Appendix to

Legislator dissent does not affect electoral outcomes

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1 Descriptive Statistics

Table A1 presents the summary statistics for all variables in the main text — except for the fixed effects variables.

We use separate datasets for MP-level and voter-level analyses, which are both in the long format. Most of the variables in the MP-level dataset originate from the Public Whip (publicwhip.org.uk). The only exception is the *Vote Share* variable, which comes from election results published by the Electoral Commission (electoralcommission.org.uk). All variables in the voter-level dataset originate from the British Election Study (britishelectionstudy.com), Internet Panel (BESIP).

Table A1: Descriptive statistics

Variable	Dataset	N	Mean	SD	Median	Min	Max
Vote Share	MPs	2,923	0.5	0.1	0.5	0.1	0.9
Vote Choice	Voters	68,241	0.5	0.5	0	0	1
Dissent	MPs	2,909	0.01	0.01	0.004	0	0.2
Attendance	MPs	2,923	0.7	0.2	0.7	0	1.0
Majority	MPs	2,923	0.2	0.1	0.2	0.000	0.8
Office	MPs	2,923	0.4	0.6	0	0	5.5
Political Knowledge	Voters	103,237	7.8	1.3	8.2	2.4	9.8
Media Consumption	Voters	101,062	2.3	0.9	2	1	5
Left-Right Position	Voters	84,229	5.0	2.4	5	0	10
Party ID	Voters	53,842	-0.1	2.0	0	-3	3

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1.1 Dependent variables

Note that the dependent variables are coded as missing for MPs who stood down or for voters in constituencies without an incumbent among the candidates.

Vote Share. This variable is the proportion of valid votes that MPs received, at the general election following their voting record in parliament. Figure A1 visualises the distribution of this variable.

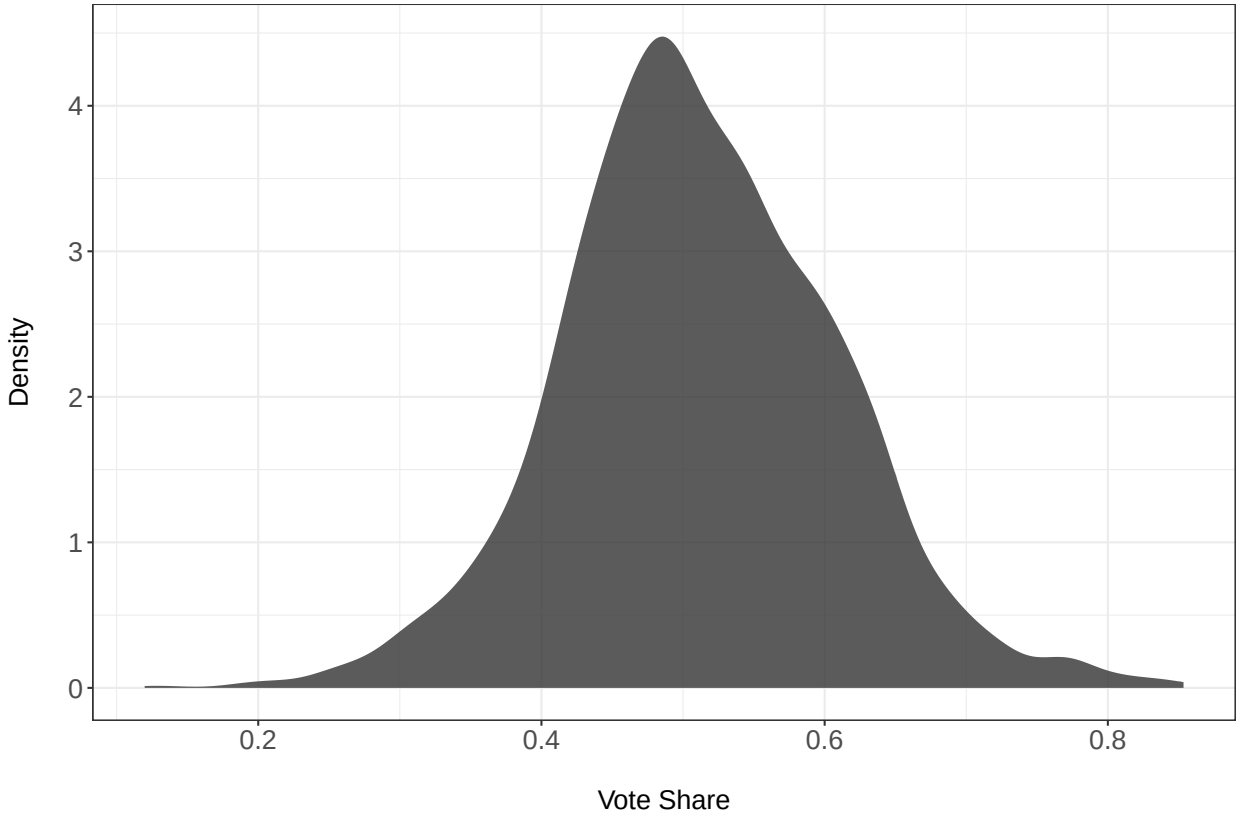

Figure A1: Distribution of the *Vote Share* variable.

Vote Choice. This variable indicates whether (1) or not (0) survey respondents voted for incumbent MPs standing for re-election in their constituency.

1.2 Independent variable

Dissent. This variable is the share of divisions that MPs vote against the majority in their party in a parliamentary term. Figure A2 plots this variable in six parliamentary terms under analysis.

As mentioned in the main text, there appear strong correlations between the number of (a) votes

cast against the majority in a party and (b) votes cast against the whip. Figure A3 plots these correlations with data on the latter measure of dissent among Labour MPs in the 2008-9 session (Cowley and Stuart, 2009) and Conservative MPs in the 2012-13 session (Cowley and Stuart, 2013).

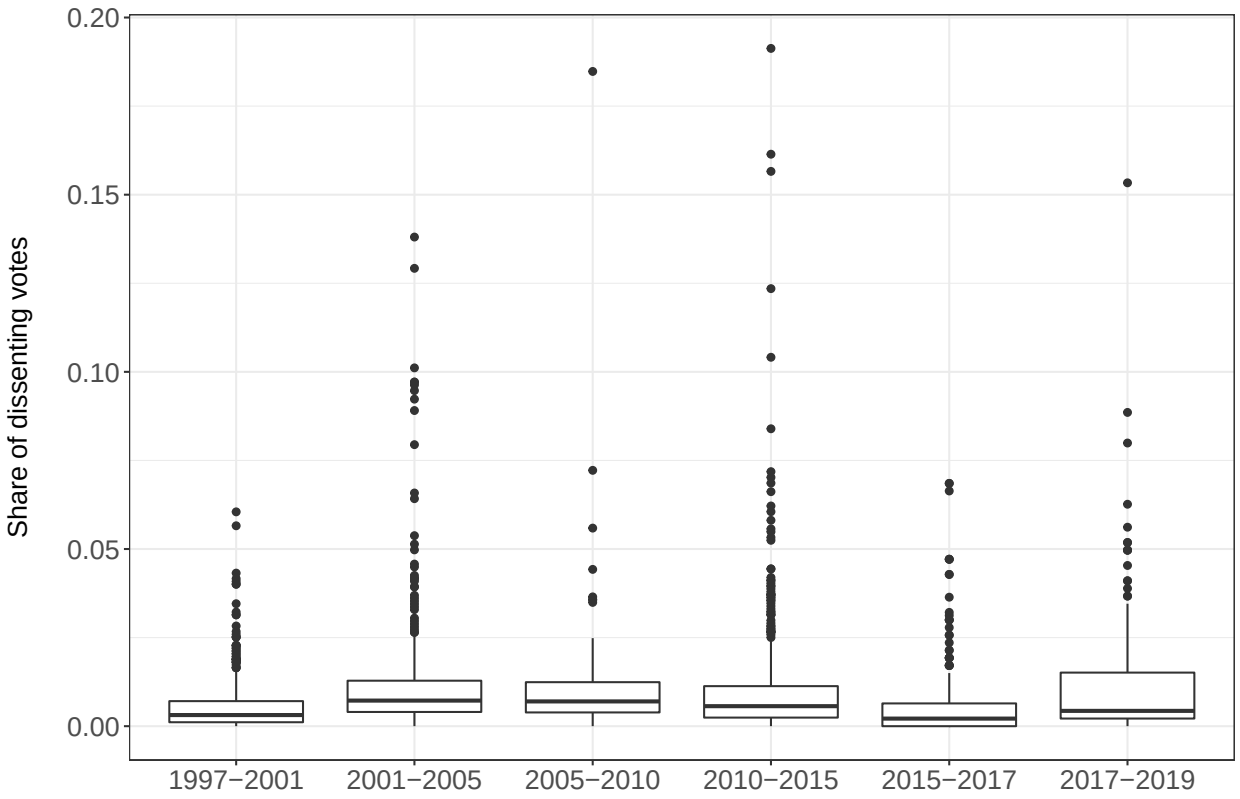

Figure A2: Legislative dissent in six parliamentary terms.

1.3 Control variables

Attendance. This variable is the share of divisions that MPs vote in a parliamentary term.

Majority. This variable is the difference in the vote shares of the incumbent MP and the candidate who came second in the most recent elections. Figure A4 plots this variable against *Dissent*.

Office. This variable is the share of a parliamentary term, in days, that MPs held one or more higher offices. These offices include party leadership, ministers, shadow ministers, and/or party spokespersons.

Political Knowledge. This variable is based on measuring how knowledgeable respondents are about the ideological position of parties — a method that outperforms measuring political knowledge with

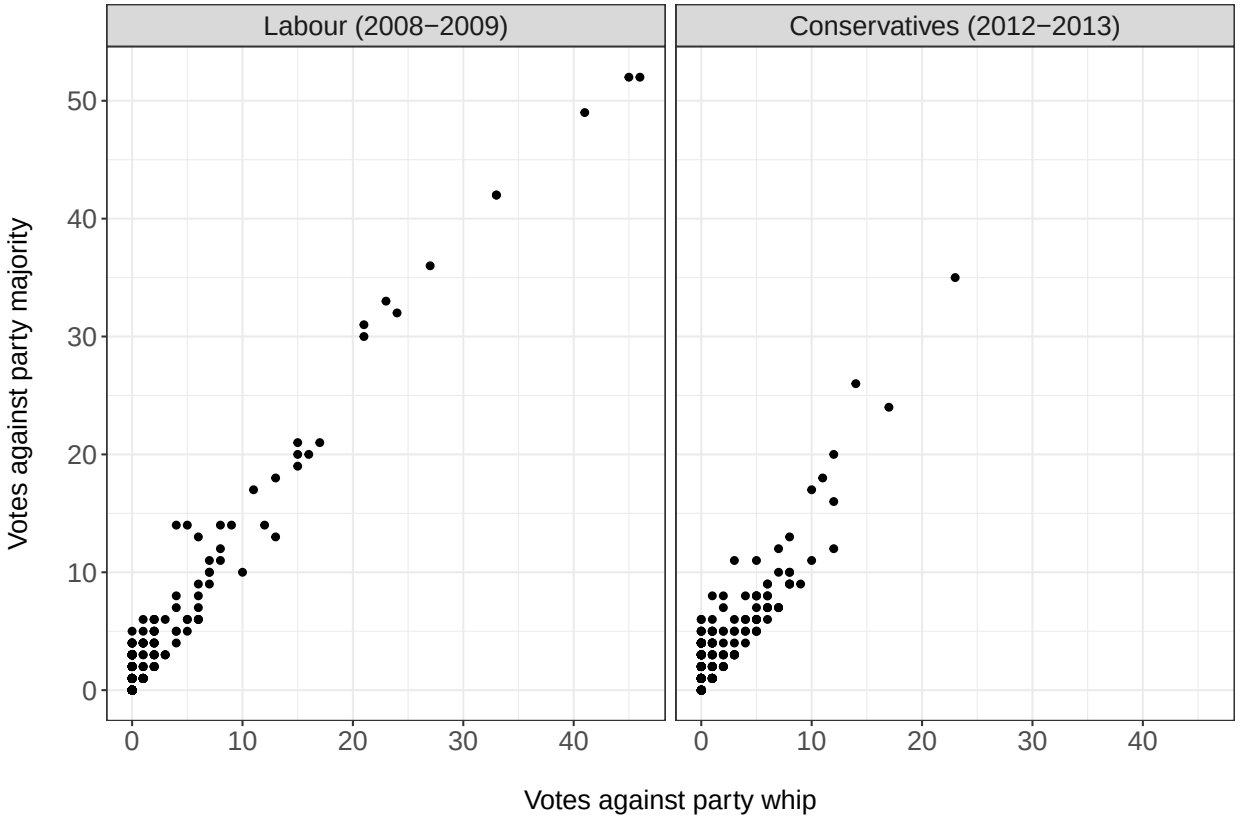

Figure A3: Correlation between votes against party majority and party whip.

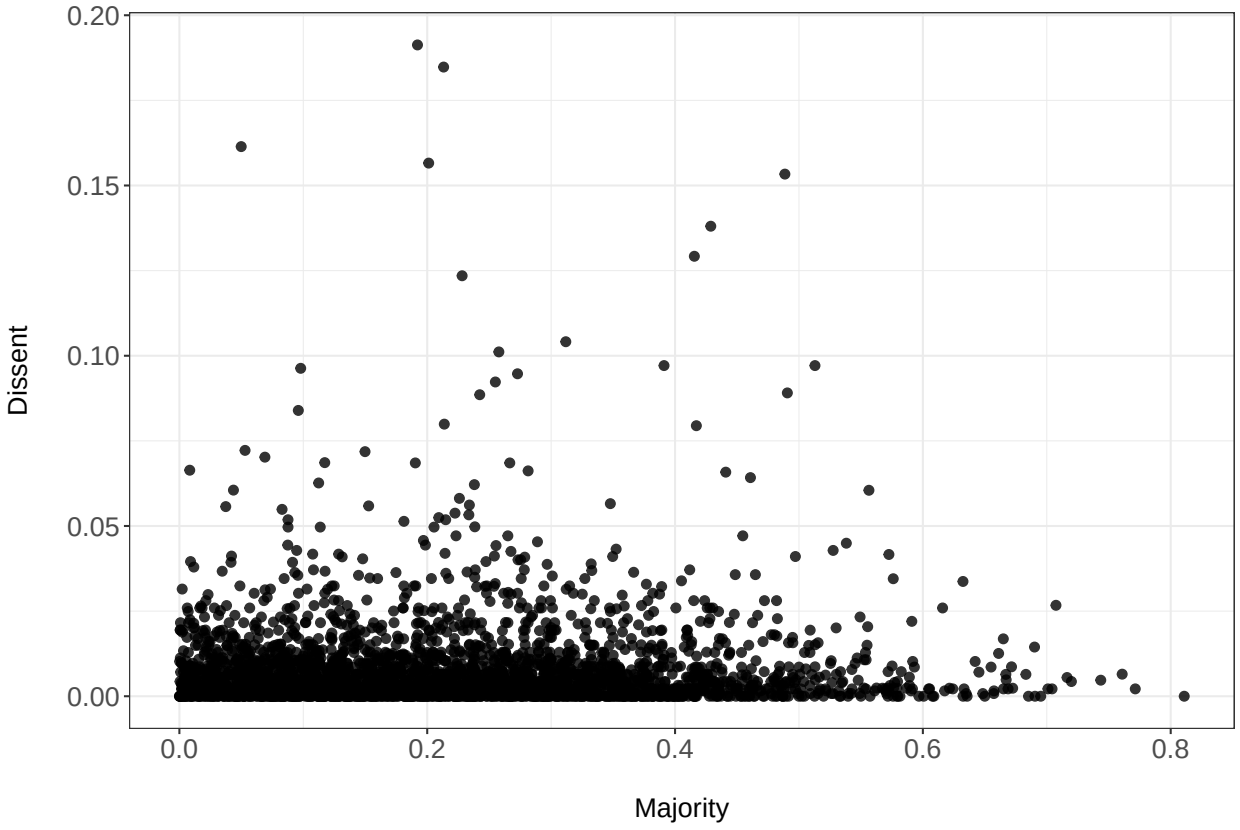

Figure A4: Correlation between *Majority* and *Dissent*.

factual knowledge questions (Gidengil et al., 2016). It originates from the *lr* item in BESIP, which asks '*In politics people sometimes talk of left and right. Where would you place the following parties on this scale?*'. The answer categories range between 0 (*Left*) and 10 (*Right*).

Following Gordon and Segura (1997), we first calculate the mean absolute distances between (a) the party placements by each respondent and (b) the average placements by all respondents. Then, for respondents who fail to place a party, we assign them the mean absolute distance for that party plus two standard deviations. Finally, we invert the values so that high scores indicate higher levels of political knowledge.

Media Consumption. This variable measures the amount of time respondents spend following the news. It originates from the *infoSources* item in BESIP, which asks '*During the last seven days, on average how much time (if any) have you spent per day following news about politics or current affairs from each of these sources?*'. The answer categories range between 1 (*None, no time at all*) and 5 (*More than 2 hours*). We take the average score for the following sources: *Television*, *Newspaper (including online)*, *Radio*, and *Internet (not including online newspapers)*.

Left-Right Position. This variable measures respondents' ideological positions. It originates from the survey item *leftRight* in BESIP, which asks '*In politics people sometimes talk of left and right. Where would you place yourself on the following scale?*'. The answer categories range from *0 (Left)* to *10 (Right)*.

Party ID. This variable measures how strongly respondents identify with the party of incumbent MP(s) standing for re-election in their constituency. It originates from three survey items in BESIP:

- *partyId*, which asks '*Generally speaking, do you think of yourself as Labour, Conservative, Liberal Democrat or what?*',
- *partyIdSqueeze*, which asks '*Do you generally think of yourself as a little closer to one of the parties than the others? If yes, which party?*', and
- *partyIdStrength*, which asks '*Would you call yourself [1] very strong, [2] fairly strong, or [3] not very strong [party]?*'.

Note that the *partyIdSqueeze* item is asked only if respondents answer *No — None* or *Don't know* to the *partyId* item.

Following Kam (2009), we then code this variable as:

- 0 for respondents without party identification,
- as inverted *partyIdStrength* for respondents who identify with incumbents' party, or
- as negated and inverted *partyIdStrength* for respondents who identify with a different party.

For example, in constituencies represented by a Labour MP, we code this variable as 3 for respondents whose *partyId* is Labour and whose *partyIdStrength* is very strong. For voters whose *partyId* is any other party and whose *partyIdStrength* is very strong, we code this variable as -3. Hence the resulting variable ranges between -3 (voters identifying very strongly with a party other than the party of their incumbent MP) and 3 (voters identifying very strongly with the party of their incumbent MP).

2 Complete regression models for Table 1

For reasons of brevity and space, the regression table in the main text (Table 1) reports only a summary of the results. The complete results are available here in Table A2.

Table A2: Effect of dissent on vote share and vote choice — Complete results for Table 1

	Vote Share			Vote Choice		
	(1)	(2)	(3)	(4)	(5)	(6)
Variables						
Dissent	0.195	-0.235	-0.182	0.698**	0.189	-0.227
	(0.130)	(0.177)	(0.165)	(0.237)	(0.621)	(1.33)
Attendance			0.047*			-0.058
			(0.018)			(0.157)
Majority			0.080***			0.011
			(0.019)			(0.131)
Office			0.001			0.005
			(0.003)			(0.015)
Political Knowledge						0.006
						(0.014)
Media Consumption						0.005
						(0.013)
Left-Right Position						0.004
						(0.009)
Party ID						0.120***
						(0.013)
Constant	0.510***			0.460***		
	(0.003)			(0.004)		
Fixed-effects						
MP–Constituency FEs	✗	✓	✓	✗	✓	✓
Party–Year FEs	✗	✓	✓	✗	✓	✓
Voter FEs	✗	✗	✗	✗	✓	✓
Fit statistics						
Observations	2,909	2,909	2,909	67,997	67,997	37,558
R^2	0.0008	0.926	0.928	0.0004	0.834	0.939
Within R^2		0.004	0.027		1.68×10^{-5}	0.183

Notes: Standard errors are clustered at the level of MPs. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

3 Regression models for Figure 2

The conditional marginal effects plot (Figure 2) in the main text is based on regression models with interaction terms. We provide these models here in Table A3.

Table A3: Models with interaction terms for Figure 2

	Vote Choice			
	(1)	(2)	(3)	(4)
Variables				
Dissent	11.2	0.872	-3.59	-0.190
	(9.65)	(2.42)	(3.35)	(1.29)
Attendance	-0.053	-0.058	-0.054	-0.063
	(0.159)	(0.157)	(0.159)	(0.156)
Majority	0.008	0.009	-0.0001	0.014
	(0.131)	(0.131)	(0.130)	(0.131)
Office	0.005	0.005	0.006	0.004
	(0.015)	(0.015)	(0.015)	(0.015)
Political Knowledge	0.014	0.006	0.005	0.005
	(0.015)	(0.014)	(0.014)	(0.014)
Media Consumption	0.004	0.007	0.004	0.005
	(0.013)	(0.014)	(0.013)	(0.013)
Left-Right Position	0.003	0.004	-2.75×10^{-5}	0.003
	(0.009)	(0.009)	(0.010)	(0.009)
Party ID	0.120***	0.120***	0.119***	0.124***
	(0.013)	(0.013)	(0.013)	(0.013)
Dissent × Political Knowledge	-1.38			
	(1.09)			
Dissent × Media Consumption		-0.443		
		(0.762)		
Dissent × Left-Right Position			0.639	
			(0.501)	
Dissent × Party ID				-0.702
				(0.430)
Fixed-effects				
MP–Constituency FEs	✓	✓	✓	✓
Party–Year FEs	✓	✓	✓	✓
Voter FEs	✓	✓	✓	✓
Fit statistics				
Observations	37,558	37,558	37,558	37,558
R^2	0.939	0.939	0.940	0.939
Within R^2	0.184	0.183	0.185	0.185

Notes: Standard errors are clustered at the level of MPs. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4 Robustness Checks

This section provides a series of nine checks on the robustness of the results reported in the main text.

4.1 Extended datasets

Three groups of MPs are excluded from our analysis by definition, as the key variables cannot be calculated for:

- MPs who did not run for re-election in the general elections that follow a parliamentary term
- MPs who did not vote - including speakers, deputy speakers, and absentee MPs from Northern Ireland
- MPs without a party affiliation

In addition, we purposefully excluded two further groups of MPs from our analyses in the main text. These were:

- MPs whose party affiliation changed at anytime from one election to the next - including MPs who had party whip removed for a period of time
- MPs whose constituency changed from one election to the next - including the boundary changes in 2005 and 2010

In Table A4, we re-estimate the models with the latter groups of MPs included in the datasets.

Table A4: Models based on data from extended datasets

	Vote Share			Vote Choice		
	(1)	(2)	(3)	(4)	(5)	(6)
Variables						
Dissent	-0.211	-0.073	-0.041	-0.044	0.089	-0.223
	(0.161)	(0.100)	(0.093)	(0.286)	(0.453)	(0.717)
Attendance			0.040**			-0.052
			(0.015)			(0.150)
Majority			0.079***			0.014
			(0.018)			(0.127)
Office			-0.0005			0.004
			(0.002)			(0.015)
Political Knowledge						0.006
						(0.013)
Media Consumption						0.005
						(0.013)
Left-Right Position						0.001
						(0.009)
Party ID						0.127***
						(0.013)
Constant	0.504***			0.462***		
	(0.003)			(0.004)		
Fixed-effects						
MP–Constituency FEs	✗	✓	✓	✗	✓	✓
Party–Year FEs	✗	✓	✓	✗	✓	✓
Voter FEs	✗	✗	✗	✗	✓	✓
Fit statistics						
Observations	3,393	3,393	3,393	69,331	69,331	38,266
R^2	0.0009	0.922	0.924	1.82×10^{-6}	0.829	0.935
Within R^2		0.0004	0.023		5.14×10^{-6}	0.202

Notes: Standard errors are clustered at the level of MPs. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4.2 Reduced datasets

According to our measure, there are two conditions under which MPs cannot be seen as deviating from their party line, no matter how they vote. First, when there is a party with a single MP voting in a division. This includes, by definition, cases where the parliamentary party consists of just one MP, but it can also include cases where an MP from a larger party rebels on their own, while the rest of their party is abstaining. Their vote alone defines the majority in their party, so they cannot deviate from it. Second, when voting MPs of a party divide equally between *Aye* and *No*, the majority cannot be defined in the first place. Again, this can happen in larger parties as well as in parties with two MPs.

In Table A5, we re-estimate the models with these cases excluded from the datasets.

Table A5: Models based on data from reduced datasets

	Vote Share			Vote Choice		
	(1)	(2)	(3)	(4)	(5)	(6)
Variables						
Dissent	0.131	-0.270	-0.208	0.683**	0.057	-0.235
	(0.130)	(0.159)	(0.145)	(0.243)	(0.667)	(1.37)
Attendance			0.046*			-0.042
			(0.019)			(0.166)
Majority			0.085***			0.018
			(0.020)			(0.141)
Office			0.002			0.007
			(0.003)			(0.017)
Political Knowledge						0.008
						(0.015)
Media Consumption						0.009
						(0.014)
Left-Right Position						0.004
						(0.010)
Party ID						0.106***
						(0.015)
Constant	0.516***			0.464***		
	(0.003)			(0.004)		
Fixed-effects						
MP–Constituency FEs	✗	✓	✓	✗	✓	✓
Party–Year FEs	✗	✓	✓	✗	✓	✓
Voter FEs	✗	✗	✗	✗	✓	✓
Fit statistics						
Observations	2,577	2,577	2,577	62,802	62,802	35,607
R^2	0.0004	0.927	0.929	0.0004	0.854	0.945
Within R^2		0.005	0.032		1.76×10^{-6}	0.141

Notes: Standard errors are clustered at the level of MPs. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4.3 Votes for both ways

MPs can technically vote for both *Aye* and *No* in the same division, although this rarely happens in practice. In the main text, and elsewhere in this Appendix, we do not consider these votes as rebellion.

In Table A6, we re-estimate the models with the votes cast both ways considered as rebellion.

Table A6: Models based on considering votes for both ways as rebellion

	Vote Share			Vote Choice		
	(1)	(2)	(3)	(4)	(5)	(6)
Variables						
Dissent	0.181	-0.223	-0.170	0.681**	0.195	-0.271
	(0.128)	(0.175)	(0.164)	(0.234)	(0.610)	(1.33)
Attendance			0.047*			-0.058
			(0.018)			(0.157)
Majority			0.083***			0.011
			(0.019)			(0.131)
Office			0.001			0.005
			(0.003)			(0.015)
Political Knowledge						0.006
						(0.014)
Media Consumption						0.005
						(0.013)
Left-Right Position						0.004
						(0.009)
Party ID						0.120***
						(0.013)
Constant	0.510***			0.460***		
	(0.003)			(0.004)		
Fixed-effects						
MP–Constituency FEs	✗	✓	✓	✗	✓	✓
Party–Year FEs	✗	✓	✓	✗	✓	✓
Voter FEs	✗	✗	✗	✗	✓	✓
Fit statistics						
Observations	2,889	2,889	2,889	67,997	67,997	37,558
R^2	0.0007	0.925	0.927	0.0004	0.834	0.939
Within R^2		0.003	0.028		1.82×10^{-5}	0.183

Notes: Standard errors are clustered at the level of MPs. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4.4 Logistic regression models

Although one of our dependent variables, *Vote Choice* is a binary measure, we modelled it using ordinary least squares (OLS) in the main text. This yields coefficients that are easy to compute, interpret, and compare.

In Table A7, we provide a robustness check on this strategy by using logistic regression models for the models with *Vote Choice* as the dependent variable.

Table A7: Logistic regression models of vote choice

	Vote Choice		
	(1)	(2)	(3)
Variables			
Dissent	2.80**	3.57	-8.79
	(0.957)	(7.93)	(25.6)
Attendance			-0.891
			(2.52)
Majority			2.79
			(2.59)
Office			0.054
			(0.371)
Political Knowledge			0.144
			(0.206)
Media Consumption			-0.028
			(0.243)
Left-Right Position			0.025
			(0.161)
Party ID			1.36***
			(0.114)
Constant	-0.159***		
	(0.016)		
Fixed-effects			
MP–Constituency FEs	✗	✓	✓
Party–Year FEs	✗	✓	✓
Voter FEs	✗	✓	✓
Fit statistics			
Observations	67,997	12,886	3,225
Squared Correlation	0.0004	0.225	0.468
Pseudo R^2	0.0003	0.192	0.417
BIC	93,951.1	74,750.1	19,966.6

Notes: Standard errors are clustered at the level of MPs. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4.5 Quadratic independent variable

In Table A8, we add a quadratic term to the original regression models.

Table A8: Models with quadratic independent variable

	Vote Share			Vote Choice		
	(1)	(2)	(3)	(4)	(5)	(6)
Variables						
Dissent	0.391	-0.203	-0.103	2.12***	0.170	-0.634
	(0.247)	(0.246)	(0.248)	(0.398)	(0.932)	(1.73)
Dissent^2	-2.15	-0.249	-0.608	-16.6***	0.170	6.98
	(1.65)	(1.23)	(1.14)	(3.22)	(6.86)	(14.7)
Attendance			0.047*			-0.056
			(0.018)			(0.158)
Majority			0.081***			0.010
			(0.019)			(0.132)
Office			0.001			0.005
			(0.003)			(0.015)
Political Knowledge						0.006
						(0.014)
Media Consumption						0.005
						(0.013)
Left-Right Position						0.004
						(0.009)
Party ID						0.120***
						(0.013)
Constant	0.509***			0.453***		
	(0.003)			(0.004)		
Fixed-effects						
MP–Constituency FEs	✗	✓	✓	✗	✓	✓
Party–Year FEs	✗	✓	✓	✗	✓	✓
Voter FEs	✗	✗	✗	✗	✓	✓
Fit statistics						
Observations	2,909	2,909	2,909	67,997	67,997	37,558
R^2	0.001	0.926	0.928	0.001	0.834	0.939
Within R^2		0.004	0.027		1.69×10^{-5}	0.183

Notes: Standard errors are clustered at the level of MPs. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4.6 Binary independent variable

In Table A9, we use a binary measure instead of *Dissent*, indicating whether (1) or not (0) MPs vote against the majority in their party at least once in a parliamentary term.

Table A9: Models with binary independent variable

	Vote Share			Vote Choice		
	(1)	(2)	(3)	(4)	(5)	(6)
Variables						
Dissent Binary	0.001	0.0002	-9.31×10^{-5}	0.011	-0.004	0.002
	(0.005)	(0.004)	(0.003)	(0.007)	(0.012)	(0.022)
Attendance			0.047*			-0.055
			(0.018)			(0.157)
Majority			0.082***			0.014
			(0.019)			(0.129)
Office			0.002			0.005
			(0.003)			(0.015)
Political Knowledge						0.006
						(0.014)
Media Consumption						0.005
						(0.013)
Left-Right Position						0.004
						(0.009)
Party ID						0.120***
						(0.013)
Constant	0.510***			0.458***		
	(0.005)			(0.006)		
Fixed-effects						
MP–Constituency FEs	✗	✓	✓	✗	✓	✓
Party–Year FEs	✗	✓	✓	✗	✓	✓
Voter FEs	✗	✗	✗	✗	✓	✓
Fit statistics						
Observations	2,909	2,909	2,909	67,997	67,997	37,558
R^2	3.1×10^{-5}	0.925	0.927	8.47×10^{-5}	0.834	0.939
Within R^2		3.63×10^{-6}	0.025		1.07×10^{-5}	0.183

Notes: Standard errors are clustered at the level of MPs. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4.7 Quartile independent variable

In Table A10, we use a categorical measure instead of *Dissent*, by dividing it into four parts. The first quarter (Q1), which includes MPs who rebel relatively rarely if at all, is the baseline category in the regression models.

Table A10: Models with quartile independent variable

	Vote Share			Vote Choice		
	(1)	(2)	(3)	(4)	(5)	(6)
Variables						
Dissent Q2	0.0001	0.002	0.002	-0.017*	-0.004	0.004
	(0.005)	(0.003)	(0.003)	(0.008)	(0.013)	(0.026)
Dissent Q3	0.002	-0.001	-0.002	0.009	-0.005	-0.0007
	(0.005)	(0.003)	(0.003)	(0.008)	(0.015)	(0.027)
Dissent Q4	0.008	-0.003	-0.002	0.041***	0.004	0.004
	(0.005)	(0.005)	(0.005)	(0.008)	(0.021)	(0.035)
Attendance			0.048*			-0.057
			(0.019)			(0.159)
Majority			0.082***			0.014
			(0.019)			(0.132)
Office			0.002			0.006
			(0.003)			(0.015)
Political Knowledge						0.006
						(0.014)
Media Consumption						0.005
						(0.013)
Left-Right Position						0.004
						(0.009)
Party ID						0.120***
						(0.013)
Constant	0.509***			0.458***		
	(0.004)			(0.006)		
Fixed-effects						
MP–Constituency FEs	✗	✓	✓	✗	✓	✓
Party–Year FEs	✗	✓	✓	✗	✓	✓
Voter FEs	✗	✗	✗	✗	✓	✓
Fit statistics						
Observations	2,909	2,909	2,909	67,997	67,997	37,558
R^2	0.001	0.926	0.927	0.002	0.834	0.939
Within R^2		0.001	0.026		5.24×10^{-5}	0.183

Notes: Standard errors are clustered at the level of MPs. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4.8 Interest in elections

Figure A5 plots the marginal effect of legislator dissent on vote choice, at different levels of voters' interest in upcoming elections. It shows that the results are not heterogeneous along this dimension either — in addition to the four dimensions in Figure 2 in the main text.

The moderating variable originates from the *electionInterest* item in BESIP, which asks '*How interested are you in the General Election that will be held on ... this year?*'. The answer categories range between 1 (*Not at all interested*) and 4 (*Very interested*).

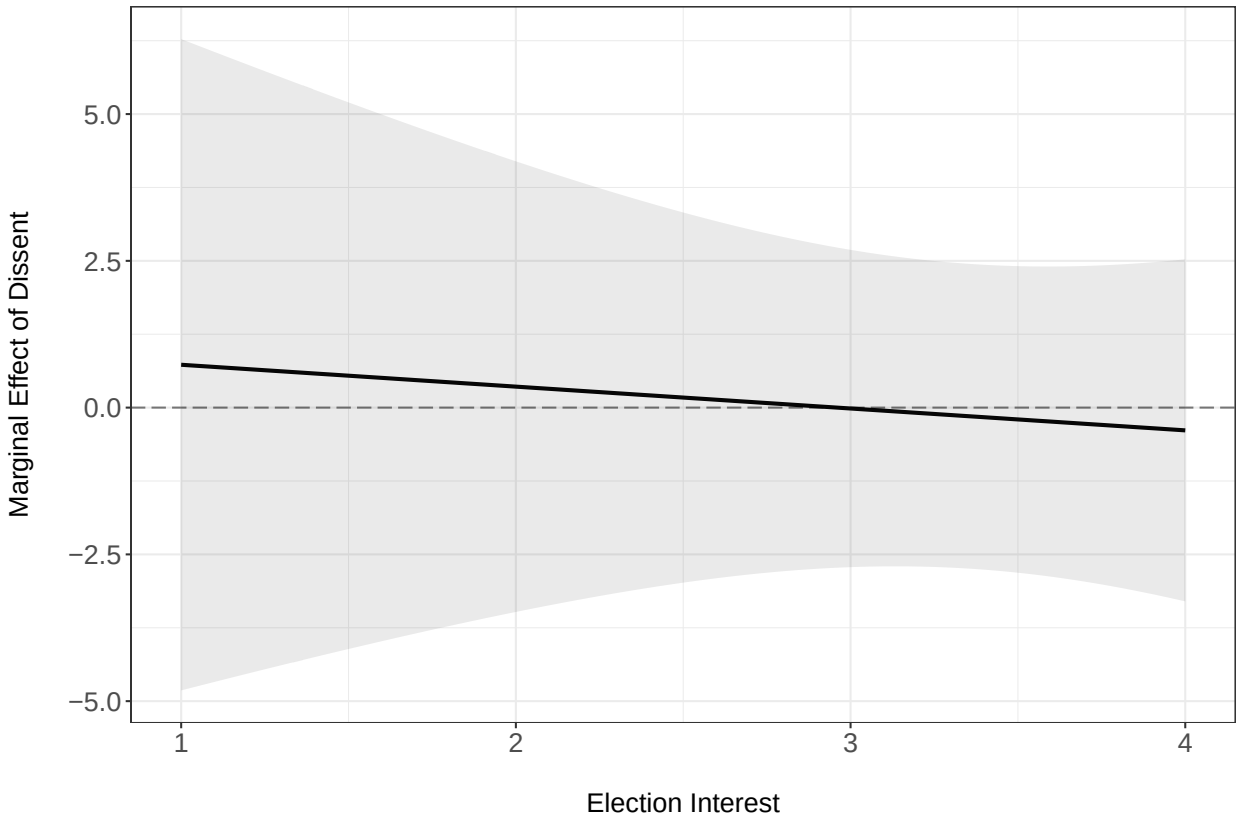

Figure A5: Marginal effect of dissent on vote choice, conditional on voters' interest in elections.

4.9 Turnout as dependent variable

In Table A11, we re-estimate the models using electoral turnout as the dependent variable.

Table A11: Models of electoral turnout

	Turnout Share			Turnout Choice		
	(1)	(2)	(3)	(4)	(5)	(6)
Variables						
Dissent	-0.033	-0.023	-0.023	0.149	-0.126	-0.142
	(0.125)	(0.042)	(0.042)	(0.078)	(0.257)	(0.670)
Attendance			-0.008			-0.022
			(0.008)			(0.085)
Majority			0.002			0.018
			(0.008)			(0.088)
Office			-0.0002			0.0009
			(0.001)			(0.013)
Political Knowledge						0.002
						(0.009)
Media Consumption						0.011
						(0.008)
Left-Right Position						0.001
						(0.005)
Party ID						0.001
						(0.003)
Constant	0.646***			0.913***		
	(0.002)			(0.002)		
Fixed-effects						
MP–Constituency FEs	✗	✓	✓	✗	✓	✓
Party–Year FEs	✗	✓	✓	✗	✓	✓
Voter FEs	✗	✗	✗	✗	✓	✓
Fit statistics						
Observations	2,909	2,909	2,909	75,067	75,067	40,158
R^2	4.27×10^{-5}	0.974	0.974	5.32×10^{-5}	0.875	0.919
Within R^2		0.0002	0.001		3.16×10^{-5}	0.002

Notes: Standard errors are clustered at the level of MPs. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

References

Cowley, P., and Stuart, M. (2009). *Dissension amongst the parliamentary Labour Party, 2008–2009: A data handbook*. University of Nottingham.

Cowley, P., and Stuart, M. (2013). *Cambo chained: Dissension amongst the coalition's parliamentary parties, 2012–2013: A data handbook*. University of Nottingham.

Gidengil, E., Meneguello, R., Shenga, C., and Zechmeister, E. (2016). *Political knowledge sub-committee report*. Michigan: Comparative Study of Electoral Systems.

Gordon, S. B., and Segura, G. M. (1997). Cross-national variation in the political sophistication of individuals: Capability or choice? *Journal of Politics*, *59*(1), 126–147.

Kam, C. J. (2009). *Party discipline and parliamentary politics*. Cambridge University Press.