HW2

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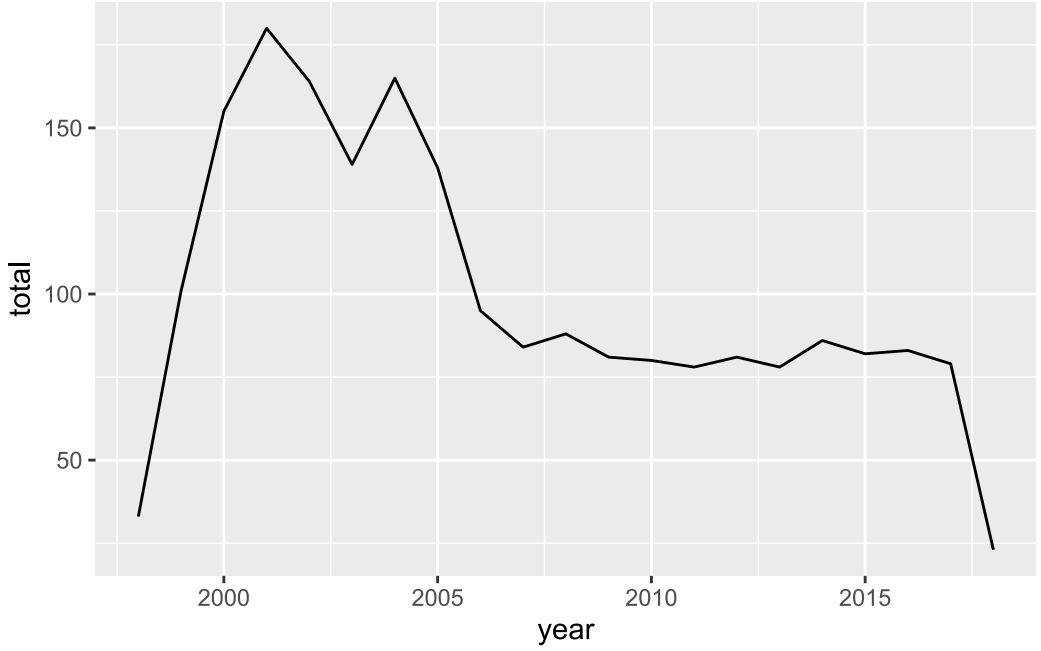
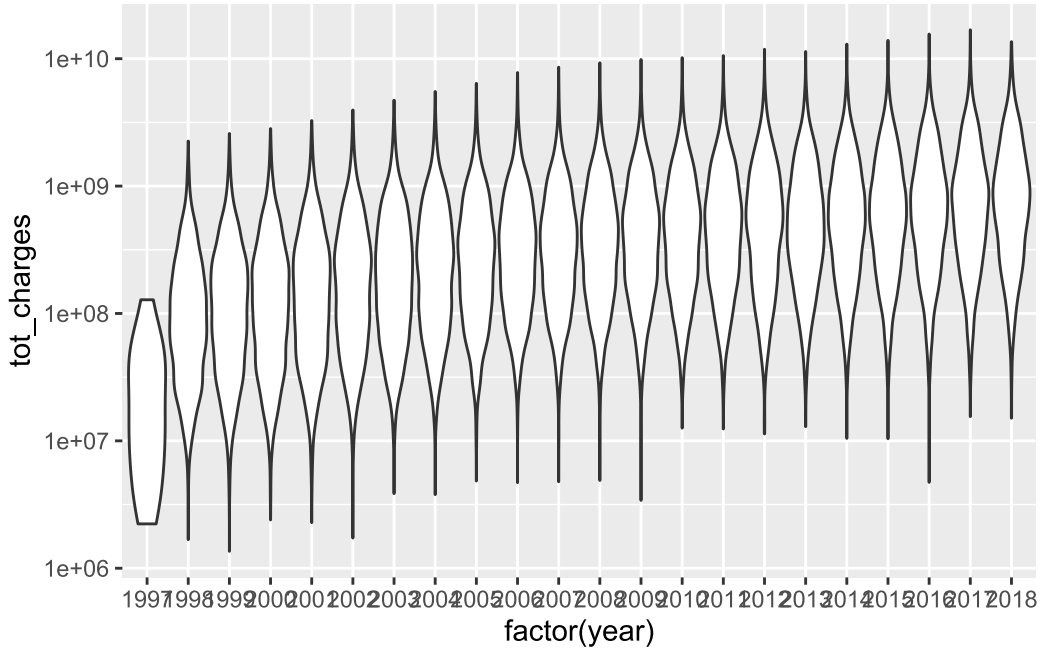
1. Hospital reports over time



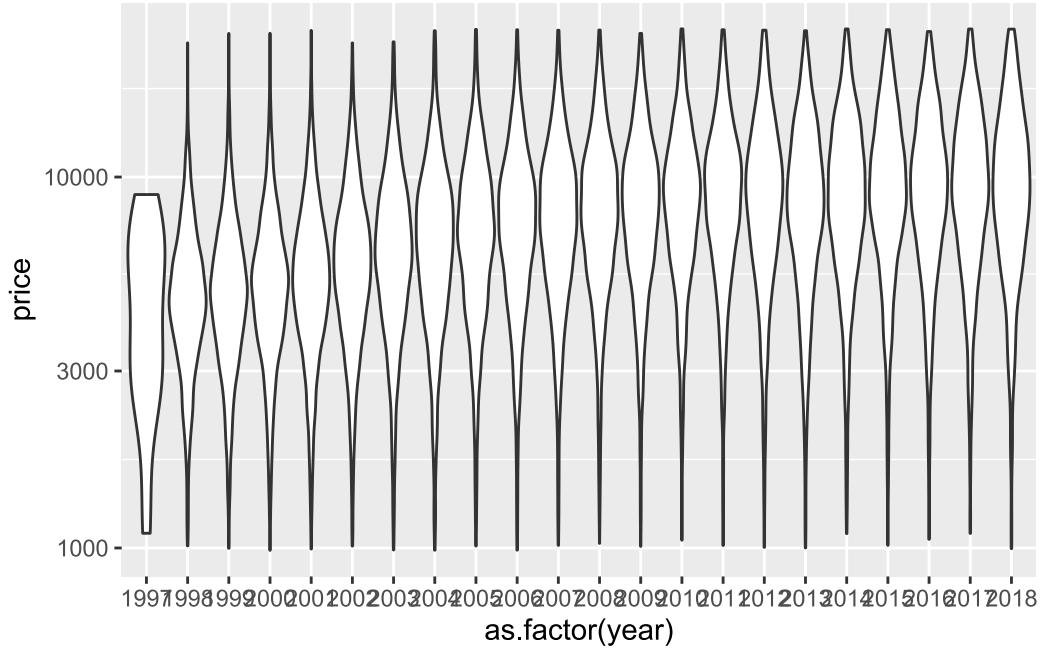
2. Number of unique hospital ids

```
# A tibble: 1 × 1
  Unique_hospital_ids
                <int>
1                  21
```

3. Distribution of total charges



4. Distribution of price



5. Average prices of penalized and non-penalized hospitals

```
# A tibble: 1 × 2
   year avg_price_nopen
```

```
  <dbl>           <dbl>
1  2012          11589.
```

```
# A tibble: 1 × 2
   year avg_price_pen
  <dbl>         <dbl>
1  2012         9825.
```

6. Bed size quantiles and their average prices

Bed Quartile	Avg Price (In Group)	Avg Price (Not in Group)
bed_1	7519.612	10613.925
bed_2	9015.002	10101.116
bed_3	9888.857	9811.928
bed_4	12919.388	8799.158

Table 1: Average Price by Bed Quartile Group

7. Calculating different estimators

Method	ATE
Inverse Variance Distance	2130.7904
Mahalanobis Distance	434.0899
Inverse Propensity Weighting	5954.2383
Simple Linear Regression	20331.4884

Table 2: Estimated Treatment Effects by Method

8. Each of these estimators produce very different estimates.
9. Due to the limited number of penalized hospitals in the dataset, I do not believe the causal effect was properly captured.
10. For some reason, working with this data was difficult because running the same code with different people was producing different outputs, which was kind of frustrating.