22 February 2017

1 Overview

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

- Continue showing differences between the OLS/`lm` and the bias-reduced logit/`brglm` sorting algorithms
- Explore the trade off of coefficients between party and ideology in the vote sorting algorithm

Craig had previously expressed concerns with the sorting of votes on two fronts; the first being that the algorithm using the bias-reduced logistic equation for sorting votes was largely not sorting close votes as party votes and the second that it could mean very different things to have a vote sorted as a party vote when the equation has opposite signs on the coefficients for party and ideology than when these are the same. On the latter category, William hypothesized instead that it could be evidence of party pressure overcoming ideology when the direction is opposite, which would leave it more in line with the basic theory and work we have been doing up until this point. While it was agreed that we would look into the results from the algorithm, William had suggested saving analysis of coefficients for a later project and focusing on extending analysis into the Senate.

The information I show below shows the information previously given for other versions of the model for the House and Senate `lm` sorted algorithm. We should discuss any final thoughts we have regarding the different sorting algorithms as well as what we should make of the signs on the coefficients now or at a later date. Depending on what is decided, it may be wise to think about next steps for the project should be and how we wish to pursue them.

2 Tables and Figures

2.1 Senate lm Descriptive Statistics

2.2 Senate lm Models

2.3 House lm Descriptive Statistics

2.4 House lm Models

congress	party calls	noncalls	gray votes
93	417	611	2
94	456	745	2
95	332	765	3
96	412	562	1
97	465	393	2
98	316	280	0
99	305	390	4
100	356	328	2
101	263	272	1
102	278	219	4
103	396	272	3
104	528	300	0
105	298	233	3
106	378	213	5
107	289	202	7
108	380	176	0
109	332	211	1
110	331	252	5
111	490	147	1
112	274	156	10
Total:	7296	6727	56
Mean	364.8	336.4	2.8
sd:	77.0	187.9	2.5

	party call	noncall	gray
lopsided	2063	4876	47
close	5233	1851	9

	Model 1	Model 2	Model 3	Model 4
pfrate100	1.06***		0.92***	
	(0.03)		(0.04)	
ideological_extremism		10.05***		8.90***
		(0.41)		(0.40)
(Intercept)	−2.85	79.19***	11.55***	78.73***
	(2.33)	(0.38)	(3.06)	(0.43)
R^2	0.58	0.37	0.38	0.34
Adj. R^2	0.58	0.37	0.38	0.34
Num. obs.	1042	1043	951	951
RMSE	7.03	8.66	9.45	9.75

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

Table 1: Statistical models

	Model 1	Model 2	Model 3	Model 4
pfrate100	0.849***	0.774***	0.727***	0.717***
	(0.030)	(0.031)	(0.025)	(0.036)
ideological_extremism	4.727***	7.289***	5.570***	7.748***
	(0.362)	(0.319)	(0.304)	(0.371)
(Intercept)	11.566***	17.872***	23.150***	19.552***
	(2.426)	(2.474)	(2.050)	(2.797)
R^2	0.643	0.601	0.648	0.590
Adj. R^2	0.642	0.600	0.647	0.589
Num. obs.	1042	951	1052	843
RMSE	6.515	7.595	6.147	7.935

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

Table 2: Statistical models

Figure 1: Main DV and Ideological Extremism - Majority and Minority Party Democrats
Note: The light gray line and dots are for Congress 107.

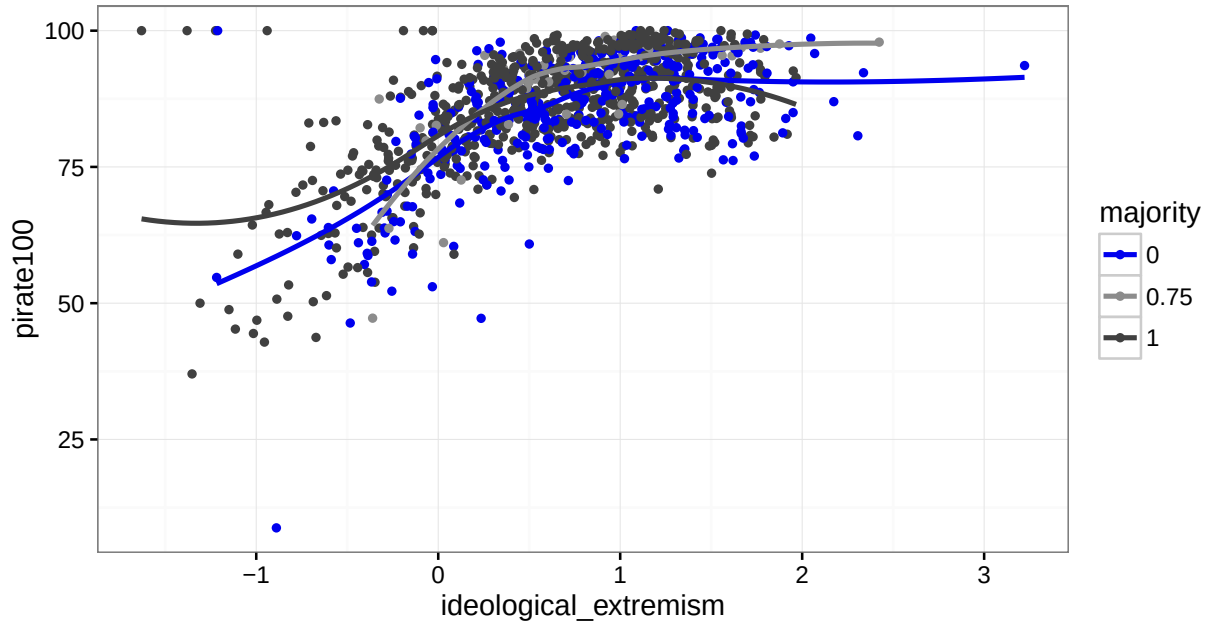


Figure 2: Main DV and Ideological Extremism - Southern and Other Democrats

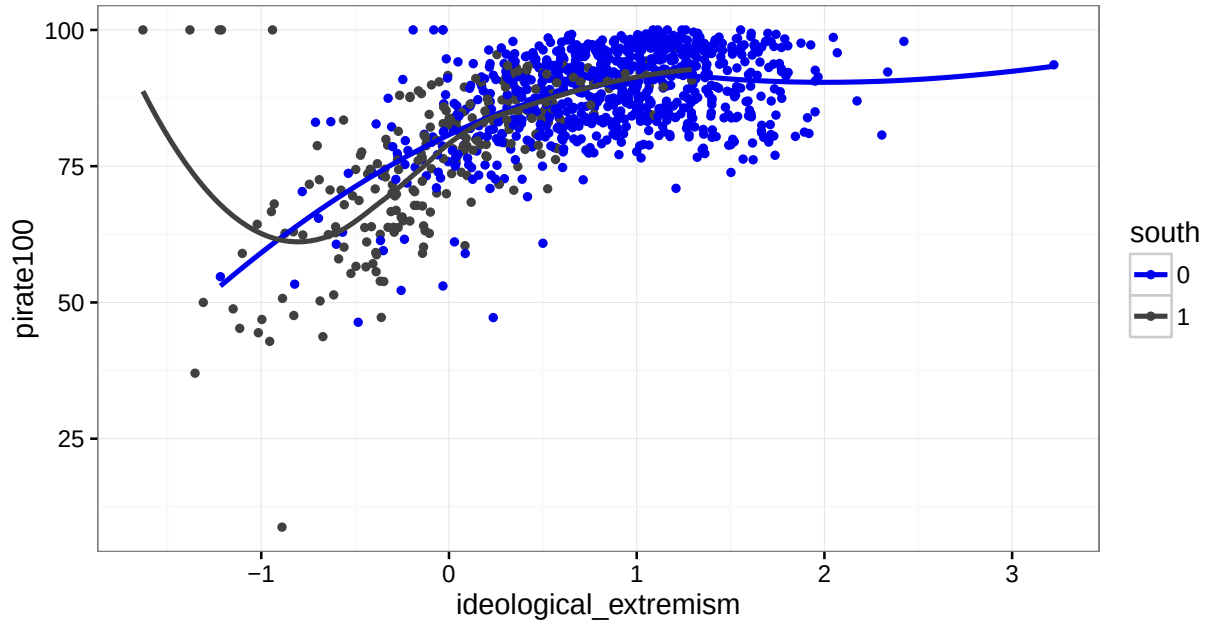


Figure 3: Main DV and Ideological Extremism - Majority and Minority Party Republicans
Note: The light gray line and dots are for Congress 107.

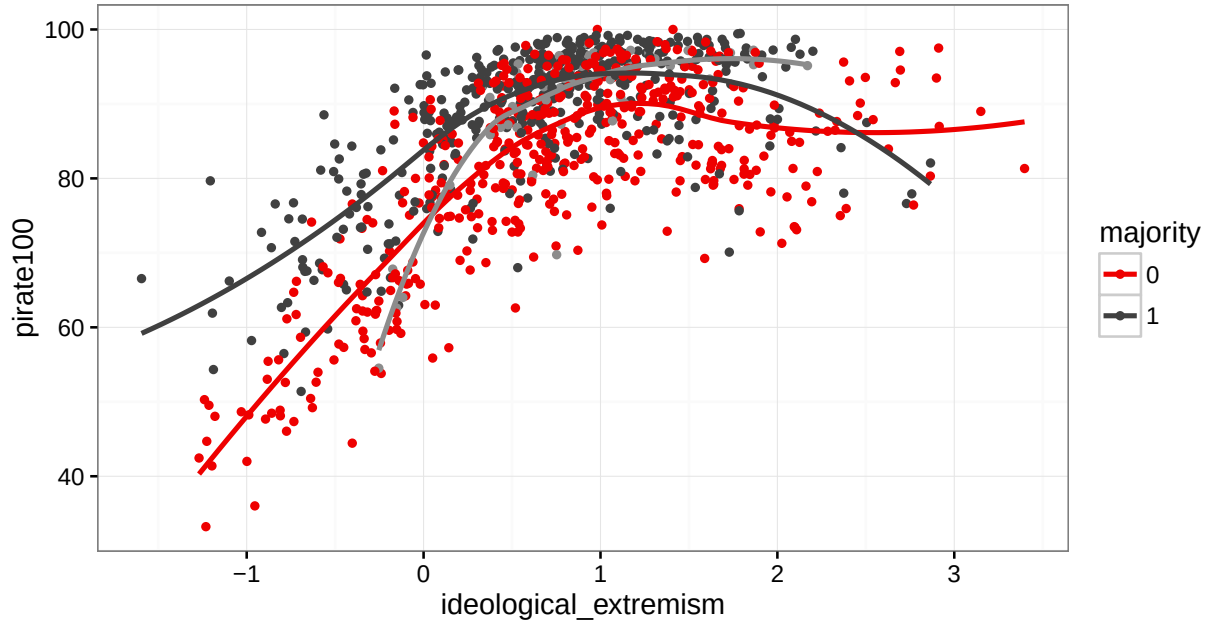


Figure 4: Main DV and Ideological Extremism - Southern and Other Republicans

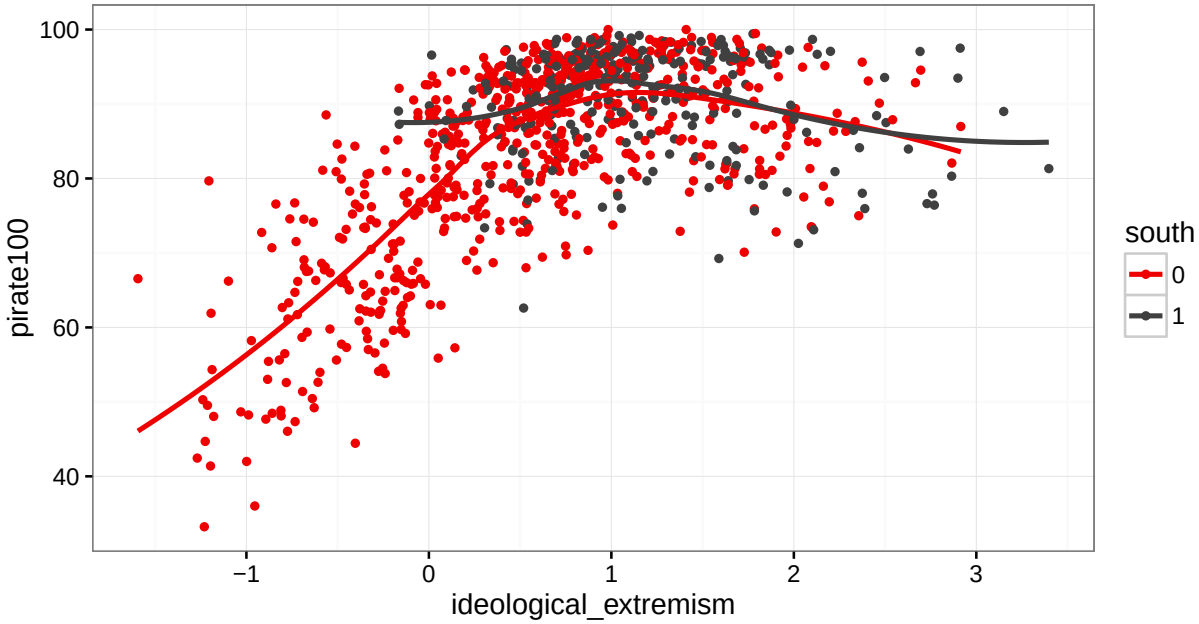


Figure 5: Main DV and Ideological Extremism - Gingrich Senators and Other Republicans

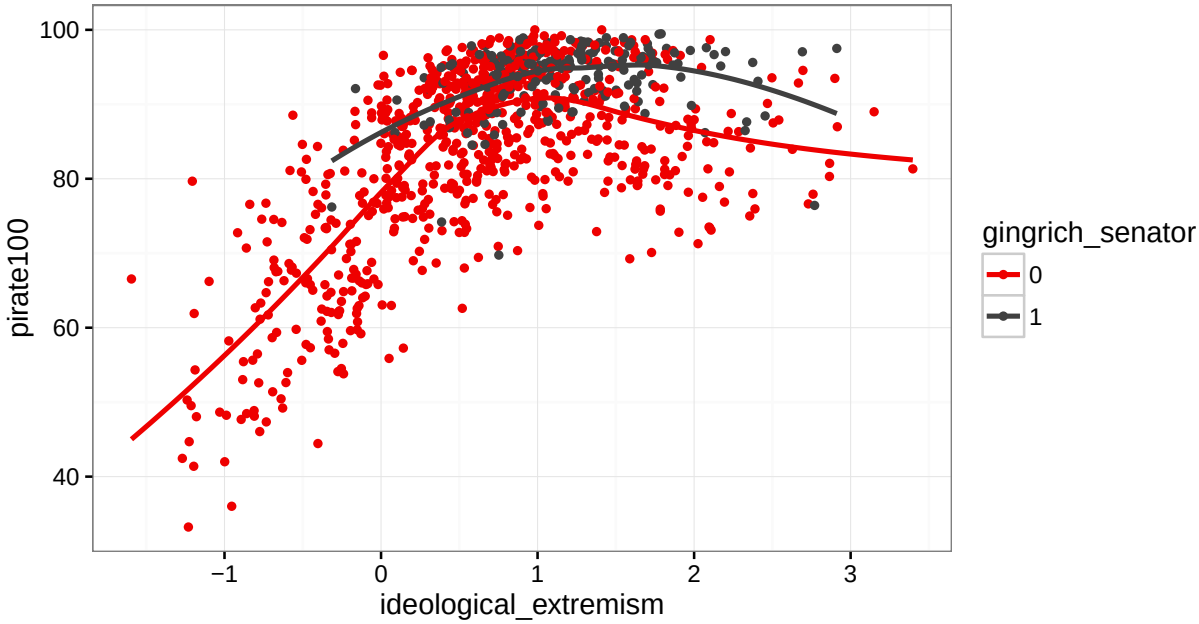


Figure 6: IV IV Plot - Senate Majority and Minority Party Democrats *Note*: The light gray line and dots are for Congress 107.

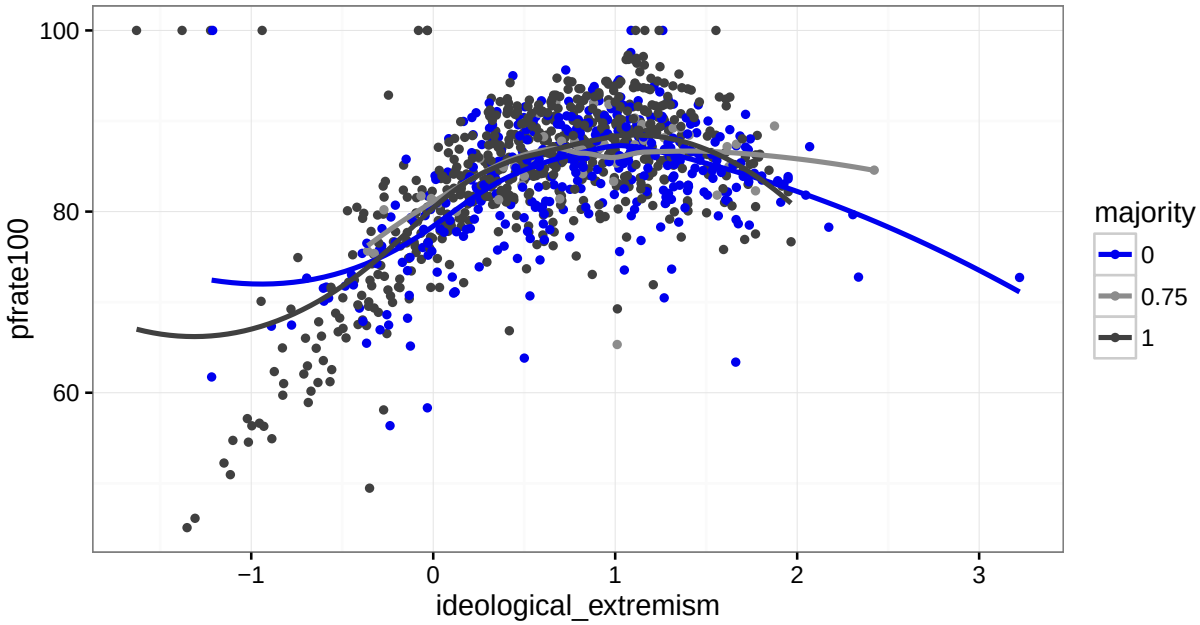


Figure 7: IV IV Plot - Senate Southern and Other Democrats

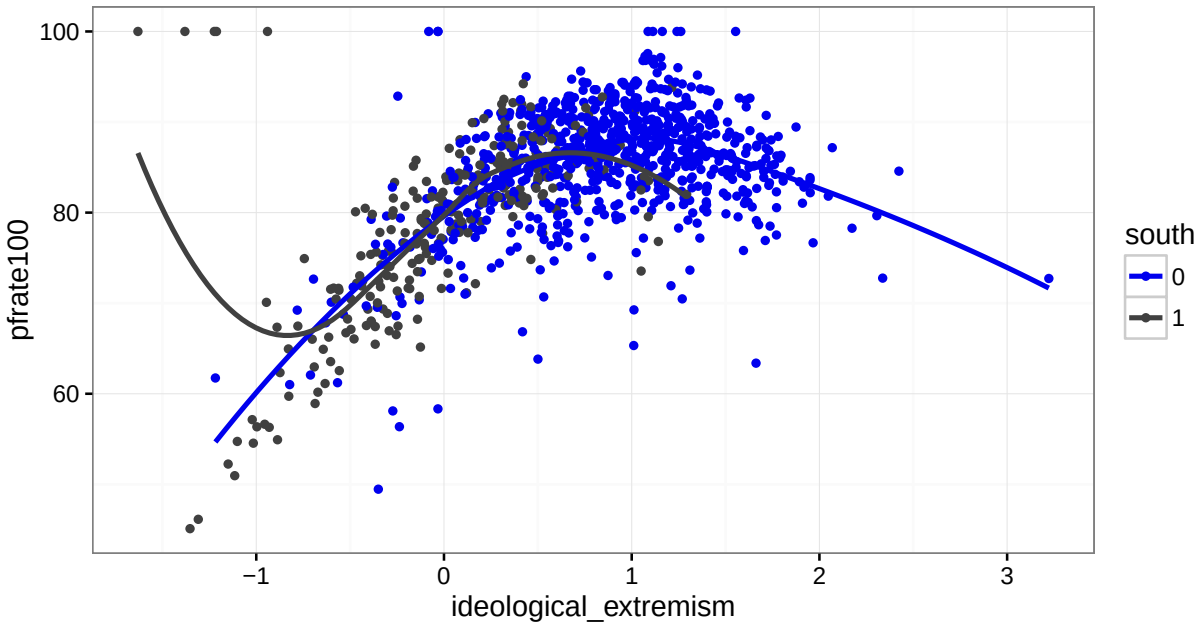


Figure 8: IV IV Plot - Senate Majority and Minority Party Republicans *Note*: The light gray line and dots are for Congress 107.

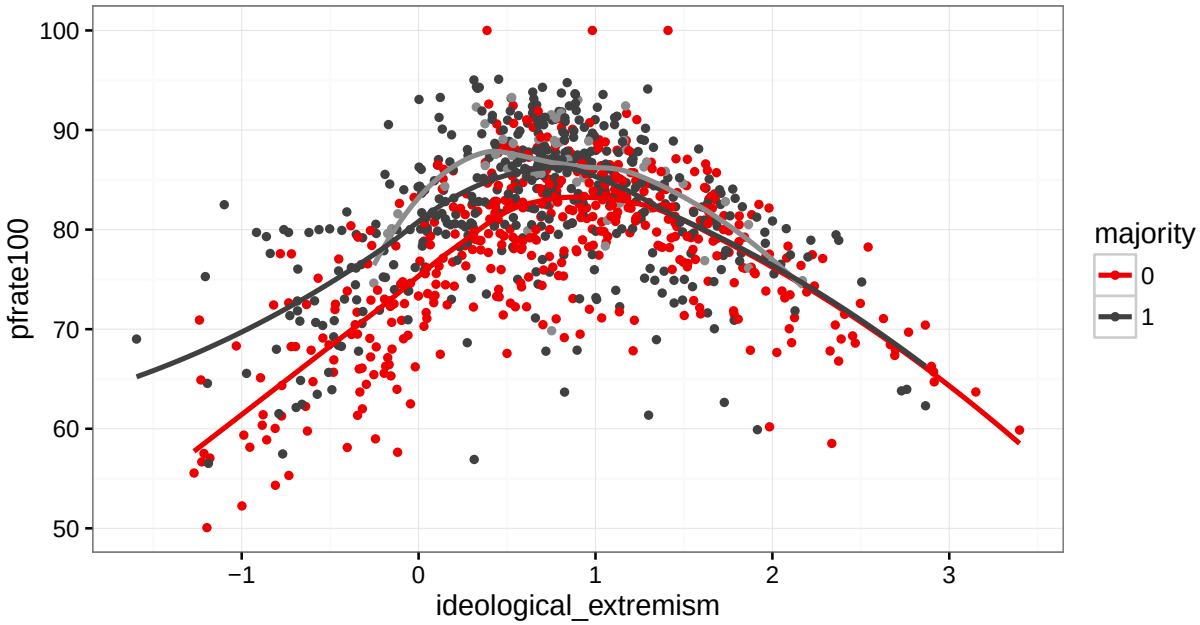


Figure 9: IV IV Plot - Senate Southern and Other Republicans

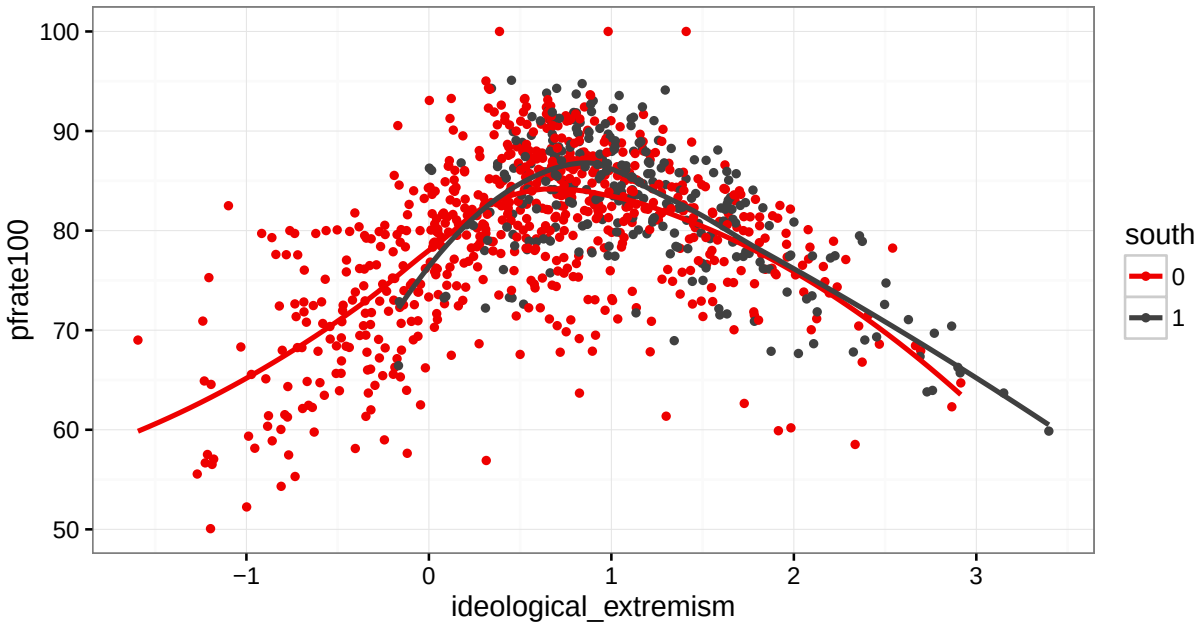
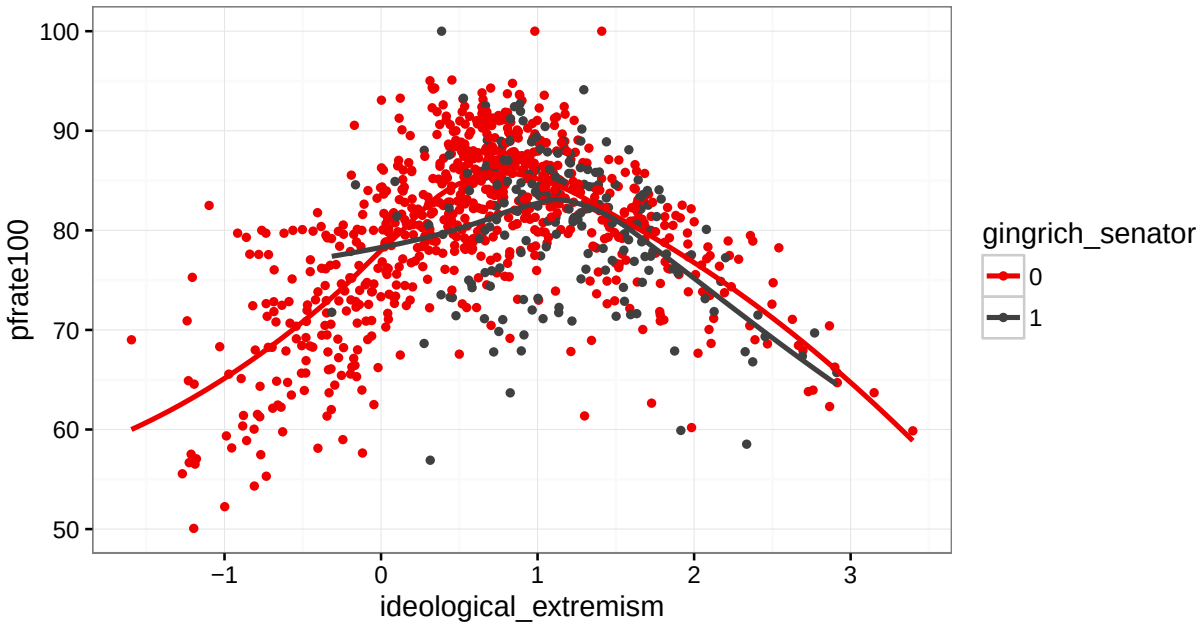


Figure 10: IV IV Plot - Gingrich Senators and Other Senate Republicans



	Model 1	Model 2	Model 3	Model 4
ideological_extremism	3.074***	7.831***	4.686***	7.923***
	(0.411)	(0.353)	(0.316)	(0.399)
chair	0.873	3.807***	−0.141	
	(0.543)	(0.696)	(0.521)	
pfrate100	0.757***	0.742***	0.705***	0.707***
	(0.030)	(0.031)	(0.025)	(0.035)
pres_vote_share	24.184***	−14.698***	18.439***	−0.009
	(2.414)	(3.062)	(1.975)	(3.196)
south	−1.636**	0.630	0.146	0.999
	(0.557)	(0.574)	(0.429)	(0.623)
power_committee	−0.735	0.461	0.002	−1.124
	(0.782)	(0.924)	(0.732)	(1.079)
vote_share	−6.572**	16.428***	−2.189	7.888**
	(2.203)	(2.822)	(2.126)	(2.990)
female	1.621*	0.345	0.498	4.148***
	(0.732)	(1.120)	(0.761)	(1.111)
afam	−0.483	−10.167*	1.876	−5.528
	(2.790)	(4.234)	(4.185)	(3.215)
latino	1.835	6.749*	4.800*	6.040
	(2.193)	(2.750)	(1.877)	(3.507)
up_for_reelection	−0.642	−1.694**	−0.988*	−1.362*
	(0.421)	(0.531)	(0.407)	(0.601)
seniority	−0.062	0.104	0.012	0.146
	(0.060)	(0.083)	(0.067)	(0.080)
freshman	−1.533**	2.191**	−0.983	0.876
	(0.574)	(0.764)	(0.570)	(0.814)
retiree	1.724	2.385*	1.951*	2.617*
	(0.912)	(0.987)	(0.866)	(1.108)
best_committee	0.173	−0.082	−0.036	0.298
	(0.129)	(0.160)	(0.124)	(0.182)
leader	2.122**	1.270	1.386*	1.965*
	(0.719)	(0.773)	(0.668)	(0.901)
(Intercept)	12.019***	17.116***	18.262***	10.974**
	(2.988)	(3.600)	(2.746)	(4.131)
R^2	0.690	0.650	0.684	0.616
Adj. R^2	0.685	0.644	0.679	0.609
Num. obs.	1039	949	1049	841
RMSE	6.107	7.172	5.863	7.739

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

Table 3: Statistical models

Figure 11: Senate lm Coefficient Plot