Supplemental Appendices to

Party Calls and Reelection in the U.S. Senate

Contents

Appendix A: Classifying Party Calls

As in Minozzi and Volden (2013), we use an algorithm to classify votes as "party calls"—that is, whether votes are predicted by party membership even after controlling for ideology. We classify the complement of votes as "party free," and we use them to estimate ideal points absent party influence. The classification algorithm is iterative. In each iteration of the algorithm, ideal points are estimated based only on the votes which were classified as "party free" in the previous iteration. All votes are then regressed on ideal points and party membership, and votes are re-categorized based on the explanatory power of party in these regressions. To begin the process we need an initial classification, and so ideal points in the first iteration are estimated using lopsided votes (which have more than 65% or less than 35% of members of the chamber voting on the same side). We then use a 15 iteration "burn-in" period for each Congress. During this early period, many votes switch categories from iteration to iteration. This number of switchers also declines rapidly in these early iterations. After burn-in, the algorithm continues until either (1) the number of votes that switch classifications stops declining, or (2) until there are fewer than 5 votes that switch. Once either condition is met, it continues for an additional 15 iterations. Finally, we use the last five iterations to provide a final classification of votes. During these final iterations, any vote that does not switch is classified in its appropriate category. Any vote which does switch is dropped from further analysis, on the basis that these votes could not be credibly classified.

Our algorithm departs from MV's in a few ways, most of them minor. However, a key change was the use of the binIRT command from the R package emIRT (Imai, Lo and Olmsted, 2016) to estimate ideal points, replacing the ideal command from the R package pscl (Jackman, 2015) used by MV. The binIRT function is considerably faster than ideal, and by using it, we were able to test a much wider variety of alternative specifications to the original algorithm.

The results of these alternative specifications culminated in a few alterations to the original algorithm. Throughout, to ensure continuity of method, we vetted alternatives by re-estimating the results from MV. Those results are remarkably robust to the alternatives we explored. Such

robustness notwithstanding, we elected to make two minor changes. First, the original classification algorithm used logistic regression to predict votes, meaning that party-line votes suffered from separation, which was resolved using a method for that purpose (Zorn, 2005). In this paper's classification method, we used linear models of roll call votes. Second, the original algorithm classified votes as "party calls" if the p-value on the party indicator in a regression of a roll call vote was smaller than 0.01. However, the House roll call data features many more votes cast per roll call than the Senate, since the lower chamber is much larger. As such, the threshold of 0.01 eventuated in classifying very few Senate votes as party calls, essentially because of the smaller n. We explored a variety of alternative p-value thresholds and settled on 0.05, as it resulted in similar fractions of party calls across the two chambers. Third, we also explored a variety of alternatives to the algorithm used here, but ultimately rejected them in order to maintain as much consistency with MV as possible. These included using random initial classifications of votes, adding a "simulated annealing"-style heating and cooling schedule to categorizations, and alternative stopping rules. We found that none of these alternatives significantly altered the results presented in the paper, and therefore elected to use an algorithm that closely matched the early effort.

Finally, with this algorithm in hand, we probed for differences in vote classifications between the two chambers. First, we broke down votes by close/lopsideness and classification as party calls/party free. Table A1 shows these comparisons for each chamber. In each panel, there is a notable, though far from perfect, correlation between close votes and party calls. This correlation is higher in the House (0.51) than in the Senate (0.45), but the two are remarkably close. We take this as prima facie evidence that the classification algorithm is at work on similar data-generating processes.

Next, we focus on whether party influence exacerbates or moderates ideological tendencies. In the regression models we use to classify votes, both ideal points and party are included as predictors of roll call behavior. We can therefore compare the signs on the coefficients of these variables to understand how the two variables interact on the average vote. Perhaps unsurprisingly, we find that the two coefficients have the same sign a majority of the time, regardless of

Table A1: Party Calls and Close/Lopsided Votes

	House		Senate	
	Party Call	Party Free	Party Call	Party Free
Lopsided	4245 (20%)	6123 (29%)	2063 (15%)	4876 (35%)
Close	9308 (45%)	1090 (5%)	5233 (37%)	1851 (13%)

The threshold for a vote to be lopsided was more than 65% of members voting on the same side of a roll call vote.

chamber (see top third of Table A2). Interestingly, we further find that party calls explain most of this relationship; similar signs appear for party and ideal points for about 75% of party calls (middle of Table A2), yet less than 50% of non-calls (bottom of Table A2). We interpret this evidence as consistent with the idea that party calls typically act to attract extremists back into the party fold.

Table A2: Comparing Coefficient Signs from Roll Call Regressions

	House		Senate	
	(−) Ideal	(+) Ideal	(−) Ideal	(+) Ideal
All Votes				
(−) Party	8159 (38%)	3180 (15%)	4581 (33%)	2264 (16%)
(+) Party	3739 (17%)	6405 (30%)	3224 (23%)	4010 (28%)
Party Calls Only				
(−) Party	6522 (44%)	1569 (11%)	2812 (39%)	822 (11%)
(+) Party	1627 (11%)	5070 (34%)	1045 (15%)	2476 (35%)
Party Free Only				
(−) Party	1637 (26%)	1611 (25%)	1769 (26%)	1442 (22%)
(+) Party	1976 (31%)	1132 (18%)	2052 (31%)	1425 (21%)

Each observation is a roll call vote, and the table categorizes these votes based on the signs of the Party and Ideal Point coefficients. The Party variable is an indicator for Republican and is positively correlated with ideal points.

Appendix B: Methodology for Senate Reelection Study

To better test the role of reelection we use same-state senators as a natural pairing. These results were shown in Figure 2 in the main text. The analyses we performed on these pairs were generalizations of the difference in differences design, in which the member not up for reelection had their rate of voting with the party on party calls and party free votes subtracted from that of the member who was up for reelection, as well as the difference between the response rate to party calls being subtracted from those of their same-state pairs.

As a further test, not shown in the paper, we estimated the effect of reelection and other variables with a fixed effects model. This produces substantively similar effects to those reported in the main paper. This allows us to decompose results by party. In doing so, we find results largely in line with those reported in the paper. Democrats show the least changes as reelection approaches, but for all categories the effect of reelection on party call responsiveness is negative and statistically significant.

Table A3: Senate Fixed Effects Models

	All	Democrats	Republicans	Majority	Minority
Ideological Extremism	2.36^{***}	2.88^{***}	4.00^{***}	1.94^{**}	4.11^{***}
	(0.48)	(0.69)	(0.75)	(0.63)	(0.88)
Baseline Rate of	0.35^{***}	0.37^{***}	0.25^{***}	0.38^{***}	0.22^{**}
Voting with Party	(0.03)	(0.05)	(0.05)	(0.05)	(0.07)
Up for Reelection	-1.01^{***}	-0.55^{*}	-1.55^{***}	-1.03^{***}	-0.91^{*}
	(0.25)	(0.27)	(0.34)	(0.28)	(0.36)
Vote Share	-0.01	0.03	-0.05	0.03	-0.03
	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)
Pres. Vote Share	0.04	0.27^{***}	0.09	0.32^{***}	0.16^{**}
	(0.02)	(0.04)	(0.05)	(0.06)	(0.06)
Freshman	1.31^{***}	0.71	0.98^{*}	0.58	0.64
	(0.37)	(0.48)	(0.46)	(0.44)	(0.76)
Retiree	0.52	0.25	0.88	0.37	0.60
	(0.63)	(0.83)	(0.83)	(0.96)	(0.85)
Best Committee	0.18	0.14	0.11	0.21	0.32
	(0.10)	(0.12)	(0.16)	(0.16)	(0.17)
Power Committee	-0.66	-0.48	-0.22	-0.96	-0.51
	(0.61)	(0.70)	(0.98)	(0.88)	(0.93)
Party Leader	1.27^{*}	0.87	1.46^{*}	1.28	1.12
	(0.51)	(0.47)	(0.62)	(0.71)	(0.74)
Committee Chair	2.93^{***}	0.38	0.65	-0.36	
	(0.48)	(0.64)	(0.71)	(0.56)	
Num. obs.	1993	1042	951	1100	893
R^2	0.87	0.89	0.91	0.91	0.93
Adj. R^2	0.85	0.87	0.88	0.88	0.90

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

Appendix C: Summary Statistics

Here we give descriptions of report summary tables of the variables used in our paper. Members are grouped either as Democrats or Republicans, with independents being grouped with the party they caucus with in each chamber. The data are constructed with observations for members in each Congress they were present in. Values are according to member status in each Congress. Members who changed parties have multiple observations in the Congress which they did so to have observations for them in each. In each chamber, *Majority* is an indicator variable for if a members' party is in the majority during a Congress, which is used to divide results and summary statistics.[1]

The bulk of the data were provided by the Legislative Effectiveness Project (Volden and Wiseman, 2014) or constructed from those data, with a few exceptions. Keith Poole furnished the roll call data. Committee data for all Senate terms and the 110^{th}-112^{th} in the House are from Charles Stewart's Congressional data page, with committee value ranks based on (Groseclose and Stewart, 1998). Committee data from the 93^{rd}-109^{th} terms in the House come from the replication data for MV. House elections data were provided to us by Gary Jacobson, and Senate elections data come from Dave Leip's U.S. Election Atlas. Gingrich Senators were identified based on (Theriault, 2013).

Party Free Ideal Point is a member's ideal point, estimated with the binIRT function from the R package emIRT using only party-free votes, mean-centered at zero, scaled to have unit standard deviation, and oriented so that Democrats' values are on average lower (i.e., further left) than Republicans'. *Ideological Extremism* is simply the *Party Free Ideal Point* value for Republicans and sign-reversed for Democrats, so that higher numbers represent more extreme members for both parties. *Responsiveness to Party Calls* is the percentage of party calls on which a member voted

1. Each party held the majority for a portion of the 107^{th} Senate, with Democrats in control for most of the term. Therefore, for the purposes of analyses, Democrats were coded as the majority of this term. This decision does not meaningfully affect the inferences in the paper.

with a majority of their party; *Baseline Rate of Voting with Party* is that percentage for party-free votes.

Up for Reelection is a Senate-specific variable, representing whether a member's election falls during a Congress. *Vote Share* is calculated by the member's share of the vote relative to their nearest opponent.[2] *Presidential Vote Share* in each chamber is an indication of Democrat or Republican (depending on who the member caucused with) presidential candidate 2-party vote share in the previous election based on the previous presidential election. *Party Leader* is an indicator for if a member is in one of the positions identified as the congressional leadership (other than committee positions) in the *Almanac of American Politics* for a particular Congress. *Committee Chair* is an indicator for whether held such a position in that Congress. *Power Committee* represents a member being on one of the top four ranked committees. *Best Committee* takes a value based on the highest ranked committee a member was on with ranks reversed so that higher means better, i.e., values range from zero (member not on a committee) to the number of committees in the chamber (member served on the highest ranked committee). *Female* is an indicator variable for female legislators. *African American* is an indicator for African American legislators. *Latino* is an indicator for Hispanic and Latino legislators. *South* is an indicator for if a member represents a state or district from 13-state south. *Seniority* is a count of consecutive terms a member has served. *Freshman* is an indicator variable for the first Congress of a member previously not in Congress.

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2. In the House, we report above or below average centered at zero since unchallenged runs were coded as missing, to avoid selecting values for these. This decision had no impact on results.

Table A4: Senate Summary Statistics

Variable	Mean	SD	Min	Max
Responsiveness to Party Calls	85.5	11.4	8.8	100
Party Free Ideal Point	0.00	1.00	−3.22	3.40
Ideological Extremism	0.69	0.72	−1.63	3.40
Baseline Rate of Voting with Party	82.0	8.2	45.1	100
Up for Reelection	0.33	0.47	0	1
Vote Share	61.2	9.9	50.0	100
Pres. Vote Share	52.1	9.7	20.1	78.0
Party Leader	0.10	0.30	0	1
Committee Chair	0.18	0.39	0	1
Power Committee	0.73	0.45	0	1
Best Committee	12.3	2.7	0	15
Female	0.07	0.25	0	1
African American	< 0.01	0.06	0	1
Latino	0.01	0.09	0	1
South	0.26	0.44	0	1
Seniority	6.25	4.62	1	26
Freshman	0.11	0.32	0	1

$N = 1,993$

Table A5: House Summary Statistics

Variable	Mean	SD	Min	Max
Responsiveness to Party Calls	85.8	11.5	8.0	100
Party Free Ideal Point	0.00	1.00	−4.08	9.35
Ideological Extremism	0.60	0.80	−4.32	9.35
Baseline Rate of Voting With Party	87.0	7.5	0	100
Vote Share vs. Mean Vote Share	0.0	9.2	−15.7	31.4
Pres. Vote Share	56.6	12.4	16.3	96.1
Party Leader	0.04	0.19	0	1
Committee Chair	0.05	0.22	0	1
Power Committee	0.26	0.44	0	1
Best Committee	13.8	6.4	0	22
Female	0.09	0.29	0	1
African American	0.06	0.24	0	1
Latino	0.04	0.18	0	1
South	0.30	0.46	0	1
Seniority	5.33	4.05	1	29
Freshman	0.16	0.36	0	1

$N = 8,544$

Regression Models of Responsiveness

Here we present results from regression models in the House and Senate which separately model by party or majority status. We expected that reelection would make members less responsive to the call of the party as they work to pivot to their districts when approaching reelection. We find that for all models categories that the sign is in the expected direction and that for all, save Democrats, it achieves statistical significance. Further, we should expect that those retiring are no longer beholden to their constituents and thus would not have this draw on their attention when the party calls. We find across all models that retirees' responsiveness to party calls takes a positive coefficient and for all, save Democrats, it is statistically significant.

We find that minority party women are substantially more responsive to party calls than their male counterparts in both chambers. Others have found that minority party women remain more focused on legislative agendas than their male counterparts Volden, Wiseman and Wittmer (2013), and we take this finding as being in line with this account. While results for this are mixed, we find generally that increased same-party presidential vote share (an indicator of party strength in the district) increases responsiveness to party calls while increased personal vote share (an indicator of member popularity in the district) decreases responsiveness. However, this relationship does not present itself for Democrats. A number of factors complicate this relationship for Democrats, such as landslide presidential election losses and the presence of Southern Democrats early on who were more moderate than their copartisans.

Table A6: House Responsiveness to Party Calls

	All	Democrats	Republicans	Majority	Minority
Ideological Extremism	7.766^{***}	8.350^{***}	5.873^{***}	6.713^{***}	8.655^{***}
	(0.130)	(0.168)	(0.207)	(0.157)	(0.201)
Baseline Rate of	0.575^{***}	0.636^{***}	0.414^{***}	0.522^{***}	0.632^{***}
Voting With Party	(0.012)	(0.015)	(0.020)	(0.015)	(0.020)
Vote Share	-0.007	-0.058^{***}	0.021	-0.125^{***}	-0.109^{***}
	(0.012)	(0.013)	(0.022)	(0.015)	(0.019)
Pres. Vote Share	0.028^{**}	0.099^{***}	-0.098^{***}	0.204^{***}	0.185^{***}
	(0.010)	(0.011)	(0.020)	(0.012)	(0.018)
Party Leader	1.811^{***}	1.972^{**}	2.787^{***}	2.627^{***}	1.843^{**}
	(0.497)	(0.599)	(0.761)	(0.647)	(0.653)
Committee Chair	4.960^{***}	2.552^{***}	9.779^{***}	1.964^{***}	
	(0.456)	(0.498)	(0.803)	(0.444)	
Power Committee	2.756^{***}	1.801^{***}	2.931^{***}	2.972^{***}	1.135^{**}
	(0.235)	(0.275)	(0.374)	(0.269)	(0.361)
Best Committee	-0.169^{***}	-0.038^{*}	-0.240^{***}	-0.178^{***}	-0.161^{***}
	(0.016)	(0.019)	(0.025)	(0.019)	(0.023)
Female	1.173^{***}	0.615	-0.078	0.037	2.228^{***}
	(0.322)	(0.353)	(0.574)	(0.404)	(0.442)
African American	1.835^{***}	-0.470	5.089	-3.014^{***}	3.402^{***}
	(0.429)	(0.441)	(2.972)	(0.536)	(0.610)
Latino	3.221^{***}	1.711^{***}	2.405^{*}	2.453^{***}	3.191^{***}
	(0.507)	(0.514)	(1.153)	(0.626)	(0.705)
South	-0.922^{***}	-2.640^{***}	3.610^{***}	-2.180^{***}	-0.667^{*}
	(0.205)	(0.276)	(0.329)	(0.244)	(0.313)
Seniority	-0.053	0.049	-0.334^{***}	0.011	0.015
	(0.028)	(0.031)	(0.050)	(0.034)	(0.041)
Freshman	0.834^{**}	-0.058	1.167^{*}	0.346	-0.456
	(0.297)	(0.356)	(0.464)	(0.348)	(0.446)
Intercept	30.952^{***}	21.282^{***}	53.412^{***}	30.032^{***}	12.343^{***}
	(1.217)	(1.495)	(2.174)	(1.390)	(2.106)
R^2	0.460	0.631	0.303	0.564	0.478
Adj. R^2	0.459	0.630	0.301	0.563	0.477
Num. obs.	8544	4746	3798	4898	3646
RMSE	8.443	7.363	8.868	7.559	8.015

Results are produced by OLS regressions for all members for the entire period in the first column, with additional analyses for all Democrats and Republicans as well as all members of the Majority and Minority party in Congresses 93-112 in the House of Representatives. Details on the variables are provided in Appendix C. $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

Table A7: Senate Responsiveness to Party Calls

	All	Democrats	Republicans	Majority	Minority
Ideological Extremism	6.242^{***}	3.125^{***}	7.799^{***}	4.697^{***}	7.963^{***}
	(0.252)	(0.410)	(0.358)	(0.315)	(0.400)
Baseline Rate of	0.737^{***}	0.760^{***}	0.741^{***}	0.703^{***}	0.702^{***}
Voting With Party	(0.021)	(0.030)	(0.031)	(0.025)	(0.035)
Up for Reelection	-0.806^{*}	-0.642	-1.238^{*}	-1.013^{*}	-0.928
	(0.361)	(0.435)	(0.551)	(0.421)	(0.616)
Retiree	1.403^{*}	1.095	1.173	1.054	1.650
	(0.685)	(0.888)	(0.981)	(0.843)	(1.087)
Vote Share	0.029	-0.053^{*}	0.150^{***}	-0.012	0.077^{**}
	(0.018)	(0.022)	(0.028)	(0.021)	(0.030)
Pres. Vote Share	0.097^{***}	0.234^{***}	-0.133^{***}	0.182^{***}	0.006
	(0.018)	(0.024)	(0.031)	(0.020)	(0.032)
Party Leader	1.607^{**}	2.220^{**}	0.908	1.447^{*}	1.923^{*}
	(0.539)	(0.712)	(0.777)	(0.660)	(0.900)
Committee Chair	2.109^{***}	0.857	3.621^{***}	-0.025	
	(0.452)	(0.543)	(0.701)	(0.517)	
Power Committee	-0.672	-0.835	-0.335	-0.019	-1.475
	(0.620)	(0.771)	(0.925)	(0.719)	(1.065)
Best Committee	0.160	0.232	0.009	0.020	0.374^{*}
	(0.101)	(0.124)	(0.154)	(0.118)	(0.175)
Female	2.046^{**}	1.687^{*}	0.475	0.522	4.268^{***}
	(0.639)	(0.730)	(1.133)	(0.758)	(1.115)
African American	-4.782	-1.193	-10.776^{*}	1.522	-5.536
	(2.487)	(2.789)	(4.283)	(4.183)	(3.222)
Latino	5.712^{**}	1.805	7.251^{**}	4.778^{*}	6.201
	(1.816)	(2.198)	(2.782)	(1.878)	(3.510)
South	0.611	-1.701^{**}	0.881	0.053	1.087
	(0.362)	(0.558)	(0.579)	(0.427)	(0.623)
Seniority	0.001	0.040	-0.025	0.077	0.117
	(0.044)	(0.052)	(0.072)	(0.060)	(0.070)
Freshman	0.887	0.755	0.427	0.571	1.086
	(0.567)	(0.710)	(0.843)	(0.633)	(1.033)
Intercept	11.537^{***}	9.432^{**}	18.000^{***}	16.344^{***}	10.679^{**}
	(2.274)	(2.906)	(3.491)	(2.643)	(4.013)
R^2	0.632	0.689	0.641	0.684	0.614
Adj. R^2	0.629	0.684	0.634	0.679	0.607
Num. obs.	1993	1042	951	1052	843
RMSE	6.970	6.118	7.263	5.864	7.757

Results are produced by OLS regressions for all members for the entire period in the first column, with additional analyses for all Democrats and Republicans as well as all members of the Majority and Minority party in Congresses 93-112 in the Senate. Details on the variables are provided in Appendix C. $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

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