

ONLINE APPENDIX – SUPPLEMENTARY MATERIALS

*for paper entitled “Political competition and legislative shirking in roll-call votes:
Evidence from Germany for 1953–2017” by Marco Frank and David Stadelmann*

Appendix A: Summary statistics, robustness tests and further refinements

Table A1: Summary statistics

Variable	Dummy	Obs	Mean	Std. Dev	Min	Max
<i>Absentee Rates (dependent variables)</i>						
Absentee rate in roll-call votes	No	8,734	0.125	0.150	0	1
Share of days absent	No	8,734	0.151	0.159	0	1
<i>Competition</i>						
Elected competitors in constituency	Yes	8,734	0.842	0.365	0	1
Vote margin	No	8,734	-0.0241	0.241	-0.683	0.710
Closeness constituency	No	8,734	0.155	0.121	0	0.710
Direct candidates	No	8,734	6.854	1.535	3	16
Parl. group size	No	8,734	210.9	78.68	8	319
<i>Instruments for Elected competitors in constituency</i>						
Early dropout in constituency	Yes	8,734	0.0355	0.185	0	1
Replacement in constituency	Yes	8,734	0.0464	0.210	0	1
<i>Legislator specific variables</i>						
Direct mandate	Yes	8,734	0.517	0.500	0	1
Government party	Yes	8,734	0.578	0.494	0	1
Age	No	8,734	49.03	8.951	19	85
Tenure	No	8,734	2.752	1.713	1	12
Last term	No	8,734	0.268	0.443	0	1
<i>Position and experience</i>						
Minister	Yes	8,734	0.0366	0.188	0	1
Junior minister	Yes	8,734	0.0461	0.210	0	1
(vice) Parl. president	Yes	8,734	0.0112	0.105	0	1
(vice) Chair committee	Yes	8,734	0.0982	0.298	0	1
(vice) Chair parl. group	Yes	8,734	0.0613	0.240	0	1
Whip	Yes	8,734	0.0321	0.176	0	1
Experience as minister	Yes	8,734	0.0473	0.212	0	1
Experience as jun. minister	Yes	8,734	0.0480	0.214	0	1

Notes: Data (except *Vote margin* and *Direct candidates*) for the time period 1953-2013 is generated from Bergmann et al. 2018a and Bergmann et al. 2018b. The *Vote margin* and *Direct candidates* variables for the period 1953-2017 are generated from the official electoral results as published by the *Bundeswahlleiter* (Federal Election Commissioner). Data for absentee rates 2013-2017 is taken from the publicly available records for the results of roll-call votes in the German Bundestag from the official Bundestag website. Data for legislator specific covariates 2013-2017 is collected from the personal biographies provided on the official website of the German Bundestag. The remaining variables 2013-2017 are generated with the help of the *Datenhandbuch zur Geschichte des Deutschen Bundestags* (Data Handbook on the History of the German Bundestag) from the official Bundestag website.

Table A2: The effect of *Count of elected competitors in constituency* on the *Absentee rate in roll-call votes* (2SLS)

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)
	Absentee rate in roll-call votes			Share of days absent		
<i>Panel (a): Second stage results</i>						
Count of elected competitors in constituency	-0.0597*** (0.0139)	-0.0315*** (0.0114)	-0.0316*** (0.0114)	-0.0622*** (0.0145)	-0.0298*** (0.0112)	-0.0299*** (0.0111)
<i>Panel (b): First stage results for instruments only</i>						
Dependent variable	<i>Count of elected competitors in constituency</i>					
Early dropout in constituency	-0.496*** (0.0393)	-0.648*** (0.0416)	-0.649*** (0.0415)	-0.496*** (0.0393)	-0.648*** (0.0416)	-0.649*** (0.0415)
Replacement in constituency	0.473*** (0.0371)	0.368*** (0.0364)	0.370*** (0.0364)	0.473*** (0.0371)	0.368*** (0.0364)	0.370*** (0.0364)
Controls (for all panels):						
Personal controls	No	Yes	Yes	No	Yes	Yes
Political position controls	No	No	Yes	No	No	Yes
Legislator fixed effects	No	Yes	Yes	No	Yes	Yes
Legislative period fixed effects	No	Yes	Yes	No	Yes	Yes
Observations	8,734	8,734	8,734	8,734	8,734	8,734
Number of legislators	3,006	3,006	3,006	3,006	3,006	3,006
F-statistic first stage	159.6	174.7	175.2	159.6	174.7	175.2
Hansen J-statistic (p-val.)	0.012	0.763	0.823	0.009	0.843	0.901

Notes: 2SLS estimation. The unit of observation is an individual legislator-legislative period pair. The dependent variables are the share of missed roll-call votes in columns (1)-(3) and the share of days a roll-call vote is missed at least once in columns (4)-(6). Personal controls include *Direct mandate*, *Government party*, *Age*, *Age²*, *Tenure* and *Minister* as in Table 1. Political position controls include *Junior minister*, *(vice) Parl. president*, *(vice) Chair committee*, *(vice) Chair parl. group*, *Whip*, *Experience as minister*, *Experience as jun. minister*. Standard error estimates are clustered at the legislator level. *** p<0.01, ** p<0.05, * p<0.1.

Table A2 replicates estimations from Table 2 using the *Count of elected competitors in constituency* instead of the binary variable *Elected competitors in constituency*: 55.6% of all legislators have *exactly* one *elected* co-representative from the same constituency. About 25.0% have two competitors and a smaller fraction of 3.4% and 0.2% have *exactly* three or four *elected* competitors, respectively. As in our main regressions, *Early drop out in constituency* decreases competition at the constituency level while *Replacement in constituency* increases it. Increasing the count of elected competitors by one reduces *Absentee rate in roll-call votes* on average by 3.2 percentage points (columns 2 and 3) and the *Share of days absent*

by 3.0 percentage points (columns 5 and 6). Our results are robust to the definition of the main explanatory variable and the findings from Table A2 are fully consistent with the main results. Having elected legislators from the same constituency reduces absentee rates in roll-call votes.

Table A3: Robustness checks for the effect of *Elected competitors in constituency* on the *Absentee rate in roll-call votes* estimating subsamples

	Absentee rate in roll-call votes							
	(1) Exclude legislators in their last term	(2) Exclude ministers	(3) Exclude legislators with position	(4) Subsample 1953 - 1990	(5) Subsample 1990-2017	(6) Exclude legislative periods that ended prematurely	(7) Include observations when served less than half of the period	(8) Control for position on party list
Elected competitors in constituency	-0.0488* (0.0249)	-0.0420** (0.0207)	-0.0435* (0.0233)	-0.0575* (0.0328)	-0.0457 (0.0305)	-0.0703** (0.0280)	-0.0487** (0.0231)	-0.0752*** (0.0260)
Personal controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Legislator fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Legislative period fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,397	8,414	6,488	4,442	4,292	6,773	9,128	7,139
Number of legislators	2,373	2,987	2,795	1,590	1,770	2,905	3,123	2,638
F-statistic first stage	67.26	98.40	75.26	67.95	27.09	74.74	106.5	75.86
Hansen J-statistic (p-val.)	0.476	0.357	0.356	0.600	0.716	0.624	0.320	0.929

Notes: 2SLS estimation. The unit of observation is an individual legislator-legislative period pair. The table shows second stage regression results using *Early dropout in constituency* and *Replacement in constituency* to instrument *Elected competitors in constituency*. The dependent variable is the absentee rate in roll-call votes in all columns. Personal controls include *Direct mandate*, *Government party*, *Age*, *Age²*, *Tenure* and *Minister* as in Table 1. In column (1) we exclude legislators in their last term from the sample. In column (2) and we drop ministers from the sample and we additionally drop junior ministers, chairs of committees and parliamentary groups, parliamentary presidents and whips in column (3). Columns (4) and (5) estimate subsamples for the periods 1953-1990 and 1990-2017. In column (6), we drop legislative periods from the sample that ended before the regular four years. In column (7), we include observations from legislators in legislative periods when they served less than half of the respective period. In column (8), the sample consists only of legislators who run as candidate on a party list. We further control for the safeness of the position on the party list. The respective control takes a value of one if the position is smaller than the position of the last legislator receiving a mandate through the party list multiplied by 0.75, that is, when the position on the list is comparatively safe. Standard error estimates are clustered at the legislator level. *** p<0.01, ** p<0.05, * p<0.1.

Table A3 shows regressions from different samples to test for the robustness of the effect of elected competitors in constituency on absences in roll-call votes. As argued in the main text, legislators in their last term without reelection incentives might be less sensitive to competitors from the same constituency. While we are able to observe that legislators are in their last term, we do not know whether they do not present themselves for reelection voluntarily, such that the variable *Last term* only partly captures the actual incentives of legislators in their last term. In column (1), we therefore exclude all observations from legislators in their last term from our sample.

Legislators with exposed positions (e.g. ministers or whips) in parliament might be systematically different from legislators without such a position, for example due to their popularity or their typically high absentee rates in roll-call votes to pursue other official duties. In column (2), we drop ministers from the sample. In column (3), we drop junior ministers, parliamentary presidents, chairs of parliamentary groups or committees, and whips additionally.

Over time, transparency regarding legislative behavior or the criteria to evaluate legislators' work could have changed which could affect the importance of being exposed to competitors from the same constituency. To account for developments over time, columns (4) and (5) investigate subsamples in the pre- and post-reunification periods, respectively. In column (6), we also exclude all observations from legislative periods that are shorter than the regular four years.

In our main analysis, we omit observations from legislators when they served for less than half of the legislative period and only attend a few roll-call votes. In column (7), we include observations from all legislators who attend at least one roll-call vote to make sure that the effect of elected competitors on legislative shirking is not limited to our sample of legislators who attend at least half of the legislative period.

In column (8), we consider a subsample of all legislators who have been a candidate in a constituency and on the state party list simultaneously, that is, we drop all legislators who have been a candidate in a constituency only. This allows us to include a control which reflects how “safe” a rank on the party list is. Legislators who are closely elected from the party list could be more dependent on the party and therefore attend more roll-call votes or try to recommend themselves with low absentee rates for a higher rank in the next election. In addition, the rank on the party list could be seen as an indicator for competition at the constituency level if candidates receive a “safe” rank as a fallback option. We consider a legislator to have a “safe” rank on the party list if it is smaller than three quarters of the last candidate’s rank who received a mandate from the party list. The effect of elected competitors on absentee rates in roll-call votes is robust to this subsample and an indicator for the safeness of the position on the party list.

In all regressions from the different samples in columns (1)–(8) in Table A3, we find overall support for our main results and our interpretations.

Table A4: Using different dependent variables to estimate the effect of *Elected competitors in constituency* on legislative shirking

Dependent variable	(1) Share of votes that legislator misses with excuse	(2) Share of votes that legislator misses without excuse	(3) Share of days that legislator misses the whole day	(4) Share of days that legislator misses the whole day without excuse	(5) Share of votes that legislator misses in first half of legislative period	(6) Share of votes that legislator misses in second half of legislative period
Elected competitors in constituency	-0.0348* (0.0181)	-0.0265 (0.0162)	-0.0579*** (0.0211)	-0.0204* (0.0116)	-0.0705** (0.0294)	-0.0503* (0.0299)
Personal controls	Yes	Yes	Yes	Yes	Yes	Yes
Legislator fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Legislative period fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,734	8,734	8,734	8,734	8,709	8,711
Number of legislators	3,006	3,006	3,006	3,006	2,997	2,997
F-statistic first stage	102.1	102.1	102.1	102.1	103.2	102.5
Hansen J-statistic (p-val.)	0.205	0.339	0.758	0.512	0.637	0.376

Notes: 2SLS estimation. The unit of observation is an individual legislator-legislative period pair. The table shows second stage regression results using *Early dropout in constituency* and *Replacement in constituency* to instrument *Elected competitors in constituency*. The dependent variables are different variations of the previously used dependent variables. Personal controls include *Direct mandate*, *Government party*, *Age*, *Age²*, *Tenure* and *Minister* as in Table 1. Standard error estimates are clustered at the legislator level. *** p<0.01, ** p<0.05, * p<0.1.

In Table A4, we use nuanced measures for *Absentee rate in roll-call votes* as a dependent variable. The legislators can officially excuse their absence in parliament in advance, but no reason for the absence has to be indicated, and an excused absence no longer entails reductions of the lump sum for missed roll-call votes. Legislators may apply for a leave of absence for any reason without indicating it and are thus able to cleverly circumvent wage deductions. The effect of having elected competitors in one's constituency negatively affects excused (column 1) and unexcused (column 2) absences. In column (3), we employ the number of days a legislator misses *all* roll-call votes as a share of all days when recorded votes are scheduled; thus, legislators who appear once in roll-call votes and show at least some presence do not count as shirkers when using this measure. Column (4) uses the share of days when legislators miss all roll-call votes without excuse as a dependent variable (see Fisman et al. 2015). In columns (5) and (6), we take absentee rates in the first half and in the second half of the legislative period as dependent variables. The effect of *Elected competitors in constituency* confirms our main results in all specifications when using nuanced alternative measures for absences. The quantitative effect can be compared with previous estimates when taking account of the nuances in the dependent variables used (e.g., there are fewer roll-calls that are missed without an excuse and with an excuse).

Figure A1: Mean *Absentee rate in roll-call votes* by *Elected competitors in constituency*

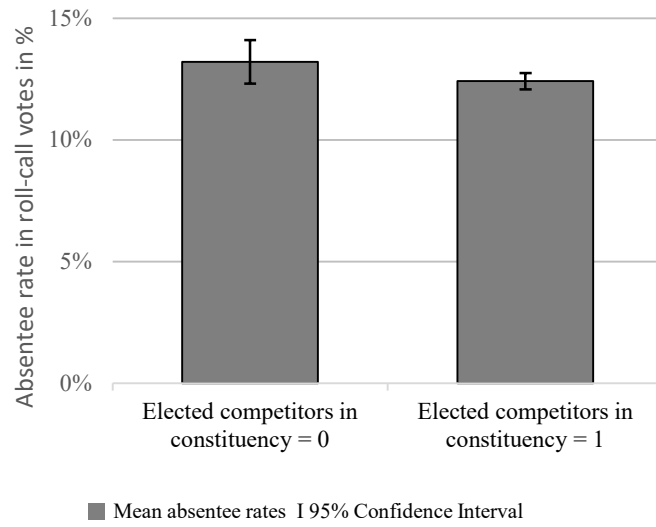
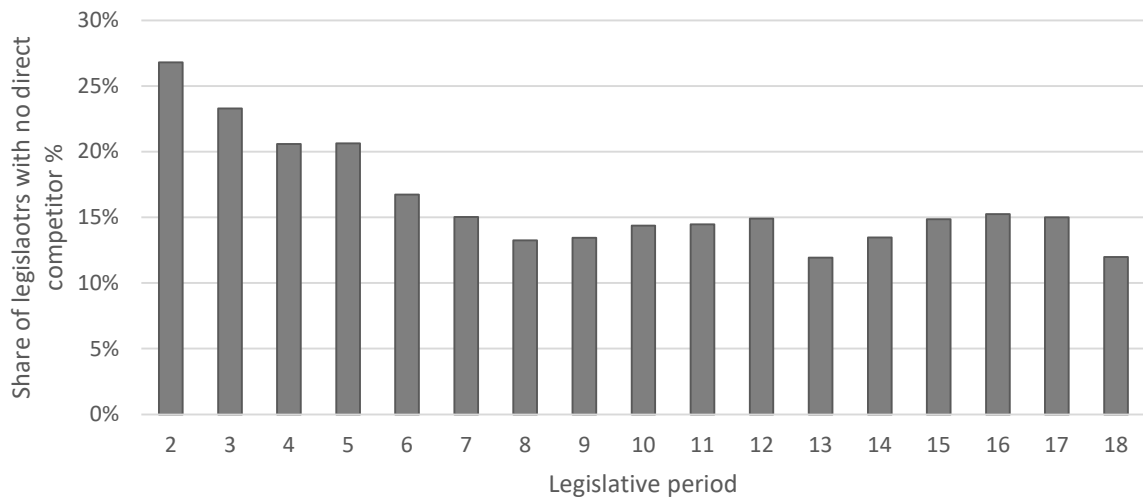


Figure A2: Share of legislators having no elected competitor by legislative periods (*Elected competitors in constituency = 0*)



Appendix B: Benchmarking of legislators from the same constituency – Anecdotal evidence

There are different channels how voters receive information on the activities, achievements and political positions of their legislators which can be used for benchmarking: Press statements, participation in local events and panel discussions, distribution of fliers, articles in local party newspapers and of course the local media offer information to compare legislators, especially those from the same constituency. Anecdotal evidence is highly suggestive that legislators are also more directly compared to each other in local media outlets concerning their contribution to local infrastructure projects¹, their voting behavior in roll-call votes of special public interest² or based on grades given for their activity on the platform *Abgeordnetenwatch*³, to provide just a few examples. Legislators from the same constituency are often jointly invited to political events and panel discussions in the constituency during their term or in advance of elections which also allows for direct comparisons.⁴

Transparency regarding voting behavior and participation in roll-call votes is high given that the results are published at the individual legislator level along with plenary protocols throughout the period of our analysis. Legislative shirking is one aspect of parliamentary activity frequently covered in the media. For instance, the high-circulation tabloid *Bild* regularly publishes a list of legislators who most often miss in roll-call votes.⁵ Anecdotes provide insights that frequent absences have been a relevant topic in earlier legislative periods. In 1956, for example, legislators from the *Deutsche Partei* received rather negative news coverage when three of their legislative proposals were unanimously rejected in parliament

¹ See, for example, <https://www.bo.de/lokales/offenburg/tunnel-schaeuble-hat-schon-mit-mehdorn-gesprochen>, accessed January 15, 2021.

² See, for example, <https://celleheute.de/ehe-fuer-alle-otte-nein-luehmann-ja>, accessed January 15, 2021.

³ See, for example, <https://www.shz.de/lokales/landeszeitung/note-sehr-gut-fuer-zwei-politiker-id7170601.html>, accessed October 19, 2020).

⁴ Legislators are also criticized for not participating in such panel discussions by their competitors. See for example <https://www.sven-kindler.de/2017/09/pm-kindler-von-der-leyen-war-auf-keiner-einzigen-podiumsdebatte-im-wahlkreis>, accessed January 15, 2021.

⁵ See, for example, <https://www.bild.de/politik/inland/politik-inland/sie-fehlt-am-haeufigsten-die-abstimmungs-schwaenzer-im-bundestag-57801292.bild.html>, accessed January 15, 2021.

without discussion as no representative of the faction was present.⁶ Legislators have always been aware of such media coverage and provide explanations for their absentee rates, for example by releasing a press statement.⁷ Legislators who frequently attend roll-call votes and parliamentary sessions are acknowledged for their diligence and highlight their activities publicly.⁸ Finally, electoral competitors but even members of their own party criticize legislators for absenteeism publicly.⁹ More recently, citizens can retrieve results of roll-call votes from the official webpage of the German Bundestag directly and apply filter options to compare legislators at the level of the constituency which is done by journalists.

⁶ See, for example, <https://www.spiegel.de/spiegel/print/d-43062299.html>, accessed January 15, 2021.

⁷ Common explanations for absences often include other duties related to the political mandate and family or health reasons. Concerned legislators also criticize how absences in these articles are counted or question their correctness (see, for example, <https://www.silke-launert.de/aktuelles/klarstellung-zum-bild-artikel/>, accessed January 15, 2021).

⁸ See, for example, <https://www.express.de/news/nicht-einmal-gefehlt-das-sind-deutschlands-fleissigste-abgeordnete-4840846?cb=1610709047746>, accessed January 15, 2021 or another article in the tabloid *Bild* <https://www.bild.de/regional/stuttgart/baron-von-stetten-8676506.bild.html>, accessed January 15, 2021.

⁹ See, for example, Antwerpen, Marianne. Hauptstadt Notizen, in: *Bonner Generalanzeiger*, 25.05.1984, S.4 or <https://www.sueddeutsche.de/politik/bundestag-fauler-ururenkel-1.781822>, accessed 15.01.2021.