Predicting costs :: Part 2

Planning and Regional Development

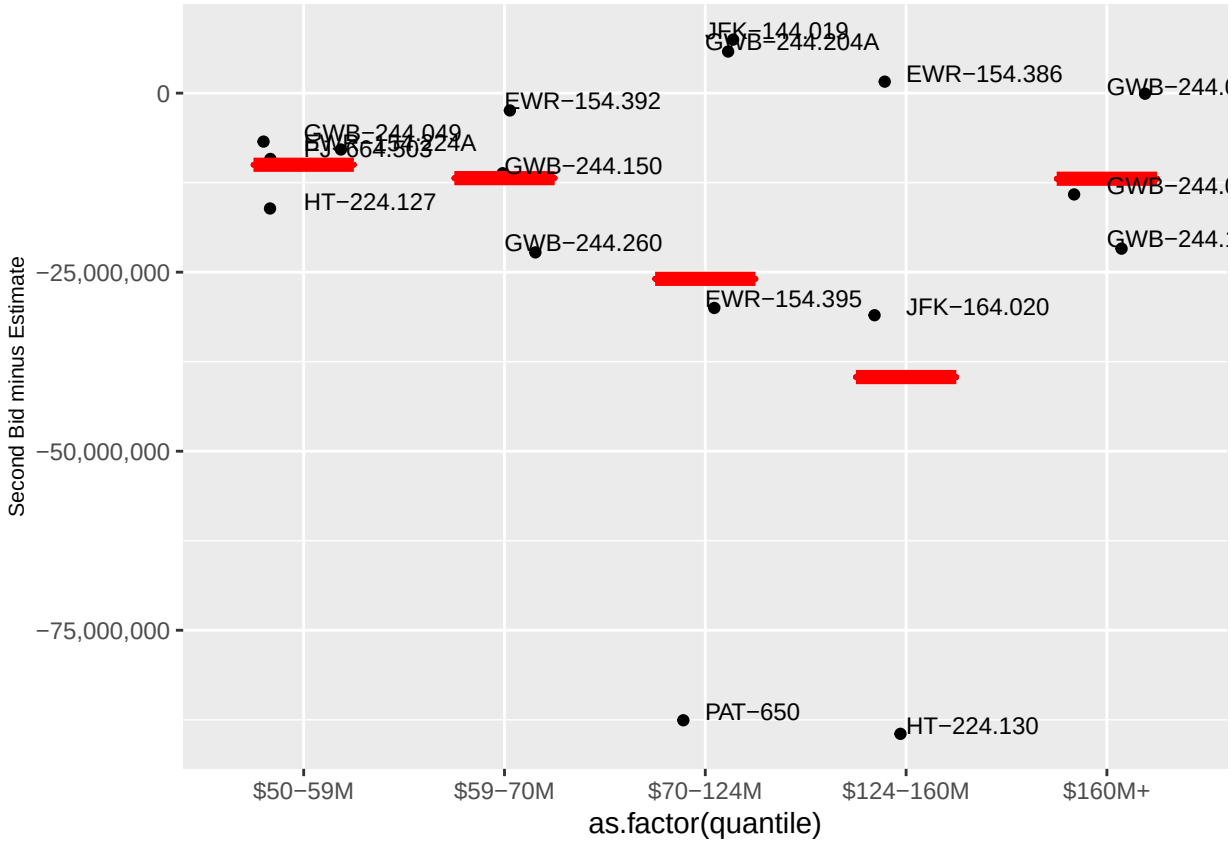
1/21/2020

Large projects - defined as the biggest 20 percent of 239 projects evaluated in Part 1 — and ones subjected to closed bidding processes explain a significant degree of the inaccuracy observed in agency cost estimation. Part 2 searches for predictive factors from within those two project subpopulations. It also considers the relationship between accuracy and the number of bidders, which was generally omitted from Part 1 as internal estimators do not know how many bidders will respond as they develop estimates.

The agency's internal cost estimates predict 95 percent of variation in cost, using the second-lowest bid[1] as a predicting target. On an absolute basis[2], however, the gap between internal estimate and second-lowest bid averages $2.7 million, or 18 percent of the average project size. Reducing this gap would provide for stronger confidence in long-range capital capacity estimates and could reduce the need for project-level change orders.

Focus on largest projects

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
##  54744000  67636000  92495500 140304202 189900000 479900000
```



[1]The agency's internal regulations require, in all but a handful of cases, the acceptance of the lowest bid. The Engineering Department views the second-lowest bid as a better predictive target.

[2]Mean absolute error, MAE.

Number of bidders