

Appendix A

This Appendix describes the distribution of the recorded divisions and the loyalty scores for the Liberal and Conservative parties across legislative terms.

There is an average of 272 divisions in each parliament between 1867 and 2011 (standard deviation of 370). The 31st minority Parliament saw the lowest number of votes with only eight recorded votes, whereas the 36st Parliament saw the highest number of divisions with 1,990 recorded votes.

Figure A1 summarizes the distribution of divisions by terms. Each parliament sat for an average of 1,178 days, and the mean number of vote per sitting day was 22 percent. The highest number of votes (472) in a single day was recorded on December 7, 1999, when the Reform party attempted to filibuster the adoption of the Nisga'a First Nation land claim treaty. We also note that more than 57 percent of all divisions occurred between the 32nd and the 40th Parliaments (1988-2011). This surge is observed in part because the opposition parties adopted new tactics to obstruct the proceedings of the government in the House of Commons (O'Brien and Bosc, 2009). Since the mere process of recording divisions takes time, opposition parties have slowed the proceedings of the House by requesting, for example, individual votes over hundreds of motions introduced in amendment during the reporting stage of a bill. The adoption of new rules to alleviate this process also explains the increase in the number of recorded divisions in more recent terms. For example, the House has adopted the practice of deferring divisions, whereby party leaders agrees to carry all of its legislative votes successively at a particular time during the week, either on Tuesdays or Wednesdays, usually before the daily adjournment. Another practice is to apply the results of one vote to a series of successive votes. Here, government and opposition whips agree on a common position for their parties, which is announced to the speaker (see O'Brien and Bosc, 2009).

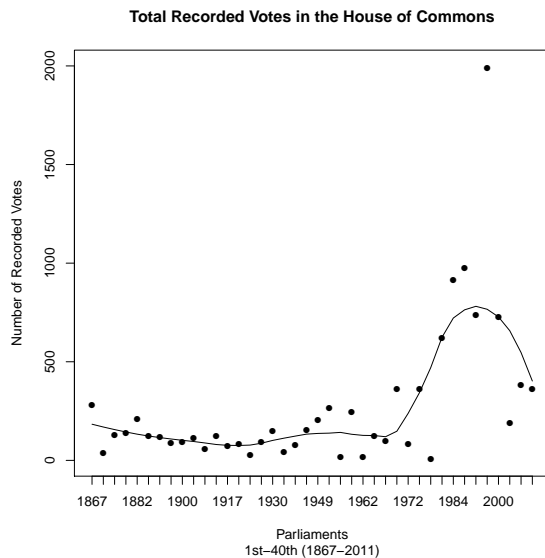


Figure A1: The Figure reports the total number of recorded divisions in the House of Commons in each parliament between 1867 and 2011. The lines are loess curves fitted locally on the x axis.

Figure A2 presents a summary of the loyalty scores for the Liberal and Conservative parties in each parliament. We report in two boxplots the distribution of individual loyalty scores, a variable ranging from 0 to 1, where 1 implies that an MP always voted with the majority of his/her party during a term.

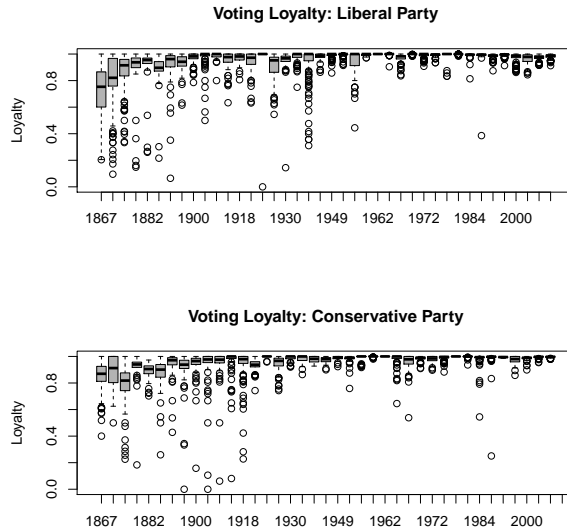


Figure A2: Figure A2 shows box-plots of the distribution of individual loyalty for Liberal (upper) and Conservative (lower) party members in each parliament for all recorded divisions. The lines in the boxes correspond to the first, second (median), third quartiles of the distribution. Individual circles indicate outlier MPs. The years on the x axis indicate the first year of the parliamentary term.

The box plots show that the median loyalty score is more or less always in the range of 75 to 100 per cent for both parties. It is lowest during the first term, and reaches 100 per cent by the 10th Parliament (1904). After this point, the median loyalty level never falls below 95 per cent. This last result does not imply that all members are systematically loyal to their respective parties. In fact, we only find three terms where every elected member follows the party line perfectly: the Liberals in the 15th and 25th Parliaments, and the Conservatives in the 25th and the 31st Parliaments (all shorter minority parliaments with a handful of votes). We can also see that the variation in the loyalty scores decreases over time. The standard deviation is never above ten points for both parties after the 20th Parliament. Note that the distribution of our second dependent variable, the party unity scores (not reported here), follows a similar pattern as well. In this case, we find that the Rice index for both parties converges toward 100 during the first half of the twentieth century. In fact, more than 76 per cent (Liberals) and 68 per cent (Conservatives) of the total number of votes have a Rice index greater than 99 on the scale when we consider all of the 10,893 recorded divisions between 1867 and 2011.

Appendix B

Table B1 reproduces the results presented in table 1 of the main text. However, the dependent variable for these models is now the individual loyalty scores for government related votes only. We identified these divisions by locating the original sponsor of the motion in the Hansards Journal. Whenever a division occurred over a motion/bill introduced by a member of the cabinet, we coded this as a government vote. Note that amendments to these motions/bills are still considered government related in the analysis.

Overall, the analysis shows that electoral incentives do not have a significant influence on individual loyalty scores (effective no. of candidates + total no. of voters). Like before, we find that being in the Cabinet and in the governing party increases the likelihood to support one's own party in the House. In this analysis, however, we find that cohorts have a significant effect on party loyalty for the Liberal party.

In the results presented in tables 1 and B1, we also find that MPs are more likely to dissent when they are elected under a minority government. This results is explained by two reasons. First, we had to remove from the data three minority parliaments where there was perfect party cohesion (because of multicollinearity). Second, the minority government variable does not differentiate between opposition and government status (i.e., government \times minority government). When we include this interactive term in the analysis, the conditional effect of sitting with a minority government becomes positive and significant for the Liberal party.

Variables	Liberal				Conservative			
	Model 1	Model 2	1 st -15 th	16 th -40 th	Model 1	Model 2	1 st -15 th	16 th -40 th
Intercept	1.338† (0.245)		1.148† (0.295)	0.307 (1.013)	1.315† (0.206)		1.560† (0.274)	10.401† (1.241)
Legislative turnout	0.469† (0.113)	0.493† (0.110)	0.399† (0.159)	0.454† (0.144)	0.461† (0.091)	0.483† (0.091)	0.462† (0.116)	0.470† (0.141)
Effective no. candidates	0.075 (0.101)	0.011 (0.098)	-0.045 (0.111)	0.303† (0.141)	0.126 (0.080)	0.063 (0.069)	0.171 (0.092)	-0.169 (0.154)
Total no. voters	-0.091 (0.099)	-0.081 (0.105)	0.049 (0.136)	0.076 (0.112)	0.088 (0.091)	0.048 (0.087)	0.091 (0.115)	-0.155 (0.123)
First term	0.079 (0.161)	-0.179 (0.179)	0.041 (0.202)	0.213 (0.202)	-0.156 (0.126)	-0.108 (0.137)	-0.210 (0.153)	0.108 (0.248)
Last term	-0.338† (0.099)	-0.333† (0.101)	-0.526† (0.123)	-0.099 (0.151)	-0.245† (0.085)	-0.185† (0.092)	-0.293† (0.101)	-0.288 (0.145)
Cabinet	0.205 (0.178)	0.527† (0.179)	-0.227 (0.259)	0.813† (0.151)	0.512† (0.191)	0.614† (0.197)	0.559† (0.224)	-0.016 (0.479)
Governing party	0.606† (0.109)		0.851† (0.143)	-0.285 (0.205)	0.944† (0.104)		0.808† (0.126)	1.626† (0.341)
Minority government	-0.340† (0.168)			-0.803† (0.166)	0.377† (0.141)			0.090 (0.176)
Parliament	0.359† (0.076)		0.592† (0.117)	0.319† (0.146)	0.237† (0.067)		0.036 (0.103)	-0.460† (0.181)
Parliament ²	-0.008† (0.001)		-0.026† (0.010)	-0.006† (0.002)	-0.005† (0.001)		0.010 (0.006)	0.009† (0.004)
Cohort	-0.106 (0.075)		-0.087 (0.113)	-0.052 (0.131)	-0.062 (0.065)		0.067 (0.105)	0.033 (0.124)
Cohort ²	0.004† (0.001)		0.010 (0.010)	0.002 (0.003)	0.002 (0.001)		-0.009 (0.007)	-0.001 (0.003)
Region fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Term fixed effects		✓				✓		
Cohort fixed effects		✓				✓		
N	4897	4897	1619	3278	4183	4183	1656	2527

Table B1: Fractional logit models of individual legislator voting behaviour on government sponsored votes. The dependent variable is the individual party loyalty score on government sponsored votes. Heteroskedastic and autocorrelation consistent standard errors are reported in parentheses. † $p < .05$

Appendix C

We begin this Appendix by offering a more detailed description of what constitutes private member business in the data. This variable includes all of the motions/bills introduced by members who are not in the cabinet. In other words, this variable lumps together all of the motions made by opposition leaders, and other backbenchers from both the government and opposition parties. It is important to note that private member motions should not be understood as related to private member bills only, they could also relate to motions of censure or motions to adjourn the debates, for example. Note also that whenever a private member motion is introduced in the legislature, the government does not explicitly control the agenda.

The analysis presented in table C1 reproduces the results of table 2 in the main text. The dependent variable for these models is the weighted Rice Index (counting abstentions). The results from both of these tables are slightly different.

Recall that private member business has a negative impact on party unity for both major parties in the analysis of table 2 when we consider all of the votes. However, when we weight party unity by abstentions, we find in table C1 that private member motions (on their own) have a negative impact on the unity of the Liberal party only. For the Conservatives, it is rather the combination of private member initiatives with the type of motions (Second reading and Supply) that reduces the level of unity for this party.

The results from tables 2 and C1 also demonstrate that the Liberals are more likely to be unified when a division is related to a motion introduced by a member of their own caucus. This is not the case for the Conservative party. The results also show that caucuses tend to be more unified during minority governments.

One of the more puzzling result of table 2 is not supported by the analysis of the weighted Rice index. In the main analysis, we saw that the Liberal party was *less* likely to be unified when in the government. This puzzling results is partially explained by abstentions. When we weight the Rice index by the number of abstentions in table C1, we find a positive relationship between government status and party unity for both the Liberal and Conservative parties. This finding is explained by the fact that abstentions are less frequent when a party controls the government.

We also note that the effect of time (as measured by parliament number) is consistent across both parties, but inconsistent when we consider abstentions in the analysis. While it is positive and decreasing if non-voters are excluded, it becomes negative and increasing when abstentions are counted in table C1. This last results suggests that abstentions increase the level of party unity in later parliaments, when they also tend to be more frequent.

Finally, Figure C1 reproduces the simulations presented in the main text (Figure 3) for the Conservative party by showing the predicted level of party unity during two different types of votes: supply motions and third reading of bills. This analysis also compares the level of party unity observed for cabinet and non-cabinet members. Overall, the trends observed are similar for the Conservative and Liberal parties.

Variables	Liberal				Conservative			
	Model 1	Model 2	1 st -16 th	17 th -40 th	Model 1	Model 2	1 st -16 th	17 th -40 th
Intercept	1.579† (0.117)		1.889† (0.181)	2.409† (0.565)	1.619† (0.082)		1.129† (0.142)	4.258† (0.738)
Own party	0.194† (0.025)	0.138† (0.027)	0.148† (0.034)	0.172† (0.032)	-0.04 (0.029)	0.005 (0.028)	0.004 (0.037)	-0.044 (0.036)
Governing party	0.262† (0.080)		0.200 (0.107)	0.449† (0.104)	0.229† (0.087)		-0.013 (0.11)	-0.071 (0.145)
Minority government	0.211† (0.060)			0.221† (0.069)	0.823† (0.130)			0.796† (0.139)
Percentage seats	0.099 (0.241)	3.537† (1.172)	-1.202† (0.417)	-0.225 (0.304)	-0.307 (0.216)	-0.017 (0.541)	0.791 (0.405)	0.383 (0.331)
Private member	-0.080† (0.040)	-0.071† (0.036)	-0.133† (0.053)	-0.078 (0.046)	0.019 (0.042)	0.003 (0.038)	-0.105 (0.060)	0.028 (0.048)
Supply motion	0.006 (0.055)	0.051 (0.045)	0.001 (0.061)	0.012 (0.078)	0.219† (0.055)	0.183† (0.047)	0.074 (0.06)	0.193† (0.074)
Throne speech	0.346† (0.13)	0.346† (0.099)	0.693† (0.271)	0.293† (0.145)	0.364† (0.125)	0.339† (0.097)	0.512† (0.24)	0.304† (0.133)
Second reading	-0.192† (0.042)	-0.138† (0.035)	-0.179† (0.075)	-0.197† (0.044)	-0.055 (0.045)	-0.032 (0.042)	-0.054 (0.071)	-0.062 (0.051)
Third reading	-0.185† (0.040)	-0.164† (0.034)	-0.249† (0.056)	-0.171† (0.044)	-0.079 (0.042)	-0.067 (0.037)	-0.192† (0.057)	-0.083 (0.047)
Committee report	-0.312† (0.047)	-0.259† (0.043)	-0.149 (0.078)	-0.313† (0.050)	-0.133† (0.055)	-0.099 (0.053)	-0.170† (0.07)	-0.096 (0.059)
Throne × Private	-0.090 (0.150)	-0.023 (0.114)	-0.218 (0.296)	-0.052 (0.167)	-0.087 (0.146)	-0.044 (0.123)	0.094 (0.306)	-0.048 (0.153)
Second × Private	-0.072 (0.055)	-0.125† (0.054)	0.014 (0.082)	-0.126 (0.066)	-0.129† (0.062)	-0.228† (0.06)	-0.233† (0.09)	-0.102 (0.074)
Third × Private	-0.053 (0.060)	-0.070 (0.052)	-0.007 (0.074)	0.032 (0.105)	-0.129 (0.067)	-0.190† (0.06)	-0.088 (0.077)	0.020 (0.093)
Committee × Private	0.091 (0.111)	0.089 (0.108)	0.321† (0.153)	-0.025 (0.123)	0.146 (0.099)	0.047 (0.077)	0.419† (0.150)	0.018 (0.113)
Supply × Private	-0.15 (0.119)	-0.170 (0.108)	-0.121 (0.132)	-0.050 (0.163)	-0.367† (0.097)	-0.341† (0.094)	-0.204 (0.116)	-0.401† (0.129)
Parliament	-0.033† (0.007)		0.049† (0.015)	-0.093† (0.038)	-0.022† (0.007)		0.010 (0.014)	-0.232† (0.060)
Parliament ²	0.001† (0.000)		-0.002† (0.001)	0.002† (0.001)	0.001† (0.000)		0.001 (0.001)	0.005† (0.001)
Term fixed effects		✓				✓		
N	10831	10831	1786	9045	10104	10104	11786	8318

Table C1: Fractional logit models of party unity on recorded votes. The dependent variable is the individual vote Rice index, with abstentions included. Heteroskedastic and autocorrelation consistent standard errors are reported in parentheses. † p<.05

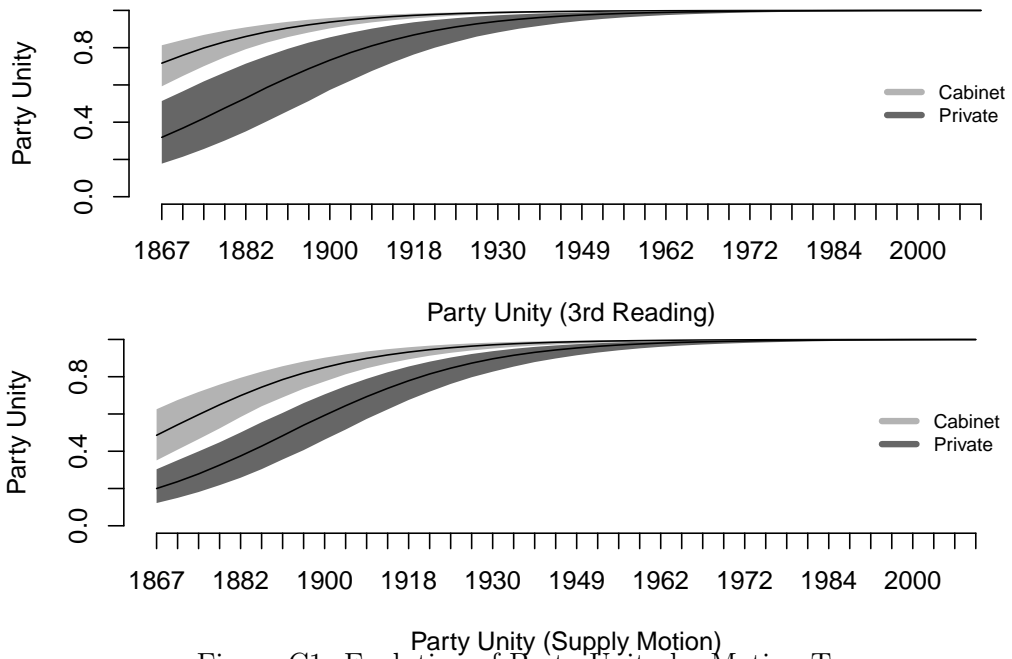


Figure C1: Evolution of Party Unity by Motion Type.

The black lines show the estimated level of party unity for the Conservatives from Model 1 (Table 2) for two different types of vote over time when all of the remaining variables are held at their mean level. The grey area surrounding the lines is the 95 per cent confidence interval.

Appendix D

Table D1 reports the complete results of the analysis presented in table 3 of the text. The dependent variable for these models is the same as in the analysis of table 1 (individual loyalty scores on all types of recorded divisions). The results show that including these additional control variables do not alter the main results by much. Note that $\text{West} \times \text{Farmer}$ and French are the only two new variables that are negative and statistically significant in the complete model specification (Model 1). We do find that some of the professions, like health or the media (in the West) are significant in some of the models, but these results are not supported in the main analysis (Models 1-2). Note also that Western, Quebec, and Maritime members are all more likely to have lower loyalty scores than representatives from Ontario (e.g., the regional dummy variables) when they are elected under the Liberal banner. For Conservatives members, this is only true for Quebec representatives (which is coherent with the argument presented in the main text).

This last empirical analysis demonstrates that Western MPs are indeed less likely to be loyal when they are elected under the Liberal party banner. We also find that the interactive variable $\text{West} \times \text{Farmer}$ reduces the loyalty of Liberal party members even more. Likewise, we observe the same negative relationship between French Canadian MPs and the Conservative party. Both of these findings show that members of these factions are less likely to support their caucus in parliament. As with the case of private member business, we can thus infer that the overall level of party unity should increase whenever the number of Western farmers and French Canadian nationalists declines within the Liberal and Conservative parliamentary caucuses.

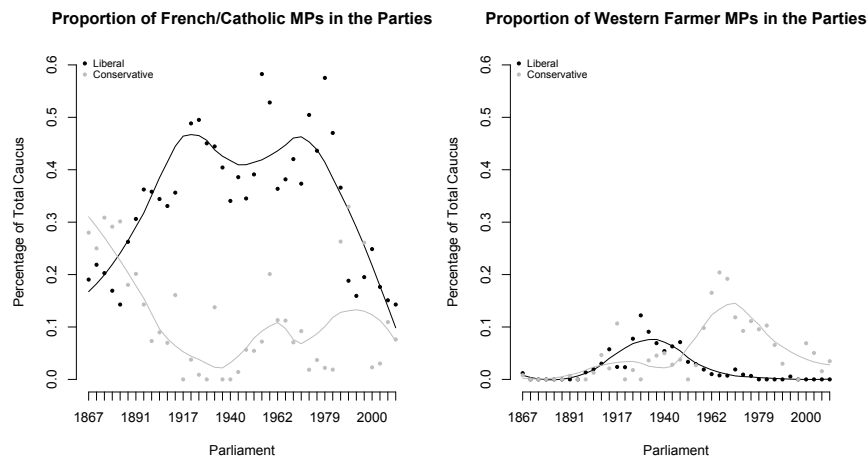


Figure D1: The first plot represents the distribution of French Canadian MPs within the entire Liberal and Conservative caucuses. The second plot reports the same information for Western Farmer representatives only. The lines are loess curves fitted locally on the x axis.

Figure D1 demonstrates that the proportion of French Canadians MPs in the Conservative party was gradually reduced after Confederation, to eventually reached zero in 1917. Likewise, a similar trend is observed with Western farmers and the Liberal party, although the definitive reduction in their number did not occur until after World War II.

Variables	Liberal				Conservative			
	Model 1	Model 2	1 st -15 th	16 th -40 th	Model 1	Model 2	1 st -15 th	16 th -40 th
Intercept	1.186† (0.170)		1.418† (0.224)	-6.254† (0.657)	0.963† (0.138)		1.286† (0.179)	-0.777 (0.867)
Legislative turnout	0.328† (0.087)	0.394† (0.086)	0.340† (0.125)	0.334† (0.101)	0.384† (0.067)	0.420† (0.067)	0.409† (0.089)	0.332† (0.106)
Effective no. candidates	0.041 (0.074)	-0.047 (0.065)	-0.118 (0.080)	0.322† (0.094)	0.056 (0.048)	0.027 (0.043)	0.079 (0.050)	-0.020 (0.103)
Total no. voters	-0.029 (0.065)	-0.003 (0.066)	0.058 (0.091)	-0.012 (0.082)	0.050 (0.068)	0.053 (0.064)	0.039 (0.084)	0.016 (0.098)
First term	0.004 (0.102)	-0.143 (0.112)	-0.057 (0.133)	-0.006 (0.138)	0.011 (0.088)	-0.029 (0.093)	-0.001 (0.107)	0.213 (0.168)
Last term	-0.274† (0.066)	-0.263† (0.067)	-0.482† (0.084)	-0.009 (0.100)	-0.117 (0.062)	-0.079 (0.064)	-0.115 (0.072)	-0.158 (0.103)
Cabinet	0.294† (0.100)		-0.068 (0.147)	0.516† (0.117)	0.477† (0.114)		0.391† (0.129)	0.325 (0.320)
Governing party	0.254† (0.077)		0.471† (0.090)	-0.376† (0.152)	0.635† (0.075)		0.449† (0.091)	1.366† (0.190)
Minority government	-0.223 (0.120)			-0.685† (0.150)	0.147 (0.119)			-0.277 (0.159)
West	-1.096† (0.154)	-1.079† (0.144)	-1.718† (0.219)	-0.513† (0.173)	-0.060 (0.136)	0.063 (0.141)	0.007 (0.233)	-0.079 (0.126)
Quebec	-0.363† (0.111)	-0.425† (0.111)	-0.564† (0.188)	-0.148 (0.111)	-0.144 (0.099)	-0.113 (0.101)	-0.025 (0.109)	-0.923† (0.192)
Maritime	-0.541† (0.129)	-0.616† (0.127)	-0.967† (0.186)	0.084 (0.133)	-0.069 (0.109)	0.003 (0.107)	0.150 (0.139)	-0.471† (0.153)
French	-0.160 (0.090)	-0.117 (0.091)	-0.240 (0.143)	-0.036 (0.116)	-0.427† (0.094)	-0.457† (0.095)	-0.493† (0.106)	0.122 (0.201)
Business	0.201 (0.120)	0.190 (0.120)	0.031 (0.156)	0.093 (0.213)	0.009 (0.126)	0.017 (0.135)	0.084 (0.153)	-0.307 (0.178)
Education	0.161 (0.195)	0.085 (0.202)	-0.003 (0.310)	-0.031 (0.231)	0.285 (0.319)	0.409 (0.283)	0.051 (0.332)	0.816 (0.497)
Health	-0.145 (0.163)	-0.068 (0.165)	-0.450† (0.219)	0.201 (0.271)	0.081 (0.128)	0.125 (0.117)	0.303† (0.142)	-0.621† (0.225)
Media	0.354 (0.244)	0.270 (0.266)	0.095 (0.300)	-0.172 (0.290)	-0.238 (0.180)	-0.120 (0.185)	-0.130 (0.188)	-0.414 (0.543)
Farmer	0.163 (0.137)	0.161 (0.144)	-0.040 (0.195)	0.384 (0.215)	0.117 (0.133)	0.049 (0.132)	0.041 (0.159)	0.384 (0.231)
West × Business	0.034 (0.359)	-0.078 (0.324)	0.374 (0.437)	-0.001 (0.456)	0.326 (0.214)	0.241 (0.208)	0.455 (0.322)	0.267 (0.267)
West × Education	-0.158 (0.778)	0.539 (0.652)		-0.178 (0.608)	-0.640 (0.475)	-0.791 (0.485)	0.395 (0.431)	-1.566† (0.629)
West × Health	-0.029 (0.358)	0.165 (0.321)	1.318† (0.533)	-0.668 (0.377)	-0.620 (0.371)	-0.662 (0.361)	-0.562 (0.361)	-0.657 (0.708)
West × Media	-0.368 (0.346)	-0.990† (0.442)	-0.186 (0.410)	-0.339 (0.981)	0.159 (0.401)	-0.057 (0.345)	0.353 (0.500)	-0.663 (0.669)
West × Farmer	-0.793† (0.259)	-0.568† (0.244)	0.069 (0.332)	-1.036† (0.337)	-0.303 (0.280)	-0.161 (0.265)	-0.821 (0.450)	-0.053 (0.288)
Quebec × Business	-0.202 (0.199)	-0.228 (0.201)	-0.136 (0.251)	-0.036 (0.366)	0.016 (0.185)	-0.072 (0.183)	-0.046 (0.205)	0.147 (0.374)
Quebec × Education	-0.411 (0.411)	-0.569 (0.423)	-1.049 (0.548)	0.560 (0.444)	-1.154 (0.783)	-1.345† (0.628)		-1.931† (0.811)
Quebec × Health	0.279 (0.224)	0.087 (0.222)	0.423 (0.282)	0.234 (0.497)	0.242 (0.191)	0.123 (0.193)	0.018 (0.210)	0.952 (0.836)
Quebec × Media	-0.434 (0.377)	-0.601 (0.408)	-0.616 (0.491)	0.924 (0.545)	-0.292 (0.508)	-0.750 (0.514)	-0.586 (0.524)	1.747 (1.104)
Quebec × Farmer	-0.269 (0.253)	-0.286 (0.255)	-0.148 (0.298)	-0.568 (0.533)	-0.343 (0.271)	-0.297 (0.257)	-0.248 (0.304)	-0.794 (0.430)

Maritime × Business	-0.225 (0.219)	-0.220 (0.222)	0.195 (0.265)	0.044 (0.347)	-0.117 (0.202)	-0.169 (0.199)	-0.375 (0.245)	0.507 (0.284)
Maritime × Education	0.375 (0.401)	0.425 (0.396)	0.592 (0.547)	0.153 (0.576)	0.193 (0.524)	0.084 (0.466)	0.060 (0.557)	0.481 (0.635)
Maritime × Health	0.580 (0.313)	0.444 (0.311)	0.969† (0.362)	1.016 (0.637)	-0.174 (0.337)	-0.191 (0.348)	-0.541 (0.378)	1.495† (0.421)
Maritime × Media	0.420 (0.366)	0.453 (0.385)	0.514 (0.443)	1.683† (0.800)	-1.327 (1.078)	-1.355 (0.958)	-1.645 (1.078)	0.898 (0.567)
Maritime × Farming	-0.309 (0.253)	-0.320 (0.238)	0.104 (0.293)	-0.345 (0.393)	0.025 (0.359)	0.039 (0.335)	-0.168 (0.399)	0.925 (0.543)
Cohort	-0.028 (0.048)		0.037 (0.066)	-0.019 (0.093)	-0.022 (0.046)		0.085 (0.076)	-0.077 (0.102)
Cohort ²	0.001 (0.001)		0.001 (0.007)	0.001 (0.002)	0.000 (0.001)		-0.013† (0.005)	0.001 (0.002)
Parliament	0.281† (0.048)		0.391† (0.072)	0.768† (0.107)	0.210† (0.047)		0.009 (0.074)	0.425† (0.145)
Parliament ²	-0.006† (0.001)		-0.014† (0.007)	-0.014† (0.002)	-0.002† (0.001)		0.015† (0.005)	-0.007† (0.003)
Term fixed effects		✓				✓		
Cohort fixed effects		✓				✓		
n	4897	4897	1619	3278	4039	4039	1656	2383

Table D1: Fractional logit models of individual voting behaviour.

The dependent variable is the individual party loyalty score. Heteroskedastic and autocorrelation consistent standard errors are reported in parentheses. † $p < .05$