

Supplementary Information

on

Heterogeneity in General Multinomial Choice Models

Contents

A	R Function to Implement the GHMNL Model	1
B	Empirical Application: Data and Operationalization	2
B.1	Spatial Proximities	2
B.2	Nonpolicy Considerations	2
C	Competing Models	3
C.1	Standard MNL Models	3
C.2	MXL Models	4
C.2.1	Models without Covariates	4
C.2.2	Models with Covariates	6
C.3	S-MNL Models	8
C.3.1	Models without Covariates	8
C.3.2	Models with Covariates	10
C.4	G-MNL Models	12
C.4.1	Models without Covariates	12
C.4.2	Models with Covariates	14

Section A describes the routines to implement the *General Heterogeneous Multinomial Logit Model* (GHMNL). Section B contains a detailed description of the measurement and coding of all variables considered in the empirical application. Section C reports the estimates of competing models.

A R Function to Implement the GHMNL Model

The R function to fit the *General Heterogeneous Multinomial Logit Model* (GHMNL) is

GHMNL(*dat*, *namesglob*, *Indglob*, *namescats*, *Indcats*, *nameshet*, *nameresp*, *k*, *pen*).

The elements of the function are:

dat: data set in long format

namesglob: names of global variables (chooser-specific attributes)

Indglob > 0: global variables are included, otherwise ignored

namescats: names of category-specific variables (choice-specific attributes)

Indcats > 0: category-specific variables are included, otherwise ignored

nameshet: names of variables in the heterogeneity term (can be empty)

nameresp: name of response variable (vector of 0-1 dummy variables, based on the nominal dependent variable)

k: number of alternatives

pen: unpenalized estimates are obtained by choosing $pen = 0$; if $pen > 0$ a ridge penalized estimate is computed; should always be small, e.g., $pen = 0.0000001$

B Empirical Application: Data and Operationalization

Our empirical application uses the 2017 German national election study (Roßteutscher et al. 2018). We restrict the analysis to voter choice for one of the six major German parties using the second vote: the Christian-Democratic Parties (CDU/CSU)⁷, the Social-Democratic Party (SPD), the Liberal Party (FDP), the Greens, the Left Party, and the Alternative for Germany (AfD).

B.1 Spatial Proximities

The election study contains three policy issues (immigration, taxes, climate change) on which the respondents positioned themselves and the parties on eleven-point scales. The end points are labeled as follows:

- Immigration: 1 = “immigration should be facilitated”, 11 = “immigration should be restricted”;
- Taxes: 1 = “lower taxes, even if this means a reduction in the benefits offered by the social state”, 11 = “more benefits offered by the social state, even if this means an increase in taxation”;
- Climate Change: 1 = “fight against climate change should take precedence, even if it impairs economic growth”, 11 = “economic growth should take precedence, even if it impairs the fight against climate change”.

Based on this information, we constructed the choice-specific variables z_{ij} . For each issue k , the voter-party proximity measures are defined as the absolute negative distance between respondent-specific perceptions of party positions (p_{ijk}) and self-reported respondent position (x_{ik}) so that $z_{ijk} := -|x_{ik} - p_{ijk}|$.

B.2 Nonpolicy Considerations

- religious denomination: 1 (catholic), 0 (otherwise);
- gender: 1 (female), 0 (male);
- West/East Germany: 1 (former West Germany), 0 (former East Germany);
- Education: 1 (higher education entrance qualification; i.e., a higher-school certificate with university admission), 0 (otherwise).

⁷For voters in Bavaria, the CSU instead of the CDU is used.

C Competing Models

C.1 Standard MNL Models

Parameter Estimates:

Immigration Issue	coef.	s.e.	t-val.
SPD: Constant	-0.541	0.068	-8.007
FDP: Constant	-1.095	0.079	-13.788
Greens: Constant	-0.941	0.080	-11.738
Left: Constant	-1.050	0.084	-12.535
AfD: Constant	-1.251	0.093	-13.470
Issue Proximity	0.283	0.014	19.700
Tax Issue	coef.	s.e.	t-val.
SPD: Constant	-0.494	0.082	-6.020
FDP: Constant	-1.012	0.099	-10.236
Greens: Constant	-0.971	0.095	-10.176
Left: Constant	-0.983	0.101	-9.759
AfD: Constant	-0.894	0.099	-9.001
Issue Proximity	0.285	0.020	14.592
Climate Change Issue	coef.	s.e.	t-val.
SPD: Constant	-0.665	0.086	-7.771
FDP: Constant	-1.155	0.106	-10.875
Greens: Constant	-1.101	0.102	-10.784
Left: Constant	-1.207	0.102	-11.864
AfD: Constant	-0.827	0.103	-8.040
Issue Proximity	0.326	0.020	16.147
Full Model: Tax Issue	coef.	s.e.	t-val.
SPD: Constant	-0.208	0.121	-1.719
FDP: Constant	-0.614	0.140	-4.380
Greens: Constant	-0.819	0.144	-5.686
Left: Constant	-0.611	0.147	-4.168
AfD: Constant	-0.470	0.138	-3.400
Issue Proximity	0.288	0.020	14.607
SPD: Catholic	-0.830	0.194	-4.274

FDP: Catholic	-0.642	0.230	-2.791
Greens: Catholic	-0.284	0.207	-1.375
Left: Catholic	-1.236	0.266	-4.648
AfD: Catholic	-1.106	0.260	-4.261
SPD: Gender	-0.223	0.169	-1.324
FDP: Gender	-0.486	0.208	-2.340
Greens: Gender	-0.221	0.195	-1.136
Left: Gender	-0.181	0.206	-0.879
AfD: Gender	-0.454	0.211	-2.150
SPD: Union Membership	0.201	0.254	0.791
FDP: Union Membership	-0.378	0.372	-1.016
Greens: Union Membership	0.177	0.289	0.612
Left: Union Membership	-0.024	0.317	-0.076
AfD: Union Membership	0.105	0.321	0.328

Note: CDU is reference party. Optimization method: Newton Raphson. R Package “mlogit”.

Performance Measures:

	N	LogL	AIC	BIC
Immigration Issue	1807	-2814.052	5640.104	5673.101
Tax Issue	1251	-1996.636	4005.272	4036.062
Climate Change Issue	1193	-1878.293	3768.587	3801.584
Full Model: Tax Issue	1251	-1968.593	3979.187	4086.953

C.2 MXL Models

Model C.2.1:

mean utility weights and chooser-specific deviations from the means

Model C.2.2:

chooser-specific covariates to explain heterogeneity

C.2.1 Models without Covariates

Parameter Estimates:

Immigration Issue	coef.	s.e.	t-val.
SPD: Constant	-0.543	0.068	-7.954

FDP: Constant	-1.101	0.080	-13.740
Greens: Constant	-0.958	0.082	-11.716
Left: Constant	-1.068	0.086	-12.483
AfD: Constant	-1.323	0.106	-12.514
Issue Proximity: Mean	-1.327	0.075	-17.701
Issue Proximity: Standard Deviation	0.545	0.191	2.856

Tax Issue	coef.	s.e.	t-val.
SPD: Constant	-0.506	0.084	-5.993
FDP: Constant	-1.038	0.102	-10.194
Greens: Constant	-0.982	0.098	-10.064
Left: Constant	-1.043	0.108	-9.652
AfD: Constant	-0.915	0.102	-8.952
Issue Proximity: Mean	-1.409	0.125	-11.283
Issue Proximity: Standard Deviation	0.846	0.236	3.580

Climate Change Issue	coef.	s.e.	t-val.
SPD: Constant	-0.665	0.086	-7.756
FDP: Constant	-1.158	0.107	-10.866
Greens: Constant	-1.119	0.107	-10.438
Left: Constant	-1.213	0.103	-11.821
AfD: Constant	-0.831	0.103	-8.038
Issue Proximity: Mean	-1.136	0.071	-15.908
Issue Proximity: Standard Deviation	0.282	0.254	1.109

Full Model: Tax Issue	coef.	s.e.	t-val.
SPD: Constant	-0.217	0.124	-1.742
FDP: Constant	-0.632	0.144	-4.398
Greens: Constant	-0.833	0.147	-5.658
Left: Constant	-0.673	0.156	-4.314
AfD: Constant	-0.472	0.142	-3.330
SPD: Catholic	-0.841	0.199	-4.219
FDP: Catholic	-0.650	0.235	-2.764
Greens: Catholic	-0.285	0.211	-1.347
Left: Catholic	-1.298	0.283	-4.586
AfD: Catholic	-1.131	0.267	-4.243

SPD: Gender	-0.220	0.173	-1.274
FDP: Gender	-0.488	0.212	-2.300
Greens: Gender	-0.214	0.199	-1.077
Left: Gender	-0.151	0.215	-0.700
AfD: Gender	-0.485	0.217	-2.238
SPD: Union Membership	0.198	0.261	0.759
FDP: Union Membership	-0.410	0.381	-1.075
Greens: Union Membership	0.185	0.295	0.628
Left: Union Membership	-0.014	0.331	-0.041
AfD: Union Membership	0.086	0.329	0.260
Issue Proximity: Mean	-1.392	0.122	-11.445
Issue Proximity: Standard Deviation	0.821	0.228	3.592

Note: CDU is reference party. Distribution assumption: log-normal, simulation based on 500 Halton draws. Optimization method: BFGS maximization. R Package “gmnl”.

Performance Measures:

	N	LogL	AIC	BIC
Immigration Issue	1807	-2812.482	5638.964	5677.460
Tax Issue	1251	-1993.144	4000.289	4036.211
Climate Change Issue	1193	-1878.114	3770.227	3805.817
Full Model: Tax Issue	1251	-1965.101	3974.202	4087.100

C.2.2 Models with Covariates

Parameter Estimates:

Immigration Issue	coef.	s.e.	t-val.
SPD: Constant	-0.543	0.068	-7.971
FDP: Constant	-1.099	0.080	-13.733
Greens: Constant	-0.957	0.082	-11.725
Left: Constant	-1.067	0.085	-12.500
AfD: Constant	-1.303	0.107	-12.210
Issue Proximity: Mean	-0.977	0.278	-3.516
Issue Proximity: Platform Divergence	-0.042	0.033	-1.272
Issue Proximity: Standard Deviation	0.494	0.202	2.449

Tax Issue	coef.	s.e.	t-val.
SPD: Constant	-0.501	0.084	-5.966
FDP: Constant	-1.033	0.101	-10.196
Greens: Constant	-0.978	0.097	-10.061
Left: Constant	-1.024	0.108	-9.476
AfD: Constant	-0.910	0.102	-8.931
Issue Proximity: Mean	-1.017	0.306	-3.326
Issue Proximity: Platform Divergence	-0.052	0.040	-1.323
Issue Proximity: Standard Deviation	0.721	0.258	2.792

Climate Change Issue	coef.	s.e.	t-val.
SPD: Constant	-0.665	0.086	-7.761
FDP: Constant	-1.158	0.106	-10.873
Greens: Constant	-1.111	0.108	-10.338
Left: Constant	-1.209	0.103	-11.797
AfD: Constant	-0.830	0.103	-8.030
Issue Proximity: Mean	-0.929	0.245	-3.789
Issue Proximity: Platform Divergence	-0.027	0.032	-0.863
Issue Proximity: Standard Deviation	0.213	0.336	0.634

Full Model: Tax Issue	coef.	s.e.	t-val.
SPD: Constant	-0.215	0.125	-1.722
FDP: Constant	-0.636	0.144	-4.407
Greens: Constant	-0.843	0.148	-5.696
Left: Constant	-0.674	0.157	-4.292
AfD: Constant	-0.459	0.142	-3.232
SPD: Catholic	-0.848	0.200	-4.244
FDP: Catholic	-0.657	0.236	-2.780
Greens: Catholic	-0.301	0.212	-1.418
Left: Catholic	-1.311	0.284	-4.611
AfD: Catholic	-1.134	0.266	-4.259
SPD: Gender	-0.219	0.172	-1.269
FDP: Gender	-0.474	0.212	-2.238
Greens: Gender	-0.197	0.199	-0.989
Left: Gender	-0.147	0.214	-0.686
AfD: Gender	-0.494	0.215	-2.299

SPD: Union Membership	0.168	0.262	0.642
FDP: Union Membership	-0.431	0.384	-1.122
Greens: Union Membership	0.180	0.295	0.610
Left: Union Membership	-0.005	0.329	-0.016
AfD: Union Membership	0.079	0.328	0.242
Issue Proximity: Mean	-1.663	0.223	-7.470
Issue Proximity: Education	0.363	0.168	2.156
Issue Proximity: Gender	-0.326	0.183	-1.784
Issue Proximity: Region	0.362	0.198	1.832
Issue Proximity: Standard Deviation	0.782	0.227	3.444

Note: CDU is reference party. Distribution assumption: log-normal, simulation based on 500 Halton draws. Optimization method: BFGS maximization. R Package “gmnl”.

Performance Measures:

	N	LogL	AIC	BIC
Immigration Issue	1807	-2811.731	5639.463	5683.458
Tax Issue	1251	-1992.360	4000.720	4041.774
Climate Change Issue	1193	-1877.758	3771.517	3812.191
Full Model: Tax Issue	1251	-1958.191	3966.383	4094.675

C.3 S-MNL Models

Model C.3.1:

scaling factor σ_i scales α up or down proportionately across i chooser

Model C.3.2:

chooser-specific covariates enter the scale

C.3.1 Models without Covariates

Parameter Estimates:

Immigration Issue	coef.	s.e.	t-val.
SPD: Constant	-0.542	0.068	-7.944
FDP: Constant	-1.101	0.080	-13.742

Greens: Constant	-0.958	0.082	-11.719
Left: Constant	-1.068	0.086	-12.484
AfD: Constant	-1.326	0.106	-12.497
Issue Proximity	0.307	0.023	13.175
τ	0.628	0.213	2.944

Tax Issue	coef.	s.e.	t-val.
SPD: Constant	-0.506	0.084	-6.007
FDP: Constant	-1.034	0.101	-10.208
Greens: Constant	-0.982	0.097	-10.084
Left: Constant	-1.041	0.108	-9.650
AfD: Constant	-0.914	0.102	-8.960
Issue Proximity	0.335	0.038	8.799
τ	0.913	0.261	3.506

Climate Change Issue	coef.	s.e.	t-val.
SPD: Constant	-0.666	0.086	-7.747
FDP: Constant	-1.159	0.107	-10.865
Greens: Constant	-1.128	0.108	-10.466
Left: Constant	-1.215	0.103	-11.823
AfD: Constant	-0.833	0.104	-8.046
Issue Proximity	0.338	0.026	13.074
τ	-0.397	0.246	-1.614

Full Model: Tax Issue	coef.	s.e.	t-val.
SPD: Constant	-0.152	0.125	-1.215
FDP: Constant	-0.592	0.143	-4.131
Greens: Constant	-0.747	0.149	-5.026
Left: Constant	-0.688	0.154	-4.456
AfD: Constant	-0.470	0.143	-3.295
Issue Proximity	0.352	0.045	7.824
SPD: Catholic	-0.920	0.239	-3.845
FDP: Catholic	-0.792	0.306	-2.591
Greens: Catholic	-0.359	0.220	-1.628
Left: Catholic	-1.368	0.356	-3.839
AfD: Catholic	-1.368	0.428	-3.196

SPD: Gender	-0.375	0.205	-1.826
FDP: Gender	-0.586	0.265	-2.209
Greens: Gender	-0.416	0.246	-1.691
Left: Gender	-0.193	0.222	-0.871
AfD: Gender	-0.571	0.277	-2.060
SPD: Union Membership	0.042	0.314	0.134
FDP: Union Membership	-0.624	0.514	-1.214
Greens: Union Membership	0.100	0.305	0.327
Left: Union Membership	0.047	0.327	0.145
AfD: Union Membership	0.137	0.376	0.365
τ	0.895	0.261	3.431

Note: CDU is reference party. Simulation based on 500 Halton draws. Constants are not scaled. τ represents the standard deviation of σ_i . Optimization method: BFGS maximization. R Package “gmnI”.

Performance Measures:

	N	LogL	AIC	BIC
Immigration Issue	1807	-2812.469	5638.937	5677.433
Tax Issue	1251	-1993.818	4001.636	4037.558
Climate Change Issue	1193	-1877.773	3769.547	3805.136
Full Model: Tax Issue	1251	-1965.937	3975.873	4088.770

C.3.2 Models with Covariates

Parameter Estimates:

Immigration Issue	coef.	s.e.	t-val.
SPD: Constant	-0.543	0.068	-7.960
FDP: Constant	-1.099	0.080	-13.733
Greens: Constant	-0.957	0.082	-11.725
Left: Constant	-1.068	0.085	-12.498
AfD: Constant	-1.307	0.107	-12.162
Issue Proximity	0.425	0.114	3.744
τ	0.574	0.228	2.516
Issue Proximity: Platform Divergence	-0.042	0.033	-1.270

Tax Issue	coef.	s.e.	t-val.
SPD: Constant	-0.501	0.084	-5.977
FDP: Constant	-1.029	0.101	-10.212
Greens: Constant	-0.978	0.097	-10.077
Left: Constant	-1.021	0.108	-9.466
AfD: Constant	-0.908	0.102	-8.940
Issue Proximity	0.461	0.116	3.957
τ	0.770	0.289	2.662
Issue Proximity: Platform Divergence	-0.054	0.039	-1.395

Climate Change Issue	coef.	s.e.	t-val.
SPD: Constant	-0.665	0.086	-7.752
FDP: Constant	-1.159	0.107	-10.872
Greens: Constant	-1.122	0.108	-10.405
Left: Constant	-1.212	0.103	-11.806
AfD: Constant	-0.833	0.104	-8.040
Issue Proximity	0.403	0.094	4.280
τ	-0.346	0.277	-1.249
Issue Proximity: Platform Divergence	-0.025	0.032	-0.783

Full Model: Tax Issue	coef.	s.e.	t-val.
SPD: Constant	-0.175	0.124	-1.413
FDP: Constant	-0.697	0.152	-4.587
Greens: Constant	-0.949	0.169	-5.604
Left: Constant	-0.667	0.159	-4.186
AfD: Constant	-0.458	0.141	-3.244
Issue Proximity	0.240	0.049	4.872
SPD: Catholic	-0.598	0.195	-3.068
FDP: Catholic	-0.381	0.206	-1.851
Greens: Catholic	-0.120	0.152	-0.788
Left: Catholic	-0.798	0.274	-2.909
AfD: Catholic	-0.854	0.295	-2.896
SPD: Gender	-0.277	0.182	-1.525
FDP: Gender	-0.351	0.239	-1.465
Greens: Gender	-0.090	0.201	-0.448
Left: Gender	-0.185	0.200	-0.925

AfD: Gender	-0.527	0.266	-1.983
SPD: Union Membership	0.006	0.215	0.026
FDP: Union Membership	-0.350	0.327	-1.071
Greens: Union Membership	0.184	0.198	0.929
Left: Union Membership	-0.100	0.258	-0.387
AfD: Union Membership	0.052	0.255	0.205
τ	0.663	0.278	2.384
Issue Proximity: Education	0.319	0.162	1.965
Issue Proximity: Gender	-0.293	0.161	-1.818
Issue Proximity: Region	0.391	0.186	2.099

Note: CDU is reference party. Simulation based on 500 Halton draws. Constants are not scaled. τ represents the standard deviation of σ_i . Optimization method: BFGS maximization. R Package “gmn1”.

Performance Measures:

	N	LogL	AIC	BIC
Immigration Issue	1807	-2811.719	5639.438	5683.433
Tax Issue	1251	-1992.949	4001.897	4042.951
Climate Change Issue	1193	-1877.479	3770.959	3811.632
Full Model: Tax Issue	1251	-1959.647	3969.295	4097.587

C.4 G-MNL Models

C.4.1 Models without Covariates

Parameter Estimates:

Immigration Issue	coef.	s.e.	t-val.
SPD: Constant	-0.543	0.068	-7.954
FDP: Constant	-1.101	0.080	-13.742
Greens: Constant	-0.958	0.082	-11.708
Left: Constant	-1.068	0.086	-12.462
AfD: Constant	-1.327	0.109	-12.155
Issue Proximity	-1.347	0.173	-7.787
Issue Proximity: Standard Deviation	0.501	0.368	1.360
τ	0.267	0.896	0.298

γ	0.064	2.810	0.023
----------	-------	-------	-------

Tax Issue	coef.	s.e.	t-val.
SPD: Constant	-0.511	0.085	-6.033
FDP: Constant	-1.039	0.101	-10.248
Greens: Constant	-0.988	0.098	-10.095
Left: Constant	-1.058	0.109	-9.723
AfD: Constant	-0.919	0.102	-8.972
Issue Proximity	-1.982	0.775	-2.557
Issue Proximity: Standard Deviation	0.535	0.506	1.058
τ	1.108	0.456	2.427
γ	-0.180	0.736	-0.244

Climate Change Issue	coef.	s.e.	t-val.
SPD: Constant	-0.667	0.086	-7.748
FDP: Constant	-1.160	0.107	-10.865
Greens: Constant	-1.136	0.109	-10.423
Left: Constant	-1.219	0.103	-11.807
AfD: Constant	-0.835	0.104	-8.045
Issue Proximity	-1.171	0.102	-11.530
Issue Proximity: Standard Deviation	0.185	0.329	0.561
τ	0.361	0.309	1.167
γ	-3.146	8.349	-0.377

Full Model: Tax Issue	coef.	s.e.	t-val.
SPD: Constant	-0.267	0.130	-2.051
FDP: Constant.	-0.647	0.146	-4.422
Greens: Constant	-0.865	0.146	-5.921
Left: Constant	-0.684	0.157	-4.367
AfD: Constant	-0.476	0.143	-3.342
SPD: Catholic	-0.777	0.231	-3.368
FDP: Catholic	-0.585	0.277	-2.112
Greens: Catholic	-0.222	0.193	-1.152
Left: Catholic	-1.516	0.514	-2.949
AfD: Catholic	-1.279	0.423	-3.025
SPD: Gender	-0.149	0.166	-0.899

FDP: Gender	-0.517	0.249	-2.072
Greens: Gender	-0.120	0.186	-0.646
Left: Gender	-0.149	0.203	-0.736
AfD: Gender	-0.481	0.232	-2.073
SPD: Union Membership	0.261	0.242	1.079
FDP: Union Membership	-0.399	0.460	-0.867
Greens: Union Membership	0.146	0.269	0.543
Left: Union Membership	-0.026	0.355	-0.073
AfD: Union Membership	0.104	0.318	0.328
Issue Proximity	-1.782	0.503	-3.542
Issue Proximity: Standard Deviation	0.549	0.468	1.175
τ	0.920	0.381	2.413
γ	-0.156	0.848	-0.184

Note: CDU is reference party. Distribution assumption: log-normal, simulation based on 500 Halton draws. Constants are not scaled. τ represents the standard deviation of σ_i . γ indicates how the variance of the error term varies with the scale σ_i . Optimization method: BFGS maximization. R Package “gmnl”.

Performance Measures:

	N	LogL	AIC	BIC
Immigration Issue	1807	-2812.487	5642.973	5692.468
Tax Issue	1251	-1991.781	4001.561	4047.747
Climate Change Issue	1193	-1877.525	3773.051	3818.809
Full Model: Tax Issue	1251	-1963.894	3975.789	4098.950

C.4.2 Models with Covariates

Parameter Estimates:

Immigration Issue	coef.	s.e.	t-val.
SPD: Constant	-0.544	0.068	-7.986
FDP: Constant	-1.099	0.080	-13.737
Greens: Constant	-0.958	0.082	-11.676
Left: Constant	-1.068	0.086	-12.435
AfD: Constant	-1.302	0.121	-10.771
Issue Proximity	-0.951	0.330	-2.880

Issue Proximity: Platform Divergence	0.041	0.033	1.243
Issue Proximity: Standard Deviation	0.259	0.488	0.531
τ	0.251	1.511	0.166
γ	-0.713	8.414	-0.085

Tax Issue	coef.	s.e.	t-val.
SPD: Constant	-0.507	0.084	-6.001
FDP: Constant	-1.036	0.101	-10.251
Greens: Constant	-0.984	0.098	-10.085
Left: Constant	-1.040	0.109	-9.554
AfD: Constant	-0.914	0.102	-8.949
Issue Proximity	-1.117	0.469	-2.384
Issue Proximity: Platform Divergence	0.060	0.043	1.383
Issue Proximity: Standard Deviation	0.162	0.501	0.324
τ	0.923	0.408	2.264
γ	-0.254	3.030	-0.084

Climate Change Issue	coef.	s.e.	t-val.
SPD: Constant	-0.666	0.086	-7.750
FDP: Constant	-1.160	0.107	-10.875
Greens: Constant	-1.131	0.108	-10.423
Left: Constant	-1.217	0.103	-11.804
AfD: Constant	-0.835	0.104	-8.049
Issue Proximity	-0.979	0.245	-3.998
Issue Proximity: Platform Divergence	0.023	0.032	0.734
Issue Proximity: Standard Deviation	0.057	0.265	0.214
τ	0.330	0.284	1.163
γ	-9.208	52.219	-0.176

Full Model: Tax Issue	coef.	s.e.	t-val.
SPD: Constant	-0.315	0.129	-2.433
FDP: Constant	-0.614	0.143	-4.285
Greens: Constant	-0.718	0.142	-5.038
Left: Constant	-0.707	0.159	-4.454
AfD: Constant	-0.507	0.143	-3.535
SPD: Catholic	-0.938	0.387	-2.424

FDP: Catholic	-1.002	0.500	-2.001
Greens: Catholic	-0.571	0.367	-1.556
Left: Catholic	-2.378	1.076	-2.211
AfD: Catholic	-1.814	0.786	-2.308
SPD: Gender	-0.094	0.165	-0.567
FDP: Gender	-0.623	0.333	-1.871
Greens: Gender	-0.370	0.255	-1.449
Left: Gender	-0.153	0.209	-0.732
AfD: Gender	-0.415	0.252	-1.645
SPD: Union Membership	0.344	0.302	1.139
FDP: Union Membership	-0.611	0.694	-0.880
Greens: Union Membership	-0.100	0.459	-0.218
Left: Union Membership	0.185	0.437	0.422
AfD: Union Membership	0.142	0.409	0.348
Issue Proximity	-2.677	1.153	-2.323
Issue Proximity: Education	-0.572	0.240	-2.383
Issue Proximity: Gender	0.299	0.198	1.512
Issue Proximity: Region	-0.335	0.227	-1.473
Issue Proximity: Standard Deviation	0.792	0.606	1.306
τ	1.017	0.383	2.656
γ	-0.102	0.450	-0.227

Note: CDU is reference party. Distribution assumption: log-normal, simulation based on 500 Halton draws. Constants are not scaled. τ represents the standard deviation of σ_i . γ indicates how the variance of the error term varies with the scale σ_i . Optimization method: BFGS maximization. R Package “gmm1”.

Performance Measures:

	N	LogL	AIC	BIC
Immigration Issue	1807	-2811.603	5643.205	5698.199
Tax Issue	1251	-1990.921	4001.843	4053.160
Climate Change Issue	1193	-1877.267	3774.534	3825.376
Full Model: Tax Issue	1251	-1956.316	3966.633	4105.189