

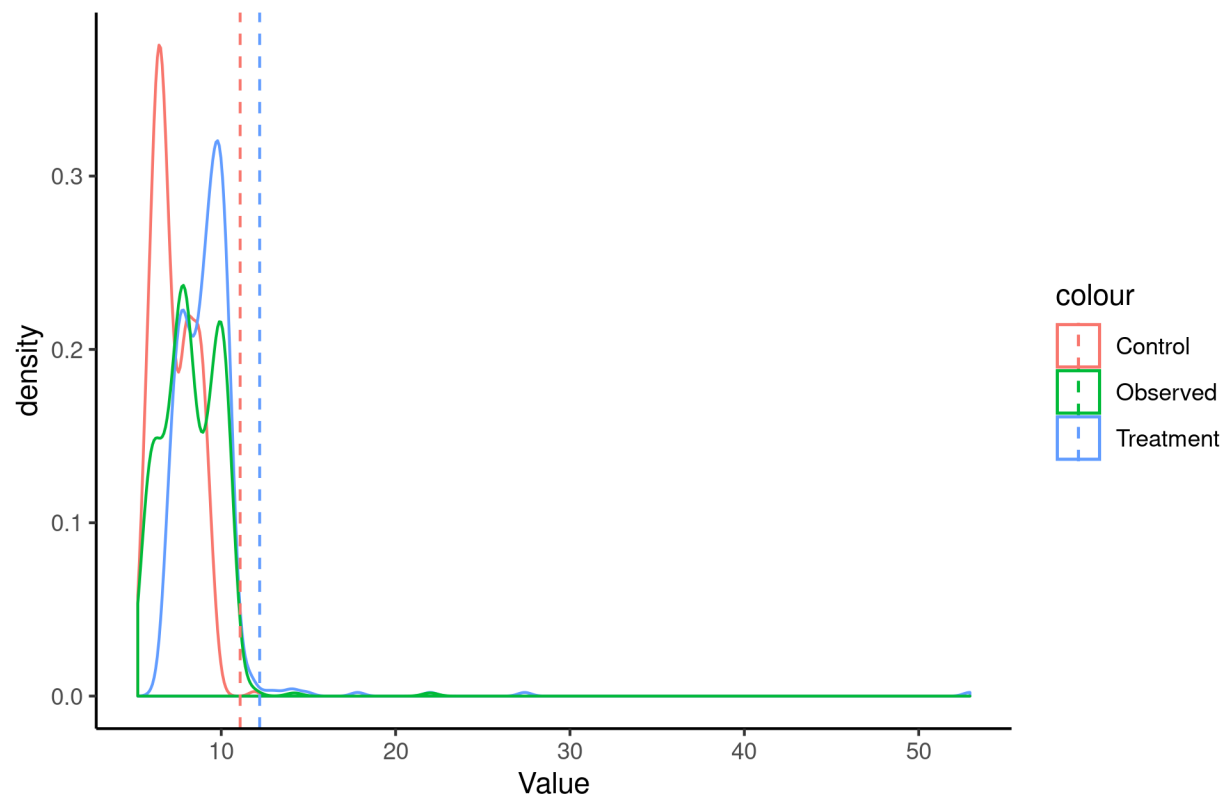
Mixture Model Quantile treatment effect

Arnab Aich

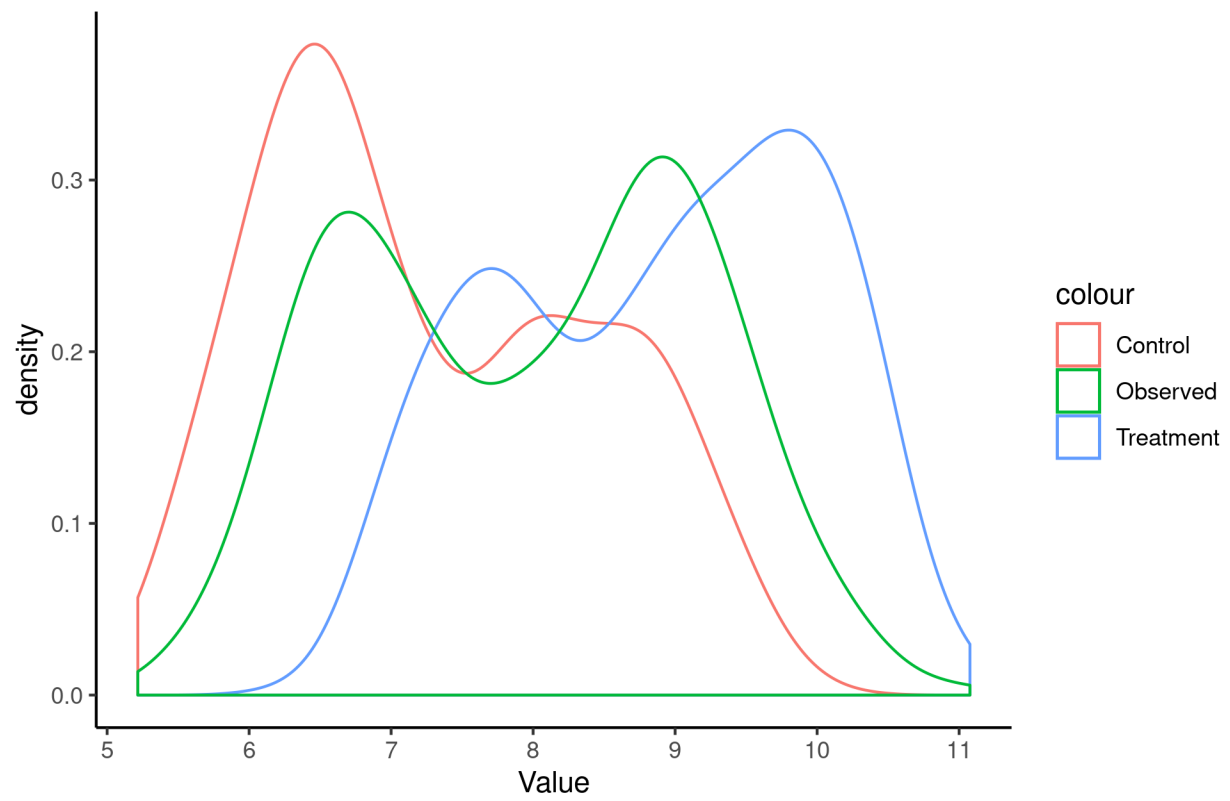
2023-10-01

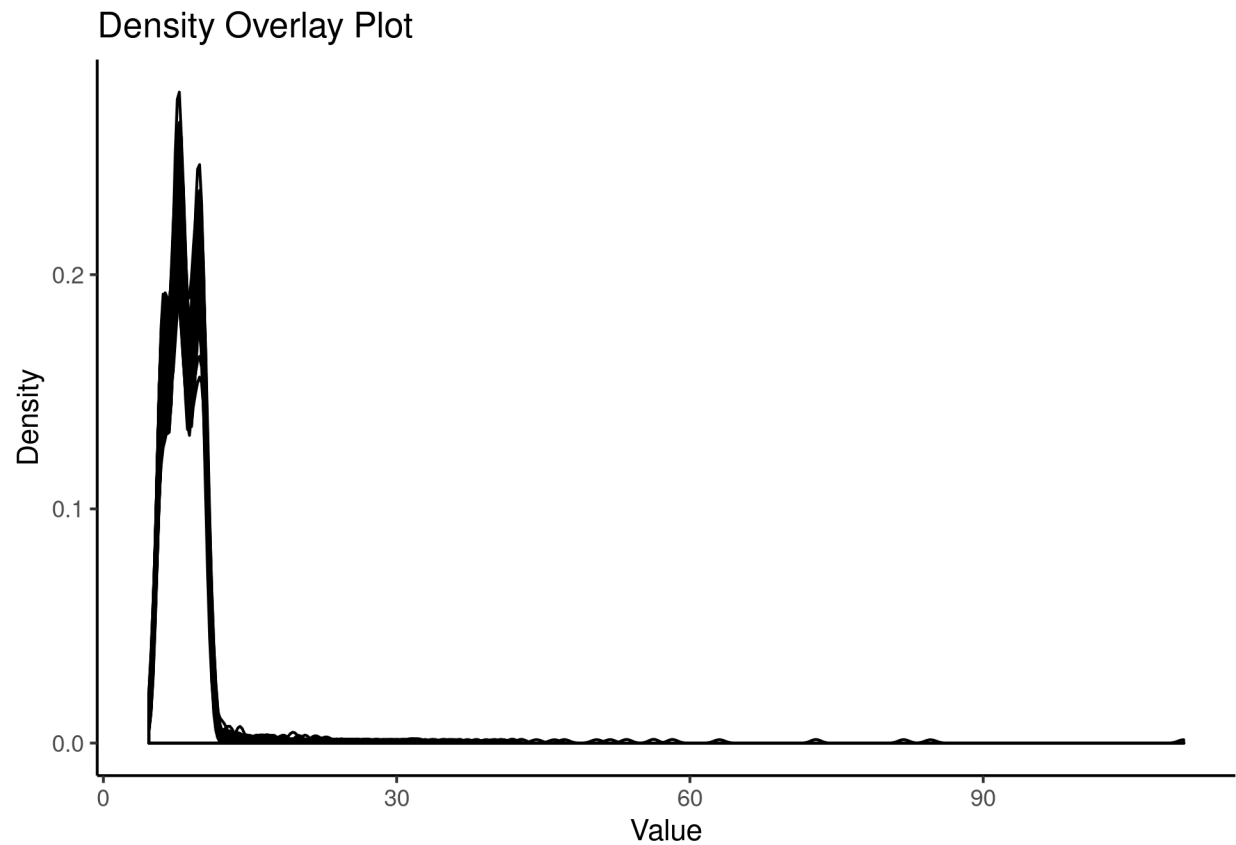
```
# ,cache = TRUE
```

Density Plots with Extreme Values



Density Plots without Extreme Values





```
Final$Treatment$Mean_Int_Sq_error
```

```
[1] 0.01439636
```

```
Final$Treatment$estimated
```

```
$alpha
```

```
[1] 1.457684
```

```
$weights
```

```
[1] 0.581764 0.418236
```

```
$mu
```

```
[1] 9.792298 7.742443
```

```
$eta
```

```
[1] 0.274892 0.330992
```

```
Final$Treatment$True
```

```
$weights
```

```
[1] 0.65 0.35
```

```
$mu
```

```
[1] 9.595473 7.547737
```

```
$eta
```

```
[1] 0.4 0.4
```

```
$u
```

```
u1
```

```
12.2035
```

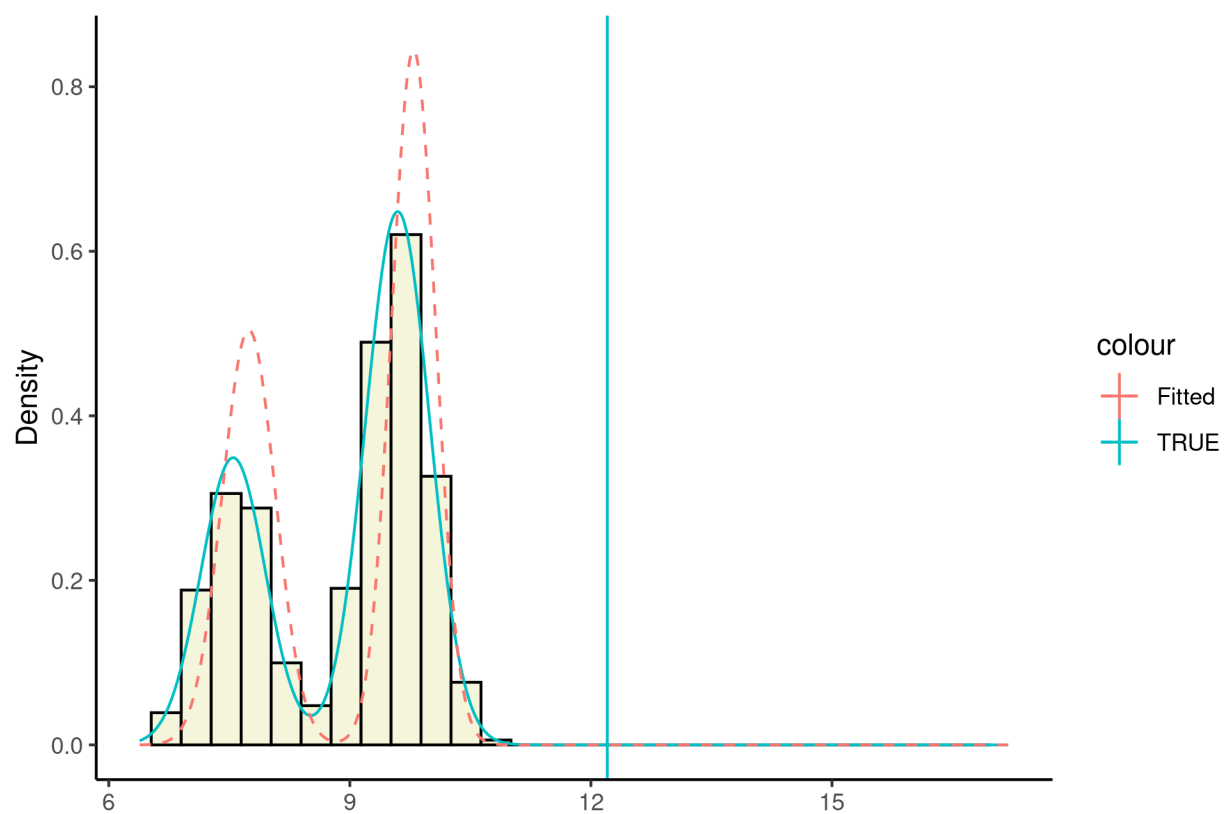
```
$sigma
```

```
[1] 4
```

```
$xi
```

```
[1] 0.3
```

```
Final$Treatment$True_vs_Fitted
```



```
Final$Treatment$used_iteration
```

```
[1] 250
```

```
Final$Control$Mean_Int_Sq_error
```

```
[1] 0.08659151
```

```
Final$Control$Estimated
```

```
$alpha
```

```
[1] 1.246292
```

```
$weights
```

```
[1] 0.51742 0.48258
```

```
$mu
```

```
[1] 6.393487 7.757667
```

```
$eta
```

```
[1] 0.188852 0.243924
```

```
Final$Control$True
```

```
$weights
```

```
[1] 0.55 0.45
```

```
$mu
```

```
[1] 6.321605 8.369341
```

```
$eta
```

```
[1] 0.3 0.3
```

```
$u
```

```
      u0  
11.08416
```

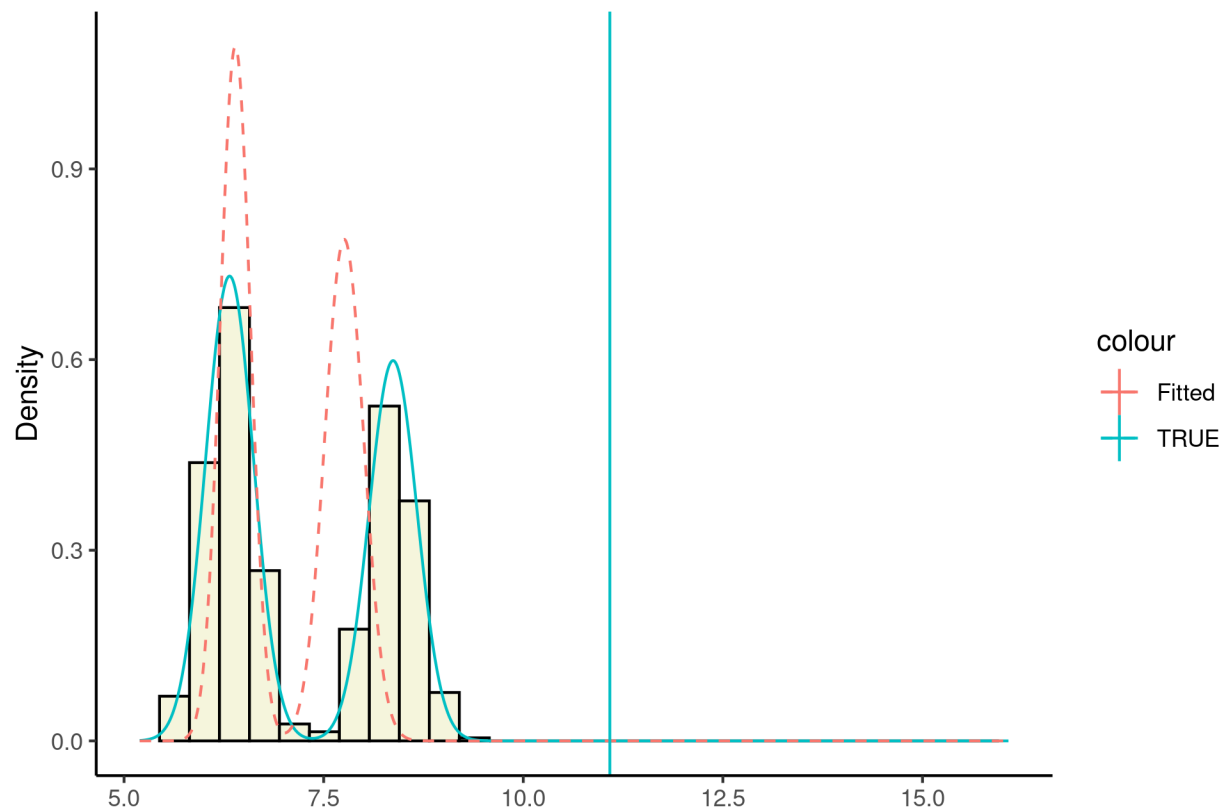
```
$sigma
```

```
[1] 3
```

```
$xi
```

```
[1] 0.4
```

```
Final$Control$True_vs_Fitted
```



```
Final$Control$used_iteration
```

```
[1] 250
```

```
[[1]]
```

	True	Estimated	Bias
Treated	6.773863	5.9670042	0.80685927
Control	5.691112	5.6599339	0.03117852
Treatment Effect	1.082751	0.3070703	0.77568074

```
[[2]]
```

	True	Estimated	Bias
Treated	7.113162	7.233612	-0.12044995
Control	5.926823	5.848310	0.07851325
Treatment Effect	1.186339	1.385302	-0.19896319

```
[[3]]
```

	True	Estimated	Bias
Treated	9.297995	9.584065	-0.2860705
Control	6.703454	6.550580	0.1528731
Treatment Effect	2.594541	3.033485	-0.4389436

```
[[4]]
```

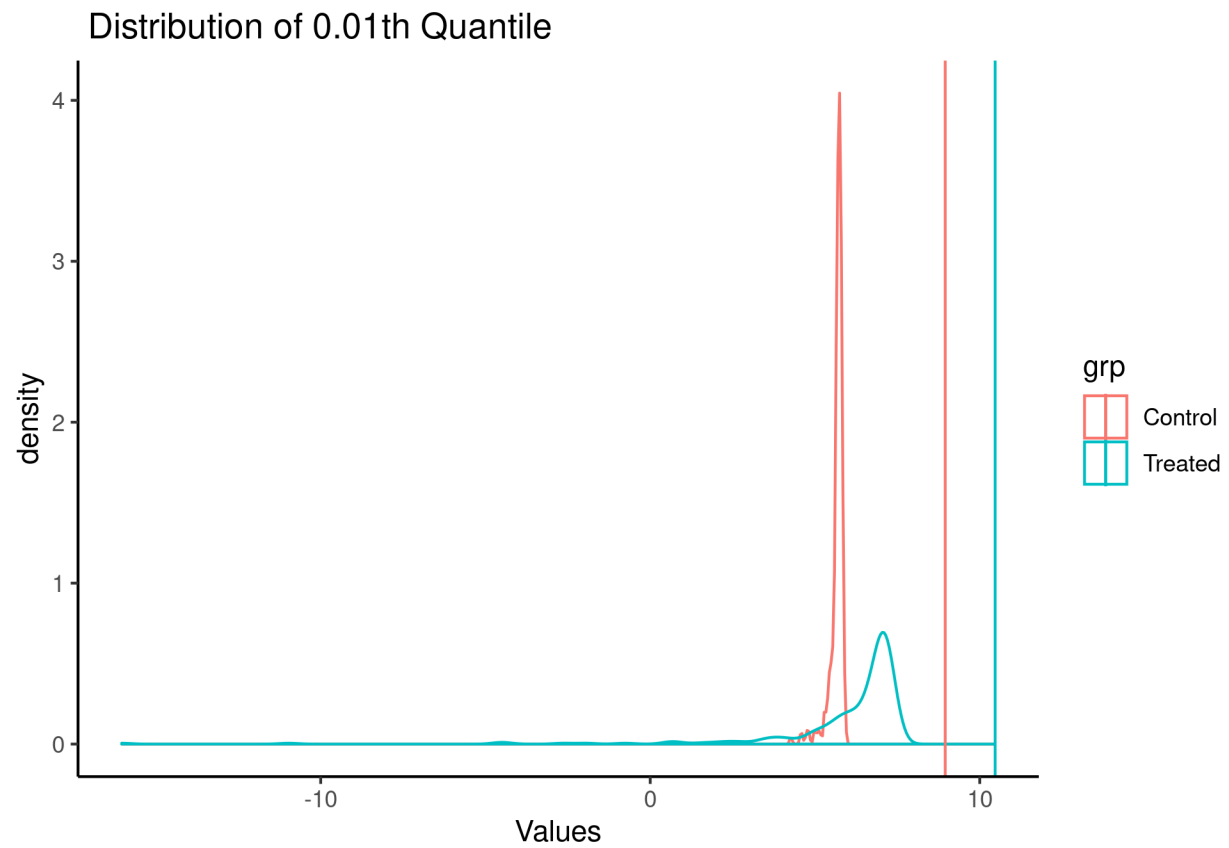
	True	Estimated	Bias
Treated	10.169067	10.288799	-0.1197324

Control	8.717604	8.350278	0.3673260
Treatment Effect	1.451463	1.938521	-0.4870584

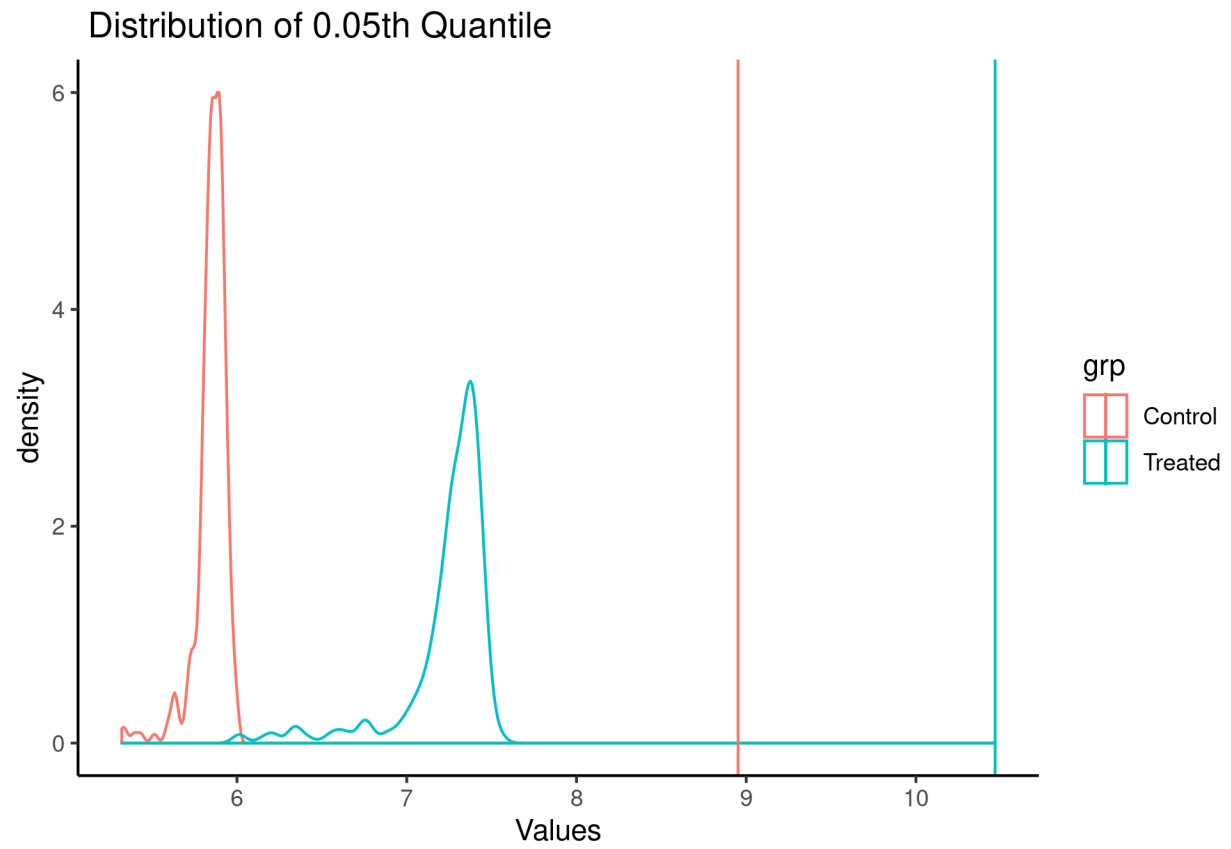
[[5]]

	True	Estimated	Bias
Treated	10.466656	11.490140	-1.0234844
Control	8.952089	8.615428	0.3366616
Treatment Effect	1.514567	2.874713	-1.3601460

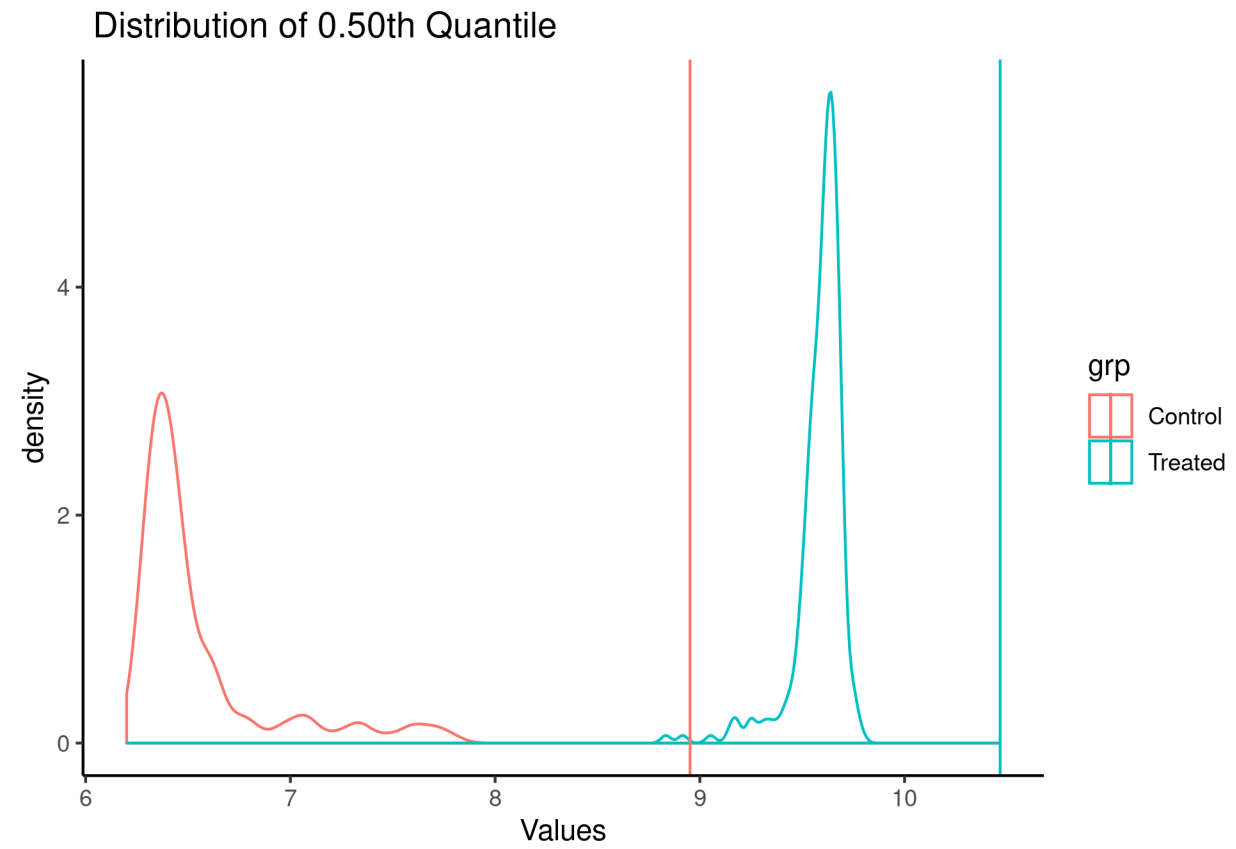
[[1]]



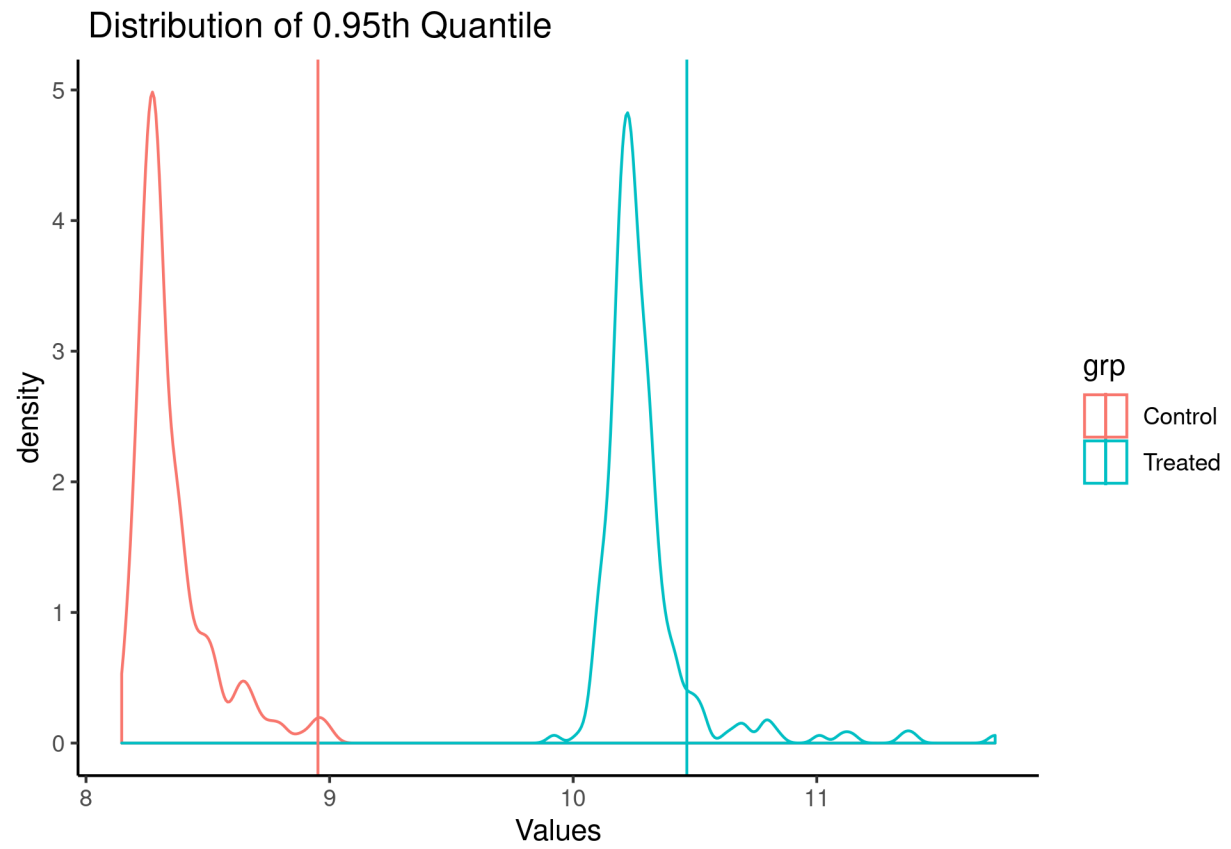
[[2]]



[[3]]



[[4]]



[[5]]

