SimResult

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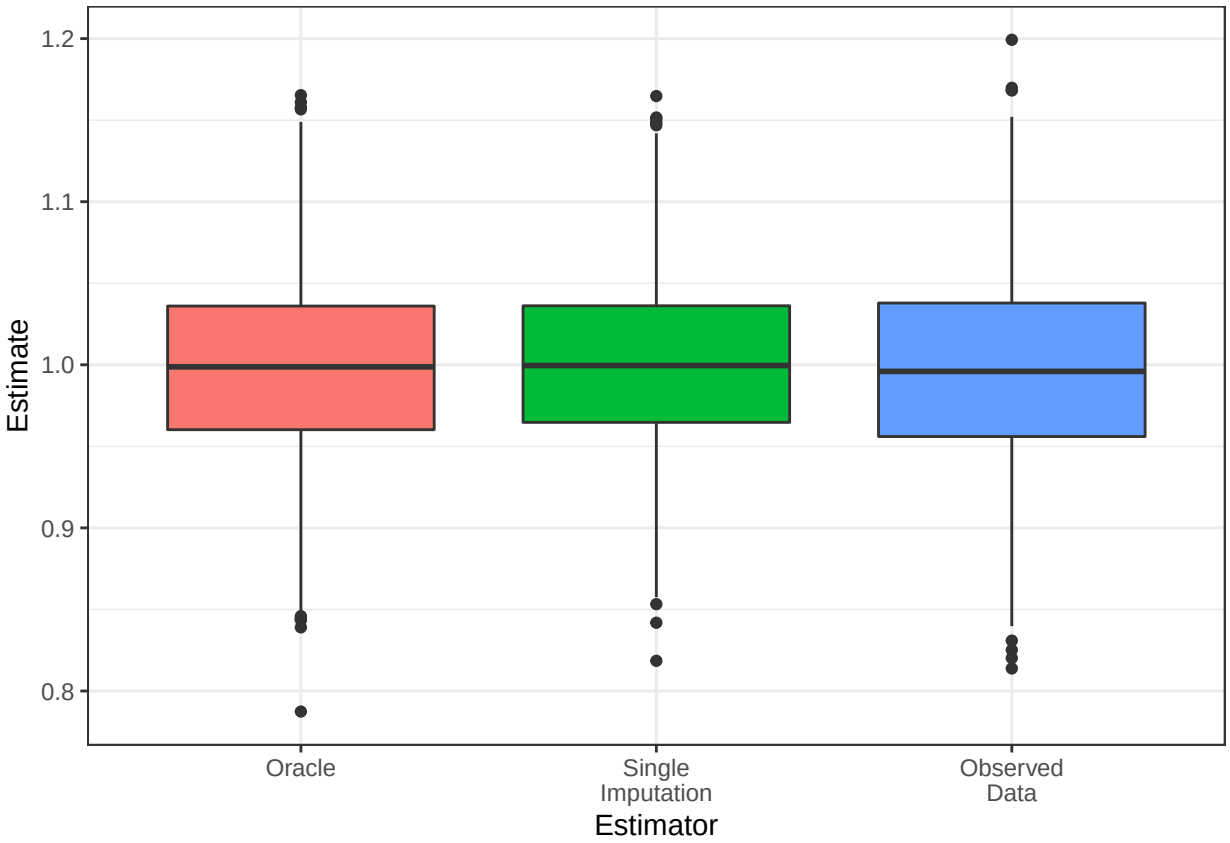
7/1/2022

Simulation Parameter

Single Imputation

Beta known, model correctly specified

```
## Note: Using an external vector in selections is ambiguous.
## i Use ‘all_of(cov)‘ instead of ‘cov‘ to silence this message.
## i See <https://tidyselect.r-lib.org/reference/faq-external-vector.html>.
## This message is displayed once per session.
```



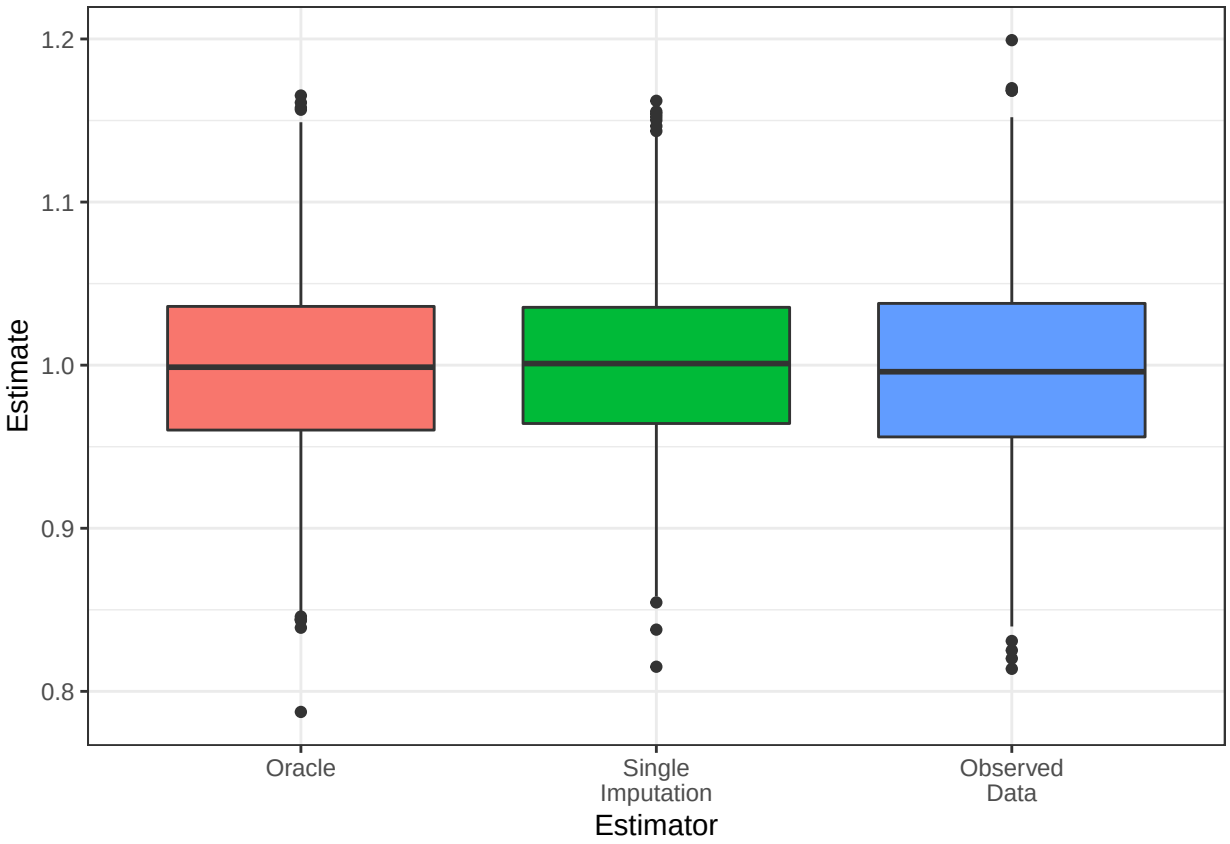

```
## # A tibble: 3 x 3
```

```
##   estimator   est     se
##   <chr>     <dbl>  <dbl>
## 1 si        0.999 0.0518
## 2 obs       0.998 0.0579
## 3 oracle    0.998 0.0563
```

```
##                    si        obs     oracle
## empirical 0.05772189 0.05991917 0.05383904
## estimated 0.05631670 0.05789101 0.05174918
```

Beta known, model incorrectly specified

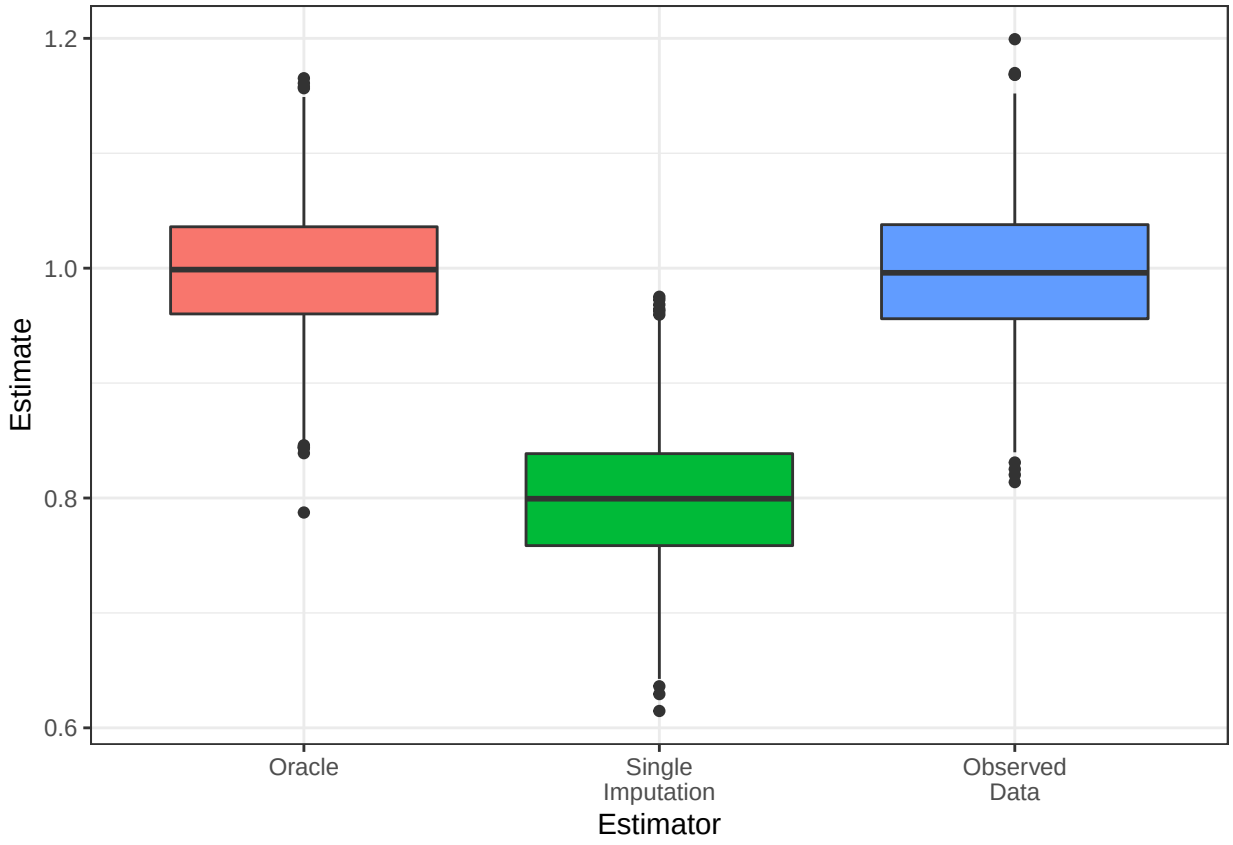
$\hat{Y} \sim G, X$




```
## # A tibble: 3 x 3
##   estimator   est     se
##   <chr>     <dbl>  <dbl>
## 1 si        0.999 0.0528
## 2 obs       0.998 0.0579
## 3 oracle    0.998 0.0563
```

```
##                    si        obs     oracle
## empirical 0.05772189 0.05991917 0.05469555
## estimated 0.05631670 0.05789101 0.05276199
```

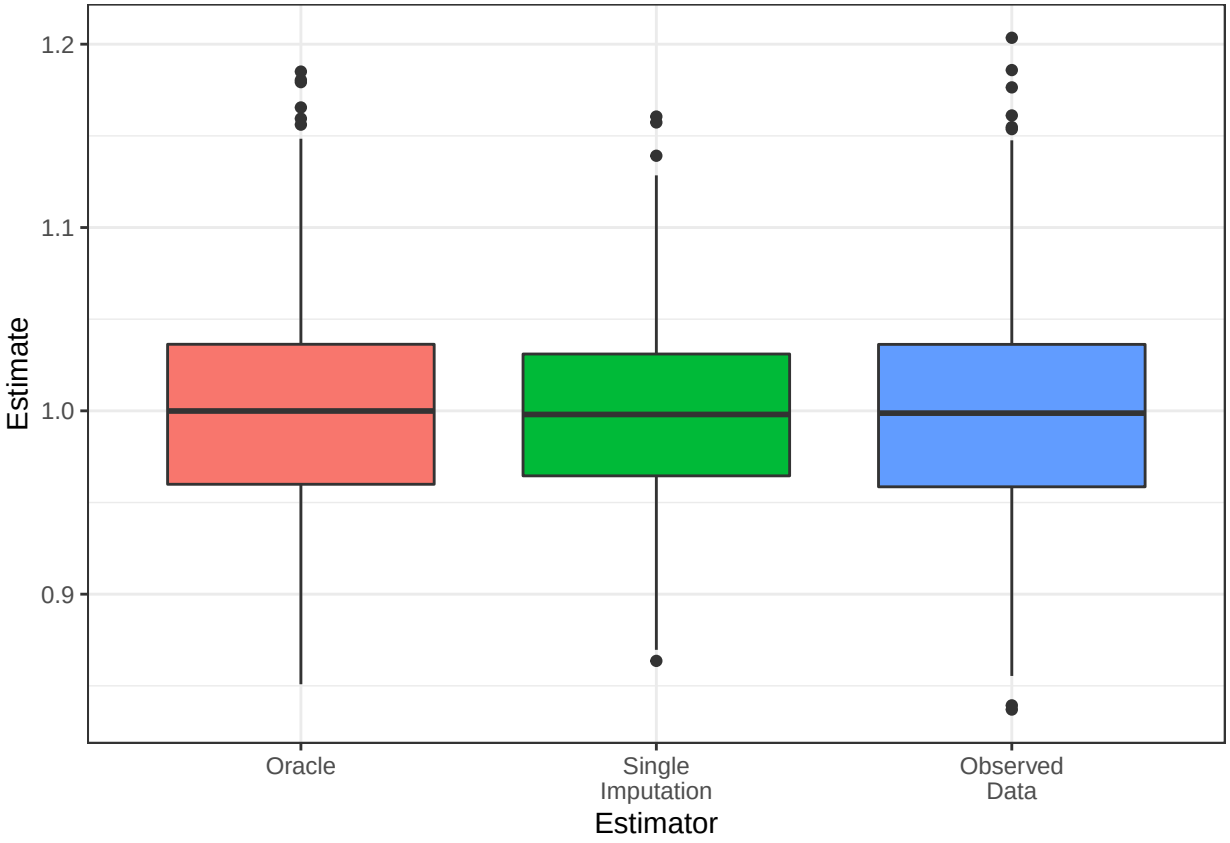
$\hat{Y} \sim X, Z$




```
## # A tibble: 3 x 3
##   estimator   est     se
##   <chr>     <dbl>  <dbl>
## 1 si        0.799 0.0543
## 2 obs       0.998 0.0579
## 3 oracle    0.998 0.0563
```

```
##                    si        obs     oracle
## empirical 0.05772189 0.05991917 0.06025671
## estimated 0.05631670 0.05789101 0.05424222
```

Beta unkown and correctly specified

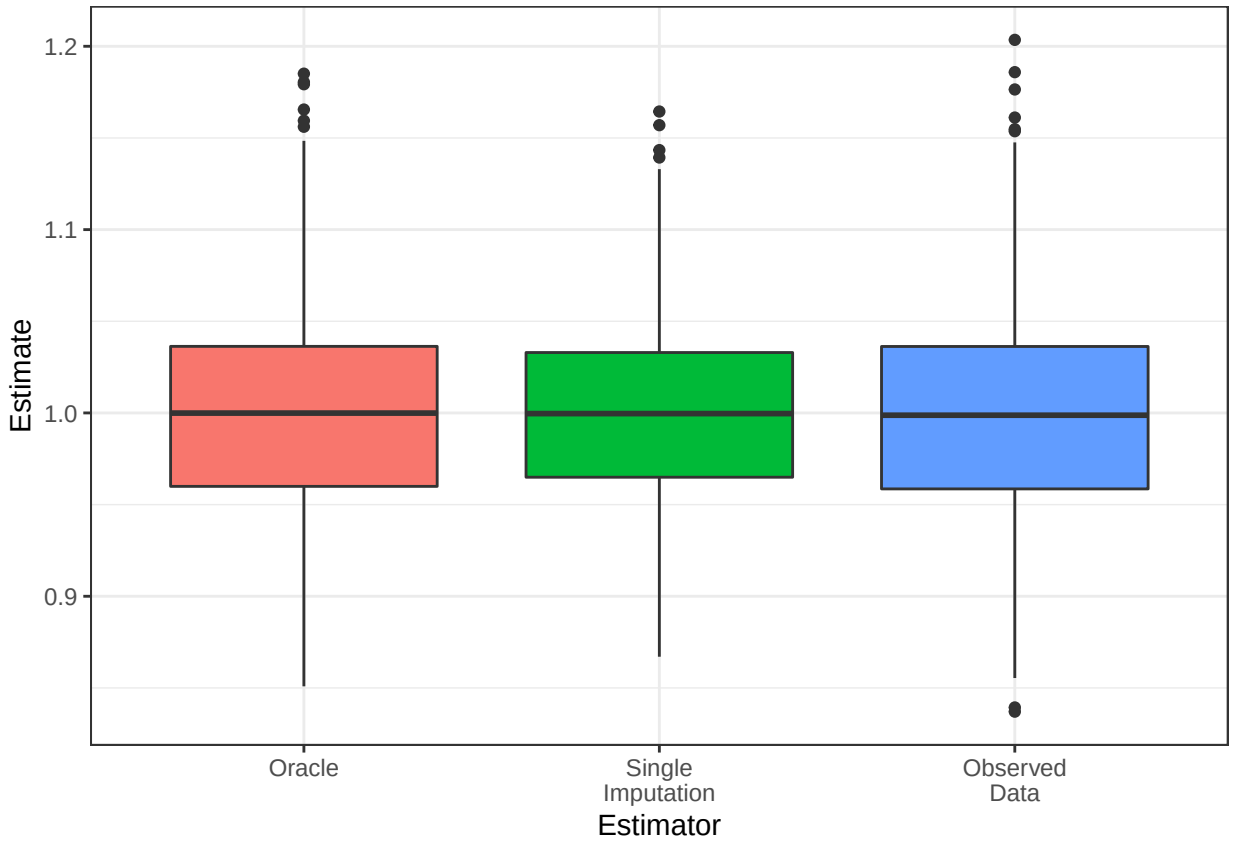



```
## # A tibble: 3 x 3
##   estimator   est     se
##   <chr>     <dbl>  <dbl>
## 1 si        0.999 0.0569
## 2 obs       0.999 0.0578
## 3 oracle    0.999 0.0564
```

```
##                    si        obs     oracle
## empirical 0.05542767 0.05657539 0.04743766
## estimated 0.05633309 0.05779937 0.05690282
```

Beta unkown and incorrectly specified

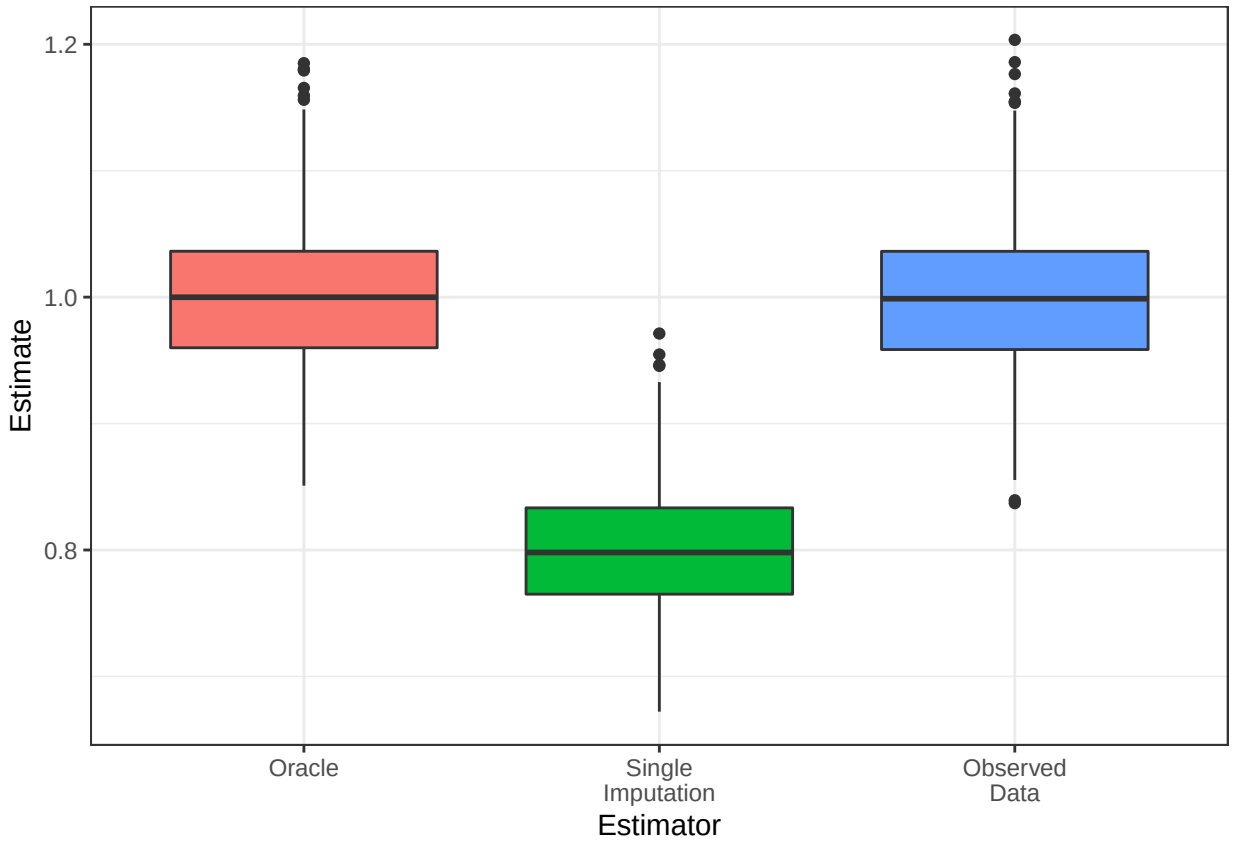
$\hat{Y} \sim G, X$




```
## # A tibble: 3 x 3
##   estimator   est     se
##   <chr>     <dbl>  <dbl>
## 1 si        1.00  0.0594
## 2 obs       0.999 0.0578
## 3 oracle    0.999 0.0564
```

```
##                    si        obs     oracle
## empirical 0.05542767 0.05657539 0.04871135
## estimated 0.05633309 0.05779937 0.05936070
```

$\hat{Y} \sim X, Z$

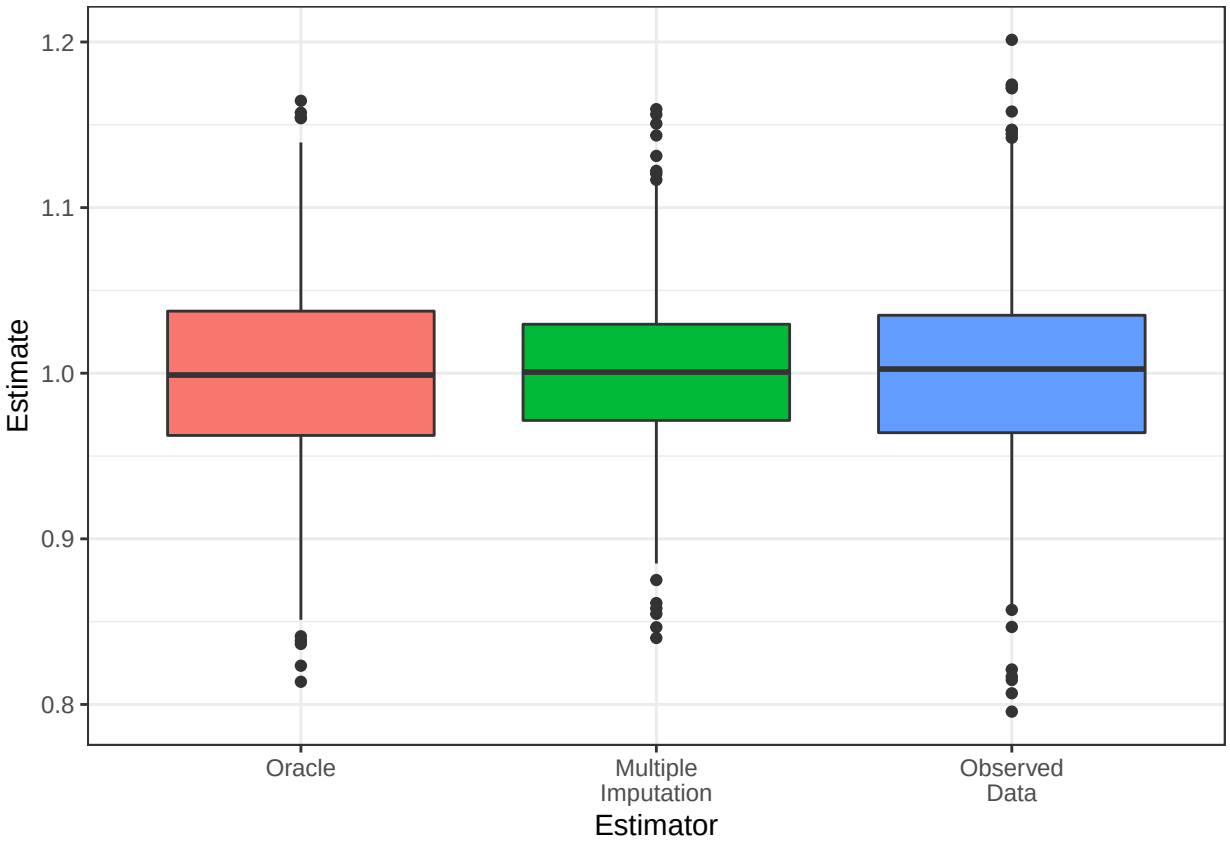



```
## # A tibble: 3 x 3
##   estimator   est     se
##   <chr>     <dbl>  <dbl>
## 1 si        0.799 0.0618
## 2 obs       0.999 0.0578
## 3 oracle    0.999 0.0564
```

```
##                    si        obs     oracle
## empirical 0.05542767 0.05657539 0.04821741
## estimated 0.05633309 0.05779937 0.06172049
```

Multiple Imputation

Beta known, model correctly specified

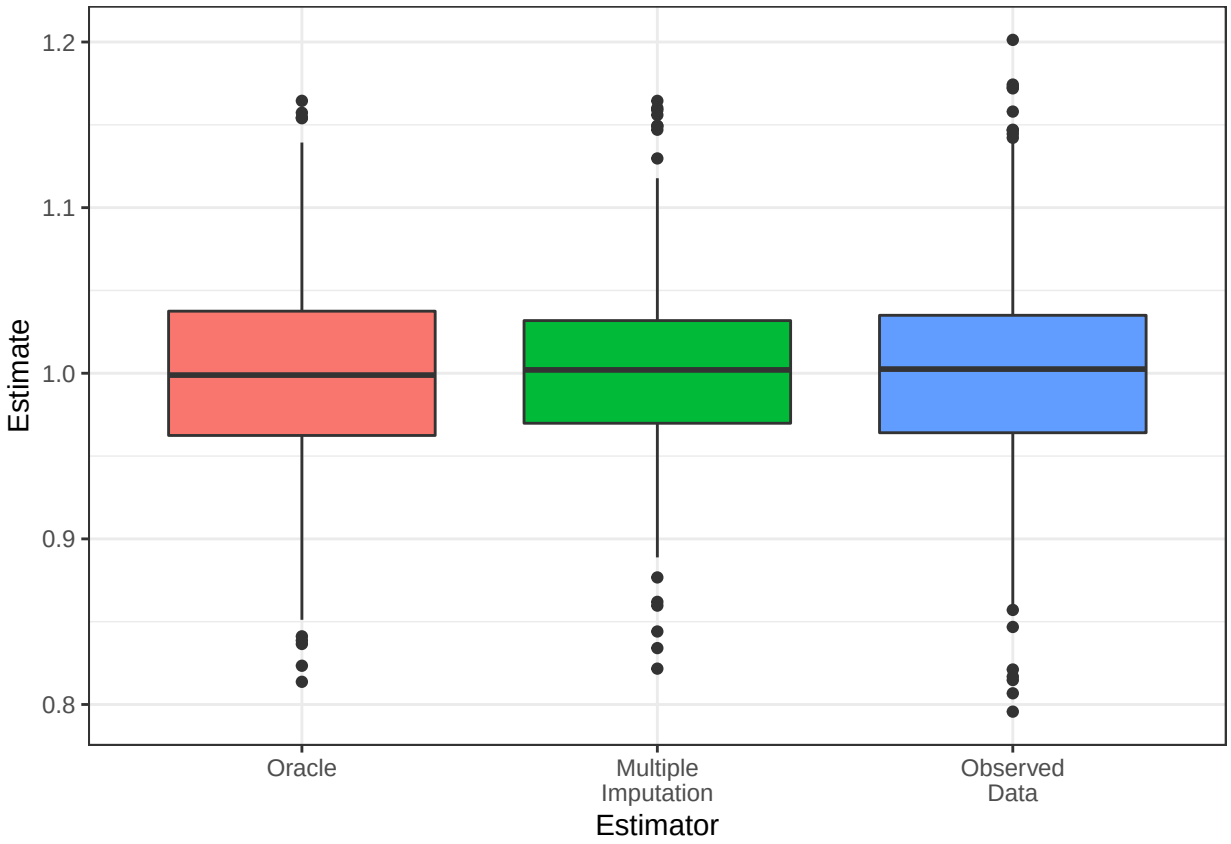



```
## # A tibble: 3 x 3
##   estimator   est     se
##   <chr>     <dbl>  <dbl>
## 1 mi         1.00 0.0570
## 2 obs        1.00 0.0579
## 3 oracle     1.00 0.0564
```

```
##           oracle_est    obs_est     mi_est
## empirical 0.05522382 0.05728497 0.04592360
## estimated 0.05635012 0.05786868 0.05698082
```

Beta known, model incorrectly specified

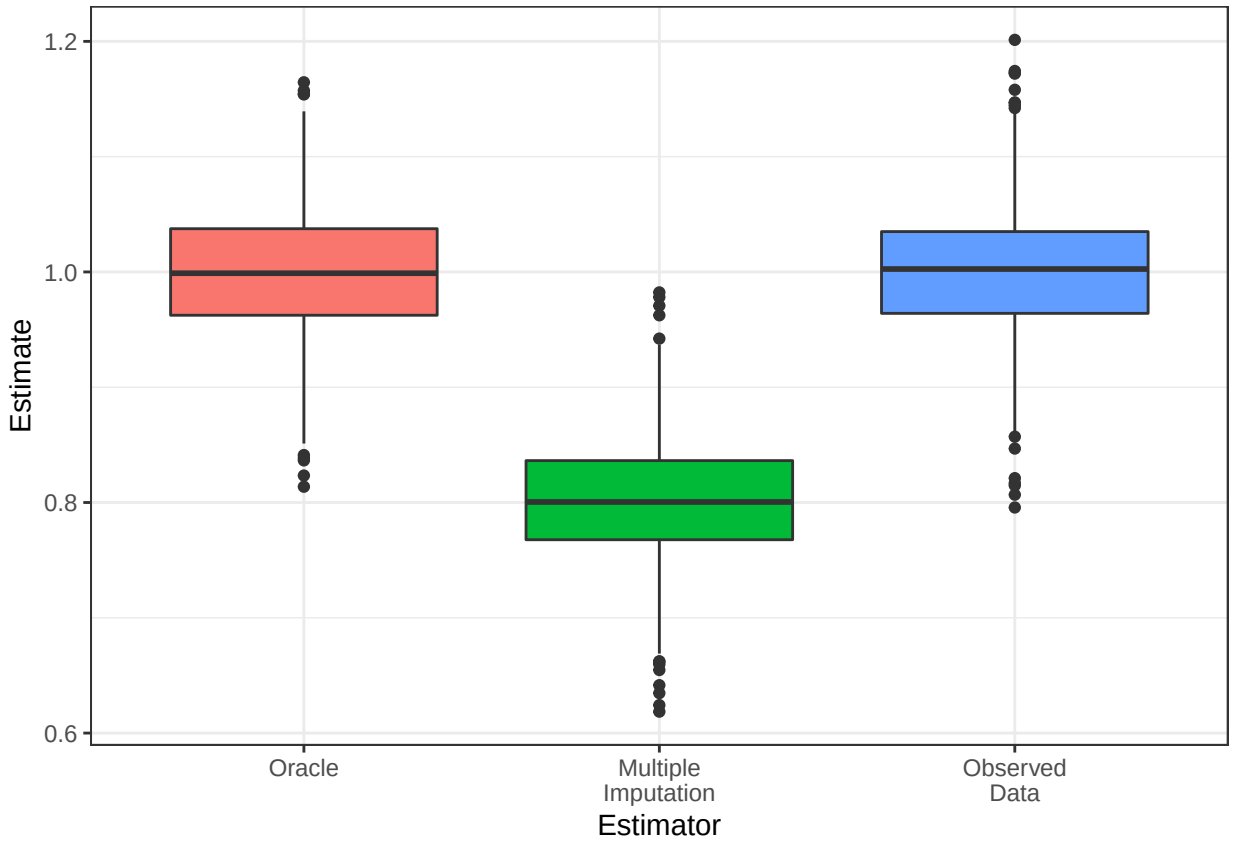
$\hat{Y} \sim G + X$




```
## # A tibble: 3 x 3
##   estimator   est     se
##   <chr>     <dbl>  <dbl>
## 1 mi         1.00 0.0579
## 2 obs        1.00 0.0579
## 3 oracle     1.00 0.0564
```

```
##           oracle_est    obs_est     mi_est
## empirical 0.05522382 0.05728497 0.04790228
## estimated 0.05635012 0.05786868 0.05791107
```

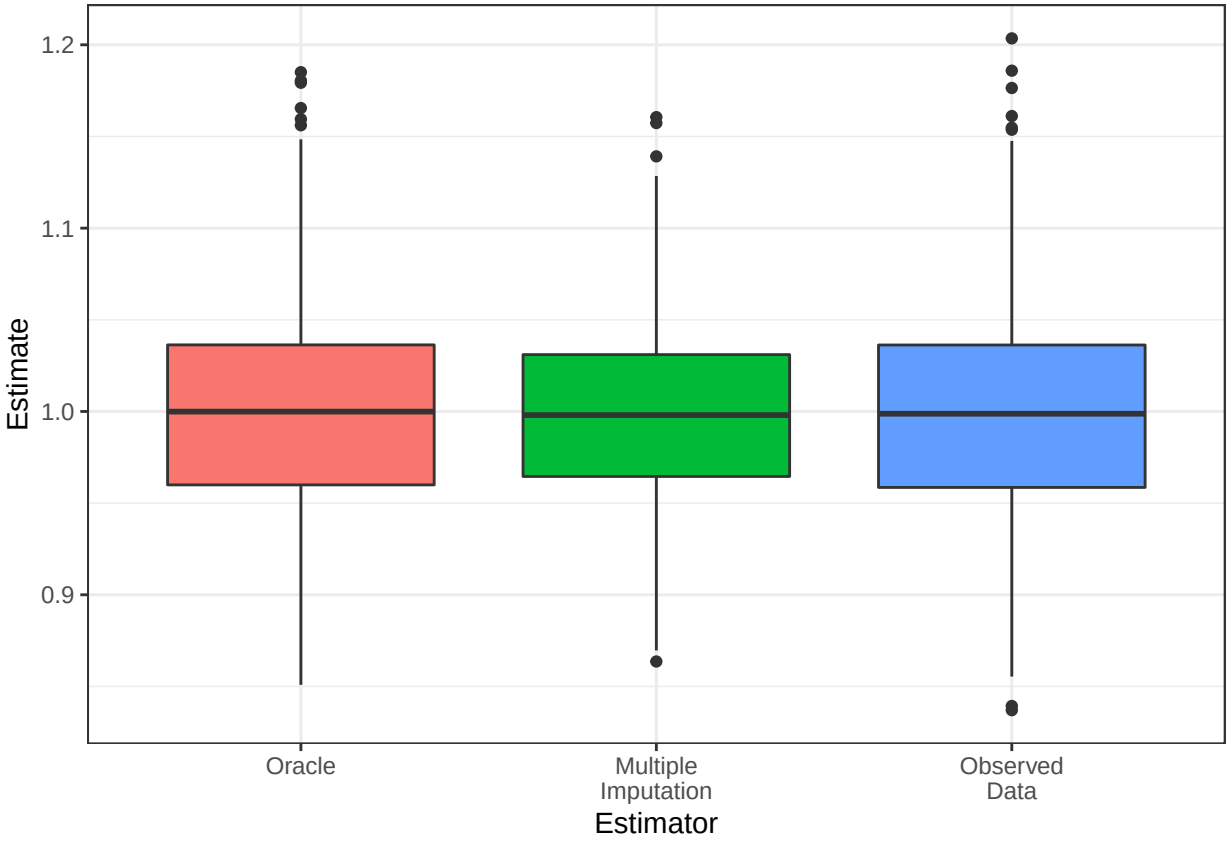
$\hat{Y} \sim X + Z$




```
## # A tibble: 3 x 3
##   estimator   est     se
##   <chr>     <dbl>  <dbl>
## 1 mi        0.800 0.0593
## 2 obs       1.00  0.0579
## 3 oracle    1.00  0.0564
```

```
##           oracle_est    obs_est     mi_est
## empirical 0.05522382 0.05728497 0.05277274
## estimated 0.05635012 0.05786868 0.05927804
```

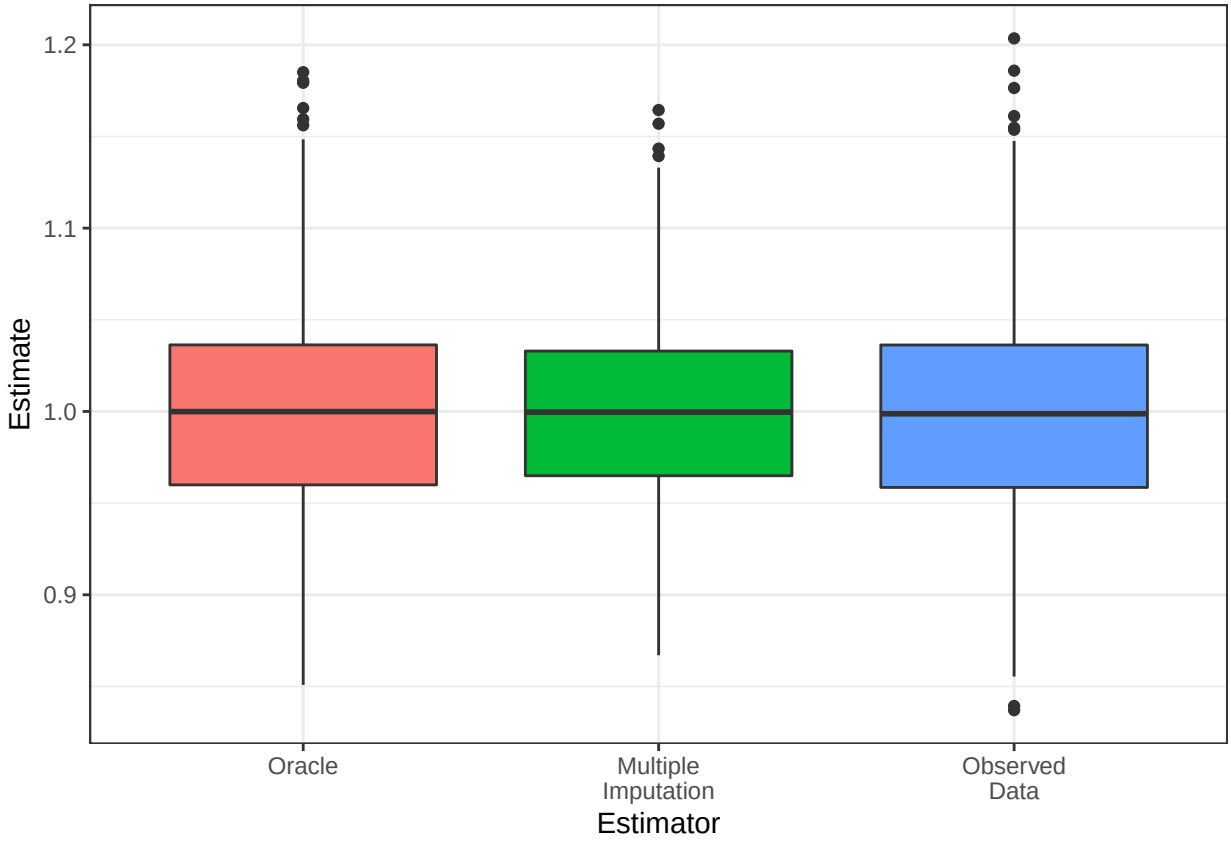
Beta unknown, model correctly specified




```
## # A tibble: 3 x 3
##   estimator   est     se
##   <chr>     <dbl>  <dbl>
## 1 mi        0.999 0.0569
## 2 obs       0.999 0.0578
## 3 oracle    0.999 0.0564
```

```
##           oracle_est    obs_est     mi_est
## empirical 0.05542767 0.05657539 0.04743766
## estimated 0.05633309 0.05779937 0.05690282
```

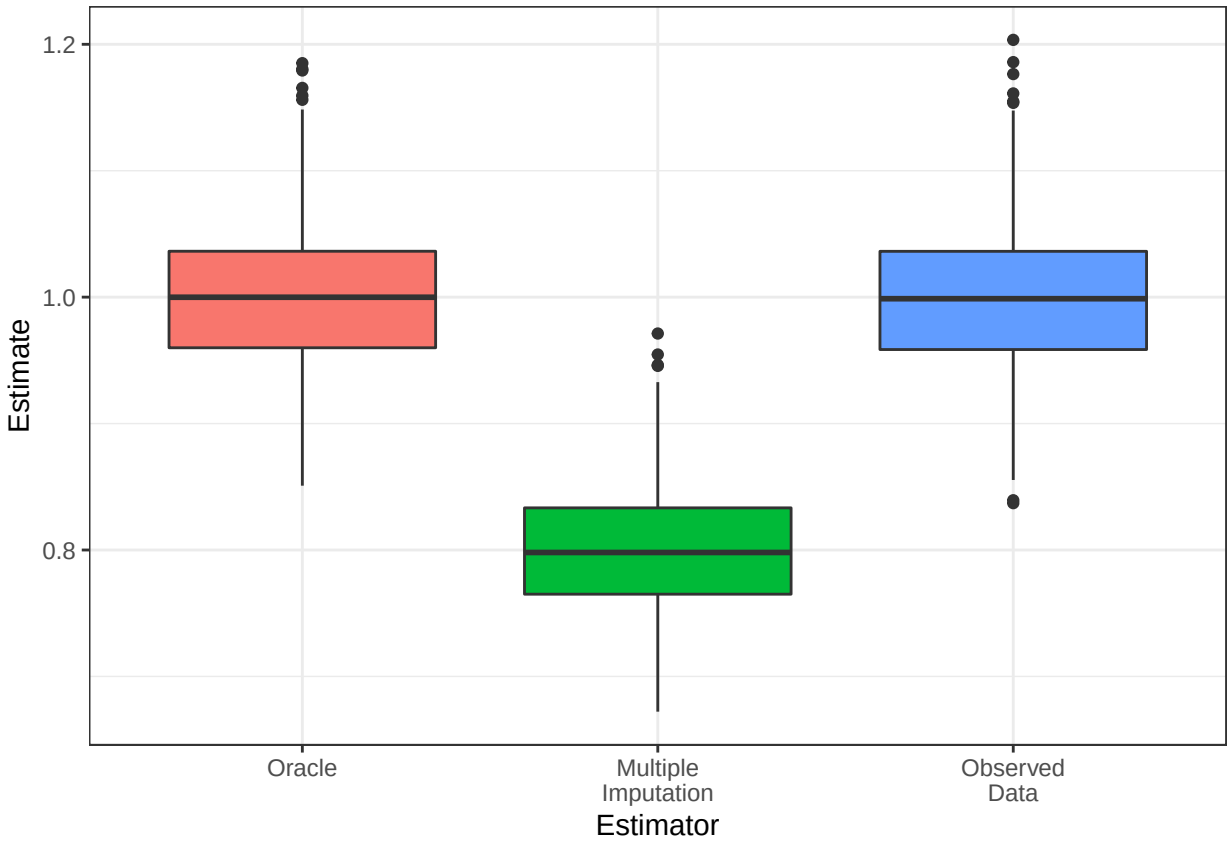
Beta unknown, model incorrectly specified



$\hat{Y} \sim G+X$

```
## # A tibble: 3 x 3
##   estimator   est     se
##   <chr>     <dbl>  <dbl>
## 1 mi        1.00  0.0594
## 2 obs       0.999 0.0578
## 3 oracle    0.999 0.0564
```

```
##           oracle_est    obs_est     mi_est
## empirical 0.05542767 0.05657539 0.04871135
## estimated 0.05633309 0.05779937 0.05936070
```



$\hat{Y} \sim X + Z$

```
## # A tibble: 3 x 3
##   estimator   est     se
##   <chr>     <dbl>  <dbl>
## 1 mi        0.799 0.0618
## 2 obs       0.999 0.0578
## 3 oracle    0.999 0.0564
```

```
##           oracle_est    obs_est     mi_est
## empirical 0.05542767 0.05657539 0.04821741
## estimated 0.05633309 0.05779937 0.06172049
```