Analysis of oil

2019-04-03
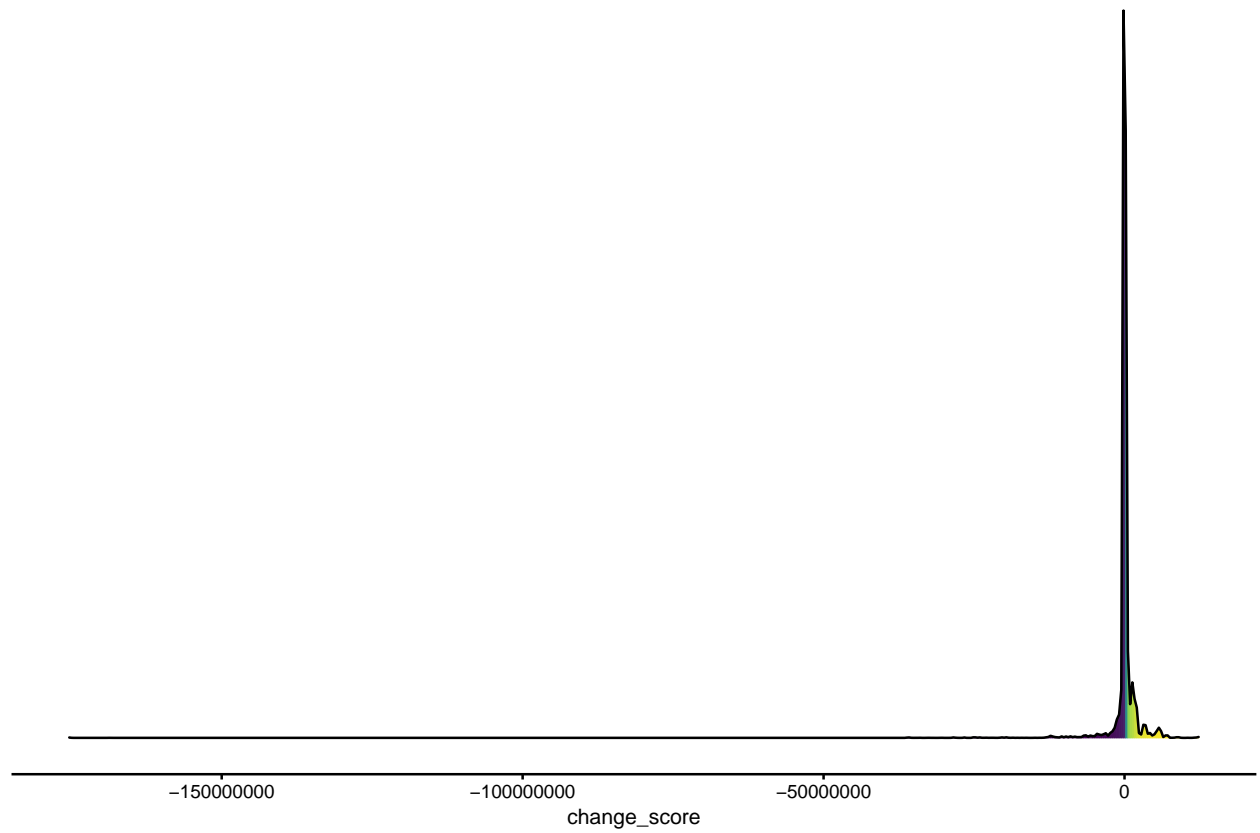
Data Prep

1. Dropped records with missing oil values at t1 and t2. Call the resulting data set `df`.
2. Separated `df` into two subsets:
   - `df_tiny`: oil < 1000 at t1 or t2.
   - `df_main`: oil >= 1000 at t1 and t2
3. Created long-format version:
   - `df_long`: long-format version of the full set `df`
   - `df_tiny_long`: long-format version of the subset `df_tiny`
   - `df_main_long`: long-format version of the subset `df_main`
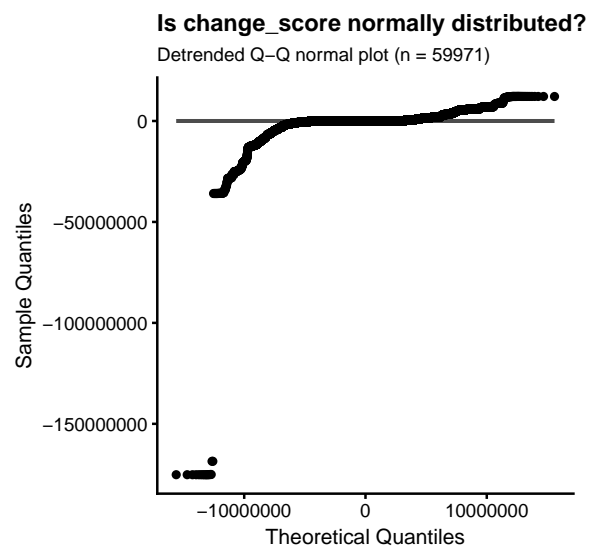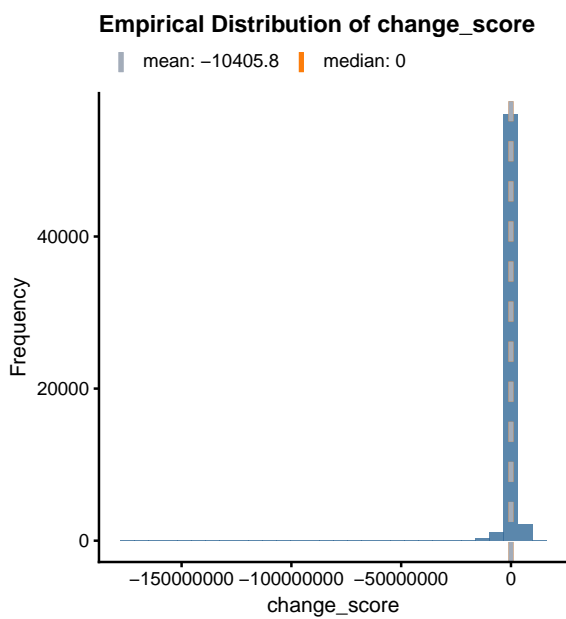
Analyze the full set `df`

Table 1: Sample Summary Statistics of oil

time	n_tribes	n	mean	SEM
t1	184	59971	444552.9	14261.741
t2	184	59971	434147.1	4898.684

oil

change_score

NAs were dropped

Empirical Distribution of change_score

mean: −10405.8   median: 0

Is change_score normally distributed?

Detrended Q–Q normal plot (n = 59971)
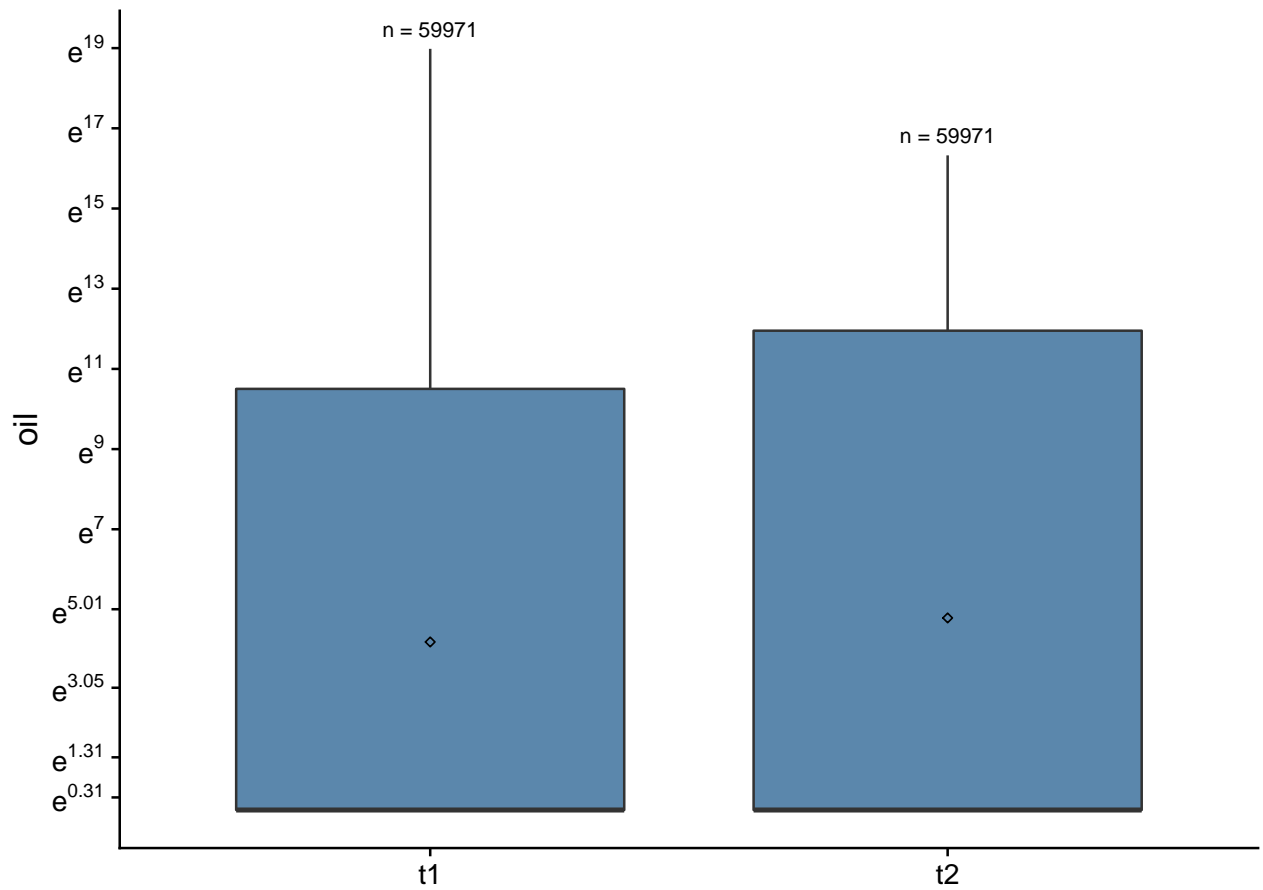
```
1-way Repeated Measure ANOVA Output:

Error: tribe
          Df             Sum Sq          Mean Sq F value Pr(>F)
Residuals 183 54861717447793800 299790805725649

Error: tribe:time
          Df             Sum Sq          Mean Sq F value Pr(>F)
time       1     3246849589998     3246849589998   0.025  0.875
Residuals 183 24075923142606936 131562421544300

Error: Within
            Df             Sum Sq          Mean Sq F value Pr(>F)
Residuals 119574 738877222967341440 6179246516528
```

oil

n = 184

$y = 0.0612 + 0.635\ x,\ \ R^2 = 0.46$

$p - \text{value} < 0.001$

Mean value at t2

Mean value at t1

Each dot is a tribe

oil

n = 184

$y = 1.48 + 0.732\,x, \; R^2 = 0.33$

$p-\text{value} < 0.001$

Median value at t1

Median value at t2

Each dot is a tribe