Keeping Tabs through Collaboration? Sharing Ministerial Responsibility in Coalition Governments

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SUMMARY STATISTICS

Variable	mean	sd	min	med	max
		Germany			
Sharedness	0	0.309	0	0.2	1
Ministries Dyad	1	0	1	1	1
Ministries Difference	0	0.186	0.067	0.267	0.571
Issue Salience	0	0.013	0	0.004	0.13
Policy Conflict	1	0.536	0.011	0.808	2.086
		Denmark			
Sharedness	0	0.3	0	0	0.998
Ministries Dyad	1	0	1	1	1
Ministries Difference	0	0.107	0.263	0.333	0.5
Issue Salience	0	0.031	0	0	0.294
Policy Conflict	1	0.892	0	0.968	3.85
		The Netherlands			
Sharedness	0	0.292	0	0	1
Ministries Dyad	1	0.175	0.385	0.692	1
Ministries Difference	0	0.143	0	0.154	0.538
Issue Salience	0	0.025	0	0.002	0.704
Policy Conflict	1	0.53	0.004	0.66	2.369

TABLE A1 *Summary statistics of response variable and covariates.*

CAP Policy Code	CAP Policy Issue	Mean Salience
	Germany	
100	Macroeconomics - General	9.17
107	Tax Code	5.52
1910	Western Europe	4.48
230	Immigration	4.41
1308	Child Care	3.99
202	Gender Discrimination	3.92
609	Education - R&D	3.51
500	Labor - General	3.28
1303	Elderly Assistance	3.20
105	National Budget	3.18
600	Education - General	3.18
1305	Volunteer Associations	3.02
	Denmark	
900	Immigration	19.29
107	Tax Code	13.79
1300	Social Welfare - General	9.46
600	Education - General	9.15
1303	Elderly Assistance	8.40
322	Medical Facilities	7.94
100	Macroeconomics - General	7.84
1308	Child Care	7.79
602	Elementary & Secondary	7.72
700	Environment - General	6.72
500	Labor - General	5.76
105	National Budget	5.23
	The Netherlands	
105	National Budget	12.83
2097	Specific developments within political parties	9.46
230	Immigration	9.20
2000	Government Operations - General	6.65
100	Macroeconomics - General	6.03
1910	Western Europe	5.84
1200	Law & Crime - General	5.44
600	Education - General	5.25
1300	Social Welfare - General	5.05
700	Environment - General	4.25
2100	Public Lands	4.13
500	Labor - General	3.92
300	Health Care - General	3.53

TABLE A2 *Top 5% of salient policy issues per country, by average salience across all observed governments. Mean salience in %.*

Robustness Checks

This section presents some robustness checks showing that the results presented in the paper's main body hold across different model specifications. In particular, in the first section the presented fractional logistic regression models are re-estimated with (a) fixed effects for major policy clusters and (b) replacing the country-level fixed effects with cabinet-level fixed effects. Finally, a different regression model – beta regression – is used to model the stipulated hypothesis.

Fractional Logistic Regression – Policy Clusters

	Dependent variable:		
	Sharedness		
Ministries Dyad	-1.111^{***}	-1.664^{***}	-1.672^{***}
	(0.039)	(0.071)	(0.076)
Ministries Difference	0.462^{***}	-0.125	-0.133
	(0.093)	(0.111)	(0.095)
Ministries Difference * Ministries Dyad	-2.317^{***}	-1.525^{***}	-1.522^{***}
	(0.210)	(0.216)	(0.187)
Issue Salience	10.215^{***}	7.328^{***}	4.364^{***}
	(1.539)	(0.587)	(0.670)
Policy Conflict		-0.066	-0.112
		(0.098)	(0.079)
Policy Conflict * Issue Salience			3.393^{**}
			(1.339)
DK	-0.386^{***}	-0.347^{***}	-0.339^{***}
	(0.020)	(0.056)	(0.052)
NL	-1.412^{***}	-1.447^{***}	-1.454^{***}
	(0.043)	(0.053)	(0.053)
Civil Rights	0.637	0.558	0.544
	(1.051)	(1.063)	(1.033)
Health	-0.231	-0.298	-0.294
	(0.701)	(0.623)	(0.602)

Agriculture	0.196	0.064	0.062
	(1.059)	(0.949)	(0.933)
Labor	0.079	0.060	0.075
	(0.787)	(0.722)	(0.698)
Education	−0.181	−0.631	−0.613
	(0.663)	(0.410)	(0.384)
Environment	0.964	0.921	0.930
	(1.098)	(0.991)	(0.969)
Energy	0.629	1.117	1.131
	(0.896)	(0.921)	(0.900)
Immigration	−2.820***	−2.233***	−2.485***
	(0.439)	(0.748)	(0.884)
Transportation	−0.087		
	(0.733)		
Law and Crime	0.885	0.813	0.830
	(0.946)	(0.898)	(0.869)
Social Welfare	−0.018	0.089	0.114
	(0.849)	(0.940)	(0.905)
Housing	0.214	0.213	0.219
	(0.544)	(0.751)	(0.732)
Domestic Commerce	0.491	0.499	0.515
	(0.386)	(0.378)	(0.362)
Defense	−0.195	−0.515	−0.501
	(0.897)	(0.666)	(0.632)
Technology	0.541		
	(0.622)		
Foreign Trade	1.116**	1.061***	1.052***
	(0.533)	(0.226)	(0.215)
International Affairs	1.073**	1.053***	1.060***
	(0.424)	(0.393)	(0.365)
Government Operations	0.605	1.225	1.243
	(0.788)	(0.977)	(0.949)
Public Lands	0.448	0.341	0.342
	(0.814)	(1.142)	(1.118)
Culture	0.938		
	(0.695)		
State and Local Government Administration	0.160		
	(0.738)		
German Reunification	0.434		
	(0.735)		
Constant	0.224	0.860	0.901

	(0.802)	(0.681)	(0.675)
Observations	3,919	2,681	2,681
Log Likelihood	−1,759.997	−1,225.175	−1,224.302
Akaike Inf. Crit.	3,577.994	2,500.350	2,500.604
Note:			*p<0.1; **p<0.05; ***p<0.01

TABLE A3 *Fractional logistic regression models. Cluster-robust standard errors shown in parentheses. Drop in number of observations due to lack of data on policy conflict for some policy areas. Please refer to Table A7*

Fractional Logistic Regression – Cabinets

	Dependent variable:		
	Sharedness		
	(1)	(2)	(3)
Ministries Dyad	−0.984	−0.943	−0.897
	(0.898)	(1.439)	(1.428)
Ministries Difference	−0.486	−0.219	−0.048
	(2.517)	(4.540)	(4.533)
Ministries Difference * Ministries Dyad	−0.009	−1.152	−1.403
	(3.749)	(6.315)	(6.315)
Issue Salience	7.194***	5.008***	2.835
	(2.220)	(1.875)	(2.327)
Policy Conflict		0.028	−0.005
		(0.118)	(0.124)
Policy Conflict * Issue Salience			2.401*
			(1.263)
Balkenende II	0.083	0.102	0.095
	(0.083)	(0.180)	(0.179)
Balkenende IV	−0.332***	−0.209***	−0.206***
	(0.051)	(0.077)	(0.077)
Fogh Rasmussen I	0.891***	0.880***	0.897***
	(0.144)	(0.228)	(0.236)
Fogh Rasmussen II	0.600***	0.549***	0.570***
	(0.088)	(0.123)	(0.133)
Fogh Rasmussen III	0.479***	0.424***	0.439**
	(0.088)	(0.165)	(0.172)
Kok I	0.089***	−0.129***	−0.125***

	(0.025)	(0.044)	(0.044)
Kok II	−0.145**	−0.342***	−0.339***
	(0.060)	(0.107)	(0.107)
Merkel I	1.153***	0.893***	0.888***
	(0.231)	(0.328)	(0.326)
Merkel II	0.977***	0.943***	0.961***
	(0.143)	(0.205)	(0.214)
Merkel III	1.214***	1.095***	1.101***
	(0.093)	(0.130)	(0.132)
Nyrup Rasmussen III	0.104	0.345	0.388
	(0.340)	(0.479)	(0.488)
Nyrup Rasmussen IV	0.368	0.641	0.665
	(0.340)	(0.477)	(0.487)
Rutte I	−0.215	−0.557*	−0.559**
	(0.203)	(0.286)	(0.284)
Rutte II	−0.368*	−0.801***	−0.804***
	(0.203)	(0.284)	(0.282)
Schröder II	0.518	0.817	0.855
	(0.426)	(0.610)	(0.620)
Constant	−0.818	−0.585	−0.591
	(0.593)	(0.975)	(0.972)
Observations	3,919	2,681	2,681
Log Likelihood	−1,835.236	−1,300.333	−1,299.956
Akaike Inf. Crit.	3,710.473	2,642.666	2,643.913
Note:			*p<0.1; **p<0.05; ***p<0.01

TABLE A4 *Fractional logistic regression models. Cluster-robust standard errors shown in parentheses. Drop in number of observations due to lack of data on policy conflict for some policy areas. Please refer to Table A7.*

Beta Regression

Ferrari and Cribari-Neto (2004) suggest using beta regression models to analyze data that is proportions and, hence, falls in the unit interval. The underlying beta distribution is defined on the open unit interval and can represent multiple shapes, accommodating for potential skewness or flatness of the data. Given the high frequency of observations that are close to zero, beta regressions, therefore, come in handy to account for this distribution of the dependent variables. Yet, the data also contains a considerable number of observations that are precisely 0, which, strictly speaking, the beta distribution is not defined over. To accommodate for the occurrence of such data within the framework of a beta regression, Smithson and Verkuilen (2006) suggest squeezing the data from the closed into the open unit interval through the transformation $\widetilde{y} = \frac{y(n-1)+0.5}{n}$, where n denotes the sample size. This procedure circumvents the complexity of modelling zeros and ones separately by slightly shifting the point mass to a different location. The entire model can be written as

$$\widetilde{y} \sim B\left(\mu, \phi\right); g\left(\mu\right) = X\beta$$

where μ is the mean of the distribution and ϕ denotes the variance. In the parameterization suggested by Cribari-Neto and Zeileis (2010), ϕ can be inferred from the estimation of μ, as both depend on the two shape parameters of the beta distribution (p, q). $X\beta$ denotes the matrix of unknown regression parameters for the explanatory variables. Lastly, $g(\cdot)$ is a link function to ensure that both sides of the regression function assume values on the real line. While the researcher has some flexibility in selecting the best-fitting function, the most frequently applied link, which is also used here, is the conventional logit.

	Dependent variable:
	Sharedness

	(1)	(2)	(3)	(4)	(5)	(6)
Ministries Dyad	−0.292**	−0.499**	−0.499**	−0.359***	−0.613***	−0.613***
	(0.131)	(0.198)	(0.196)	(0.108)	(0.138)	(0.135)
Ministries Difference	0.638	0.406	0.408	0.531	0.257	0.263
	(0.548)	(0.726)	(0.716)	(0.509)	(0.565)	(0.550)
Ministries Difference * Ministries Dyad	−1.576*	−1.201	−1.207	−1.480*	−1.117	−1.129
	(0.860)	(1.156)	(1.142)	(0.827)	(0.930)	(0.908)
Issue Salience	5.080***	3.640***	2.099**	7.104***	5.013***	2.994***
	(1.077)	(0.821)	(0.829)	(0.910)	(0.846)	(0.728)
Policy Conflict		−0.021	−0.039		−0.069	−0.093*
		(0.070)	(0.077)		(0.052)	(0.053)
Policy Conflict * Issue Salience			1.734**			2.255***
			(0.814)			(0.316)
Denmark	−0.277***	−0.283***	−0.282***	−0.295***	−0.292***	−0.290***
	(0.019)	(0.041)	(0.041)	(0.028)	(0.038)	(0.038)
Netherlands	−0.948***	−0.936***	−0.938***	−0.988***	−1.005***	−1.009***
	(0.070)	(0.086)	(0.086)	(0.090)	(0.100)	(0.099)
Civil Rights				0.305	0.280	0.269
				(0.459)	(0.464)	(0.450)
Health				−0.068	−0.109	−0.111
				(0.327)	(0.305)	(0.299)
Agriculture				0.150	0.074	0.070
				(0.375)	(0.356)	(0.351)
Labor				0.058	0.035	0.040
				(0.335)	(0.330)	(0.325)
Education				0.021	−0.130	−0.123
				(0.257)	(0.201)	(0.199)
Environment				0.494	0.495	0.497
				(0.456)	(0.411)	(0.406)
Energy				0.279	0.562*	0.567*
				(0.296)	(0.312)	(0.307)
Immigration				−1.335***	−0.890**	−0.988**
				(0.266)	(0.356)	(0.391)
Transportation				0.133		
				(0.243)		
Law and Crime				0.450	0.434	0.440
				(0.334)	(0.315)	(0.307)
Social Welfare				0.087	0.144	0.152

				(0.268)	(0.332)	(0.326)
Housing				0.063	0.014	0.015
				(0.240)	(0.335)	(0.330)
Domestic Commerce				0.265***	0.270***	0.275***
				(0.092)	(0.087)	(0.091)
Defense				0.040	−0.067	−0.064
				(0.324)	(0.251)	(0.241)
Technology				0.297*		
				(0.163)		
Foreign Trade				0.585***	0.573***	0.566***
				(0.159)	(0.058)	(0.058)
International Affairs				0.498***	0.512***	0.515***
				(0.112)	(0.115)	(0.110)
Government Operations				0.277	1.043***	1.053***
				(0.266)	(0.251)	(0.244)
Public Lands				0.236	0.411	0.410
				(0.247)	(0.793)	(0.786)
Culture				1.096***		
				(0.188)		
State and Local Government Administration				0.372		
				(0.250)		
German Reunification				0.105		
				(0.263)		
Constant	−0.376***	−0.176**	−0.159**	−0.542**	−0.205	−0.183
	(0.090)	(0.073)	(0.075)	(0.231)	(0.230)	(0.223)
Observations	3,919	2,681	2,681	3,919	2,681	2,681
R^2	0.118	0.110	0.110	0.161	0.184	0.185
Log Likelihood	11,106.090	7,370.304	7,371.069	11,158.360	7,430.673	7,431.966
Note:						*p<0.1; **p<0.05; ***p<0.01

TABLE A5 *Beta regression models. Cluster-robust standard errors shown in parentheses. Drop in number of observations due to lack of data on policy conflict for some policy areas. Please refer to Table A7.*

Policy Position on 13 Dimensions

To obtain preferential information on a majority of CAP policy issues, this paper replicates the procedure described in Klüver and Zubek (2018). It consists of the following steps:

1. Cluster the policy items defined by the Manifesto Project into 13 larger policy clusters according to Table A6.

2. Within each cluster, determine which items represent positive and negative references to the cluster.

3. Per party and national election, sum up the respective scores of positive and negative references for each policy cluster

4. Following Lowe et al. (2011), calculate a party's position before a specific election as $Position = log((C_a^+ + 0.5)/(C_a^- + 0.5))$, where C_a^+ denotes the sum of positive mentions of a policy cluster, whereas C_a^+ refers to negative mentions of the same cluster by party a.

5. Map the resulting positions per party and national election onto the policy issues defined by the Comparative Agendas Project using the mapping table shown in Table A7.

Policy Cluster	Manifesto Project Code	
	Positive	Negative
Agriculture	407	406; 703
Budget	409	414
Civil rights	201; 202; 604; 705	603; 605
Decentralization	301	302
Defense	105	104
Economy	403; 404; 412; 413	401; 402
Education	506	507
Environment	416; 501	410
EU	108	110
Immigration	602; 607	601; 608
Internationalism	103; 106; 107	109
Labor	405; 701	702
Welfare	503; 504; 606	505

TABLE A6 *Definition of 13 policy clusters using Manifesto Project items as described by Klüver and Zubek (2018).*

Policy Cluster	CAP Major	CAP Minor
Agriculture	4	0; 1; 2; 3; 4; 5; 6; 7; 8; 98; 99
Agriculture	18	2; 3; 7
Budget	1	1; 4; 5; 7
Civil rights	2	0; 2; 4; 5; 6; 7; 8; 9; 10; 99
Civil rights	12	0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 23; 27; 99
Decentralization	14	1; 3; 5
Decentralization	20	1
Defense	16	0; 2; 3; 4; 5; 6; 8; 9; 10; 11; 12; 15; 16; 17; 98; 99
Economy	1	0; 8; 99
Economy	15	0; 1; 2; 4; 5; 7; 20; 21; 22; 24; 25; 26; 99
Education	6	0; 1; 2; 3; 4; 6; 7; 98; 99
Environment	7	0; 1; 3; 4; 5; 7; 9; 10; 11; 98; 99
Environment	8	6; 7
Environment	16	14
Environment	19	2
Environment	21	4
EU	19	10; 13
Immigration	2	1; 30
Immigration	9	0
Internationalism	5	29
Internationalism	19	0; 1; 5; 6; 8; 11; 14; 16; 19; 20; 25; 26; 27; 29; 99
Labor	1	3; 10
Labor	5	0; 1; 2; 4; 5; 99
Welfare	3	0; 1; 2; 21; 22; 23; 24; 25; 31; 32; 33; 34; 35; 36; 41; 42; 43; 98; 99
Welfare	5	3; 6; 8
Welfare	13	0; 1; 2; 3; 4; 5; 8; 99
Welfare	14	6; 8

TABLE A7 *Mapping of 13 policy clusters onto policy issues defined by the Comparative Agendas Project (Klüver and Zubek 2018). CAP issues not listed could not be mapped onto these 13 dimensions*

Common Support

Regarding interaction models, it is important to show that the fitted model is commonly supported by all interacting variables (Hainmueller, Mummolo, and Xu 2019). In addition to the rugs plotted in Figure 3 in the main article, Figure in the appendix shows that the results do not unduly extrapolate from the empirical data. Except for extreme cases in the Netherlands, there are observations for different combinations of the interacting variables.

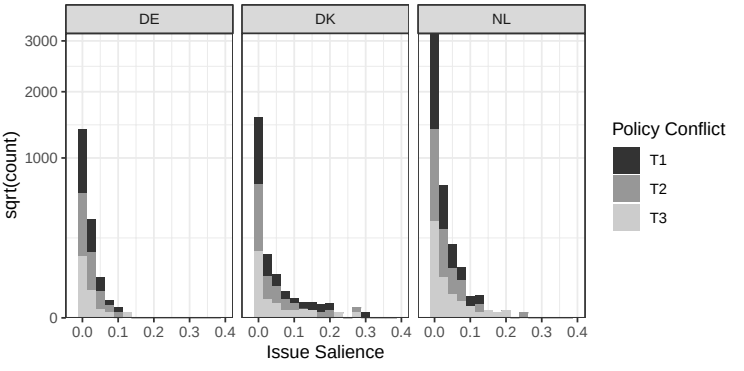

Figure A1. Histograms of issue salience, plotted by tercentiles of policy conflict. One extreme Dutch observation at 0.6 is not shown to improve readability.

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