

Strategic Party Government:
Party Influence in Congress, 1789-2000

Online Appendix

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Additional Tests of Stationarity and Fractional Integration.

Table S1 presents the results of stationarity tests as well as descriptive statistics. We use the Dickey-Fuller test, Augmented Dickey-Fuller, Variance Ratio Test, and KPSS tests (Dickey and Fuller 1979, 1981; Diebold 1989; Kwiatkowski *et al.* 1992). Each test has a different null and alternative hypothesis and, overall, give us contradictory results and a very hazy picture of whether or not to difference variables – a good indication that we should suspect fractional integration.

We estimated ARFIMA models with every permutation of parameters up to $(3,d,3)$ using both Robinson's (1995) and Sowell's (1992) procedures but in each case the $(0,d,0)$ model was deemed best based on the significance of parameters and on the Akaike and Schwartz Criteria. Table S2 presents results of Robinson's (1995) and Sallow's (1992) estimator of d . These estimates are pretty similar to each other and both support the presence of fractional integration and the need for ARFIMA methods. Robinson's values are used to filter each of the series prior to including them in the multivariate models.

Party Unity and Legislative Success

Here we test the assumption that party unity has a strong effect on legislative outcomes. We pool votes for the 1st through 106th Congress in each of the chambers of Congress. We exclude votes with disappearing quorums (i.e. strategic nonvoting by one party) as well as votes on veto overrides and constitutional amendments. We use as our dependent variable a dummy variable *Democratic Loss* scored 1 for a vote on which a majority of Democrats vote for the losing side while a majority of Republicans vote for the winning side and 0 otherwise. In the House, the Democrats have lost (“been rolled on”) 12,334 of 25,433 party votes (48.48%) and in the Senate they lost 12,964 of 24,360 party

votes (53.22%). We expect that the likelihood of the Democrats being rolled will decline as *Democratic Unity* on the vote – measured as the % of Democrats on the side of the majority of Democrats – increases. We also expect that the probability of the Democrats losing will decline as *Democratic Size* – measured as the proportion of Democrats in the chamber – increases. We include *Republican Unity* as an explanatory variable and expect it to increase the likelihood of the Democrats being rolled. Also, a control variable is included for the presence of a *Democratic President*, which should help the Democrats avoid being rolled.

We perform logistic regressions for four sets of cases – Democratic minorities and majorities in each chamber – and present the results in Table S3. To account for the possibility of autocorrelated errors within Congresses, we use robust standard errors created by clustering on each Congress (Everitt 1993). The strong z statistics for *Democratic Unity* and *Democratic Size* across all 4 models give strong support for the intuition that the party that votes together wins. Higher levels of Democratic unity make it far less likely that the Democrats will be on the losing end of a vote. For example, with a Senate Democratic Majority, moving *Democratic Unity* from 0.4 to 0.6 decreases the probability of the Democrats being rolled from 65% to 6%. Similar results occur for the size of the Democratic contingent where an increase from a bare majority to 60% of the chamber decreases the likelihood of being rolled from 61% to 5%. Also, *Republican Unity* has a significant and positive impact on the probability of the Democrats being rolled.

While these results are hardly surprising, an interesting nuance can be seen by comparing the Democratic Minority models with those of the Democratic Majority. In both chambers, when the Democrats are in the majority, it is their own level of unity that

predominates. But when Democrats are in the minority, the unity of the Republicans has the biggest impact on the likelihood of the Democrats being rolled. Thus, parties attempt to manipulate their unity level to win votes and find they have much more leverage to do so when they are the majority party. Furthermore, parties have a strong interest in increasing their seat share beyond a minimum winning coalition. Larger parties are better able to win votes without endangering cross-pressured members. Winning votes, in turn, may help party members succeed in subsequent elections – a topic addressed in our analyses.

Party Unity Using Traditional ARIMA Techniques

The construction of our data and the many statistical tests we employ all lead us to the conclusion that our series are fractionally integrated and that we should use fractional integration and cointegration techniques. Also, our theory tells us that we have two endogenous variables, Democrat *and* Republican Unity. Nevertheless, because fractional models and simultaneous equation models are somewhat less understood, we include in Tables S4 and S5 the party unity models of the first columns of Tables 1 and 2, but estimated using single equations and the traditional approach of whole differencing. Thus, many variables in these models, including the dependent variables, suffer from over-differencing. Basically, the tables here use a technique that is more familiar but the results are less reliable in two respects. Whichever is preferred, the substantive differences between these models and those presented in the paper are negligible.

Alternatives to Nominate

NOMINATE scores clearly reflect some combination of individual, constituency, and party influence, so using them as a measure of just the first two factors may understate the true influence of parties. Yet, alternative measures are difficult to come by. We reestimated our analyses of Tables 1 and 2 using ADA scores and Snyder and Groseclose's (2000) estimates of preferences using lopsided votes. ADA scores are available for the 1947-2000 period. We derive party cohesion scores and party median-to-median distance scores to replicate Tables 1 and 2 and present these results in Tables S6 and S7. Snyder and Groseclose's measures are available for the House only and cover the 1868-1998 period. We again replicate Tables 1 and 2 using these measures and present the results in Table S8. In each case, our main substantive conclusions remain: regardless of how we measure preferences, the actions of each party are compelled by the actions of their opposition.

Table S1: Yearly Data Descriptive Statistics and Summary of Stationarity Diagnostic Tests

HOUSE

Time Period*	Test Variable	DF/ADF	Var. Ratio	KPSS (η_τ)	KPSS (η_μ)	Diagnosis	Mean	Stan. Dev.	Min.	Max.
Yearly	Democratic Unity	Reject d=1	Reject d=1	Trend	Reject d=0	1>d>0	61.86	13.70	21.10	88.38
Yearly	Republican Unity	Reject d=1	Reject d=1	No trend	Reject d=0	1>d>0	67.25	11.63	31.53	92.94
Yearly	Democratic Size	Reject d=1	Reject d=1	No trend	d=0	d=0	54.94	12.60	10.40	92.00
Year/Cong.	Dem. Ideological Cohesion N1	Reject d=1	d=1	No trend	d=0	1>d≥0	0.20	0.07	0.08	0.43
Year/Cong.	Dem. Ideological Cohesion N2	Reject d=1	Reject d=1	Trend	d=0	1>d≥0	0.52	0.09	0.34	0.80
Year/Cong.	Rep. Ideological Cohesion N1	Reject d=1	Reject d=1	No trend	Reject d=0	1>d>0	0.20	0.06	0.09	0.51
Year/Cong.	Rep. Ideological Cohesion N2	d=1	Reject d=1	No trend	Reject d=0	1≥d>0	0.51	0.10	0.15	0.74
Year/Cong.	Ideological Distance N1	d=1	d=1	No trend	d=0	1≥d≥0	0.72	0.15	0.21	1.01
Year/Cong.	Ideological Distance N2	d=1	Reject d=1	No trend	Reject d=0	1≥d>0	0.30	0.25	0.00	1.14
Year/Cong.	Democratic Win Rate	Reject d=1	Reject d=1	No trend	d=0	d=0	0.52	0.21	0.10	0.95
Congress	Democratic Unity	Reject d=1	Reject d=1	Trend	Reject d=0	1>d>0	62.51	12.96	22.48	83.93
Congress	Republican Unity	Reject d=1	Reject d=1	No trend	d=0	1>d≥0	67.62	11.45	33.87	90.54
Congress	Democratic Size	Reject d=1	Reject d=1	No trend	d=0	d=0	54.94	12.59	10.40	92.00

SENATE

Time Period*	Test Variable	DF/ADF	Var. Ratio	KPSS (η_τ)	KPSS (η_μ)	Diagnosis	Mean	Stan. Dev.	Min.	Max.
Yearly	Democratic Unity	Reject d=1	Reject d=1	No trend	d=0	d=0	60.61	12.29	30.06	87.41
Yearly	Republican Unity	Reject d=1	Reject d=1	Trend	d=0	1>d≥0	63.80	11.83	30.21	95.06
Yearly	Democratic Size	Reject d=1	d=1	No trend	d=0	1≥d≥0	52.26	13.42	16.20	89.60
Year/Cong.	Dem. Ideological Cohesion N1	Reject d=1	Reject d=1	No trend	d=0	d=0	0.19	0.06	0.11	0.41
Year/Cong.	Dem. Ideological Cohesion N2	d=1	Reject d=1	Trend	Reject d=0	1≥d>0	0.50	0.06	0.37	0.66
Year/Cong.	Rep. Ideological Cohesion N1	Reject d=1	Reject d=1	Trend	d=0	1>d≥0	0.18	0.06	0.09	0.46
Year/Cong.	Rep. Ideological Cohesion N2	d=1	Reject d=1	No trend	d=0	1≥d≥0	0.43	0.07	0.27	0.60
Year/Cong.	Ideological Distance N1	Reject d=1	Reject d=1	No trend	Reject d=0	1>d>0	0.73	0.17	0.17	1.07
Year/Cong.	Ideological Distance N2	d=1	Reject d=1	No trend	Reject d=0	1≥d>0	0.39	0.26	0.00	1.02
Year/Cong.	Democratic Win Rate	Reject d=1	Reject d=1	No trend	Reject d=0	d=0	0.49	0.26	0.07	0.94
Congress	Democratic Unity	Reject d=1	Reject d=1	No trend	d=0	d=0	60.95	11.70	34.42	85.49
Congress	Republican Unity	Reject d=1	Reject d=1	No trend	d=0	d=0	63.79	11.60	34.03	88.50
Congress	Democratic Size	Reject d=1	d=1	No trend	Reject d=0	1≥d>0	52.26	13.45	16.20	89.60

* Yearly N = 212, Yearly/Cong. and Congress N = 106.

Table S2: Estimates of d obtained from $(0,d,0)$ models

Point Estimates of the Order of Integration (d)		Robinson's (1995) Gaussian Semiparametric Estimator			Sowell's (1992) Exact Maximum Likelihood Estimate		
HOUSE							
Time Period	Variable Name	Estimate of d^a	t -value for $d=0$	t -value for $d=1$	Estimate of d^b	t -value for $d=0$	t -value for $d=1$
Yearly	Democratic Unity	0.69 (0.0589)	11.71	5.26	0.54 (0.527)	10.29	8.69
Yearly	Republican Unity	0.78 (0.0589)	13.24	3.73	0.64 (0.0524)	12.20	6.88
Yearly	Democratic Size	0.75 (0.0589)	12.73	4.24	0.82 (0.0717)	11.48	2.47
Year/Congress	Dem. Ideological Cohesion N1	1.17 (0.0781)	14.98	2.18	1.13 (0.0998)	11.27	1.26
Year/Congress	Dem. Ideological Cohesion N2	0.03 (0.0781)	0.384	12.42	0.04 (0.0846)	0.44	11.38
Year/Congress	Rep. Ideological Cohesion N1	0.90 (0.0781)	11.53	1.28	0.79 (0.1014)	7.83	2.03
Year/Congress	Rep. Ideological Cohesion N2	0.75 (0.0781)	9.60	3.20	0.72 (0.0924)	7.82	3.00
Year/Congress	Ideological Distance N1	1.06 (0.0781)	13.57	0.77	0.99 (0.0595)	16.79	0.01
Year/Congress	Ideological Distance N2	0.78 (0.0781)	9.99	2.82	0.77 (0.0612)	12.64	3.70
Year/Congress	Democratic Win Rate	0.54 (0.0781)	6.92	5.89	0.49 (0.0950)	5.21	5.32
Congress	Democratic Unity	0.81 (0.0781)	10.37	2.43	0.77 (0.1002)	7.65	2.33
Congress	Republican Unity	0.88 (0.0781)	11.27	1.54	0.75 (0.0919)	8.18	2.70
Congress	Democratic Size	0.54 (0.0781)	6.92	5.89	0.58 (0.1001)	5.78	4.21
SENATE							
Time Period	Variable Name	Estimate of d^a	t -value for $d=0$	t -value for $d=1$	Estimate for d^b	t -value for $d=0$	t -value for $d=1$
Yearly	Democratic Unity	0.69 (0.0589)	11.71	5.26	0.57 (0.0537)	10.62	8.00
Yearly	Republican Unity	0.70 (0.0589)	11.88	5.09	0.62 (0.0505)	12.26	7.54
Yearly	Democratic Size	0.91 (0.0589)	15.44	1.53	0.92 (0.0661)	13.89	1.24
Year/Congress	Dem. Ideological Cohesion N1	1.03 (0.0781)	13.19	0.38	1.01 (0.1030)	9.78	0.07
Year/Congress	Dem. Ideological Cohesion N2	0.74 (0.0781)	9.48	3.33	0.69 (0.0878)	7.85	3.54
Year/Congress	Rep. Ideological Cohesion N1	0.98 (0.0781)	12.55	0.26	0.81 (0.0832)	9.71	2.31
Year/Congress	Rep. Ideological Cohesion N2	0.62 (0.0781)	7.94	4.87	0.63 (0.0833)	7.51	4.49
Year/Congress	Ideological Distance N1	0.99 (0.0781)	12.68	0.13	0.95 (0.0633)	14.99	0.81
Year/Congress	Ideological Distance N2	0.73 (0.0781)	9.35	3.46	0.86 (0.0673)	12.78	2.08

^a Available as RGSER.SRC for RATS from the Estima web site (<http://www.estima.com>). These estimates come from the estimation of $(0, 1+d, 0)$ on first differenced data due to the constrained parameter space $(-1.5 < d < .5)$. Thus, the results actually reflect the estimate of $d+1$.

^b Available as ARF500.SRC from the Estima web site. These estimates follow the same differencing process as do Robinson's.

Table S3: Predictors of Democratic Defeats on Party Votes – Pooled Logit Models by Party Status, House & Senate, 1789-2000

Independent Variable	<i>SENATE</i>		<i>HOUSE</i>	
	Democratic Majority	Democratic Minority	Democratic Majority	Democratic Minority
	Coefficient (SE)† (z)	Coefficient (SE)† (z)	Coefficient (SE)† (z)	Coefficient (SE)† (z)
Constant	19.91 (2.37) 8.39***	12.65 (1.86) 6.79***	22.29 (3.14) 7.09***	11.15 (1.59) 7.02***
Democrat Unity	-17.21 (1.46) -11.82***	-10.54 (1.57) -6.77***	-21.53 (2.63) -8.18***	-12.63 (1.46) -8.67***
Republican Unity	13.63 (1.30) 10.46***	14.90 (1.62) 9.19***	15.36 (1.67) 9.18***	16.44 (1.97) 8.33***
Democratic Size	-0.35 (0.04) -8.02***	-0.29 (0.04) -7.84***	-0.38 (0.05) -7.07***	-0.24 (0.04) -6.21***
Democratic President	-0.97 (0.53) -1.81*	0.37 (0.43) 0.86	0.01 (0.29) 0.05	-0.71 (0.61) -1.16
N	13013	11347	15245	10198
Prob > χ^2	.00	.00	.00	.00
Pseudo R^2	0.72	0.67	0.77	0.67
Log Pseudo-Likelihood	-2315.12	-2069.45	-2213.56	-1926.73

* Significant at .05 level, ** Significant at .01 level, *** Significant at .001 level (all one-tailed tests).

† Robust standard errors are clustered by Congress.

Table S4: Strategic Party Voting in the House 1789-2000 – Single Equation ARIMA Model of Democratic Unity

Independent Variable	Coefficient	s.e.	<i>p</i>
Constant	-0.063	0.505	.900
Democrat Unity _{<i>t-2</i>}	0.205	0.052	.000***
Republican Unity	0.533	0.062	.000***
(DemUnity – RepUnity) _{<i>t-1</i>} (ECM)	-0.365	0.052	.000***
Democratic Size	-0.348	0.093	.000***
Democratic Majority	-0.292	1.785	.870
Ideological Distance N. 1 st	3.246	12.216	.400
Ideological Distance N. 2 nd	-10.870	5.241	.961
Dem. Ideological Cohesion NOMINATE 1	-23.890	29.805	.212
Dem. Ideological Cohesion NOMINATE 2	-47.961	20.060	.009*
Dem. Ideological Cohesion NOMINATE 2 _{<i>t-1</i>}	-69.562	17.350	.000***
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Durbin Watson Statistic	2.36		
Centered R^2	0.51		
S.E.E.	7.28		
S.S.R.	10500.48		

N=209

* Significant at .05 level, ** Significant at .01 level, *** Significant at .001 level (all one-tailed tests).

Table S5: Strategic Party Voting in the Senate 1789-2000 – Single Equation ARIMA Model of Democratic Unity

Independent Variable	Coefficient	s.e.	<i>p</i>
Constant	0.237	0.460	.607
Democrat Unity $t-1$	-0.244	0.062	.000***
Democrat Unity $t-2$	0.029	0.059	.627
Republican Unity	0.301	0.053	.000***
(DemUnity – RepUnity) $_{t-1}$ (ECM)	-0.432	0.063	.000***
Democratic Size	-0.381	0.084	.000***
Democratic Majority	5.076	1.641	.001**
Ideological Distance N. 1 st	7.043	8.045	.191
Ideological Distance N. 1 st $_{t-2}$	19.297	8.040	.009**
Ideological Distance N. 2 nd	3.799	4.322	.190
Dem. Ideological Cohesion NOMINATE 1	2.726	22.023	.902
Dem. Ideological Cohesion NOMINATE 1 $_{t-3}$	-49.414	20.342	.008**
Dem. Ideological Cohesion NOMINATE 2	-39.877	12.212	.001***
Rep. Ideological Cohesion NOMINATE 2	16.112	10.407	.062
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Durbin Watson Statistic	2.03		
Centered R^2	0.55		
S.E.E.	6.61		
S.S.R.	8480.20		
N=208			

* Significant at .05 level, ** Significant at .01 level, *** Significant at .001 level (all one-tailed tests).

Table S6: Strategic Party Voting in the House 1949-2000 – Model of Yearly Data Using ADA Scores

Independent Variable	Dependent Variable: Democrats		Dependent Variable: Republicans	
	Coef. (s.e.)	<i>p</i>	Coef. (s.e.)	<i>p</i>
Constant	1.702 (0.590)	.004**	-1.044 (0.784)	.056
Opposition Unity	0.772 (0.097)	.000***	0.691 (0.104)	.000***
ECM _{<i>t-1</i>}	-0.186 (0.052)	.000***	-0.206 (0.061)	.000***
Democratic Size	-0.330 (0.111)	.001**	0.236 (0.121)	.025*
New Majority	15.085 (2.328)	.000***	-14.362 (2.161)	.000***
Ideological Distance	-0.074 (0.080)	.648	-0.033 (0.070)	.321
Intra-party Cohesion	-0.467 (0.199)	.010**	-0.052 (0.132)	.347
Intra-party Cohesion _{<i>t-1</i>}	-0.379 (0.138)	.003***	---	---
Durbin Watson Statistic	2.41		2.26	
Centered <i>R</i> ²	0.53		0.57	
N=52				

* Significant at .05 level, ** Significant at .01 level, *** Significant at .001 level (all one-tailed tests).

Table S7: Strategic Party Voting in the Senate 1948-2000 – Model of Yearly Data Using ADA Scores

Independent Variable	Dependent Variable: Democrats		Dependent Variable: Republicans	
	Coef. (s.e.)	<i>p</i>	Coef. (s.e.)	<i>p</i>
Constant	1.575 (0.784)	.044*	-0.886 (0.706)	.209
Opposition Unity	0.428 (0.104)	.000***	0.503 (0.119)	.000***
ECM _{<i>t-1</i>}	-0.291 (0.092)	.001***	-0.246 (0.073)	.000***
Democratic Size	0.023 (0.234)	.921	-0.205 (0.227)	.366
New Majority	9.941 (2.594)	.000**	-7.694 (2.709)	.002**
Ideological Distance	0.069 (0.095)	.232	-0.325 (0.069)	.000***
Intra-party Cohesion	-0.101 (0.309)	.745	-0.744 (0.186)	.000***
Durbin Watson Statistic	2.54		2.47	
Centered <i>R</i> ²	0.40		0.57	

N=53

* Significant at .05 level, ** Significant at .01 level, *** Significant at .001 level (all one-tailed tests).

Table S8: Strategic Party Voting in the House 1868-1998 – Model of Yearly Data Using Nominate Scores on Lopsided Votes

Independent Variable	Democrats		Republicans	
	Coef. (s.e.)	<i>p</i>	Coef. (s.e.)	<i>p</i>
Constant	01.152 (0.720)	.109	0.288 (0.596)	.629
Opposition Unity	0.883 (0.072)	.000***	0.620 (0.053)	.000***
ECM _{<i>t-1</i>}	-0.495 (0.072)	.000***	-0.437 (0.065)	.000***
Democratic Size	0.056 (0.181)	.756	-0.198 (0.154)	.196
New Majority	6.002 (2.481)	.199	-3.434 (1.515)	.011*
Ideological Distance N. 1 st	37.964 (84.431)	.326	-0.624 (49.856)	.990
Ideological Distance N. 2 nd	-34.522 (50.440)	.494	43.607 (43.312)	.157
Intra-party Cohesion NOMINATE 1	8.396 (122.967)	.472	-80.590 (90.928)	.188
Intra-party Cohesion NOMINATE 2	49.879 (72.305)	.510	28.218 (32.951)	.609
Durbin Watson Statistic	2.32		2.31	
Centered <i>R</i> ² N=131	0.42		0.40	

* Significant at .05 level, ** Significant at .01 level, *** Significant at .001 level (all one-tailed tests).

Supplemental References

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