15 February 2016

1 Overview

The main tasks I set out to accomplish over week as per our last meeting were as follows:

- Finish testing differences between the Summer and Winter specifications for the Senate to determine what led to changes in results.
- Conduct tests on models which might be meaningfully different.
- Redo the graphs from last week with `pirate100` replaced by `pfrate100` in the Senate, as well as showing similar graphs for the House.

William graciously took the time to update the Summer algorithm to include the changes we've made which are still in use. This allowed us to turn changes we'd made off and on again so we could see what the meaningful changes were. We found that the truly meaningful changes were produced by keeping very lopsided votes in the sorting (which increased the noncalls, as shown last week) and choosing between OLS and bias-reduced logit to identify party influence in votes (with OLS sorting more votes as party calls, as predicted). I tested a specification which was set up like the Winter model except for these two aspects on Senate 95 (which produced very different results between the Summer and Winter) against the Summer model and found that each model shared 344 party calls with each only having a single vote as a party call that the other didn't.

While there is good reason to stick with the bias-reduced logit instead of OLS, it remains worth considering whether we should be setting the same threshold for dropping votes in the Senate that we use in the House, given that there are over 4 times as many members of the House than the Senate. So, it means something entirely different when a House vote has 4 members on one side than it does for a Senate vote. For this reason, below I show the differences in results produced by keeping these votes in beyond the vote sorting I showed last week. Since testing showed these results to be largely the same between models, I use the sorting from the Winter model for these. I further show the tables with `pfrate100` as the y variable in the Senate and the same tables repeated for the House as requested at our last meeting.

2 Tables and Figures

2.1 Summary Statistics, Senate with Very Lopsided Votes

Table 1: Main DV and IV Range, Senate with Very Lopsided Votes

Statistic	N	Mean	St. Dev.	Min	Max
Party Free Ideal Point - All	1,990	0.002	1.000	−2.040	2.808
pirate100 - All	1,990	82.257	11.347	12.500	100.000
pfrate100 - All	1,990	87.077	7.891	41.889	100.000
Ideological Extremism - All	1,990	0.827	0.562	−1.589	2.808
Party Free Ideal Point - Dems	1,039	−0.790	0.522	−2.040	1.589
pirate100 - Dems	1,039	82.664	11.033	12.500	100.000
pfrate100 - Dems	1,039	87.926	7.713	41.889	100.000
Ideological Extremism - Dems	1,039	0.790	0.522	−1.589	2.040
Party Free Ideal Point - Reps	951	0.867	0.600	−1.279	2.808
pirate100 - Reps	951	81.813	11.671	35.897	100.000
pfrate100 - Reps	951	86.151	7.984	52.927	100.000
Ideological Extremism - Reps	951	0.867	0.600	−1.279	2.808
Party Free Ideal Point - Maj	1,049	−0.057	0.901	−1.924	2.511
pirate100 - Maj	1,049	83.089	10.982	35.516	100.000
pfrate100 - Maj	1,049	88.131	7.484	50.772	100.000
Ideological Extremism - Maj	1,049	0.737	0.521	−1.589	2.511
Party Free Ideal Point - Min	843	0.074	1.106	−2.040	2.808
pirate100 - Min	843	80.848	11.615	12.500	100.000
pfrate100 - Min	843	85.266	8.219	41.889	100.000
Ideological Extremism - Min	843	0.924	0.611	−1.279	2.808

Table 2: Basic DV IV Regression, Senate with Very Lopsided Votes

	Democrats	Democrats	Republicans	Republicans
pfrate100	1.17***		1.19***	
	(0.03)		(0.03)	
ideological_extremism		12.78***		10.53***
		(0.52)		(0.53)
(Intercept)	−20.46***	72.57***	−20.81***	72.68***
	(2.24)	(0.49)	(2.38)	(0.56)
R^2	0.67	0.37	0.66	0.29
Adj. R^2	0.67	0.37	0.66	0.29
Num. obs.	1039	1039	951	951
RMSE	6.32	8.79	6.77	9.82

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

Table 3: Main DV IV Regression, Senate with Very Lopsided Votes

	Model 1	Model 2	Model 3	Model 4
pfrate100	1.087***	1.076***	1.151***	0.991***
	(0.035)	(0.032)	(0.033)	(0.036)
ideological_extremism	1.861***	2.866***	1.659***	3.043***
	(0.510)	(0.423)	(0.475)	(0.485)
(Intercept)	−14.388***	−13.365***	−19.562***	−6.464*
	(2.782)	(2.573)	(2.699)	(2.837)
R^2	0.676	0.680	0.703	0.653
Adj. R^2	0.676	0.679	0.703	0.652
Num. obs.	1039	951	1049	843
RMSE	6.282	6.614	5.989	6.851

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$