Supporting Information for
"Roll Call Voting Under Random Seating Assignment"

Table of Contents

A Parties and Coalitions in Iceland's Alþingi

The moderately conservative Independence Party has for most of its history been the largest political party, drawing support from across the socio-economic spectrum. While emphasizing economic liberty, in latter years the party has shown fissures on the issue of membership in the European Union. The split likely reflects both nationalist values and the party's ties with the fishing industry.

The Progressive Party was formed in a merger of two farmers' parties in 1916 and has always enjoyed greater support in rural areas and, therefore, has been one of the prime beneficiaries of an electoral system that has a high degree of malapportionment.[1] Its vote share in Reykjavík, Iceland's largest and capital city, was about half of what it was in the rest of the country in the 2013 election. The Progressive Party is a center-right party and because of its centrist location in the policy spectrum it has been very successful in terms of government participation, forming and joining coalitions to both the left and the right. It emphasizes economic and cultural independence and, after a brief shift prior to the 2009 election, returned to its former position of opposing EU membership.

The Social Democratic Alliance is, not surprisingly, a social democratic party positioned on the center-left. The Social Democratic Alliance resulted from a merger of the Social Democratic Party, the People's Alliance, National Awakening, and the Women's List in 1999. The party enjoys greater support in urban areas. It is the only party that has maintained a clear pro-EU membership position over the last couple of decades.

The merger of the four parties in 1999 was not entirely successful. The left-wing of the People's Alliance, itself a merger of the Socialist Party and a faction of the Social Democratic Party in 1956, formed the Left-Green Movement. The Left-Green Movement adheres to democratic socialism as well as environmental values. It draws its support disproportionately from the two Reykjavík districts as well as the North-East constituency. Although it has opposed membership in the EU, the coalition of the Social Democratic

[1] Electoral reforms have gradually reduced the malapportionment of the system.

Alliance and the Left-Green Movement between 2009-2013 agreed to begin accession negotiations with the EU. The party was, however, not united behind the decision and several of the party's MPs defected on the vote on the accession negotiations in Alþingi.

The left has been more fractious than the right as the discussion above suggests. The National Awakening (Thjodvaki) was formed in 1994 by Johanna Sigurdardottir, who had lost a leadership bid in the Social Democratic Party, along with members of the People's Alliance. After the 1995 election, its MPs joined the parliamentary party of the Social Democratic Party and, later, Sigurdardottir became the leader of Social Democratic Alliance.

The Women's List was a feminist party between 1983 and 1999. The party did not adopt a clear position on the left-right dimension but the fact that its members joined with either the Social Democratic Alliance or the Left-Green Movement in 1999 provides some suggestions about its overall ideological orientation. The party is also notable for the fact that it rejected the possibility of joining government coalitions, seeking instead to advance feminist issues from the outside.

The Liberal Party was formed in 1998 by a former member of the Independence Party in opposition to the system of fishing quotas adopted under the party. The party's manifesto was economically liberal but it also favored limits on immigration and opposed membership in the EU. It drew its support mostly from rural areas and in particular from villages that relied heavily on fishing.

Bright Future (Björt Framtíð) is a social democratic party formed in 2012 by members of the Best Party (a new party that had contested Reykjavik city council elections) along with independent MPs who were former members of the Progressive Party (Guðmundur Steingrímsson) and the Social Democratic Alliance (Róbert Marshall). Bright Future won 8.2% of the vote in 2013, joined a short-lived coalition with the Independence Party and the Reform Party after the 2016 election, and exited parliament in the subsequent election (2017) with only 1.2% of the vote.

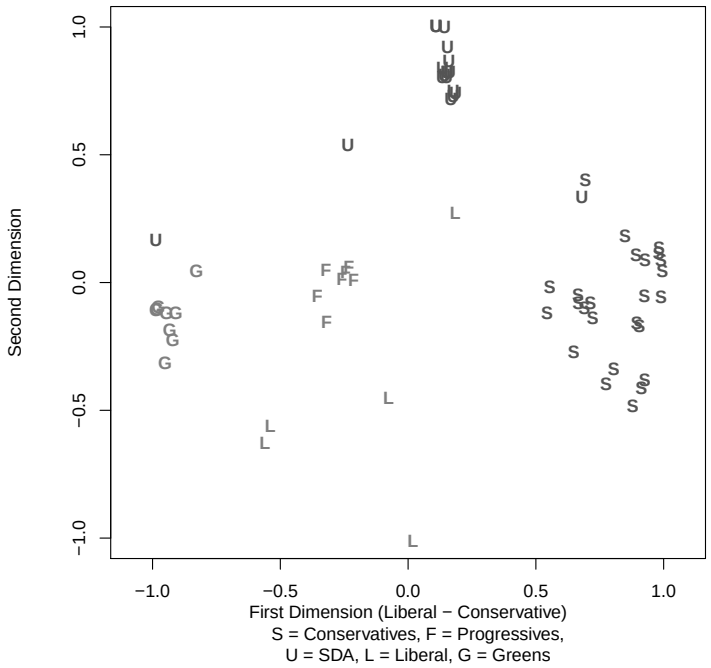
The Reform Party (Viðreisn) is a liberal party formed as a splinter from the Independence Party over the issue of European cooperation. The Reform Party intended to provide voters with a pro-EU party on the center-right of the political spectrum. The party first contested elections in 2016, won 10.5% of the vote, and joined a government coalition with the Independence Party and Bright Future. The party suffered in the subsequent election but, unlike Bright Future, avoided being wiped out and won 6.7% of the vote.

The final party to gain parliamentary representation in the period of our analysis is the Pirate Party. Formed in 2012, the party was led by Birgitta Jónsdóttir, an anarchist and former spokesperson for WikiLeaks. The party emphasizes transparency, direct democracy, and freedom of expression. From 2015 to 2016, the Pirate Party led public opinion polling in Iceland, a time period that included the exposure of Prime Minister and Progressive Party leader Sigmundur Gunnlaugsson in the Panama Papers and his subsequent resignation.

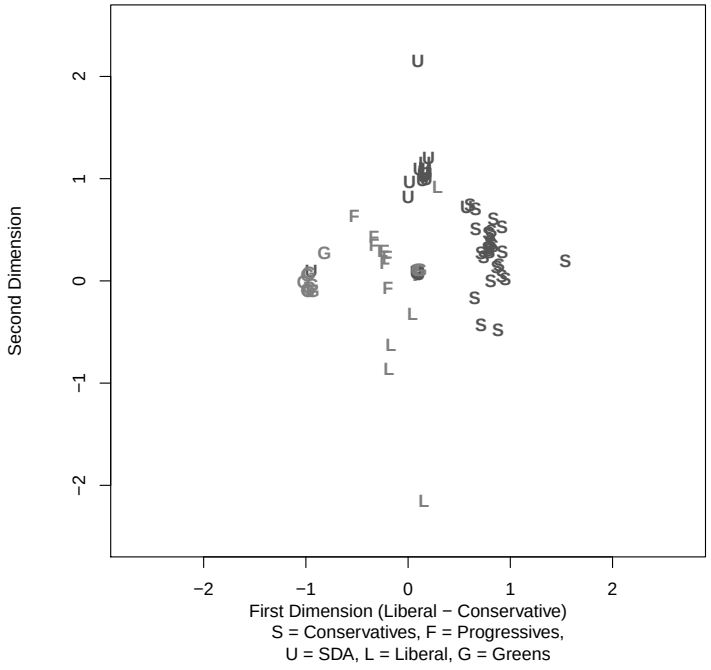
Jónsdóttir, the leader of the Pirate Party, was recently involved in a public feud with Independence Party MP, Jón Gunnarsson, over the Icelandic entertainer Björk that demonstrates the potential importance of, as well as the perils of, random seating in Alþingi. After Björk labeled Iceland's Prime Minister and Finance Minister "rednecks" for promoting economic policies she viewed as harmful to Iceland's highlands, Gunnarsson took to Facebook to question whether the singer paid taxes in Iceland. In response, Jónsdóttir stated that "No living Icelander has done more for our people and country than Björk" and expressed opposition to sitting next to Gunnarsson, to whom she had been randomly assigned as a neighbor in Alþingi, stating "I had to sit next to him for a whole year and almost had to seek crisis counseling because of his rudeness but he is known to bully everything and everyone in parliament."[2]

[2]See https://www.althingi.is/altext/raeda/145/rad20151215T104524.html. Another, more detailed, treatment of the Jónsdóttir vs. Gunnarsson incident can be found at: https://kjarninn.is/frettir/2015-12-16-birgitta-bidur-jon-gunnarsson-afsokunar-ef-hun-hefur-modgad-hann-og-saert/. This relates how, after Jónsdóttir's "speech" in parliament, she apologized if she offended Gunnarsson while noting that she had repeatedly asked for a different seat.

FIGURE A1: REPRESENTATIVE SCALING: 136TH SESSION OF ALÞINGI



(A) WNOMINATE



(B) BAYESIAN IRT/IDEAL

TABLE A1: SUMMARY STATISTICS FOR VOTE SCORES & IDEAL POINT ESTIMATES

Session	Obs.	WNOM-1	WNOM-2	IDEAL-1	IDEAL-2	Coal. Score	Def. Rate
119	52	0.044 (0.833)	-0.148 (0.390)	0.223 (0.980)	-0.812 (0.847)	60.39 (45.12)	0.20 (0.40)
120	52	-0.051 (0.767)	-0.016 (0.306)	0.180 (0.872)	0.065 (1.188)	57.32 (47.59)	0.28 (0.30)
121	52	0.074 (0.843)	-0.049 (0.320)	0.154 (0.920)	0.192 (0.707)	56.70 (47.79)	0.27 (0.37)
122	52	0.069 (0.899)	-0.077 (0.227)	0.318 (0.986)	-1.114 (0.759)	55.69 (49.57)	0.17 (0.23)
123	52	0.273 (0.761)	0.145 (0.333)	0.297 (0.696)	0.254 (0.325)	58.38 (48.23)	0.43 (1.28)
125	50	0.073 (0.739)	0.060 (0.411)	-0.146 (0.993)	0.944 (1.339)	52.84 (46.13)	0.27 (0.20)
126	50	-0.018 (0.795)	-0.043 (0.403)	-0.044 (0.792)	-0.290 (0.030)	50.68 (49.21)	0.11 (0.16)
127	50	0.012 (0.791)	0.123 (0.363)	0.063 (0.833)	0.817 (1.240)	51.21 (48.49)	0.30 (0.49)
128	50	0.060 (0.655)	0.138 (0.426)	0.410 (0.610)	-0.850 (0.793)	50.24 (49.08)	0.33 (0.98)
130	50	-0.235 (0.757)	0.135 (0.266)	-0.198 (0.963)	-0.315 (1.234)	42.95 (48.65)	0.18 (0.38)
131	50	-0.107 (0.840)	0.036 (0.333)	0.099 (0.807)	0.387 (0.769)	42.79 (48.86)	0.16 (0.25)
132	50	-0.147 (0.719)	0.070 (0.407)	-0.209 (1.496)	-1.036 (2.389)	44.25 (49.60)	0.15 (0.24)
133	51	-0.060 (0.629)	0.137 (0.386)	0.009 (0.954)	-2.295 (4.724)	45.83 (48.13)	0.10 (0.27)
135	49	0.407 (0.680)	-0.212 (0.428)	0.288 (0.608)	-0.867 (0.554)	69.28 (42.01)	0.09 (0.15)
136	53	0.274 (0.606)	0.084 (0.458)	0.298 (0.605)	0.375 (0.629)	69.26 (39.65)	0.20 (0.75)
137	50	0.054 (0.802)	-0.017 (0.456)	-0.015 (0.987)	0.496 (0.859)	50.22 (46.67)	0.71 (1.53)
138	52	0.202 (0.697)	-0.021 (0.309)	-0.038 (1.275)	-0.001 (0.634)	50.85 (45.42)	0.30 (0.40)
139	50	-0.075 (0.747)	0.029 (0.525)	-0.089 (0.739)	0.092 (0.707)	52.40 (42.66)	0.44 (0.83)
140	53	0.103 (0.776)	0.075 (0.516)	0.219 (0.854)	0.347 (0.413)	47.28 (45.42)	0.92 (1.58)
141	53	-0.098 (0.772)	0.041 (0.437)	-0.145 (0.860)	0.226 (0.661)	50.10 (46.35)	0.43 (0.73)
142	46	-0.109 (0.730)	0.243 (0.458)	0.242 (0.454)	0.942 (0.891)	56.70 (48.27)	0.54 (1.37)
143	52	0.038 (0.884)	0.113 (0.297)	0.428 (0.847)	-0.577 (0.849)	54.51 (48.80)	0.15 (0.39)
144	53	-0.176 (0.685)	-0.031 (0.340)	0.184 (0.976)	-0.223 (0.156)	53.33 (49.51)	0.29 (0.85)
Total	1,172	0.027 (0.768)	0.035 (0.398)	0.111 (0.914)	-0.144 (1.531)	53.16 (47.13)	0.30 (0.78)

Note: Means (standard deviations) are reported; observations refer to the number of legislators who cast votes.

B Seating in the Alþingi Chamber

The photo below shows the relatively tight quarters for MPs in Iceland.

FIGURE B1: CHAMBER OF ALÞINGI

C Seat Assignments and Swapping

A few exceptions have been made for MPs that are handicapped or have limited mobility. These seat assignments can effectively be considered random.

TABLE C2: EXCEPTION BECAUSE OF LIMITED MOBILITY

YEAR	SESSION	MEMBER OF PARLIAMENT
1999-2000	125	Steingrímur J. Sigfússon (LGM) for part of session
2003	130	Helgi Hjörvar (SDA) and Sigurlín M. Sigurðardóttir (Liberal)
2003-2004	131	Helgi Hjörvar (SDA) and Sigurlín M. Sigurðardóttir (Liberal)
2005-2013	132-141	Helgi Hjörvar (SDA)
2014-2015	144	Steinunn Þóru Árnadóttir (LGM)

The leaders of the parliamentary parties have also been partially exempted from the lottery since 2004. Parliamentary party leaders are allocated seats along the chamber's main aisle in order to facilitate their entry and exit from the chambers and to the podium on the grounds that they sometimes have to attend to urgent business outside the chambers and are called on to address the chamber more frequently than other MPs. While the seats are reserved, the parliamentary party leaders draw their seats randomly from among those. There were a few instances prior to 2004 where parliamentary party leaders swapped their seats for one of those that were later reserved.

TABLE C3: SEAT SWAPPING BY PARLIAMENTARY PARTY LEADERS

YEAR	SESSION	MP	SWAPPED WITH MP
1995	119	Einar K. Guðfinnsson (IP)	Geir H. Haarde (IP)
1995-1996	120	Guðmundur Hallvardsson (IP)	Geir H. Haarde (IP)
2000-2001	126	Arnbjörg Sveinsdóttir (IP)	Sigríður A. Þórðardóttir (IP)
		Lúðvík Bergvinsson (SDA)	Rannveig Guðmundsdóttir (SDA)
2007	135	Jón Magnússon (LP)	Guðjón A. Kristjánsson (LP)*

*Seat swap did not involve parliamentary party leader.

D Supplemental Results

TABLE D1: GLOBAL MORAN'S *I* RESULTS BY SESSION AND NEIGHBOR DEFINITION, 119-125

	119			120			121		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	0.129	0.130	0.099	-0.134	-0.156	0.036	0.042	-0.001	0.037
	(0.179)	(0.109)	(0.115)	(0.778)	(0.896)	(0.243)	(0.340)	(0.432)	(0.239)
WNOM-2	-0.254	-0.130	-0.059	-0.111	-0.001	0.014	0.146	-0.059	-0.015
	(0.923)	(0.812)	(0.644)	(0.730)	(0.431)	(0.337)	(0.132)	(0.645)	(0.478)
IDEAL-1	0.027	0.028	0.014	-0.161	-0.148	0.065	0.090	0.027	0.060
	(0.378)	(0.329)	(0.334)	(0.830)	(0.885)	(0.143)	(0.232)	(0.335)	0.159)
IDEAL-2	-0.200	-0.230	-0.203	0.041	0.004	0.037	-0.066	-0.081	-0.029
	(0.891)	(0.977)	(0.991)	(0.341)	(0.412)	(0.236)	(0.623)	(0.717)	(0.547)
Coal. Score	0.116	0.124	0.093	-0.199	-0.204	0.013	0.018	-0.021	0.028
	(0.200)	(0.119)	(0.127)	(0.883)	(0.955)	(0.344)	(0.401)	(0.505)	(0.275)
Def. Rate	**0.325**	**0.256**	**0.169**	-0.024	0.014	0.081	0.025	-0.024	-0.027
	(0.006)	**(0.003)**	**(0.005)**	(0.512)	(0.372)	(0.097)	(0.364)	(0.520)	(0.545)

	122			123			125		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	0.034	0.090	-0.005	0.157	0.033	0.036	0.028	**0.167**	**0.144**
	(0.362)	(0.156)	(0.426)	(0.122)	(0.314)	(0.244)	(0.376)	**(0.046)**	**(0.022)**
WNOM-2	-0.404	-0.146	-0.113	-0.106	-0.059	0.030	0.183	0.124	0.092
	(0.996)	(0.884)	(0.885)	(0.717)	(0.643)	(0.266)	(0.090)	(0.094)	(0.081)
IDEAL-1	0.053	0.098	0.000	0.178	0.034	0.045	0.183	**0.220**	**0.189**
	(0.314)	(0.139)	(0.401)	(0.092)	(0.310)	(0.210)	(0.092)	**(0.015)**	**(0.005)**
IDEAL-2	0.011	-0.039	-0.041	-0.110	-0.044	0.074	0.161	0.136	0.109
	(0.413)	(0.575)	(0.610)	(0.730)	(0.590)	(0.118)	(0.116)	(0.077)	(0.054)
Coal. Score	0.038	0.083	-0.007	0.144	0.014	0.045	0.057	**0.169**	**0.147**
	(0.352)	(0.172)	(0.436)	(0.139)	(0.380)	(0.209)	(0.309)	**(0.044)**	**(0.020)**
Def. Rate	-0.023	-0.025	-0.009	-0.051	-0.047	-0.011	0.102	**0.161**	0.077
	(0.511)	(0.523)	(0.443)	(0.692)	(0.724)	(0.405)	(0.201)	**(0.043)**	(0.105)

Note: Table reports Moran's *I* test statistics with *p*-values in parentheses.

TABLE D2: GLOBAL MORAN'S *I* RESULTS BY SESSION AND NEIGHBOR DEFINITION, 126-132

	126			127			128		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	**0.258**	0.132	0.074	**0.289**	**0.267**	0.093	-0.202	-0.109	-0.015
	(0.035)	(0.085)	(0.124)	**(0.022)**	**(0.005)**	(0.081)	(0.882)	(0.788)	(0.474)
WNOM-2	-0.074	-0.060	0.034	0.056	0.086	0.032	-0.210	-0.202	-0.136
	(0.637)	(0.641)	(0.249)	(0.304)	(0.162)	(0.256)	(0.895)	(0.951)	(0.926)
IDEAL-1	**0.285**	0.112	0.072	**0.321**	**0.238**	0.074	-0.095	-0.069	-0.004
	(0.023)	(0.117)	(0.127)	**(0.013)**	**(0.010)**	(0.122)	(0.690)	(0.675)	(0.418)
IDEAL-2	0.030	0.071	0.009	**0.265**	0.149	0.057	-0.170	-0.117	-0.134
	(0.368)	(0.201)	(0.358)	**(0.025)**	(0.054)	(0.158)	(0.839)	(0.812)	(0.922)
Coal. Score	**0.258**	0.128	0.073	**0.278**	**0.248**	0.095	-0.175	-0.112	-0.047
	(0.035)	(0.092)	(0.127)	**(0.026)**	**(0.008)**	(0.079)	(0.842)	(0.796)	(0.630)
Def. Rate	-0.058	-0.056	-0.007	**0.324**	**0.228**	**0.212**	-0.016	**0.188**	-0.025
	(0.602)	(0.633)	(0.432)	**(0.005)**	**(0.005)**	**(0.001)**	(0.479)	**(0.000)**	(0.544)

	130			131			132		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	0.088	-0.020	0.012	0.224	0.047	0.006	0.040	0.020	-0.014
	(0.239)	(0.498)	(0.349)	(0.061)	(0.271)	(0.375)	(0.350)	(0.357)	(0.469)
WNOM-2	0.220	0.156	**0.161**	0.042	0.094	0.076	-0.174	-0.046	0.021
	(0.057)	(0.055)	**(0.014)**	(0.344)	(0.151)	(0.117)	(0.838)	(0.592)	(0.306)
IDEAL-1	0.197	0.128	0.095	0.150	0.016	-0.018	-0.045	-0.055	-0.031
	(0.077)	(0.091)	(0.083)	(0.139)	(0.373)	(0.489)	(0.564)	(0.624)	(0.552)
IDEAL-2	**0.273**	**0.216**	**0.169**	**0.251**	**0.173**	0.083	-0.085	-0.027	-0.028
	(0.026)	**(0.015)**	**(0.011)**	**(0.041)**	**(0.040)**	(0.101)	(0.662)	(0.524)	(0.537)
Coal. Score	0.088	-0.000	0.044	0.160	0.046	0.014	-0.090	-0.038	-0.053
	(0.241)	(0.428)	(0.223)	(0.127)	(0.276)	(0.335)	(0.671)	(0.562)	(0.654)
Def. Rate	-0.129	-0.141	-0.101	0.115	**0.182**	**0.175**	-0.151	-0.090	0.007
	(0.803)	(0.902)	(0.875)	(0.187)	**(0.030)**	**(0.006)**	(0.818)	(0.754)	(0.354)

Note: Table reports Moran's *I* test statistics with *p*-values in parentheses.

TABLE D3: GLOBAL MORAN'S *I* RESULTS BY SESSION AND NEIGHBOR DEFINITION, 133-139

	133			135			136		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	0.018	-0.024	-0.026	-0.085	-0.099	-0.003	0.048	0.045	0.037
	(0.403)	(0.516)	(0.528)	(0.659)	(0.756)	(0.412)	(0.328)	(0.278)	(0.243)
WNOM-2	-0.057	-0.025	-0.032	0.050	0.157	-0.013	-0.190	-0.145	-0.152
	(0.594)	(0.517)	(0.561)	(0.325)	(0.056)	(0.462)	(0.873)	(0.874)	(0.951)
IDEAL-1	0.004	-0.039	-0.036	-0.148	-0.115	-0.023	0.002	0.043	0.034
	(0.440)	(0.569)	(0.580)	(0.791)	(0.800)	(0.513)	(0.444)	(0.286)	(0.252)
IDEAL-2	-0.129	-0.060	-0.059	-0.083	0.065	-0.026	-0.060	-0.076	-0.068
	(0.760)	(0.645)	(0.687)	(.654)	(0.223)	(0.527)	(0.613)	(0.708)	(0.739)
Coal. Score	-0.040	-0.031	-0.053	-0.166	-0.159	-0.008	0.152	**0.184**	0.110
	(0.552)	(0.541)	(0.657)	(0.820)	(0.889)	(0.437)	(0.129)	**(0.033)**	(0.054)
Def. Rate	-0.119	-0.003	0.037	-0.156	-0.107	-0.005	-0.043	-0.066	-0.070
	(0.805)	(0.419)	(0.173)	(0.838)	(0.810)	(0.411)	(0.584)	(0.711)	(0.798)

	137			138			139		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	-0.028	-0.031	0.039	**0.241**	**0.211**	0.035	0.041	0.015	0.023
	(0.517)	(0.539)	(0.238)	**(0.045)**	**(0.017)**	(0.247)	(0.348)	(0.377)	(0.305)
WNOM-2	0.215	**0.197**	**0.192**	-0.099	0.110	-0.041	-0.203	-0.157	-0.144
	(0.071)	**(0.027)**	**(0.005)**	(0.701)	(0.112)	(0.606)	(0.879)	(0.890)	(0.930)
IDEAL-1	-0.048	-0.059	0.031	0.111	0.114	0.001	0.079	0.028	0.034
	(0.567)	(0.634)	(0.267)	(0.195)	(0.107)	(0.399)	(0.264)	(0.334)	(0.260)
IDEAL-2	-0.065	-0.113	-0.072	0.006	**0.243**	**0.115**	-0.079	-0.038	-0.028
	(0.611)	(0.801)	(0.741)	(0.427)	**(0.004)**	**(0.033)**	(0.648)	(0.565)	(0.541)
Coal. Score	-0.037	-0.071	0.031	**0.267**	**0.179**	0.028	0.017	0.010	0.021
	(0.540)	(0.671)	(0.269)	**(0.031)**	**(0.034)**	(0.278)	(0.406)	(0.394)	(0.314)
Def. Rate	0.030	0.026	0.004	-0.131	-0.118	-0.115	0.149	0.081	0.030
	(0.322)	(0.273)	(0.334)	(0.778)	(0.831)	(0.897)	(0.120)	(0.162)	(0.258)

Note: Table reports Moran's *I* test statistics with *p*-values in parentheses.

TABLE D4: GLOBAL MORAN'S *I* RESULTS BY SESSION AND NEIGHBOR DEFINITION, 140-144

	140			141			142		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	-0.131	0.075	-0.011	0.125	0.056	0.082	-0.132	-0.081	-0.033
	(0.769)	(0.185)	(0.460)	(0.168)	(0.242)	(0.101)	(0.734)	(0.671)	(0.547)
WNOM-2	**0.252**	**0.179**	0.030	0.046	-0.015	-0.007	-0.104	-0.148	-0.038
	(0.035)	**(0.029)**	(0.269)	(0.330)	(0.485)	(0.435)	(0.681)	(0.829)	(0.565)
IDEAL-1	0.025	**0.195**	0.083	0.164	0.059	0.070	0.019	-0.011	0.014
	(0.385)	**(0.021)**	(0.101)	(0.110)	(0.230)	(0.127)	(0.405)	(0.465)	(0.351)
IDEAL-2	0.084	-0.000	-0.156	0.123	0.001	-0.043	-0.147	-0.182	-0.062
	(0.245)	(0.428)	(0.958)	(0.158)	(0.422)	(0.628)	(0.762)	(0.886)	(0.662)
Coal. Score	-0.159	0.065	-0.014	0.141	0.071	0.093	0.118	0.037	0.017
	(0.821)	(0.212)	(0.476)	(0.143)	(0.199)	(0.078)	(0.219)	(0.335)	(0.348)
Def. Rate	0.000	-0.021	0.045	-0.178	-0.028	-0.082	0.087	0.010	-0.026
	(0.445)	(0.508)	(0.195)	(0.867)	(0.533)	(0.797)	(0.249)	(0.397)	(0.512)

	143			144		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	0.100	0.060	0.010	-0.045	-0.039	-0.087
	(0.216)	(0.234)	(0.353)	(0.569)	(0.572)	(0.807)
WNOM-2	-0.076	-0.065	-0.020	-0.100	-0.045	-0.129
	(0.646)	(0.663)	(0.502)	(0.708)	(0.595)	(0.922)
IDEAL-1	-0.035	-0.022	-0.018	-0.059	-0.051	-0.115
	(0.542)	(0.510)	(0.493)	(0.607)	(0.617)	(0.890)
IDEAL-2	0.038	-0.002	-0.058	-0.031	-0.012	-0.014
	(0.349)	(0.435)	(0.692)	(0.533)	(0.474)	(0.472)
Coal. Score	0.036	0.019	-0.011	0.013	-0.031	-0.094
	(0.359)	(0.363)	(0.457)	(0.415)	(0.545)	(0.829)
Def. Rate	-0.091	-0.061	-0.052	0.008	0.018	0.017
	(0.723)	(0.683)	(0.693)	(0.385)	(0.288)	(0.232)

Note: Table reports Moran's *I* test statistics with *p*-values in parentheses.

TABLE D5: SPATIAL LAG RESULTS BY SESSION AND NEIGHBOR DEFINITION, 119-125

	119			120			121		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	-0.012	-0.016	0.008	0.046	**0.053**	0.079	0.017	0.017	0.011
	(0.766)	(0.760)	(0.876)	(0.063)	**(0.040)**	(0.070)	(0.172)	(0.341)	(0.660)
WNOM-2	-0.121	-0.110	-0.031	-0.090	-0.012	-0.305	**0.272**	0.213	0.164
	(0.316)	(0.444)	(0.875)	(0.441)	(0.935)	(0.114)	**(0.006)**	(0.164)	(0.410)
IDEAL-1	0.006	-0.079	-0.154	0.018	0.061	0.103	0.038	0.032	0.077
	(0.932)	(0.427)	(0.183)	(0.762)	(0.329)	(0.294)	(0.326)	(0.559)	(0.285)
IDEAL-2	-0.030	**-0.374**	**-0.521**	0.030	-0.012	-0.011	-0.079	-0.049	-0.089
	(0.789)	**(0.011)**	**(0.018)**	(0.744)	(0.922)	(0.945)	(0.446)	(0.716)	(0.615)
Coal. Score	-0.019	-0.023	-0.005	0.005	**0.015**	**0.029**	0.014	0.007	0.004
	(0.240)	(0.305)	(0.828)	(0.469)	**(0.040)**	**(0.016)**	(0.074)	(0.534)	(0.821)
Def. Rate	**0.261**	**0.438**	0.376	-0.038	-0.019	0.084	0.034	0.017	-0.021
	(0.026)	**(0.009)**	(0.058)	(0.754)	(0.901)	(0.672)	(0.753)	(0.920)	(0.933)

	122			123			125		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	-0.003	0.025	0.016	0.052	0.088	0.052	-0.003	-0.015	-0.018
	(0.806)	(0.153)	(0.483)	(0.256)	(0.156)	(0.534)	(0.829)	(0.473)	(0.454)
WNOM-2	**-0.326**	-0.164	-0.249	0.085	0.096	0.122	0.118	0.099	0.147
	(0.008)	(0.328)	(0.258)	(0.421)	(0.445)	(0.471)	(0.125)	(0.360)	(0.298)
IDEAL-1	0.018	0.060	0.015	0.042	0.075	0.079	0.036	0.017	-0.002
	(0.710)	(0.331)	(0.861)	(0.432)	(0.296)	(0.428)	(0.308)	(0.712)	(0.975)
IDEAL-2	0.027	-0.063	-0.140	0.041	0.045	0.160	0.045	0.086	0.069
	(0.808)	(0.662)	(0.493)	(0.657)	(0.682)	(0.249)	(0.535)	(0.370)	(0.578)
Coal. Score	0.000	0.001	0.002	0.040	0.054	0.043	-0.017	-0.016	-0.017
	(0.904)	(0.816)	(0.651)	(0.376)	(0.386)	(0.603)	(0.059)	(0.183)	(0.227)
Def. Rate	0.033	0.056	0.078	-0.037	-0.074	-0.084	0.046	0.216	0.160
	(0.797)	(0.742)	(0.743)	(0.774)	(0.695)	(0.760)	(0.736)	(0.240)	(0.489)

Note: Table reports spatial lag (ρ) parameter estimates with p-values in parentheses.

TABLE D6: SPATIAL LAG RESULTS BY SESSION AND NEIGHBOR DEFINITION, 126-132

	126			127			128		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	0.013	-0.001	0.001	0.028	0.086	0.014	-0.031	-0.027	0.028
	(0.537)	(0.982)	(0.984)	(0.460)	(0.147)	(0.860)	(0.291)	(0.463)	(0.543)
WNOM-2	0.015	0.058	0.173	0.076	0.143	0.177	-0.129	-0.241	-0.329
	(0.868)	(0.629)	(0.325)	(0.574)	(0.439)	(0.488)	(0.208)	(0.113)	(0.195)
IDEAL-1	0.052	-0.024	-0.054	0.031	0.018	-0.048	-0.013	-0.039	-0.060
	(0.249)	(0.717)	(0.485)	(0.406)	(0.764)	(0.501)	(0.813)	(0.596)	(0.529)
IDEAL-2	0.113	0.203	0.135	0.140	0.101	0.040	-0.079	0.010	-0.027
	(0.263)	(0.168)	(0.444)	(0.239)	(0.553)	(0.850)	(0.730)	(0.397)	(0.890)
Coal. Score	-0.001	-0.005	-0.008	-0.011	0.008	0.005	0.007	-0.001	-0.008
	(0.828)	(0.523)	(0.359)	(0.265)	(0.606)	(0.793)	(0.459)	(0.920)	(0.575)
Def. Rate	-0.049	-0.082	0.012	**0.295**	**0.365**	**0.518**	-0.006	**0.381**	0.089
	(0.709)	(0.660)	(0.958)	**(0.025)**	**(0.045)**	**(0.020)**	(0.967)	**(0.045)**	(0.767)

	130			131			132		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	-0.007	-0.045	-0.057	**0.064**	0.029	0.012	**0.123**	0.117	0.118
	(0.862)	(0.390)	(0.432)	**(0.012)**	(0.427)	(0.819)	**(0.003)**	(0.075)	(0.171)
WNOM-2	0.162	0.188	**0.368**	-0.094	-0.069	-0.065	-0.132	-0.114	0.086
	(0.169)	(0.206)	**(0.045)**	(0.217)	(0.493)	(0.643)	(0.138)	(0.333)	(0.585)
IDEAL-1	0.049	0.035	-0.008	0.002	0.019	-0.007	-0.014	-0.044	0.100
	(0.353)	(0.614)	(0.930)	(0.962)	(0.728)	(0.927)	(0.855)	(0.676)	(0.494)
IDEAL-2	0.085	0.038	-0.013	0.039	-0.003	-0.065	-0.069	-0.033	0.139
	(0.621)	(0.693)	(0.910)	(0.566)	(0.972)	(0.599)	(0.432)	(0.781)	(0.391)
Coal. Score	-0.014	-0.025	-0.033	-0.001	0.003	0.005	0.005	0.001	0.005
	(0.367)	(0.186)	(0.222)	(0.782)	(0.694)	(0.605)	(0.054)	(0.867)	(0.316)
Def. Rate	-0.089	-0.134	-0.117	0.080	0.224	0.365	-0.153	-0.147	0.036
	(0.475)	(0.377)	(0.519)	(0.522)	(0.159)	(0.062)	(0.269)	(0.408)	(0.877)

Note: Table reports spatial lag (ρ) parameter estimates with p-values in parentheses.

TABLE D7: SPATIAL LAG RESULTS BY SESSION AND NEIGHBOR DEFINITION, 133-139

	133			135			136		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	0.037	0.033	0.053	**0.052**	**0.052**	**0.082**	0.022	-0.071	-0.079
	(0.135)	(0.393)	(0.355)	**(0.010)**	**(0.036)**	**(0.020)**	(0.610)	(0.223)	(0.341)
WNOM-2	0.043	0.003	-0.068	-0.051	0.010	-0.179	-0.127	-0.189	-0.212
	(0.615)	(0.983)	(0.709)	(0.453)	(0.926)	(0.143)	(0.094)	(0.072)	(0.145)
IDEAL-1	0.027	-0.017	-0.006	0.025	0.058	0.085	-0.010	-0.054	-0.107
	(0.481)	(0.768)	(0.947)	(0.451)	(0.168)	(0.180)	(0.810)	(0.323)	(0.171)
IDEAL-2	-0.073	-0.144	-0.220	**-0.121**	-0.069	-0.169	-0.104	-0.150	-0.077
	(0.223)	(0.083)	(0.100)	**(0.021)**	(0.361)	(0.063)	(0.317)	(0.255)	(0.661)
Coal. Score	0.022	0.018	0.008	**0.024**	**0.034**	**0.059**	0.049	0.023	0.005
	(0.183)	(0.467)	(0.843)	**(0.040)**	**(0.022)**	**(0.008)**	(0.235)	(0.678)	(0.939)
Def. Rate	-0.052	0.028	0.135	-0.140	-0.130	0.021	-0.033	-0.012	-0.044
	(0.651)	(0.874)	(0.578)	(0.284)	(0.451)	(0.930)	(0.811)	(0.929)	(0.808)

	137			138			139		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	0.021	0.013	0.009	-0.008	0.050	0.022	**0.101**	**0.136**	**0.172**
	(0.400)	(0.649)	(0.852)	(0.840)	(0.428)	(0.757)	**(0.011)**	**(0.009)**	**(0.007)**
WNOM-2	**0.208**	**0.261**	**0.366**	-0.013	-0.014	-0.112	0.011	-0.062	-0.143
	(0.028)	**(0.028)**	**(0.026)**	(0.846)	(0.892)	(0.318)	(0.888)	(0.554)	(0.315)
IDEAL-1	-0.014	-0.035	-0.032	0.029	-0.009	-0.093	0.100	0.136	**0.168**
	(0.670)	(0.316)	(0.628)	(0.382)	(0.866)	(0.142)	(0.065)	(0.055)	**(0.050)**
IDEAL-2	-0.008	-0.101	-0.295	0.033	0.017	0.023	0.016	0.022	0.067
	(0.904)	(0.298)	(0.082)	(0.505)	(0.784)	(0.744)	(0.801)	(0.792)	(0.520)
Coal. Score	-0.014	-0.037	-0.026	0.002	0.033	0.019	**0.107**	**0.143**	**0.196**
	(0.542)	(0.145)	(0.574)	(0.887)	(0.262)	(0.555)	**(0.012)**	**(0.011)**	**(0.004)**
Def. Rate	0.044	0.096	0.030	-0.105	-0.210	-0.403	0.213	0.231	0.253
	(0.663)	(0.550)	(0.899)	(0.408)	(0.248)	(0.137)	(0.086)	(0.165)	(0.273)

Note: Table reports spatial lag (ρ) parameter estimates with p-values in parentheses.

TABLE D8: SPATIAL LAG RESULTS BY SESSION AND NEIGHBOR DEFINITION, 140-144

	140			141			142		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	0.004	0.046	-0.007	-0.026	-0.048	-0.064	**-0.113**	-0.095	-0.116
	(0.867)	(0.211)	(0.867)	(0.304)	(0.146)	(0.100)	**(0.032)**	(0.147)	(0.267)
WNOM-2	0.106	0.066	-0.038	-0.096	-0.097	-0.033	-0.042	-0.104	0.008
	(0.174)	(0.534)	(0.798)	(0.170)	(0.306)	(0.807)	(0.698)	(0.445)	(0.966)
IDEAL-1	**0.132**	**0.133**	0.041	-0.002	-0.036	-0.075	-0.073	-0.001	-0.042
	(0.005)	**(0.032)**	(0.526)	(0.964)	(0.584)	(0.316)	(0.234)	(0.986)	(0.636)
IDEAL-2	0.024	-0.056	**-0.342**	-0.053	-0.079	-0.176	-0.024	-0.150	-0.106
	(0.662)	(0.485)	**(0.005)**	(0.515)	(0.485)	(0.257)	(0.716)	(0.079)	(0.453)
Coal. Score	-0.028	0.065	0.030	-0.012	-0.041	-0.046	**-0.019**	**-0.021**	**-0.029**
	(0.316)	(0.100)	(0.481)	(0.750)	(0.399)	(0.412)	**(0.020)**	**(0.029)**	**(0.045)**
Def. Rate	-0.076	-0.097	0.028	-0.092	0.035	-0.196	0.072	0.025	-0.043
	(0.553)	(0.593)	(0.911)	(0.478)	(0.862)	(0.466)	(0.629)	(0.899)	(0.846)

	143			144		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1	**0.066**	0.072	0.028	-0.036	-0.042	-0.050
	(0.039)	(0.117)	(0.600)	(0.258)	(0.434)	(0.574)
WNOM-2	-0.114	-0.178	-0.136	-0.003	-0.068	-0.124
	(0.286)	(0.194)	(0.508)	(0.973)	(0.706)	(0.565)
IDEAL-1	-0.043	-0.083	-0.073	-0.048	-0.070	**-0.289**
	(0.263)	(0.128)	(0.324)	(0.289)	(0.379)	**(0.034)**
IDEAL-2	-0.044	-0.057	-0.139	0.009	-0.038	-0.025
	(0.558)	(0.620)	(0.280)	(0.947)	(0.847)	(0.926)
Coal. Score	0.005	0.010	-0.008	0.003	-0.001	0.006
	(0.577)	(0.443)	(0.575)	(0.334)	(0.800)	(0.476)
Def. Rate	-0.057	-0.074	-0.173	0.016	0.059	0.135
	(0.632)	(0.696)	(0.517)	(0.878)	(0.669)	(0.516)

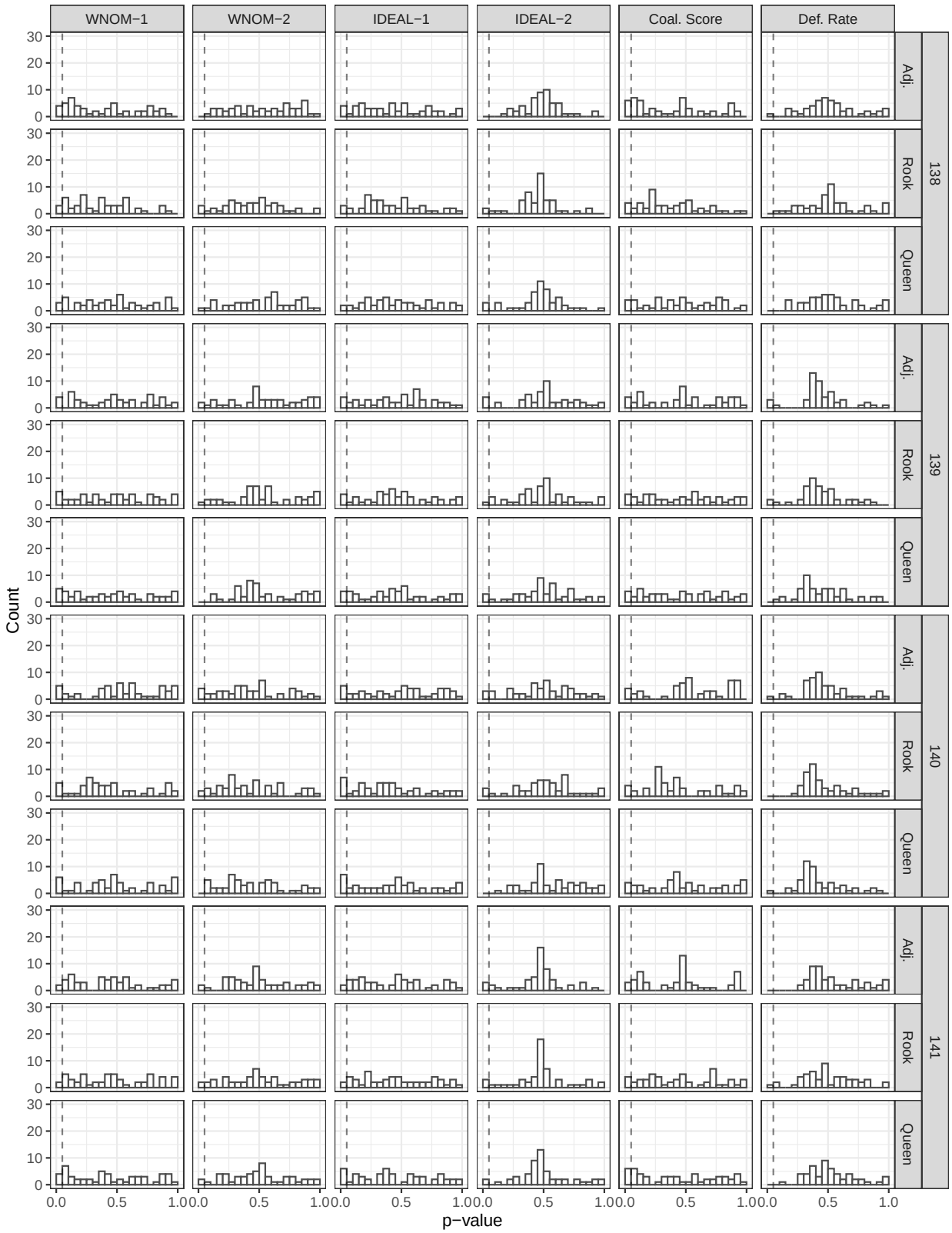
Note: Table reports spatial lag (ρ) parameter estimates with p-values in parentheses.

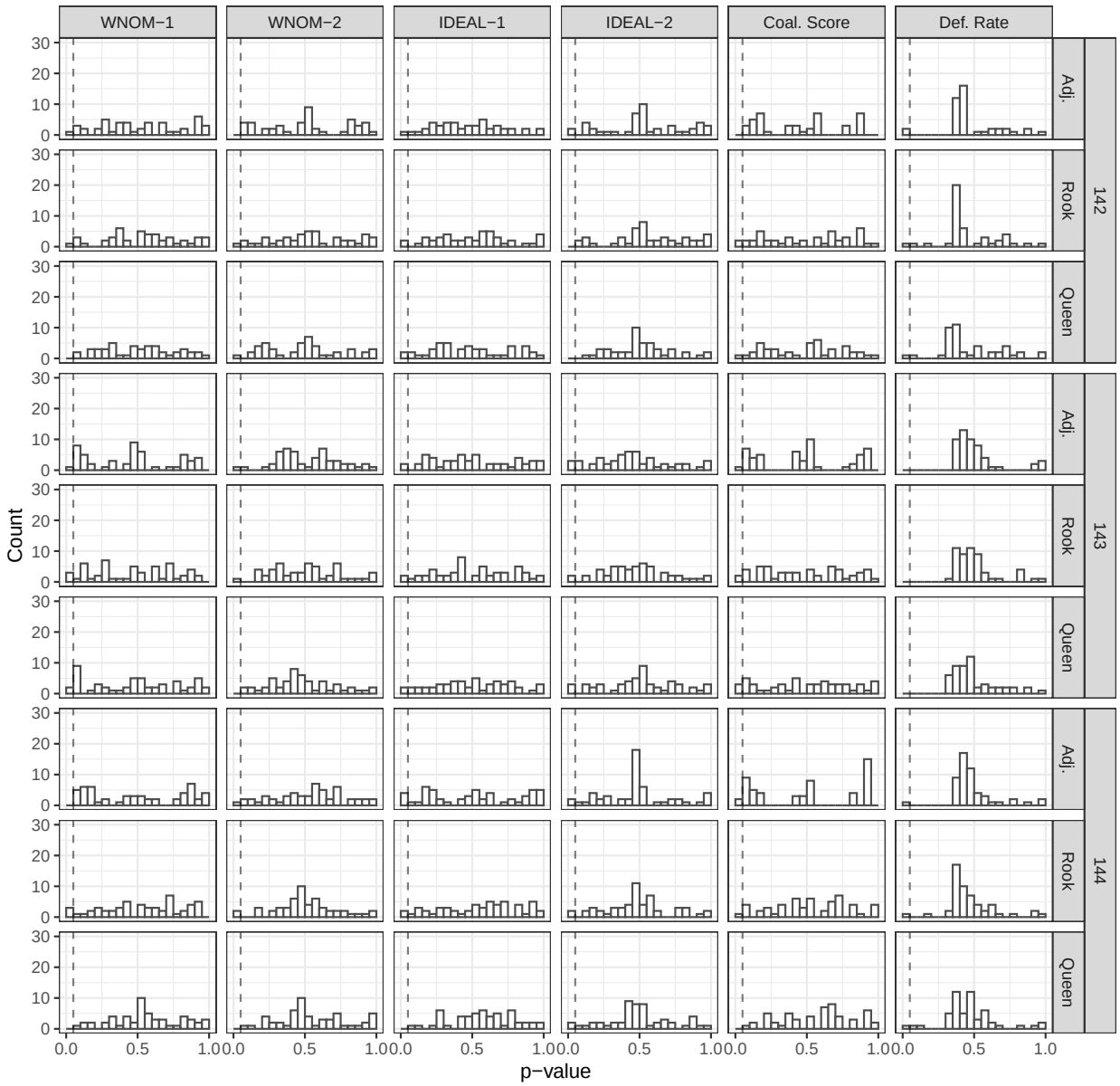
FIGURE D1: LOCAL MORAN'S *I* SIGNIFICANCE LEVELS


WNOM−1
WNOM−2
IDEAL−1
IDEAL−2
Coal. Score
Def. Rate
123
125
126
127
Adj.
Rook
Queen
Count
p−value
0
10
20
30
0.0
0.5
1.0


WNOM−1
WNOM−2
IDEAL−1
IDEAL−2
Coal. Score
Def. Rate
Adj.
Rook
Queen
128
130
131
132
Count
p−value
0
10
20
30
0.0
0.5
1.0


WNOM−1
WNOM−2
IDEAL−1
IDEAL−2
Coal. Score
Def. Rate
133
135
136
137
Adj.
Rook
Queen
Count
p−value
0
10
20
30
0.0
0.5
1.0


WNOM−1
WNOM−2
IDEAL−1
IDEAL−2
Coal. Score
Def. Rate
138
139
140
141
Adj.
Rook
Queen
Count
p−value
0
10
20
30
0.0
0.5
1.0


WNOM−1
WNOM−2
IDEAL−1
IDEAL−2
Coal. Score
Def. Rate
Adj.
Rook
Queen
142
143
144
Count
p−value
0
10
20
30
0.0
0.5
1.0

E Analysis of Member Bills & Lopsided Votes

Because private member bills in Alþingi may be subject to less party discipline, votes on them may be more likely to show evidence of peer effects. Unfortunately, very few private member bills make it to a vote. And many of the recorded votes are unanimous. Nonetheless, as discussed in Section 6.1 of the paper, there is a small sample of votes in enough sessions to conduct a systematic analysis of neighbor effects. While these votes are obviously unrepresentative of voting in Alþingi more broadly, they do afford the opportunity to look for peer effects in an environment where they are theoretically more likely to exist. We begin by briefly describing the data before proceeding to the results of our spatial analyses.

Our data on Alþingi contain 3,127 government bills and 4,381 private member bills, which together comprise nearly the universe of legislative proposals. There is also a smattering of other bill types, such as those from committee. Of the government bills, 2,774 (88.7%) were voted on at least once. The total number of votes on government bills is 27,878. In contrast, only 1,888 member bills made it to a vote (43.1%), with a total of 4,782 votes cast. The most significant issue for analyzing peer effects in votes on member bills, however, is that the vast majority of recorded votes are unanimous—91.8% passed with no opposition, and about 95% of the votes had more than 90% of the MPs in agreement, leaving only 148 votes below the 90% cutoff, which is the typical threshold to classify a vote as nonunanimous when scaling using WNOMINATE. Table E1 below shows the number of member bills per session along with the number of votes cast on those bills with less than 90% support. The other constraint for WNOMINATE scaling is that the algorithm is less likely to converge if the number of votes is very low. By considering as few as 10 votes in a session, a very minimal standard, we were able to obtain five potentially scalable sessions of Alþingi—the 127th, 130th, 135th, 139th, and 140th. For these sessions, Table E1 also lists the total number of nonunanimous (less than 100% support) and "party" (those pitting a majority of the governing coalition against a majority of the opposition) votes.

Finally, the table shows the number of members with nonzero defection rates from their party in each of the five sessions. These measures are fully described in equations (8) and (9) and the associated description in the body of the paper.

TABLE E1: VOTES ON MEMBER BILLS

Session	Member Bills	Votes <90% Support	Votes <100% Support	"Party" Votes	Members with Nonzero Def. Rates
119	13	1			
120	132	5			
121	172	3			
122	210	3			
123	169	9			
124	5	0			
125	155	7			
126	193	0			
127	177	14	15	10	24
128	170	0			
129	2	0			
130	199	25	25	23	2
131	212	0			
132	192	0			
133	170	0			
134	4	1			
135	154	15	21	0	2
136	164	4			
137	24	0			
138	123	7			
139	209	24	33	15	7
140	217	15	17	12	33
141	230	9			
142	17	7			
143	429	4			
144	639	0			

As the table reveals, there is very little data to draw from for an analysis of voting on member bills that adopts the approach presented in the paper. Nevertheless, these votes are worth examining as they have the potential to reveal greater variation in behavior as members are likely to be less constrained by party discipline on these votes. We attempted to scale these votes by session using both WNOMINATE and Bayesian IRT methods, and we also calculated coalition support scores and party defection rates. We were unable to return NOMINATE scores for all but the 130th session, and since there were no "party"

votes in the 135th, we could not calculate coalition support scores in that session. The results that follow use these data to conduct a parallel analysis to what we present for the full sweep of votes in Figures 5, 6, and 7 of the paper, and the associated material in Appendix D (Tables D1–D8 and Figure D1).

Results on Member Bills

We find very little evidence of more prominent spatial dependence in votes on private member bills relative to votes on the full sample of bills. Much like the other sessions, there are a handful of instances where the global Moran's *I* statistic (Figure E1) and/or the spatial lag results (Figure E2) suggest some degree of spatial dependence for a particular session or neighbor definition within a session. However, these patterns do not appear to be systematic, and given the small samples involved, we are hesitant to suggest that they are due to anything more than random chance. Similarly, for the local Moran's *I* results in Figure E3, on a few occasions we see some evidence of spatial dependence, although the vast majority of test statistics are not statistically significant.

FIGURE E1: GLOBAL MORAN'S *I* SIGNIFICANCE LEVELS, MEMBER BILLS

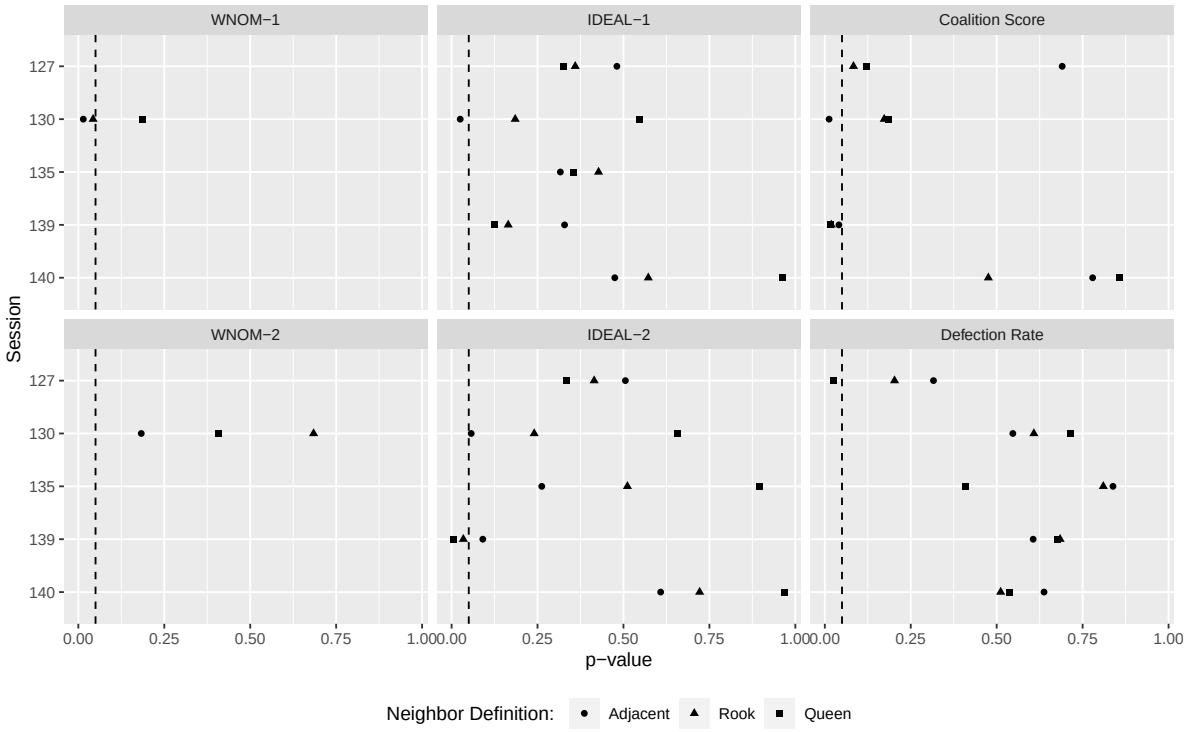


FIGURE E2: SPATIAL LAG SIGNIFICANCE LEVELS, MEMBER BILLS

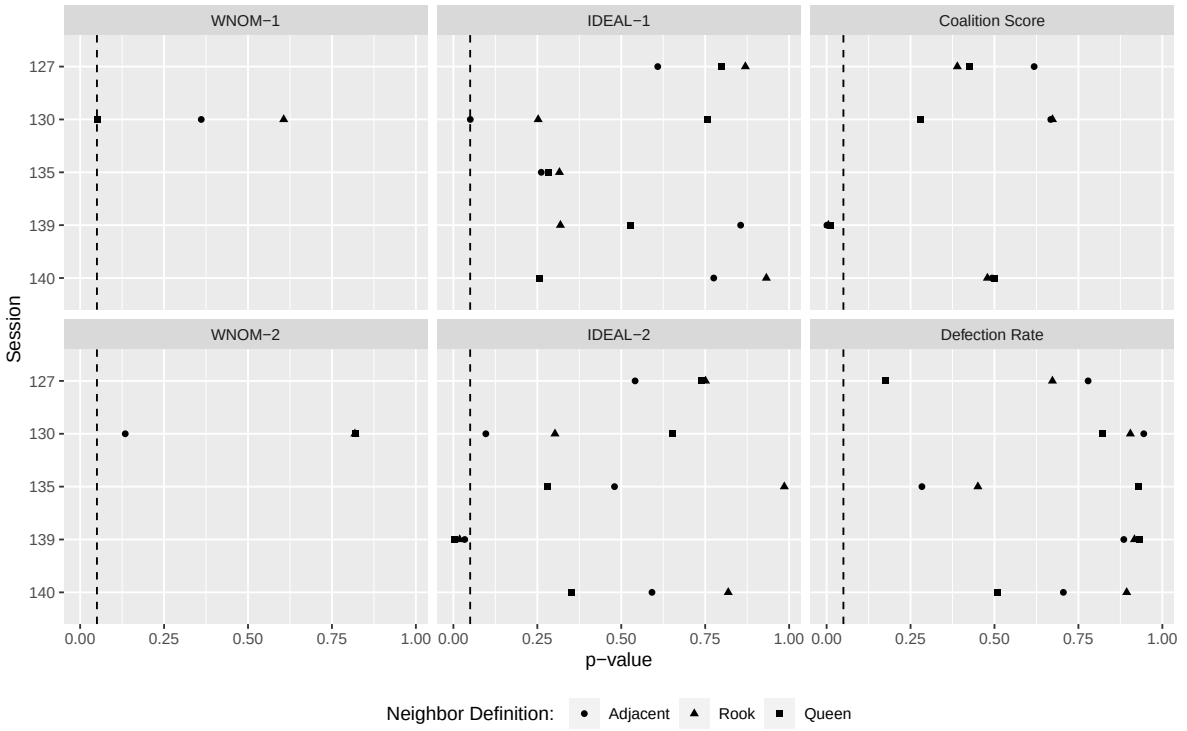
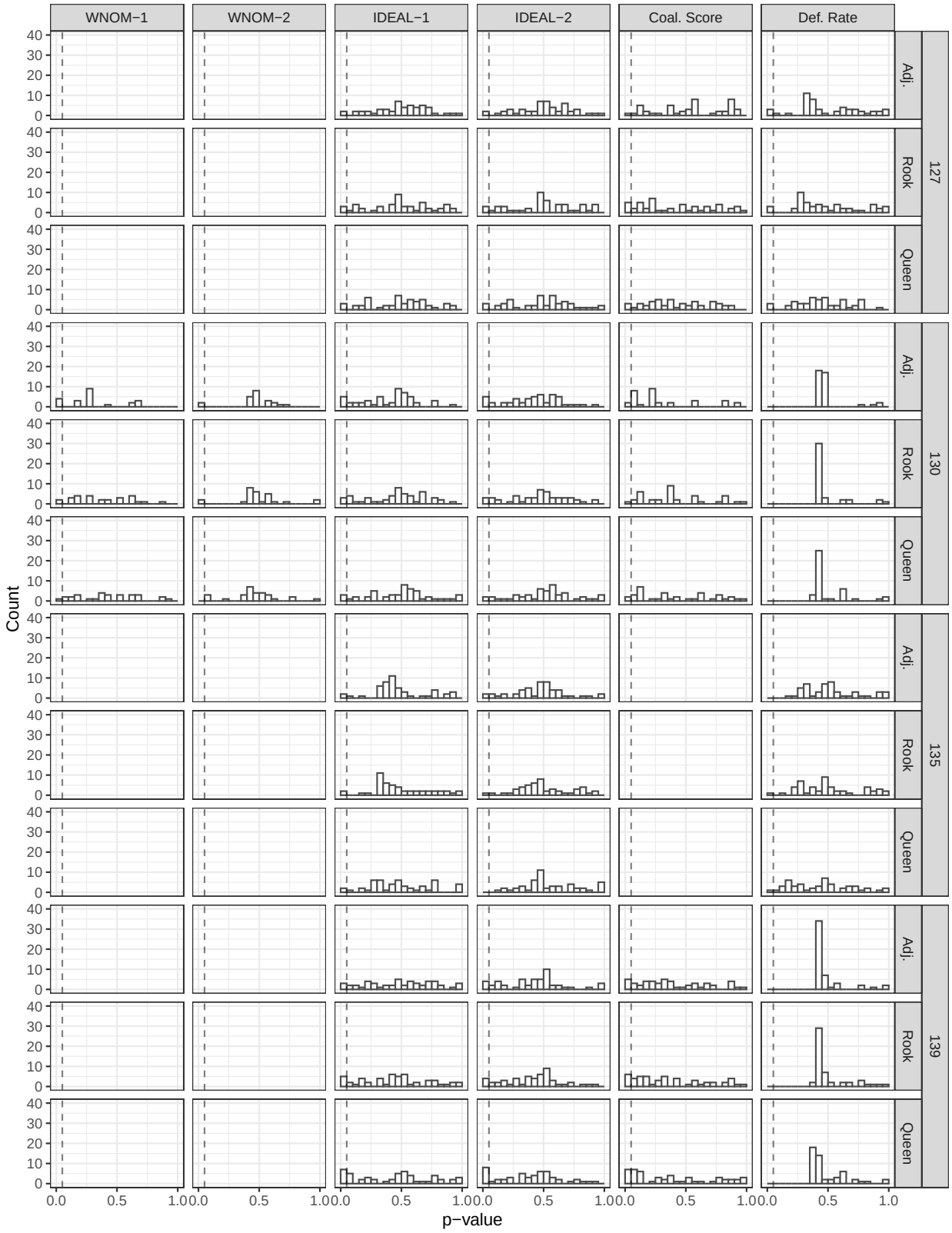


FIGURE E3: LOCAL MORAN'S *I* SIGNIFICANCE LEVELS, MEMBER BILLS



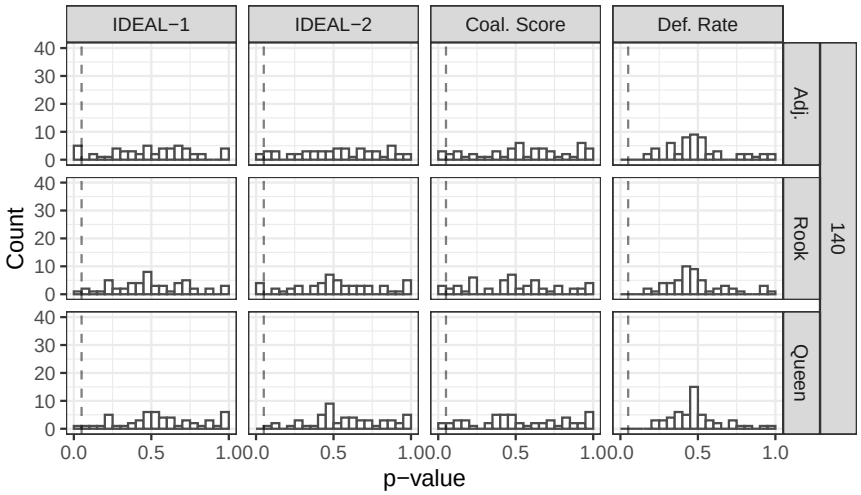

IDEAL−1
IDEAL−2
Coal. Score
Def. Rate
Adj.
Rook
Queen
140
Count
p−value
0
10
20
30
40
0.0
0.5
1.0

TABLE E2: GLOBAL MORAN'S *I* RESULTS BY SESSION AND NEIGHBOR DEFINITION, MEMBER BILLS

	127			130			135		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1				**0.549**	**0.312**	0.100			
				(0.014)	**(0.043)**	(0.187)			
WNOM-2				0.166	-0.126	-0.003			
				(0.183)	(0.684)	(0.407)			
IDEAL-1	-0.013	0.019	0.016	**0.276**	0.078	-0.030	0.053	-0.001	0.009
	(0.481)	(0.360)	(0.326)	**(0.025)**	(0.185)	(0.548)	(0.316)	(0.428)	(0.354)
IDEAL-2	-0.023	0.003	0.014	0.218	0.057	-0.054	0.078	-0.024	-0.123
	(0.506)	(0.415)	(0.335)	(0.057)	(0.240)	(0.656)	(0.262)	(0.512)	(0.896)
Coal. Score	-0.102	0.143	0.080	**0.477**	0.132	0.086			
	(0.691)	(0.083)	(0.121)	**(0.012)**	(0.173)	(0.186)			
Def. Rate	0.051	0.070	**0.134**	-0.042	-0.053	-0.069	-0.156	-0.107	-0.005
	(0.316)	(0.203)	**(0.026)**	(0.547)	(0.608)	(0.715)	(0.838)	(0.810)	(0.411)

	139			140		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1						
WNOM-2						
IDEAL-1	0.049	0.089	0.076	-0.010	-0.038	-0.162
	(0.329)	(0.165)	(0.124)	(0.475)	(0.572)	(0.964)
IDEAL-2	0.187	**0.182**	**0.188**	-0.061	-0.081	-0.167
	(0.091)	**(0.034)**	**(0.006)**	(0.608)	(0.722)	(0.968)
Coal. Score	**0.258**	**0.217**	**0.163**	-0.136	-0.013	-0.105
	(0.041)	**(0.019)**	**(0.016)**	(0.779)	(0.476)	(0.857)
Def. Rate	-0.053	-0.062	-0.050	-0.068	-0.022	-0.026
	(0.606)	(0.684)	(0.678)	(0.638)	(0.512)	(0.538)

Note: Table reports Moran's *I* test statistics with *p*-values in parentheses.

TABLE E3: SPATIAL LAG RESULTS BY SESSION AND NEIGHBOR DEFINITION, MEMBER BILLS

	127			130			135		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1				0.110	-0.072	-0.304			
				(0.361)	(0.606)	(0.051)			
WNOM-2				0.222	-0.039	-0.029			
				(0.134)	(0.818)	(0.819)			
IDEAL-1	-0.069	-0.028	-0.060	0.245	0.210	-0.067	0.078	0.086	0.125
	(0.609)	(0.870)	(0.800)	(0.050)	(0.253)	(0.757)	(0.262)	(0.316)	(0.284)
IDEAL-2	-0.082	-0.053	-0.078	0.210	0.188	-0.097	0.074	0.003	-0.245
	(0.541)	(0.751)	(0.739)	(0.097)	(0.303)	(0.652)	(0.480)	(0.986)	(0.280)
Coal. Score	-0.061	0.136	0.188	0.033	-0.042	-0.130			
	(0.618)	(0.389)	(0.424)	(0.668)	(0.673)	(0.280)			
Def. Rate	0.036	0.069	0.307	-0.009	-0.017	-0.034	-0.140	-0.130	0.021
	(0.779)	(0.673)	(0.175)	(0.945)	(0.905)	(0.821)	(0.284)	(0.451)	(0.930)

	139			140		
	Adjacent	Rook	Queen	Adjacent	Rook	Queen
WNOM-1						
WNOM-2						
IDEAL-1	0.013	0.101	0.063	0.028	-0.012	-0.212
	(0.856)	(0.319)	(0.528)	(0.775)	(0.932)	(0.256)
IDEAL-2	**0.202**	**0.296**	**0.448**	0.047	-0.028	-0.163
	(0.034)	**(0.019)**	**(0.003)**	(0.592)	(0.819)	(0.352)
Coal. Score	**0.190**	**0.209**	**0.216**	-0.039	-0.060	-0.063
	(0.001)	**(0.005)**	**(0.012)**	(0.493)	(0.479)	(0.499)
Def. Rate	0.016	0.017	0.020	-0.044	-0.024	-0.178
	(0.885)	(0.917)	(0.931)	(0.705)	(0.894)	(0.508)

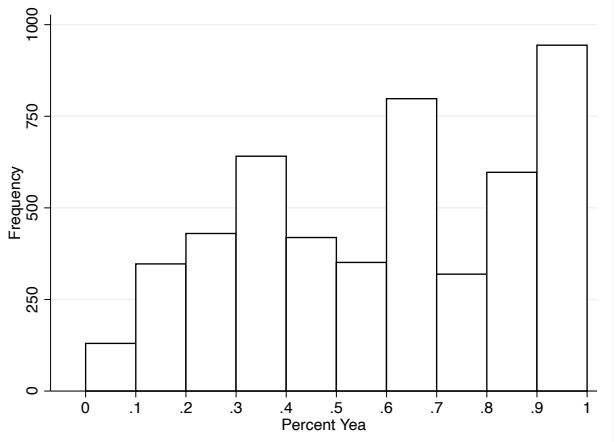
Note: Table reports spatial lag (ρ) parameter estimates with p-values in parentheses.

Lopsided Votes

One last possibility in the quest to uncover neighbor effects is to focus on lopsided votes. Following the logic of Groseclose and Snyder (2000) and McCarty, Poole and Rosenthal (2001), we might expect to find greater evidence of defecting from the party line on votes that are decided by more comfortable margins as the need for whipping members into line decreases. Moreover, it may be the case that party leaders gain information via defections, and thus find them useful on some occasions, but only when those defections are not costly—an example being lopsided votes (Indridason 2008).

To explore this possibility, we broke the winning percentage of all votes cast in Alþingi into bins of 10%, with "narrow" votes defined as those decided by less than 60% on the prevailing side and the remainder comprising "lopsided" votes. We already know that many votes are decided with unanimous support. But it is striking to see just how few votes are decided by narrow margins—across the sessions we examine, only a very small slice of the roll call record evokes narrowly divided coalitions. Figure E4 plots the distribution of *nonunanimous* votes and illustrates the considerable lumping at the top of the distribution, and more generally outside the 40% to 60% yea range. Most votes, however, are unanimous and Table E4 shows the votes in the narrow category as a percentage of *all* votes cast in the session. As such, the analysis presented in the paper is effectively

FIGURE E4: DISTRIBUTION OF NONUNANIMOUS VOTES



conducted on the body of lopsided votes already, since such a small share appears in the middle of the distribution. This is not surprising for a parliamentary system where the parties are characterized by a high degree of cohesion.

TABLE E4: LOPSIDED VOTING ON ALL MEASURES

Session	Percent 40-60%	All Votes
119	1.10	272
120	0.58	1,901
121	0.90	2,120
122	0.77	2,081
123	0.31	1,302
124	0.00	18
125	1.74	1,899
126	2.94	1,600
127	1.73	1,673
128	1.65	1,697
129	0.00	2
130	6.67	1,649
131	7.85	1,351
132	4.90	1,491
133	2.66	1,317
134	0.00	61
135	0.00	1,707
136	0.13	742
137	4.25	259
138	7.22	1,218
139	1.50	1,266
140	7.76	954
141	2.84	950
142	4.08	98
143	0.23	861
144	3.09	972

F Comparison with Saia (2018)

Our analysis goes beyond Saia's (2018) study in a few ways. By employing spatial diagnostics, we are able to diagnose spatial dependence at the global level (whether legislative behavior in a session is spatially dependent) and also to disaggregate this global dependence to the local level to pinpoint the individual members whose behavior is spatially autocorrelated with that of their neighbors. We disaggregate our analyses by session, allowing us to examine whether peer effects differ over time. We employ a more extensive set of roll-call voting measures (six such measures in all) in comparison to his single measure of a non-compliant vote, i.e., when the MP's action differs from her party line. We also employ a more extensive set of neighbor definitions, including the queen contiguity neighbor definition that is standard in spatial analyses to examine whether member *i*'s neighbors influence her behavior. And importantly, our spatial approach reflects a foundational principle of spatial dependence, Tobler's First Law of Geography (1970), in which "everything is related to everything else, but near things are more related than distant things", via the spatial multiplier in our spatial lag models.

As noted in the body of the paper, we also find little reason to believe that the exclusion restriction underlying Saia's 2SLS approach is met. In a legislature in which party positions play a significant role in shaping members' roll-call voting decisions (and parties' speech patterns), the assumption that neighbors' party lines will affect only their voting behavior and not member *i*'s behavior seems unlikely. In fact we do not see a reason to believe that this assumption would hold since it requires that a party's party lines are completely uncorrelated with those of other parties. Rather, party lines are highly correlated, meaning the exclusion restriction is violated and the parameter estimates are likely biased as a result.

On the face of it, this is consistent with the fact that our approach produces a very different set of estimates from those described by Saia (2018). Saia's main findings (2018, table 4) suggest a substantial effect on an MP's non-compliance with her own party line.

Moving from a seating arrangement where all the MP's neighbors share her party line to one in which none do increases the probability that the MP votes against her party line by somewhere in the range of 28 to 42 percentage points. A change in the party line of a single neighboring MP amounts to a change in non-compliance with the party line of about seven to ten percentage points, which is to say that a single neighboring MP affects voting behavior in nearly one out of ten votes—which equates to nearly 140 votes per legislative session on average. In contrast, as discussed above, we find little to suggest that where MPs sit affects how they vote when using a spatial diffusion process to model the simultaneity in the data.[3]

[3]It bears noting that Saia's main results include absences and abstentions (about 30% of the recorded votes) while those are excluded from our analysis. Saia does provide robustness checks where the effect is still present, albeit significantly smaller, when the analysis considers only actual votes. Still, the presence of an effect in more comparable samples suggests that the difference between Saia and our results comes down to the method of estimation.

G References

Indridason, Indridi H. 2008. "To Dissent or Not to Dissent? Informative Dissent and Parliamentary Governance." *Economics of Governance* 9(4): 363-392.

McCarty, Nolan, Keith T. Poole, and Howard Rosenthal. 2001. "The Hunt for Party Discipline in Congress." *American Political Science Review* 95(3): 673-87.

Saia, Alessandro. 2018. "Random Interactions in the Chamber: Legislators' Behavior and Political Distance." *Journal of Public Economics* 164(Aug): 225-240.

Snyder, James M., and Tim Groseclose. 2000. "Estimating Party Influence in Congressional Roll-Call Voting." *American Journal of Political Science* 44(2): 193-211.