed-effects: treatment: 2
## Standard-errors: Heteroskedasticity-robust
##                     Estimate Std. Error   t value   Pr(>|t|)
## scaled_value_diff   0.096968   0.020522  4.725062 0.00001129 ***
## scaled_dist_indiff -0.016075   0.020733 -0.775322 0.44072438
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## RMSE: 0.479361     Adj. R2: 0.271802
##                  Within R2: 0.25532
```


CRE-RCRE by Value Difference
cre_rcre
1.0
0.5
0.0
-0.5
-1.0
0
5
scaled_value_diff

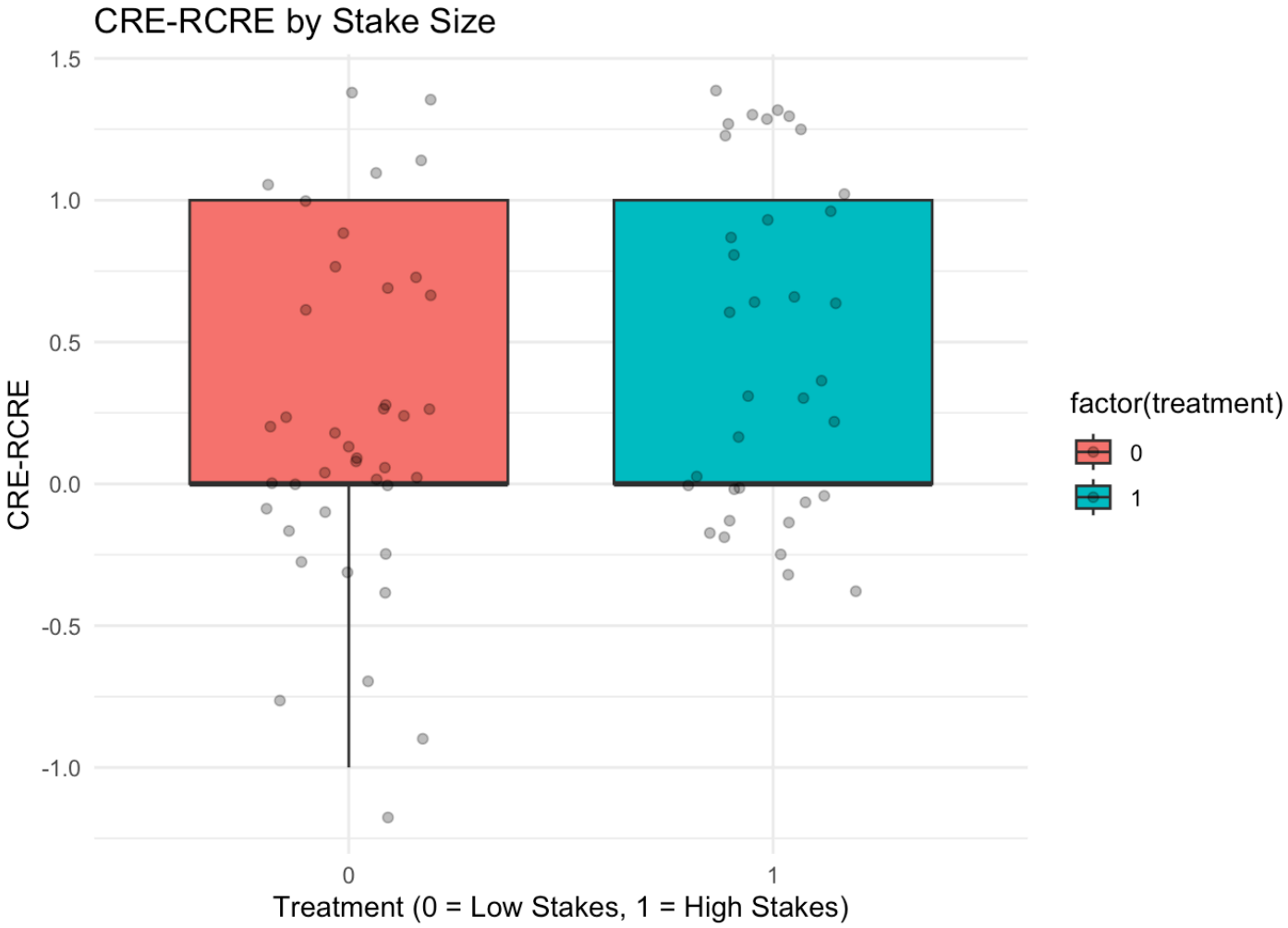

CRE-RCRE by Distance to Indifference
cre_rcre
1.0
0.5
0.0
-0.5
-1.0




```
##
## Call:
## lm(formula = cre_rcre ~ scaled_value_diff + scaled_dist_indiff +
##     factor(treatment), data = dat)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.30909 -0.28090 -0.05064  0.33987  1.06572
##
## Coefficients:
##                      Estimate Std. Error t value Pr(>|t|)
## (Intercept)        -0.0007967  0.1035346  -0.008    0.994
## scaled_value_diff   0.0969680  0.0203407   4.767 9.64e-06 ***
## scaled_dist_indiff -0.0160750  0.0219875  -0.731    0.467
## factor(treatment)1  0.2146184  0.1360462   1.578    0.119
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.4927 on 71 degrees of freedom
## Multiple R-squared:  0.3013, Adjusted R-squared:  0.2718
## F-statistic: 10.21 on 3 and 71 DF,  p-value: 1.139e-05
```

```
##
## Call:
## lm(formula = cre_rcre ~ scaled_value_diff * factor(treatment) +
##     scaled_dist_indiff, data = dat)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.32209 -0.29757 -0.01468  0.37077  1.10537
##
## Coefficients:
##                                      Estimate Std. Error t value Pr(>|t|)
## (Intercept)                          -0.02570    0.11009  -0.233 0.816089
## scaled_value_diff                     0.11126    0.02918   3.813 0.000293 ***
## factor(treatment)1                    0.27802    0.16493   1.686 0.096311 .
## scaled_dist_indiff                   -0.01683    0.02210  -0.761 0.448951
## scaled_value_diff:factor(treatment)1 -0.02786    0.04065  -0.685 0.495294
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.4945 on 70 degrees of freedom
## Multiple R-squared:  0.306,  Adjusted R-squared:  0.2663
## F-statistic: 7.716 on 4 and 70 DF,  p-value: 3.285e-05
```

```
##
##  Welch Two Sample t-test
##
## data:  cre_rcre by treatment
## t = -2.2191, df = 72.851, p-value = 0.0296
## alternative hypothesis: true difference in means between group 0 and group 1 is
not equal to 0
## 95 percent confidence interval:
##  -0.54233038 -0.02909819
## sample estimates:
## mean in group 0 mean in group 1
##       0.2000000       0.4857143
```

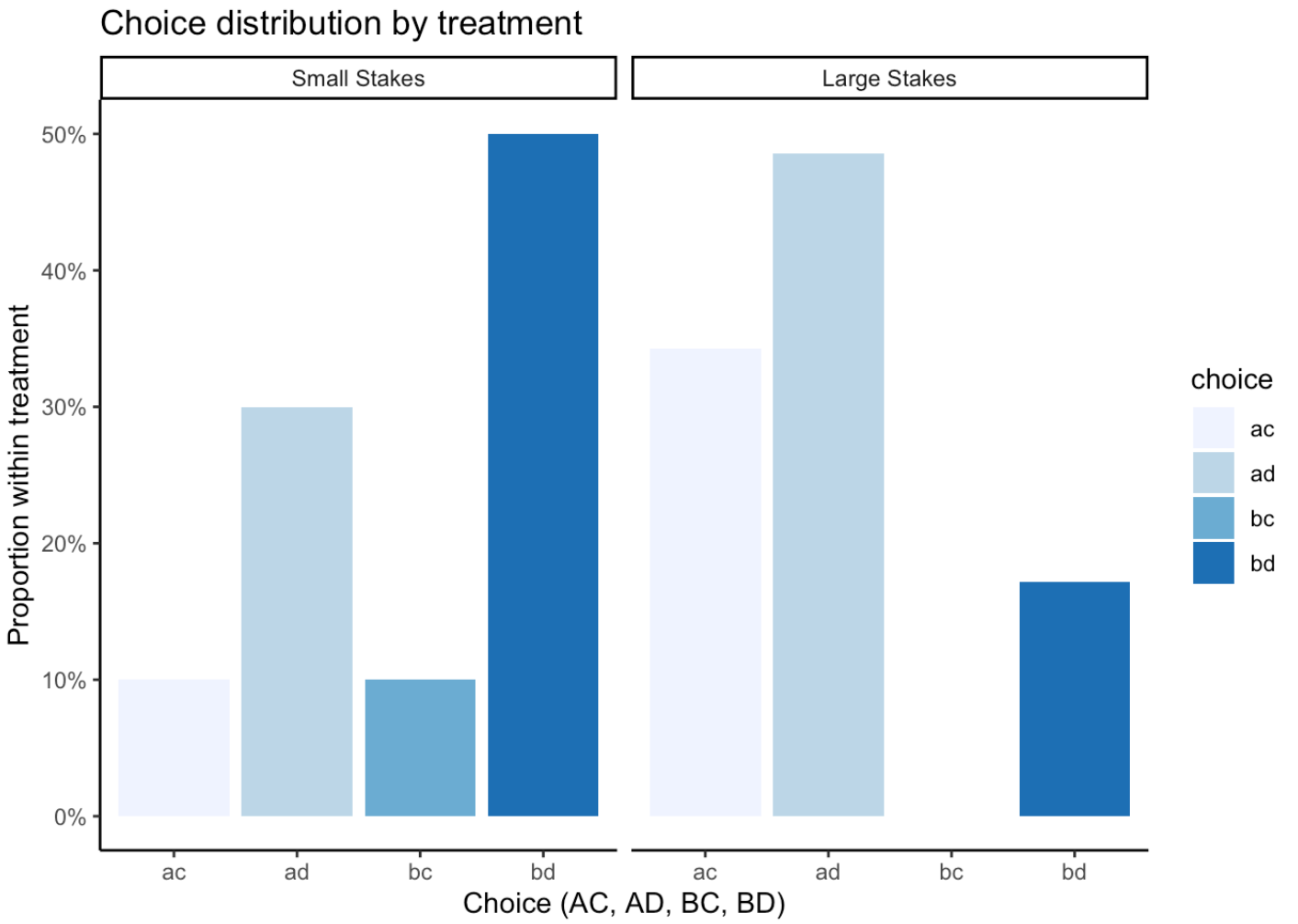


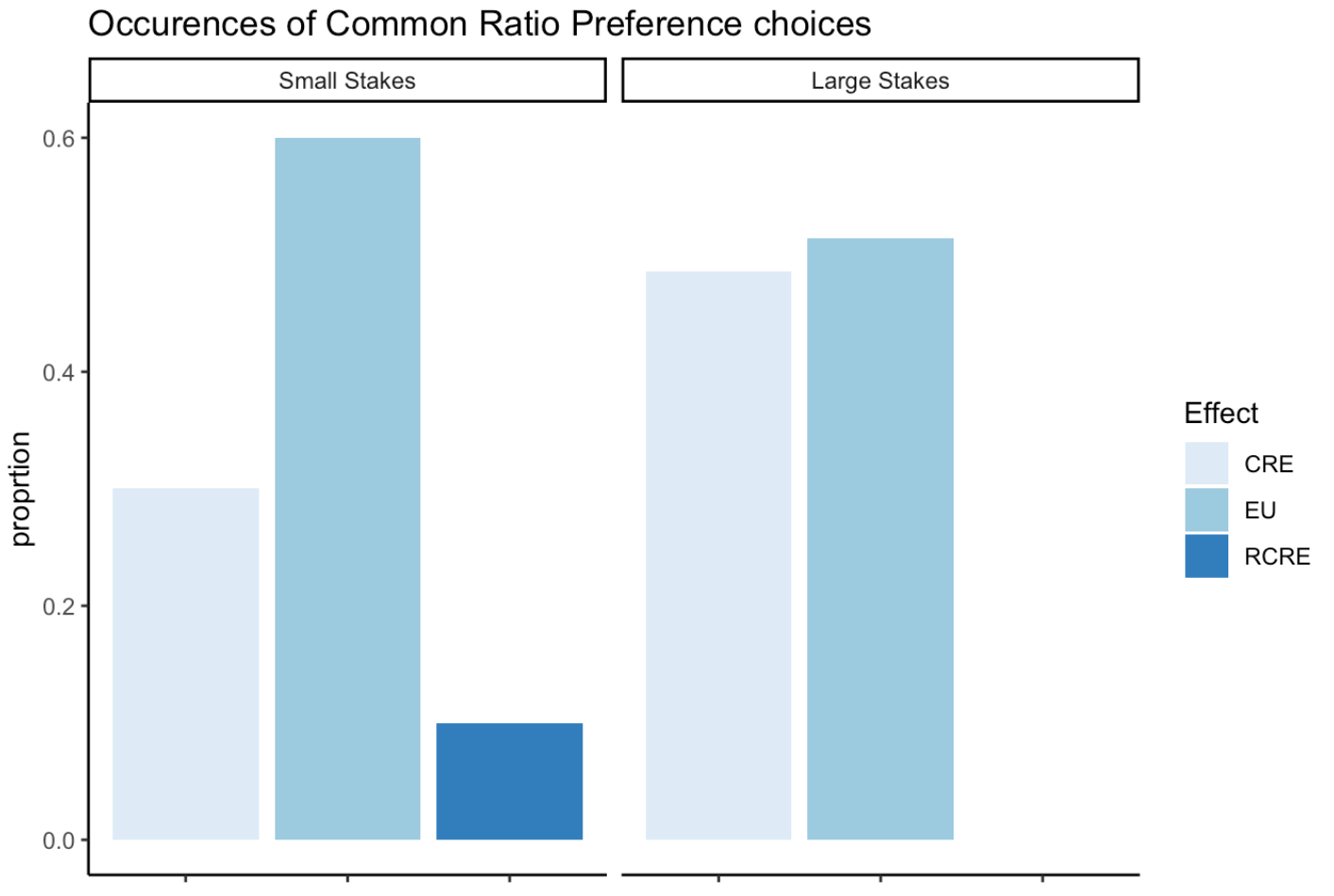
```
##
## Call:
## glm(formula = y_AB ~ dist_AB * factor(treatment), family = binomial(link = "log
it"),
##     data = dat)
##
## Coefficients:
##                              Estimate Std. Error z value Pr(>|z|)
## (Intercept)                    1.1303     0.6743   1.676  0.09367 .
## dist_AB                        0.7318     0.2454   2.982  0.00286 **
## factor(treatment)1            43.3593  8835.2611   0.005  0.99608
## dist_AB:factor(treatment)1    14.6345  2945.0869   0.005  0.99604
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 100.952  on 74  degrees of freedom
## Residual deviance:  38.878  on 71  degrees of freedom
## AIC: 46.878
##
## Number of Fisher Scoring iterations: 22
```

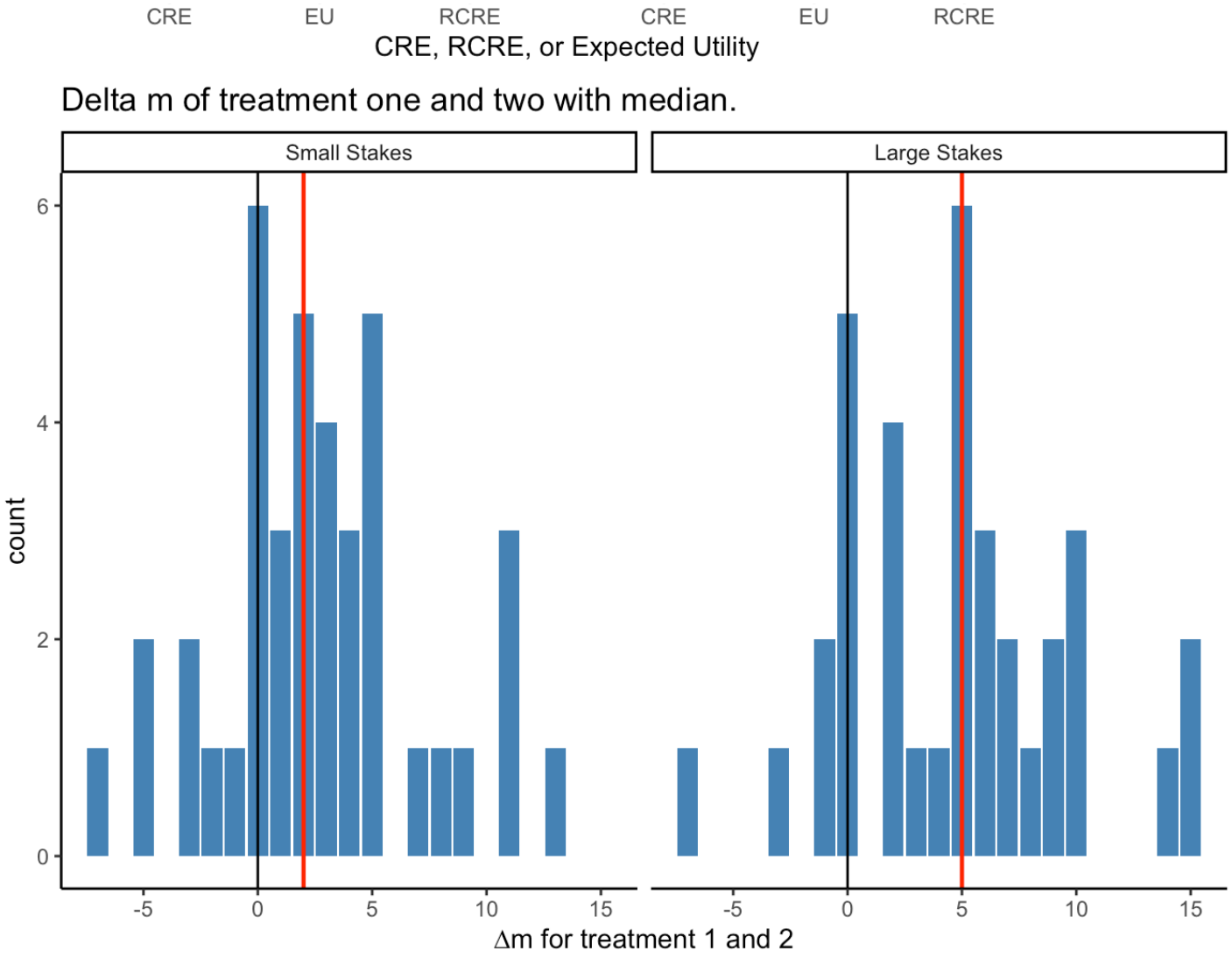
```
##
## Call:
## glm(formula = y_CD ~ dist_CD * factor(treatment), family = binomial(link = "log
it"),
##     data = dat)
##
## Coefficients:
##                              Estimate Std. Error z value Pr(>|z|)
## (Intercept)                  0.035810   0.628609   0.057   0.9546
## dist_CD                      0.397078   0.167169   2.375   0.0175 *
## factor(treatment)1          -0.003364   0.820450  -0.004   0.9967
## dist_CD:factor(treatment)1   0.137509   0.241370   0.570   0.5689
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 86.987  on 74  degrees of freedom
## Residual deviance: 56.143  on 71  degrees of freedom
## AIC: 64.143
##
## Number of Fisher Scoring iterations: 5
```

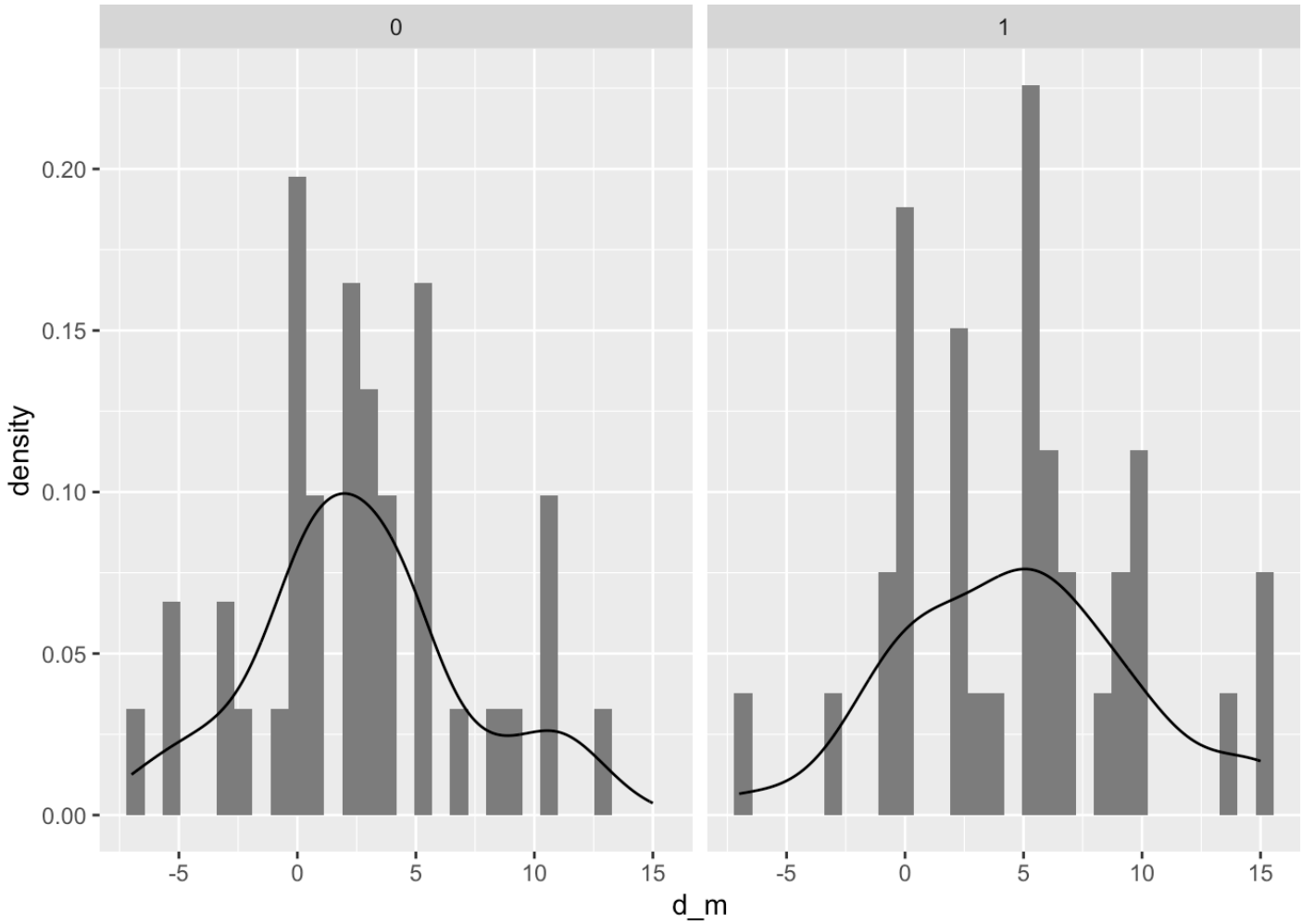
```
## # A tibble: 7 × 4
##   treatment choice     n  freq
##       <dbl> <chr>  <int> <dbl>
## 1         0 ac         4 0.1
## 2         0 ad        12 0.3
## 3         0 bc         4 0.1
## 4         0 bd        20 0.5
## 5         1 ac        12 0.343
## 6         1 ad        17 0.486
## 7         1 bd         6 0.171
```

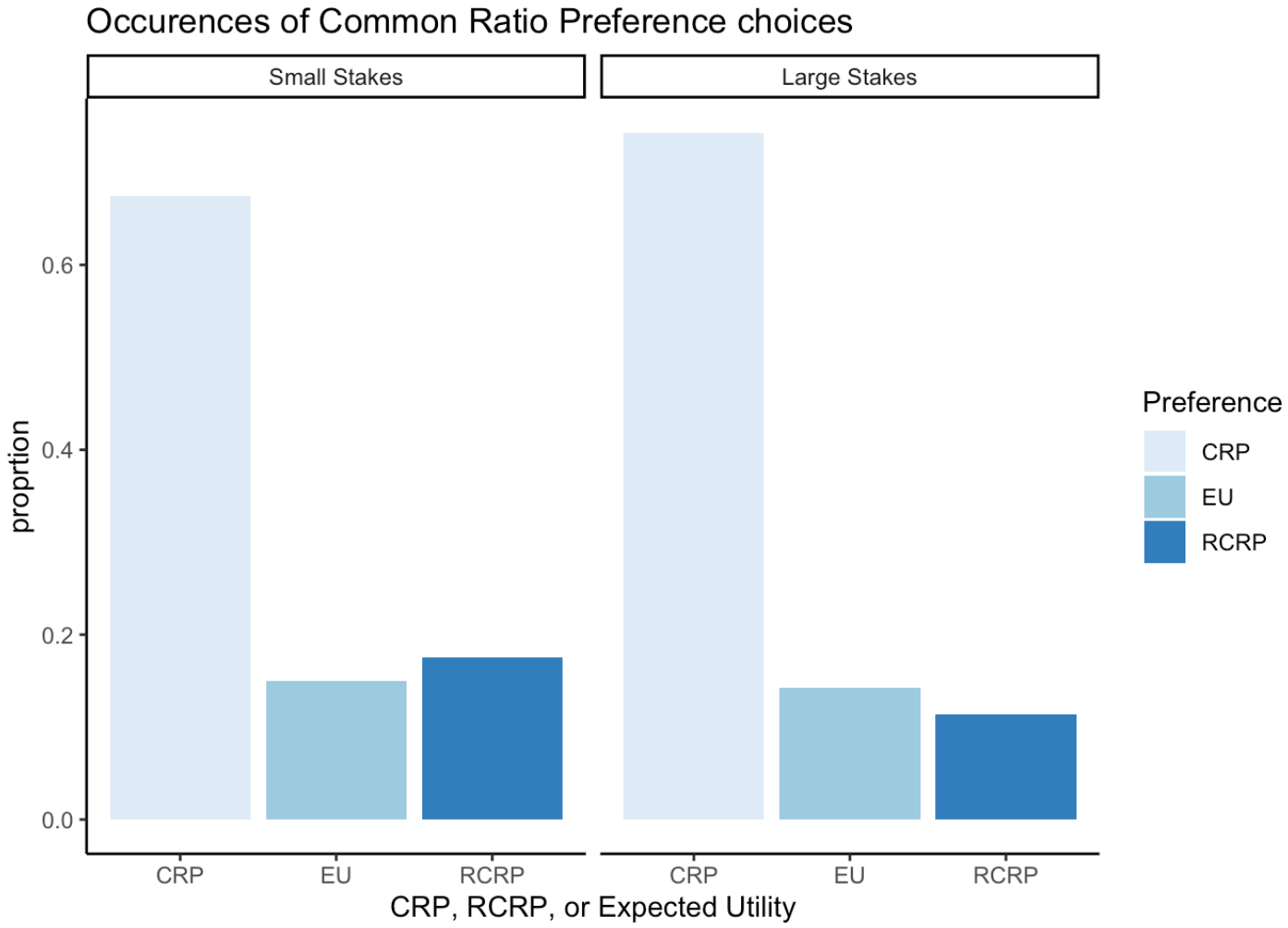
```
## # A tibble: 2 × 2
##   treatment   med
##       <dbl> <dbl>
## 1         0     2
## 2         1     5
```


Choice distribution by treatment
Small Stakes
Large Stakes
50%
40%
30%
20%
10%
0%
Proportion within treatment
ac
ad
bc
bd
Choice (AC, AD, BC, BD)
choice
ac
ad
bc
bd


Occurences of Common Ratio Preference choices
Small Stakes
Large Stakes
0.6
0.4
0.2
0.0
proprtion
Effect
CRE
EU
RCRE


CRE
EU
RCRE
CRE
EU
RCRE
CRE, RCRE, or Expected Utility
Delta m of treatment one and two with median.
Small Stakes
Large Stakes
count
0
2
4
6
-5
0
5
10
15
Δm for treatment 1 and 2


0
1
density
0.20
0.15
0.10
0.05
0.00
-5
0
5
10
15
d_m


Occurences of Common Ratio Preference choices
Small Stakes
Large Stakes
proprtion
0.0
0.2
0.4
0.6
CRP
EU
RCRP
CRP
EU
RCRP
CRP, RCRP, or Expected Utility
Preference
CRP
EU
RCRP

```
```