

Online Appendix

How Does Party Discipline Affect Legislative Behavior? Evidence from Within-Term Variation in Lame-Duck Status*

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Abstract

How important are political parties in motivating and disciplining elected officials? Using a difference-in-differences design, we study how shocks to incumbents' reelection probabilities affect legislative behavior in a setting where parties fully control candidate selection. We find that within-term variation in lame-duck status has a strong negative effect on legislative effort. There is, however, no clear evidence that lame-duck status affects the extent to which legislators deviate from the party line. Our findings align well with the citizen-candidate framework, where candidates have fixed ideological positions that do not vary based on electoral incentives.

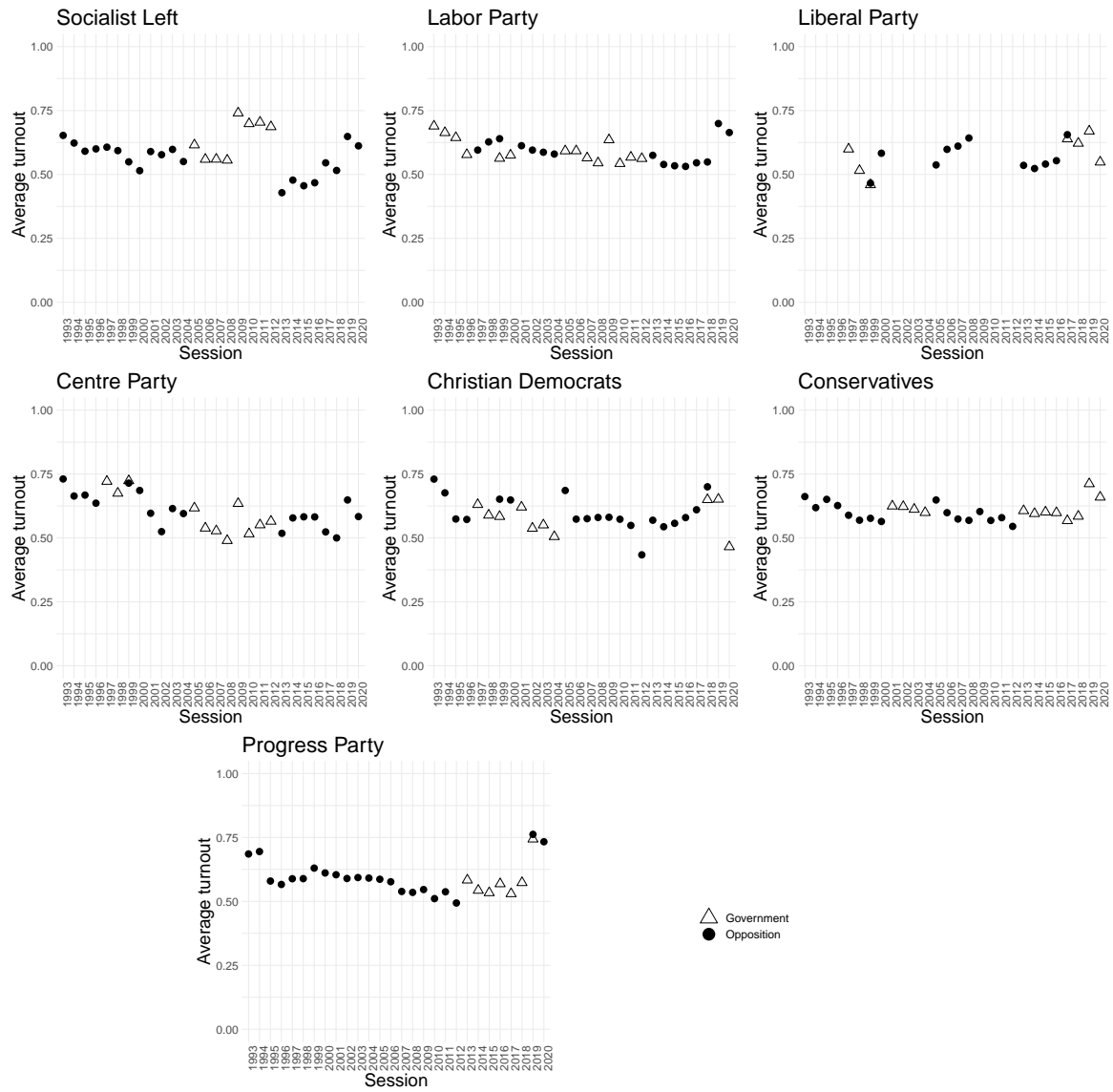
Keywords: Political parties, party discipline, roll-call votes, legislative speech

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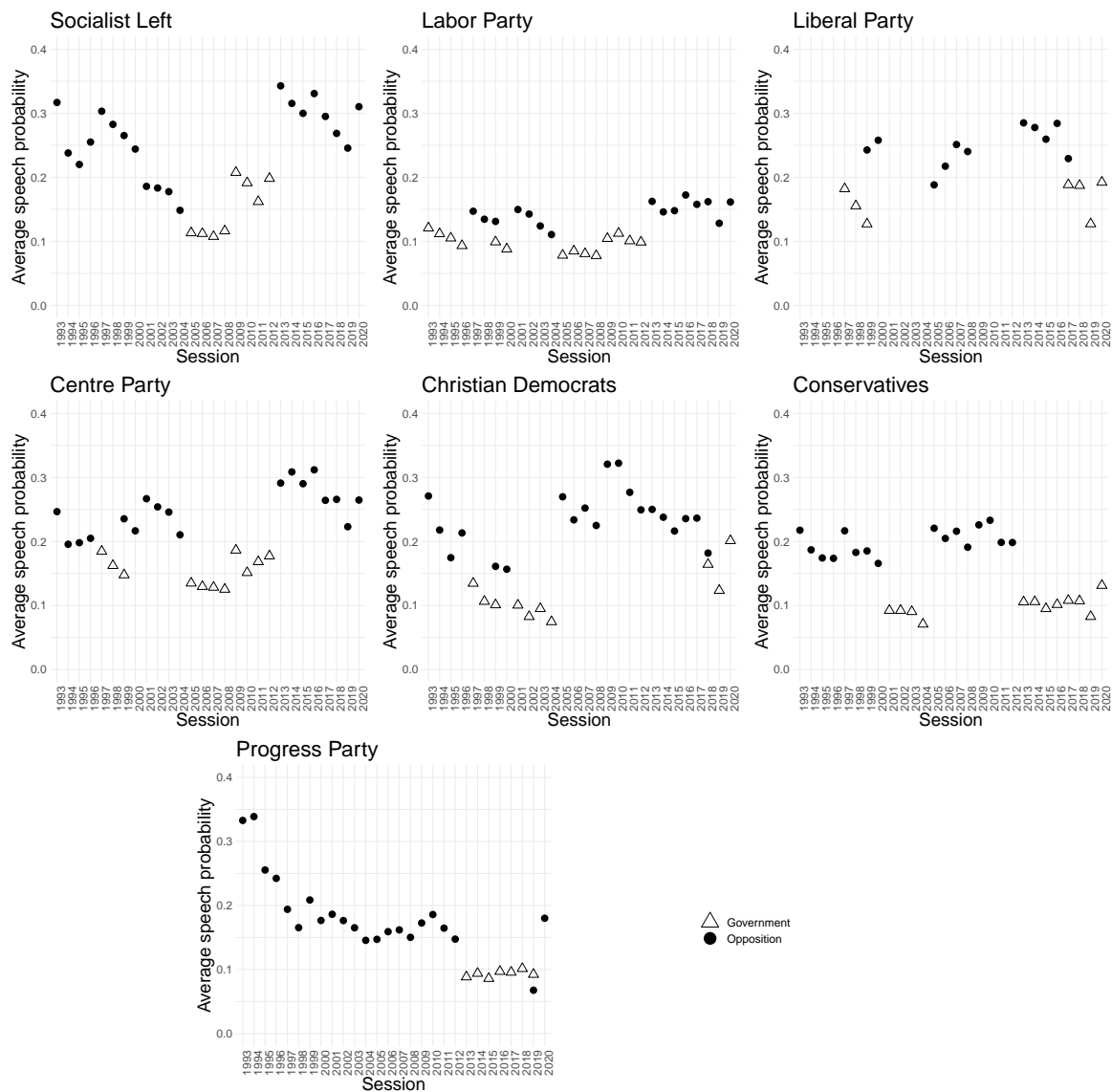
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Figure A.1: Legislative turnout over time by party and government status



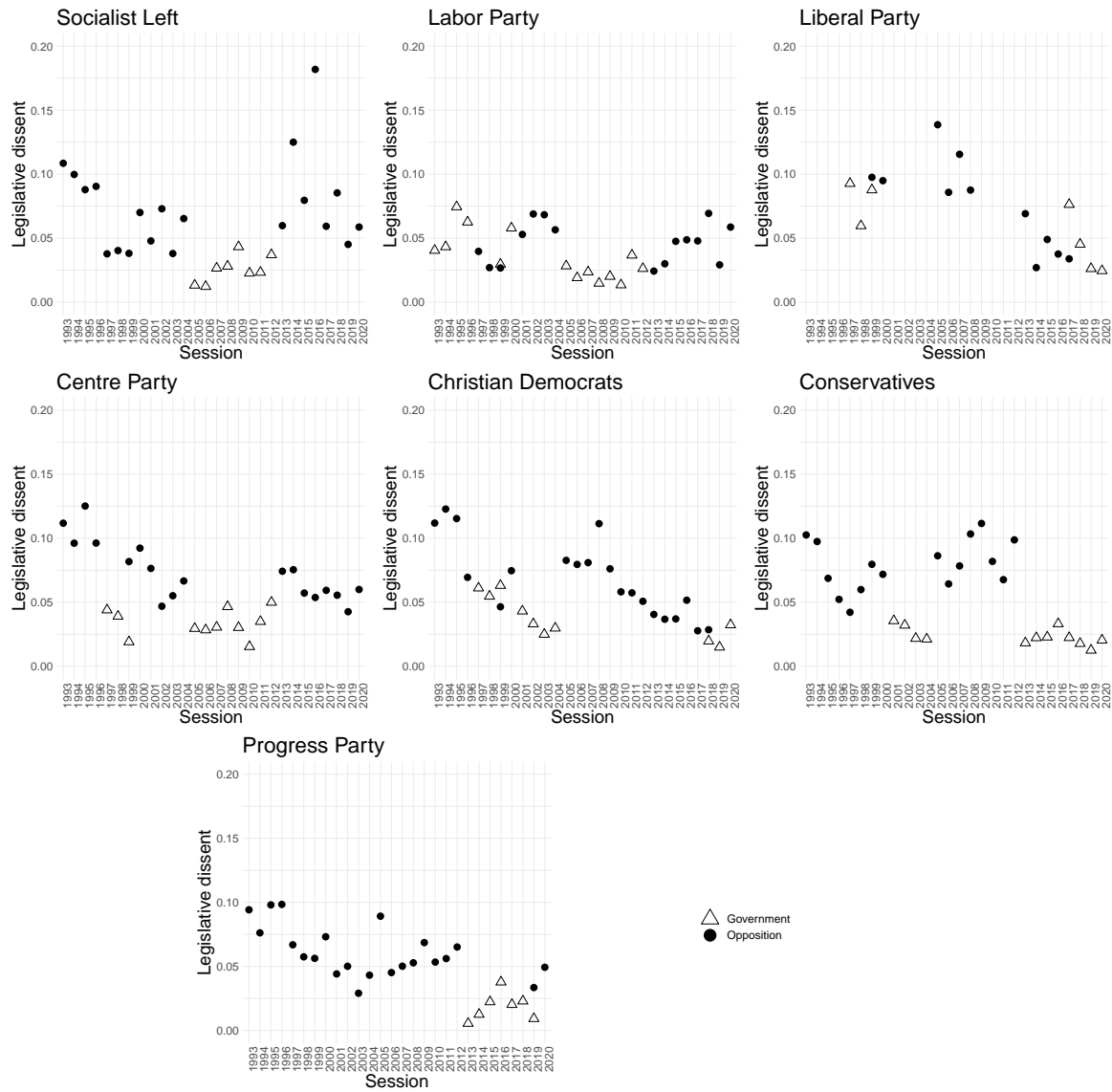
Note: This figure shows the average fraction of legislators that turn up to vote by Parliamentary session. The sample includes all parties who reach the national threshold of four percent which makes the party eligible for adjustment seats. When a party's government status changes within a session (see Appendix Table A.1), we report two within-session means. Short transition periods between governments (less than eight weeks) following general elections are excluded.

Figure A.2: Averages of daily speech attendance over time by party and government status



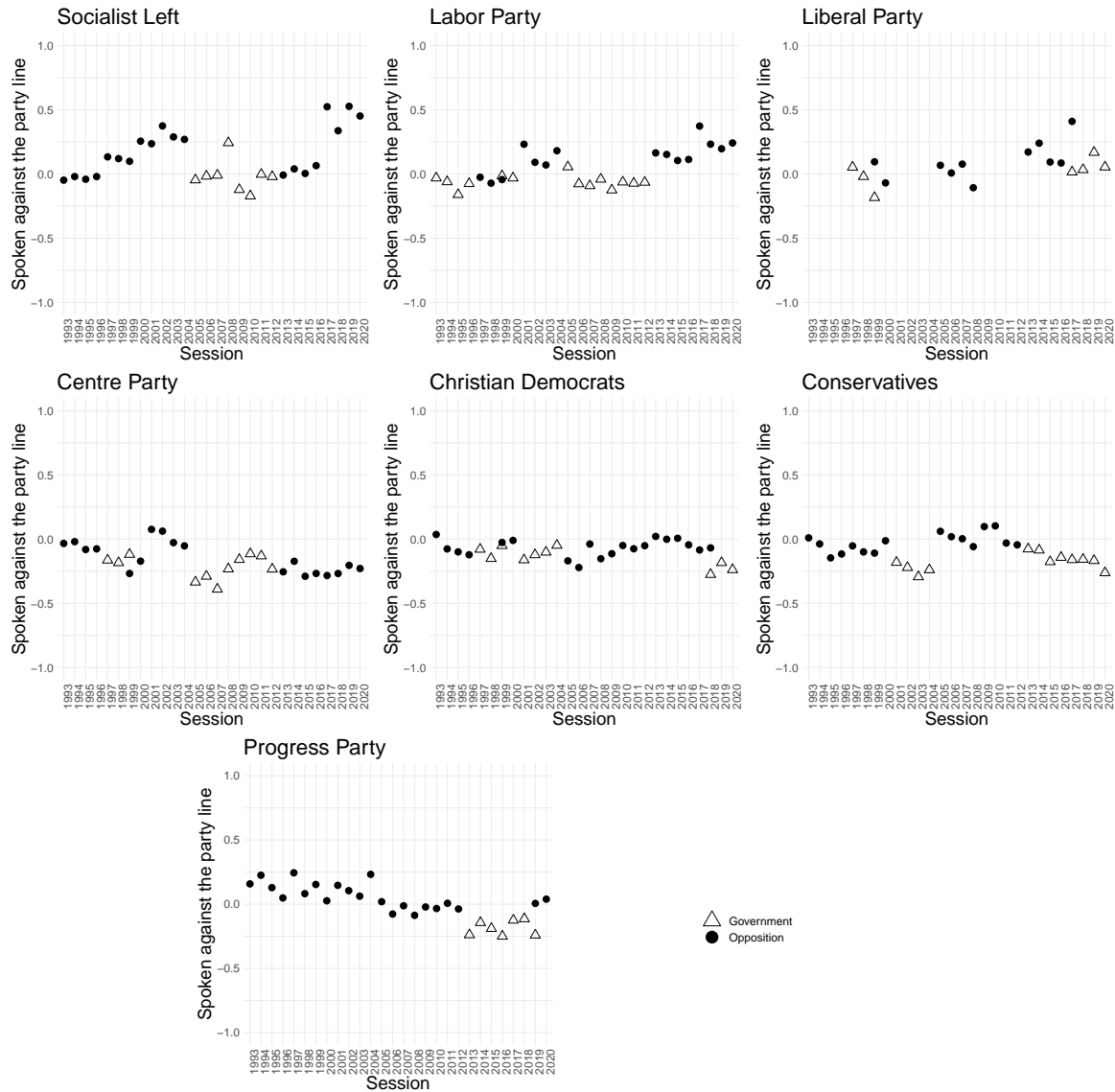
Note: This figure shows the average fraction of legislators that deliver speeches in Parliament by Parliamentary session. The sample includes all parties who reach the national threshold of four percent which makes the party eligible for adjustment seats. When a party's government status changes within a session (see Appendix Table A.1), we report two within-session means. Short transition periods between governments (less than eight weeks) following general elections are excluded.

Figure A.3: Legislative dissent in roll-call votes over time by party and government status



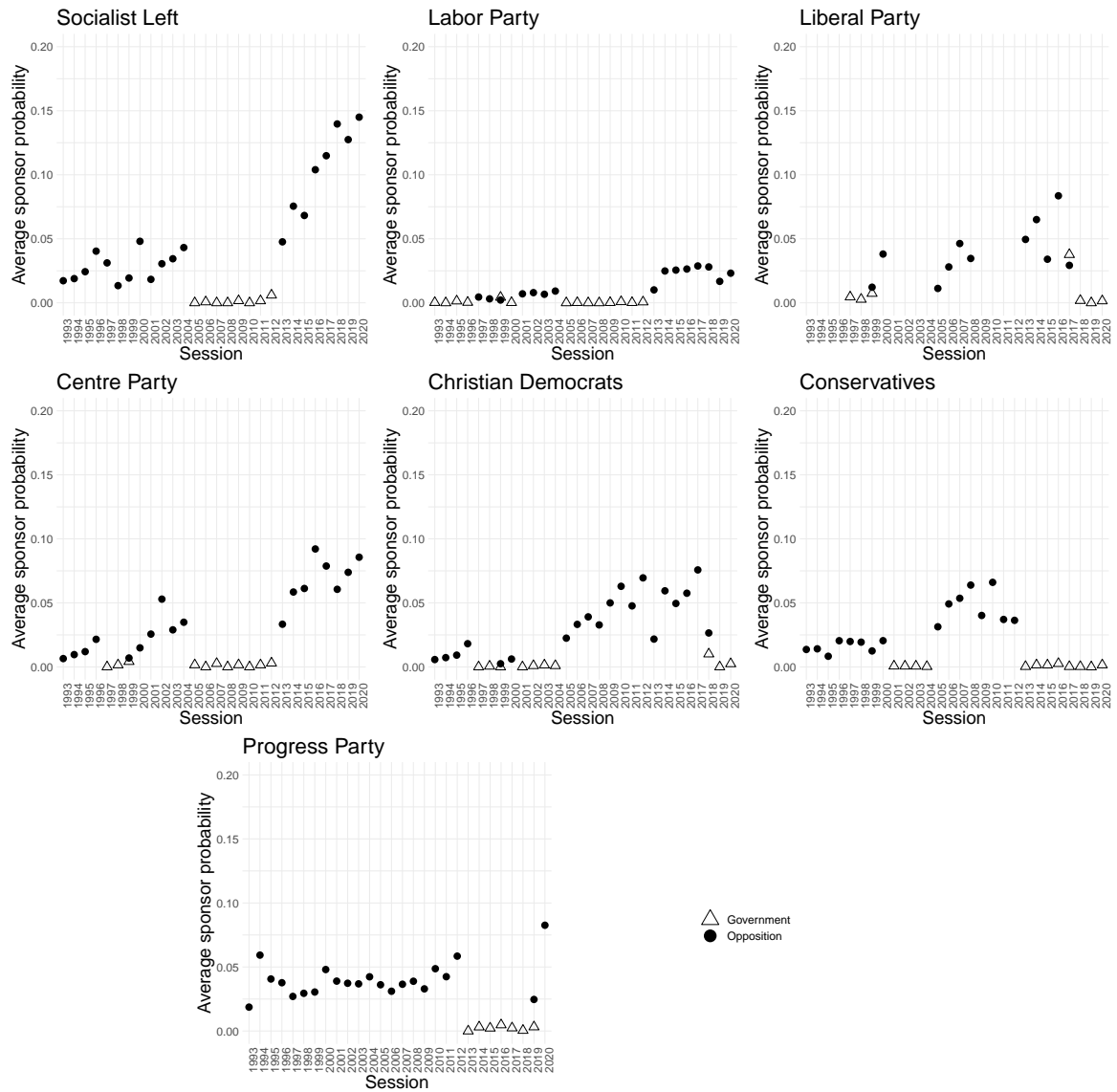
Note: This figure shows the average fraction of legislators that break the party line in floor votes by Parliamentary session. The sample includes all parties who reach the national threshold of four percent which makes the party eligible for adjustment seats. Legislative dissent is measured by a dummy taking the value one if the MP votes against the party's majority opinion. When a party's government status changes within a session (see Appendix Table A.1), we report two within-session means. Short transition periods (less than eight weeks) between governments following general elections are excluded.

Figure A.4: Distance from party leader in speech over time by party and government status



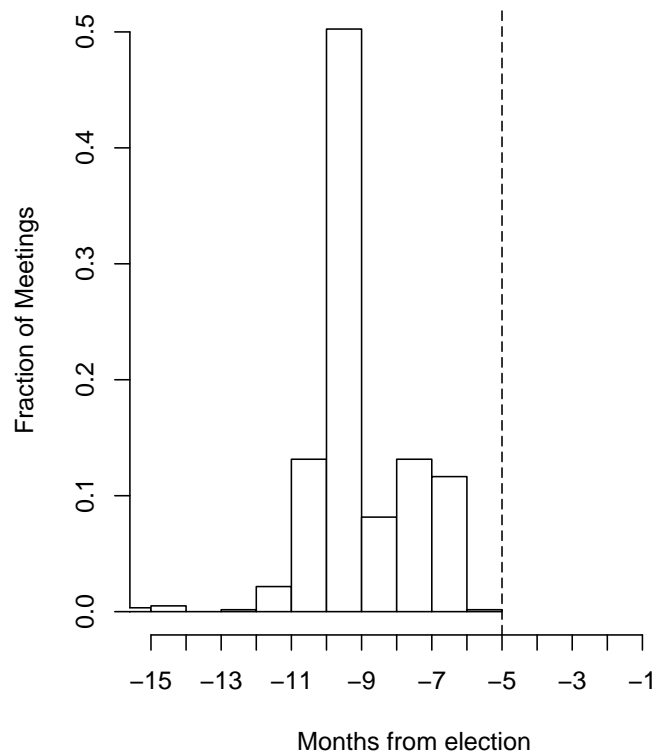
Note: This figure shows the average distance from the party line in legislative speeches along a left-right dimension by party and Parliamentary session. The polarity scores are obtained using Latent Semantic Scaling. A negative (positive) value corresponds to a higher (lower) degree of deviation from the party line in speech. The measure is standardized to have a mean of 0 and a standard deviation of 1. The party line is defined as the average left-right polarity of party leaders within an election term. The sample includes all parties who reach the national threshold of four percent, which makes the party eligible for adjustment seats. When a party's government status changes within a session (see Appendix Table A.1), we report two within-session means. Short transition periods (less than eight weeks) between governments following general elections are excluded.

Figure A.5: Averages of daily bill sponsorship over time by party and government status



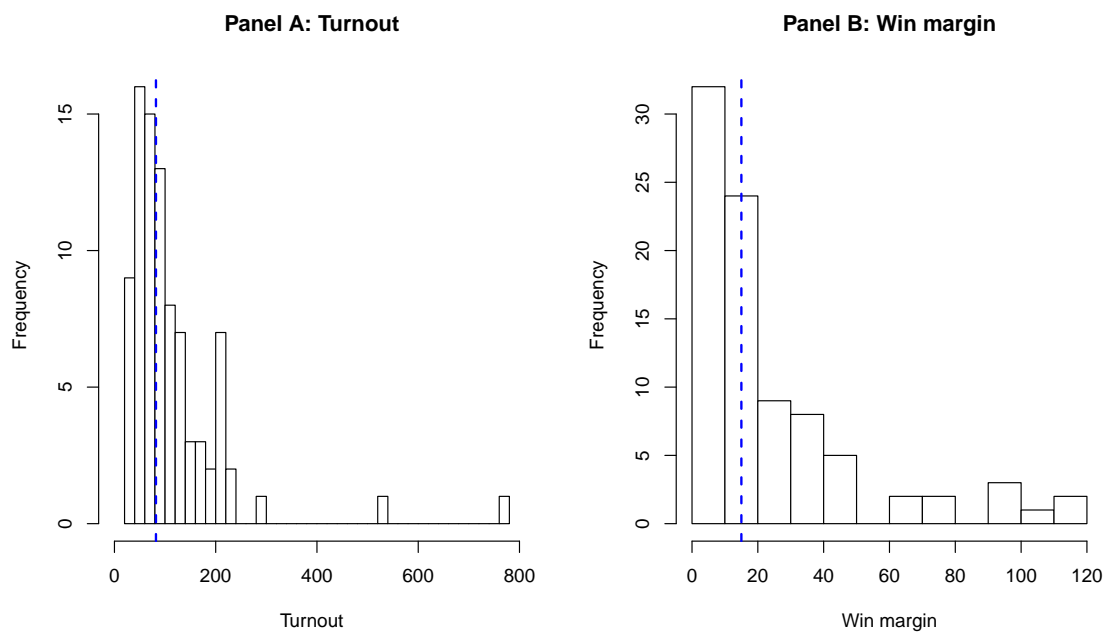
Note: This figure shows the average fraction of legislators that sponsor bills in Parliament by Parliamentary session. The sample includes all parties who reach the national threshold of four percent which makes the party eligible for adjustment seats. When a party's government status changes within a session (see Appendix Table A.1), we report two within-session means. Short transition periods between governments (less than eight weeks) following general elections are excluded.

Figure A.6: Frequency of nomination meetings by months to the next election



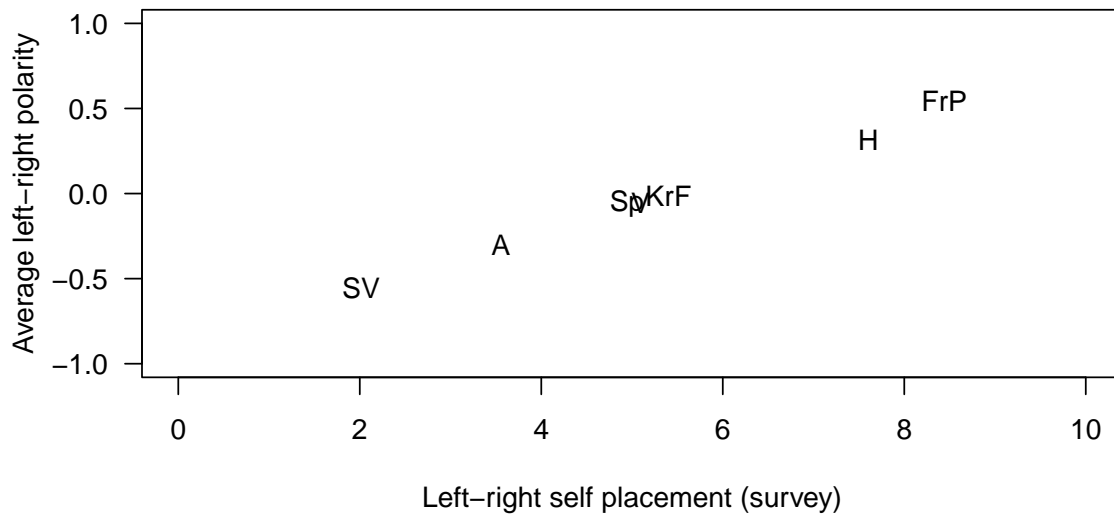
Note: This figure shows the fraction of nomination meetings by the months to the next election. The vertical line at -5 shows the deadline for when electoral lists have to be finalized (March 31 of the election year). We remove cabinet members, minor party MPs, and observations where the nomination status of the MP is unclear (see Table 1).

Figure A.7: Nomination meeting turnout and win margins of nomination fights



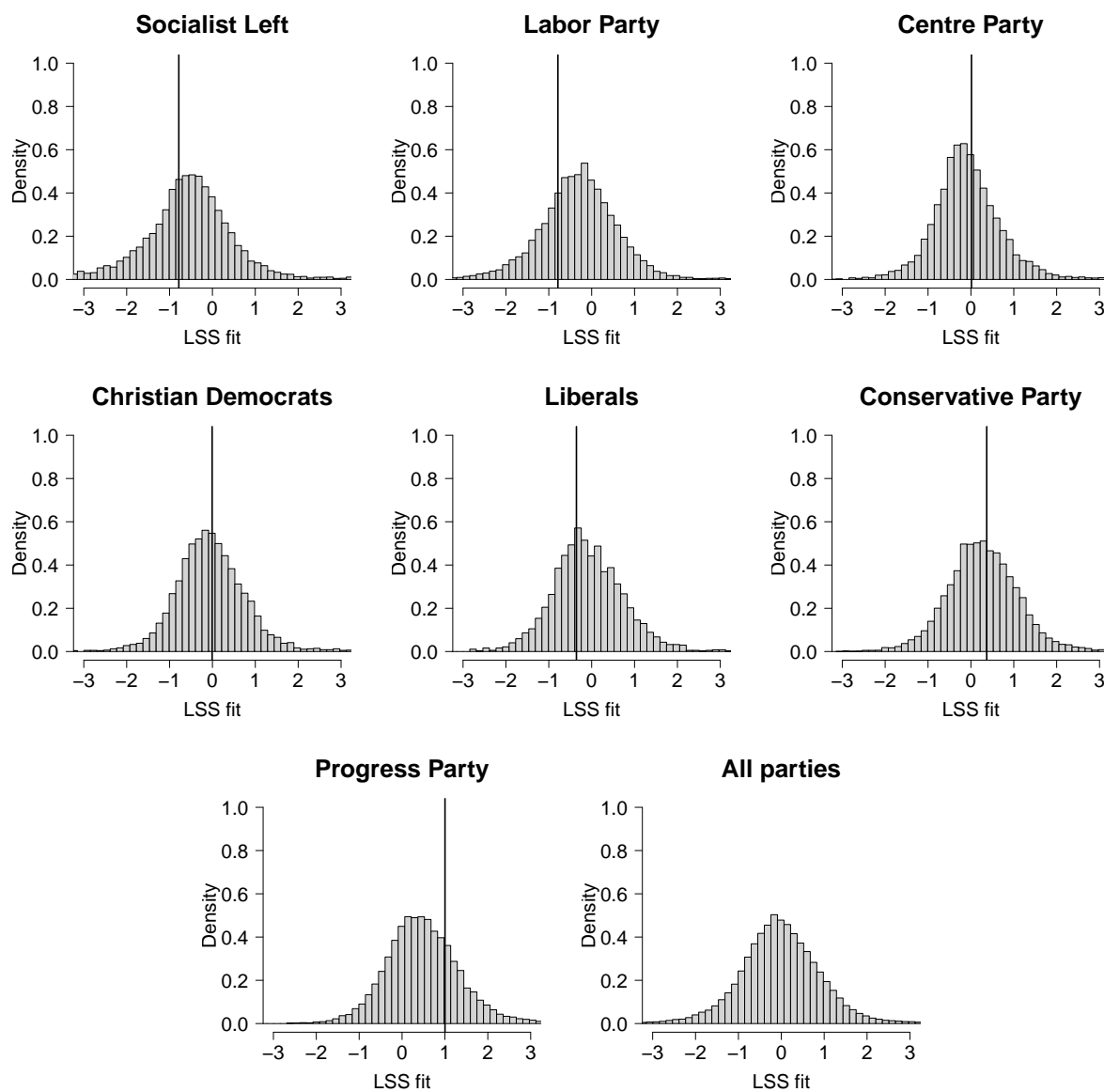
Note: This figure shows histograms of turnout (panel A) and win margins in votes (panel B) in nomination fights that involve “winners” and “losers” as defined in Table 1. We lack exact information about win margins in seven cases, resulting in a sample size of 88 in this figure. If an incumbent has been involved in multiple losing fights, we keep the observation with the narrowest win margin. The dashed blue lines mark the medians.

Figure A.8: Correlation between party positions measured in surveys and party positions measured by Latent Semantic Scaling



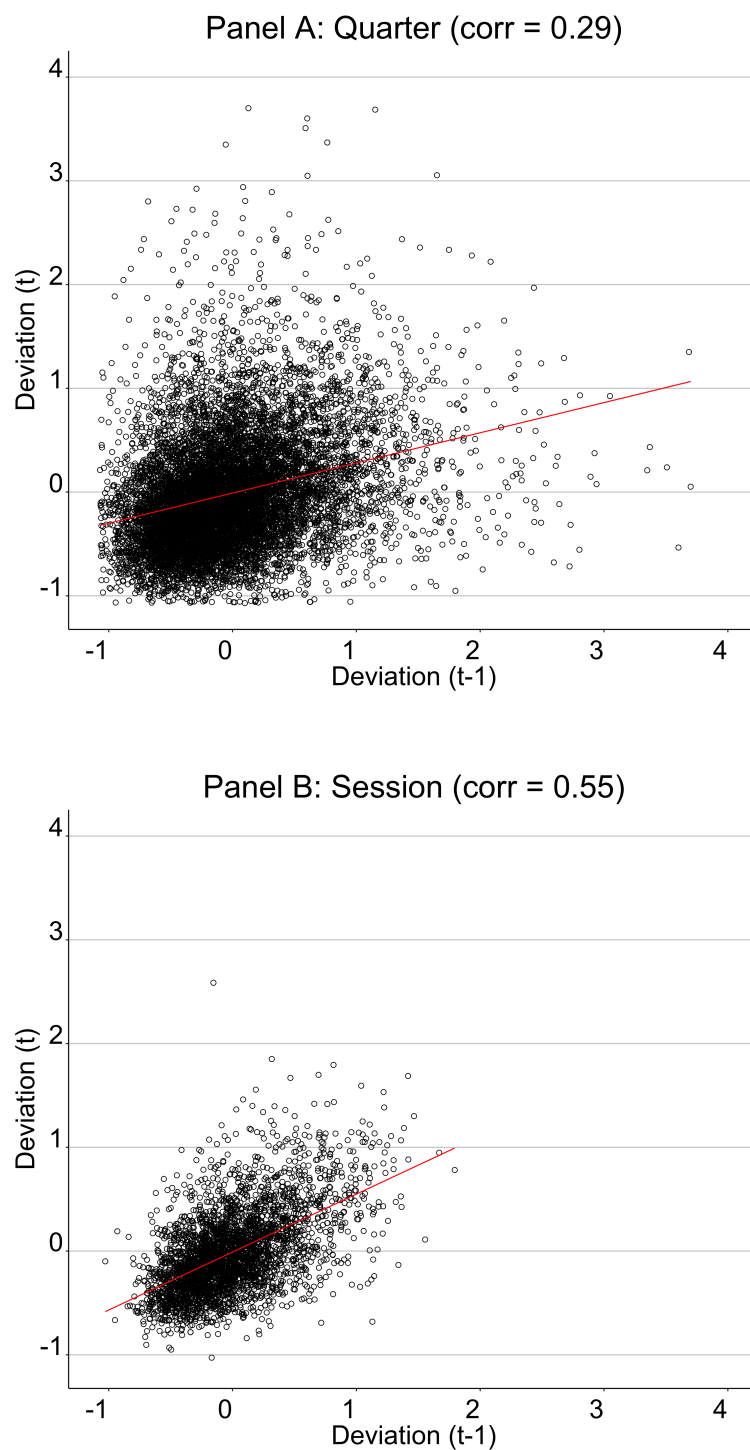
Note: This figure plots the party average left-right polarity scores against the average self-placement on the left-right axis by local politicians. The left-right polarity scores are obtained using Latent Semantic Scaling (LSS) on Parliamentary speech in the 1993–2021 period. The left-right self-placement is measured using a question where respondents placed themselves on a scale from 0 (the extreme left) to 10 (the extreme right). The surveys were conducted between 1999 and 2011. Party positions are stable over time and across space (Fiva, Folke and Sørensen, 2018). The raw correlation between the two measures plotted is 0.997.

Figure A.9: Distribution of LSS estimates by party



Note: This figure shows distributions of Latent Semantic Scaling estimates by party at the MP-day level in the 1993–2021 period. The solid black line represents the mean for party leaders across all years.

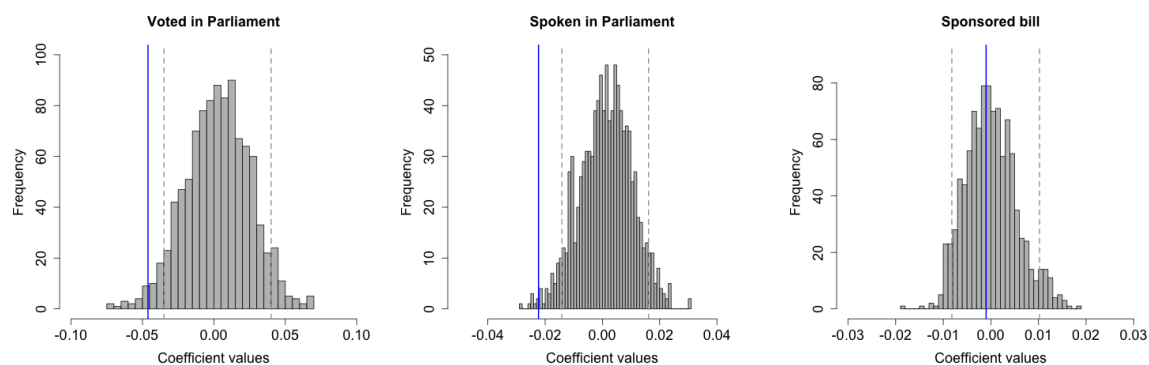
Figure A.10: Within-MP correlation in deviation measure



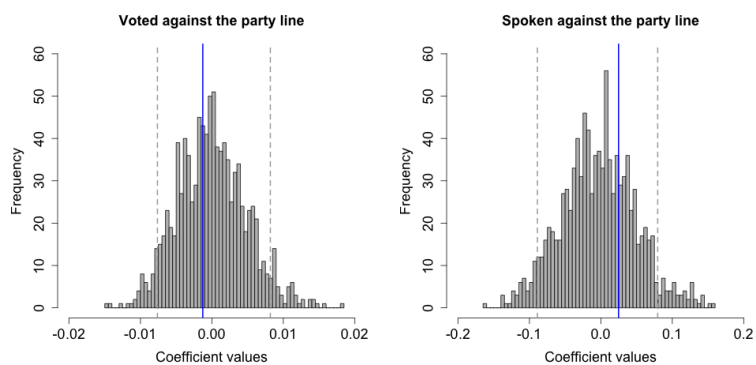
Note: Panel A (Panel B) plots MPs' mean deviation in the current quarter (Parliamentary session) against their mean deviation in the previous quarter (Parliamentary session). We omit extreme observations (> 4) for presentation purposes. The third quarter of each calendar year is omitted because the Parliament is closed in the summer. The number of observations is 10,760 in Panel A and 3,423 in Panel B. Deviation is defined in Equation 2.

Figure A.11: Placebo tests

Panel A: Legislative efforts



Panel B: Legislative dissent



Note: This figure shows placebo distributions of coefficients from regressions where MP renomination type is randomly assigned to legislators within election periods. For each election we draw n politicians, where n corresponds to the true number of losers within the election term. The gray bars represent the distributions of coefficients from 1000 permutations. The dashed gray lines represent the 5th and the 95th percentiles of the placebo distributions. The solid blue lines represent the coefficients from Table 2 and Table 3 (column 1). All regressions include date fixed effects and MP-term fixed effects. Standard errors are clustered at the MP level.

Table A.1: Norway’s Governments 1993–2021

Time period	Prime minister	Parties	Parl. basis	Appointment reason	Resignation reason
Nov 1990 – Oct 1996	Gro H. Brundtland (A)	A	Minority	Government crisis	Change prime minister
Oct 1996 – Oct 1997	Thorbjørn Jagland (A)	A	Minority	Change prime minister	General elections
Oct 1997 – Mar 2000	Kjell M. Bondevik (KrF)	KrF, SP, V	Minority	General elections	Government crisis
Mar 2000 – Oct 2001	Jens Stoltenberg (A)	A	Minority	Government crisis	General elections
Oct 2001 – Oct 2005	Kjell M. Bondevik (KrF)	KrF, H, V	Minority	General elections	General elections
Oct 2005 – Oct 2013	Jens Stoltenberg (A)	A, SV, SP	Majority	General elections	General elections
Oct 2013 – Jan 2018	Erna Solberg (H)	H, FrP	Minority	General elections	-
Jan 2018 – Jan 2019	Erna Solberg (H)	H, FrP, V	Minority	Government expansion	-
Jan 2019 – Jan 2020	Erna Solberg (H)	H, FrP, V, KrF	Majority	Government expansion	-
Jan 2020 – Jun 2021	Erna Solberg (H)	H, V, KrF	Minority	Government reduction	-

Note: The parties are Socialist Left Party (SV), the Labour Party (A), the Centre Party (SP), the Christian Democrats (KrF), the Liberal Party (V), the Conservative Party (H), and the Progress Party (FrP). Source www.regjeringen.no.

Table A.2: Descriptive statistics for different incumbent types

	Losers	Winners	Uncontested	Retirees
Affiliated with right-wing bloc (%)	80.6	61.0	48.3	44.0
Female (%)	25.0	42.4	38.7	38.7
Age (average)	52.0	52.9	48.4	54.9
Years since first appeared on election list (average)	14.2	13.2	11.0	15.5
Terms served (average)	2.1	1.8	1.8	2.8
Residing in urban municipality (%)	47.2	50.8	50.9	46.2
White-collar origin (%)	66.7	45.8	57.3	55.0

Note: This table displays descriptive statistics for losers ($N=36$), winners ($N=59$), uncontested ($N=638$) and retiring MPs ($N=266$) (see Table 1). “Years since first appearance on election list” is calculated at the speech level, while “age” is counted from the last election preceding the nomination meeting. “White-collar origin” is a binary variable taking the value one if the MPs’ father worked in a white-collar job. We remove cabinet members, minor party MPs, and observations where the nomination status of the MP is unclear (see Table 1).

Table A.3: LSS seed words

Rank	Left		Right	
	Norwegian	English	Norwegian	English
1	folk	people	norsk	Norwegian
2	kvinne	woman	enkelt	simple
3	politikk	policy	representant	representative
4	forskjell	difference	privat	private
5	penge	money	god	good
6	kutte	cut	bedrift	company
7	bra	good	næringsliv	business
8	samfunn	society	pasient	patient
9	jobb	job	statsminister	prime minister
10	land	country	konkurransen	competition
11	sosial	social	redusere	reduce
12	kommune	municipality	finansminister	finance minister
13	arbeidsliv	work life	positiv	positive
14	tiltak	measures	fremme	advance
15	politisk	political	utfordring	challenge
16	handel	trade	regjeringsparti	governing party
17	arbeid	employment	medføre	entail
18	internasjonal	international	nettopp	exactly
19	ansatt	employee	prosjekt	project
20	Oslo	Oslo	stat	state
21	felleskap	community	bonde	farmer
22	skole	school	håpe	hope
23	rik	rich	svar	answer
24	mann	man	synes	seems
25	situasjon	situation	avgifter	fees
26	understreke	emphasize	elev	pupil
27	høre	hear	løsning	solution
28	ungdom	youth	parti	party
29	vanskelig	difficult	politi	police
30	alvorlig	serious	fall	decrease
31	ansvar	responsibility	selvsagt	of course
32	slags	kind	anledning	occasion
33	type	type	litt	a little
34	fordeling	distribution	vegne	on behalf of
35	ulik	different	øke	increase
36	jobbe	work	problem	problem
37	ung	young	skape	create
38	krig	war	benytte	utilize
39	fin	fine	PST	PST
40	rettferdig	fair	interessant	interesting
41	nødt	need	bilist	motorist
42	kommuneøkonomi	municipal finances	midler	funds
43	utvikle	develop	klar	clear
44	kutt	cut	næring	industry
45	økonomisk	economic	landbruk	agriculture
46	barnehage	kindergarten	bidra	contribute
47	diskusjon	discussion	aktør	prosecutor
48	skattelette	tax relief	valgfrihet	freedom of choice
49	råd	advice	glad	happy
50	lur	smart	gjerne	happily
51	felles	common	fremlegge	submit
52	likestilling	equality	byråkrati	bureaucracy
53	barn	children	følgende	following

Table A.3: LSS seed words

Rank	Left		Right	
	Norwegian	English	Norwegian	English
54	fattig	poor	registrere	register
55	trenes	is needed	konstatere	ascertain
56	tydelig	clearly	rammevilkår	framework conditions
57	vold	violence	uttrykk	expression
58	lønn	payment	helseminister	Minister of Health
59	svekke	impair	kostnad	cost
60	slutt	end	endring	change
61	arbeidstaker	employee	samarbeidsregjering	coalition government
62	utvikling	development	tillate	allow
63	nordisk	Nordic	relative	relative
64	unge	young	familie	family
65	miljø	environment	forsøke	attempt
66	kultur	culture	stimulere	stimulate
67	enstemmig	unanimous	innen	within
68	bolig	housing	tale	speech
69	privatisering	privatization	konkret	specific
70	dumping	dumping	vekst	growth
71	borgerlig	bourgeois	eierskap	ownership
72	fattigdom	poverty	sektor	sector
73	velferdsstat	welfare state	rett	straight
74	regional	regional	konkurransedyktig	competitive
75	jernbane	railway	tilbud	offer
76	klimaendring	climate change	innbygger	inhabitant
77	styring	steering	avgift	fee
78	krise	crisis	lokal	local
79	menneske	human	borger	citizen
80	utdanning	education	skattebetaler	taxpayer
81	tenke	imagine	fremsette	present
82	nordområde	Northern area	styrke	strength
83	ulikhet	inequality	forbruker	consumer
84	kommersiell	commercial	verdskaping	value creation
85	minister	minister	mangel	lack
86	finanskrise	financial crisis	ytterligere	additional
87	dreie	concern	innovasjon	innovation
88	trygghet	safety	gledelig	happily
89	arbeidsledig	unemployed	Norge	Norway
90	forsvar	defense	uttale	statement
91	valg	choice	kapital	capital
92	ressurs	resource	samarbeidsparti	coalition party
93	stortingsflertall	parliamentary majority	eiendomsrett	property rights
94	retning	direction	presidentskap	presidentship
95	sosialhjelp	social assistance	justisminister	Minister of Justice
96	sysselsetting	employment	lever	living
97	utgangspunkt	base	statlig	governmental
98	industri	industry	infrastruktur	infrastructure
99	bygge		helsekø	health queue
100	jente	girl	investering	investment

Note: This table shows the words used as seed words in the LSS algorithm. The words represent the most polarizing words along the political left-right dimension in the Norwegian Parliament. To identify most polarizing words we use the estimator proposed by Gentzkow, Shapiro and Taddy (2019), controlling for Parliamentary session.

Table A.4: Procedural words

aksjonskanalen, anmodningsvedtak, avstemning, bebudede saker, beslutning i lagtinget, beslutningsdyktighet, bevilgningsreglementet, budsjettavtale, budsjettbehandling, budsjettinnstilling, daddelvevtak, debatt, delegere, demokrati, departement, direktorat, dobbeltstemme, dokument, dok, drøftinger, etat, eu, eøs-avtalen, fagkomité, finansdebatten, finansinnstillingen, finanstalen, flertall, flertallsregjering, folkeavstemning, folkesuverenitet, forberedende, statsråd, forfatning, konstitusjon, forholdstallsvalg, forretningsorden, forslagsrett, fraksjon, fraksjonsleder, fullmaktslov, grunnlov, grunnlovsforslag, gruppe styre, hemmelig møte, hjemfallsrett, høring, høringsbrev, høytidelig åpning, initiativdebatt, innberetning, innpisker, innstilling til Stortinget, interpellasjon, investitur, kabinettsspørsmål, koalisjonsregjering, konstituering, konsultasjon, kontraskriptur, lobbyisme, lovanmerknng, lovbehandling, løse forslag, maktfordeling, mandat, manntall, melding, mindretallsregjering, mistillitsforslag, nasjonalbudsjettet, negativt, nominasjon, Norges offentlige utredninger, nou, odelstinget, odelstingsmelding, odelstingsproposisjon, ombudsmann, opinion, opplysningsplikt, opposisjon, organisasjonskanalen, otrp, otmeld, på slottet, kongen, parlamentarisk leder, parlamentarisme, partigruppe, partiprogram, plenum, prerogativ, presidentskapet, presselosjen, proposisjon, redegjørelse, referatsak, regjering, regjeringsskisse, regjeringssutnevning, replikk, representantforslag, revidert budsjett, riksrett, riksrevisjonen, saksordfører, sammentreden, sanksjon, sedvane, sesjon, settpresident, skriftlige spørsmål, sperregrense, spørretime, spørretimespørsmål, stemmeplikt, stemmerett, stemmeseddel, stortingsmelding, stmeld, stortingsperiode, stortingsproposisjon, strp, talerrekkefølge, ting, trontaledebatten, trontalen, utbytting, utjevningssmandat, valgliste, valgnederlag, valgordning, vararepresentant, vedlegges, veto, votering

Note: This table lists procedural words from the Parliament's website (<https://www.stortinget.no/no/Stottemeny/Ordbok>).

Table A.5: Stop words (English)

a, able, about, above, abst, accordance, according, accordingly, across, act, actually, added, adj, affected, affecting, affects, after, afterwards, again, against, ah, all, almost, alone, along, already, also, although, always, am, among, amongst, an, and, announce, another, any, anybody, anyhow, anymore, anyone, anything, anyway, anyways, anywhere, apparently, approximately, are, aren, arent, arise, around, as, aside, ask, asking, at, auth, available, away, awfully, b, back, be, became, because, become, becomes, becoming, been, before, beforehand, begin, beginning, beginnings, begins, behind, being, believe, below, beside, besides, between, beyond, biol, both, brief, briefly, but, by, c, ca, came, can, cannot, can't, cause, causes, certain, certainly, co, com, come, comes, contain, containing, contains, could, couldnt, d, date, did, didn't, different, do, does, doesn't, doing, done, don't, down, downwards, due, during, e, each, ed, edu, effect, eg, eight, eighty, either, else, elsewhere, end, ending, enough, especially, et, et-al, etc, even, ever, every, everybody, everyone, everything, everywhere, ex, except, f, far, few, ff, fifth, first, five, fix, followed, following, follows, for, former, formerly, forth, found, four, from, further, furthermore, g, gave, get, gets, getting, give, given, gives, giving, go, goes, gone, got, gotten, h, had, happens, hardly, has, hasn't, have, haven't, having, he, hed, hence, her, here, hereafter, hereby, herein, here's, hereupon, hers, herself, hes, hi, hid, him, himself, his, hither, home, how, howbeit, however, hundred, i, id, ie, if, i'll, im, immediate, immediately, importance, important, in, inc, indeed, index, information, instead, into, invention, inward, is, isn't, it, itd, it'll, its, itself, i've, j, just, k, keep, keeps, kept, kg, km, know, known, knows, l, largely, last, lately, later, latter, latterly, least, less, lest, let, lets, like, liked, likely, line, little, 'll, look, looking, looks, ltd, m, made, mainly, make, makes, many, may, maybe, me, mean, means, meantime, meanwhile, merely, mg, might, million, miss, ml, more, moreover, most, mostly, mr, mrs, much, mug, must, my, myself, n, na, name, namely, nay, nd, near, nearly, necessarily, necessary, need, needs, neither, never, nevertheless, new, next, nine, ninety, no, nobody, non, none, nonetheless, noone, nor, normally, nos, not, noted, nothing, now, nowhere, o, obtain, obtained, obviously, of, off, often, oh, ok, okay, old, omitted, on, once, one, ones, only, onto, or, ord, other, others, otherwise, ought, our, ours, ourselves, out, outside, over, overall, owing, own, p, page, pages, part, particular, particularly, past, per, perhaps, placed, please, plus, poorly, possible, possibly, potentially, pp, predominantly, present, previously, primarily, probably, promptly, proud, provides, put, q, que, refs, regarding, regardless, regards, related, relatively, research, respectively, resulted, resulting, results, right, run, s, said, same, saw, say, saying, says, sec, section, see, seeing, seem, seemed, seeming, seems, seen, self, selves, sent, seven, several, shall, she, shed, she'll, shes, should, shouldn't, show, showed, shown, shows, significant, significantly, similar, similarly, since, six, slightly, so, some, somebody, somehow, someone, somethan, something, sometime, sometimes, somewhat, somewhere, soon, sorry, specifically, specified, specify, specifying, still, stop, strongly, sub, substantially, successfully, such, sufficiently, suggest, sup, sure, t, take, taken, taking, tell, tends, th, than, thank, thanks, thanx, that, that'll, thats, that've, the, their, theirs, them, themselves, then, thence, there, thereafter, thereby, thered, therefore, therein, there'll, thereof, therere, theres, thereto, thereupon, there've, these, they, theyd, they'll, theyre, they've, think, this, those, thou, though, thoughh, thousand, throug, through, throughout, thru, thus, til, tip, to, together, too, took, toward, towards, tried, tries, truly, try, trying, ts, twice, two, u, un, under, unfortunately, unless, unlike, unlikely, until, unto, up, upon, ups, us, use, used, useful, usefully, usefulness, uses, using, usually, v, value, various, 've, very, via, viz, vol, vols, vs, w, want, wants, was, wasnt, way, we, wed, welcome, we'll, went, were, werent, we've, what, whatever, what'll, whats, when, whence, whenever, where, whereafter, whereas, whereby, wherein, wheres, whereupon, wherever, whether, which, while, whim, whither, who, whod, whoever, whole, who'll, whom, whomever, whos, whose, why, widely, willing, wish, with, within, without, wont, words, world, would, wouldnt, www, x, y, yes, yet, you, youd, you'll, your, youre, yours, yourself, yourselves, you've, z, zero

Note: This table lists the stop words from the long list of stop words from <https://www.ranks.nl/stopwords>.

Table A.6: Stop words (Norwegian)

adj, ah, al, aldri, alene, alle, aller, allerede, allereie, allikevel, alltid, alt, andre, angående, angår, annan, annen, annerledes, annleis, anten, as, at, autentisera, autentisere, av, avstå, b, både, bak, bare, begynne, begynnelse, begynner, behalda, behalde, beholde, beholdt, beklager, bemerket, berørt, berre, bestemt, bety, betydeleg, betydelege, betydelig, betydelige, betydning, bind, biol, blant, bli, blir, bør, bortanfor, borte, bortenfor, bortsett, bredt, breitt, bruk, bruker, brukt, burda, burde, byrja, byrjar, byrjing, c, ca, co, com, d, dårleg, dårlig, dato, de, deg, dei, deira, del, dem, den, denne, der, derav, dere, deres, deretter, derfor, derfra, derfrå, deri, derimot, dermed, dertil, derved, desse, dessutan, dessuten, dessverre, det, dette, din, disse, diverse, dog, dømes, driver, du, dvs, e, edu, effekt, eg, egen, egentlig, eigen, eigentleg, ein, eit, eks, eksempel, eller, ellers, elles, en, enhver, enn, ennå, enno, enten, er, et, etc, etter, etterpå, f, få, faktisk, fall, får, fastsetja, fastsette, fått, fekk, fem, femte, ferd, ferdig, ff, fikk, fire, fleire, flere, følgde, følgende, følger, følgjande, følgje, for, før, forbi, fordi, førehand, fører, foreslå, forestilling, forfaller, forfell, forferdeleg, forferdelig, forhånd, forresten, forskning, forskning, først, ført, fortelja, fortelle, fortsatt, fra, frå, fram, framleis, framsyning, frem, fru, fulgte, funnet, g, ga, gå, gammal, gammel, gang, ganger, ganske, går, gav, gi, gikk, gir, gitt, gjekk, gjeld, gjemte, gjennom, gjer, gjera, gjør, gjorda, gjorde, gjøre, glipp, gong, gonger, gøynde, grad, greit, greitt, grunn, h, ha, hadde, ham, han, handling, hans, har, hås, hed, hei, heim, hel, held, heller, helst, hen, henhold, hennar, henne, hennes, her, heretter, herr, herved, hes, hhv, hit, hitten, hjelp, hjem, ho, holder, høve, hovedsakelig, hovudsakleg, hun, hundre, hva, hvem, hver, hvilken, hvis, hvor, hvordan, hvoretter, hvorfor, hvorfra, hvori, hvorledes, hvorpå, hvorved, i, id, idet, igjen, ikke, ikkje, imidlertid, imot, indeks, informasjon, ingen, ingenting, inn, innanfor, innehalda, inneheld, inneholde, inneholder, innenfor, innfall, innover, istedenfor, itd, j, ja, jeg, k, kan, kanskje, kg, kjem, kjent, km, kom, komma, komme, kommer, kor, korleis, kort, krus, kun, kunna, kunne, kunngjera, kunngjøre, kva, kvar, kven, kvifor, l, la, laget, langs, langt, lar, legge, leggja, lenger, lengre, lèt, lett, lignende, likevel, liknande, likte, linje, lite, litt, løp, løpe, løpet, m, må, man, mange, måte, me, med, medan, meg, meget, meiner, mellom, mellomtida, mellomtiden, men, mener, mens, mer, mest, meste, mg, midlar, midler, million, min, mindre, minst, ml, mogleg, mot, motsetning, mulig, muligens, mye, mykje, n, na, nå, nær, namn, når, navn, ned, nedover, nei, nemleg, nemlig, neppe, neste, nesten, ni, nitti, no, nødvendig, nødvendigvis, noe, noen, nok, noko, nokon, nokre, normalt, noterte, null, ny, nyleg, nylig, nytteverdi, nyttig, o, oftast, ofte, oftest, og, òg, også, ok, om, omtrent, ons, ønske, ønsker, ønsker, openbert, opp, oppfinnelse, oppnådd, oppstå, ord, oss, ovanfor, ovenfor, over, overalt, på, påverkar, påvirker, per, plassert, pleiar, pleier, plus, potensielt, primært, prøvde, prøve, prøver, q, que, r, ramma, raskt, raude, ref, refs, relativt, resultat, resultater, resulterande, resulterende, røde, rundt, s, sa, så, særleg, særlig, saman, same, samme, sammen, samsvar, samtidig, sånn, sannsynleg, sannsynlegvis, sannsynlig, sannsynligvis, sant, se, seg, seia, seier, seinare, seinere, seks, seksjon, sekund, selv, selve, sendt, ser, setja, sett, sette, si, sida, sidan, side, siden, sider, sier, sikker, sikkert, sin, sist, siste, sistnemnde, sistnevnte, sjå, sjølv, sjølve, sju, skal, skjer, skjønt, skulle, slekt, slik, slutt, snart, snill, som, spesielt, spesifisera, spesifisere, spesifisert, spør, spørja, spørre, sprang, springa, stad, staden, stader, stades, stand, sted, steder, sterkt, stolt, stoppa, stoppe, stor, sup, synes, syntes, syv, t, ta, tak, takk, takka, takke, tall, tar, tatt, te, tek, teke, tidlegare, tidligere, til, tilbake, tilgjengeleg, tilgjengelig, tillegg, tilstede, tilstrekkeleg, tilstrekkelig, tilsvarende, tilsvarende, tilsynelatande, tilsynelatende, tips, to, tok, treng, trenga, trengje, trenger, tro, tru, ts, tusen, tvers, tykkjer, tykt, u, uansett, umiddelbar, un, under, unntatt, ups, utan, utanfor, ute, utelate, utelatt, uten, utenfor, v, vær, være, vært, var, vår, vårt, ved, veg, vei, veit, vel, veldig, velkommen, vellykka, vellykket, vær, vera, verda, verden, verdi, verkeleg, vesentleg, vesentlig, vet, vi, via, vidare, videre, viktig, vil, vilja, ville, villig, virke, virkelig, virker, viser, vises, viss, vist, viste, vol, vore, vs, w, www, x, y, z, å, åh, åleine, åpenbart, årsaka, årsaken, åtte, åtti, avstå

Note: This table lists the Norwegian translations of A.5. The lists contains both the ‘bokmål’ and the ‘nynorsk’ translations. The words are lemmatized using the Oslo-Bergen tagger (Johannessen et al., 2012).

Table A.7: LSS evaluation

Seed words for each pole	Correlation	Accuracy	Precision	Recall	F1
2	0.996	0.592	0.657	0.709	0.682
5	0.955	0.595	0.657	0.718	0.686
10	0.974	0.597	0.658	0.727	0.691
25	0.982	0.618	0.668	0.762	0.712
50	0.996	0.613	0.664	0.768	0.712
75	0.998	0.613	0.664	0.767	0.712
100	0.997	0.610	0.662	0.766	0.710
200	0.998	0.613	0.664	0.767	0.712

Note: This table presents five performance measures to evaluate the LSS algorithm's ability to classify speeches by political bloc (right/left) when varying the number of seed words for each pole. The first column (correlation) reports correlation between the LSS measure and MPs self-reported left-right placement in surveys. The other four columns report standard performance measures to evaluate the predictive performance of the LSS algorithm. Accuracy measures the model's ability to correctly predict observations as a fraction of total observations $(TP+TN)/(TP+FP+FN+TN)$. Precision denotes the ratio of correctly predicted positives to all predicted positives $(TP/(TP+FP))$ - 'Out of all speeches that were predicted to be delivered by a right-leaning legislator, how many were truly given by a right-leaning MP?'. Recall indicates the number of true positives to all observations in the class $(TP/(TP+FN))$ - 'Of all speeches delivered by a right-leaning MP, how many did we label correctly?'. F1 measures performance by creating a weighted average of recall and precision, and hence takes into account both false positives and false negatives $(2(Recall*Precision)/(Recall+Precision))$. It does not have the same interpretability as the other measures, but has advantages when dealing with uneven class distributions. TP=True Positives, FP=False Positives, TN=True Negatives, FN=False Negatives.*

Table A.8: Legislative efforts - Difference-in-differences estimates

Effort index				
	(1)	(2)	(3)	(4)
Lame Duck	-0.126 (0.059)	-0.109 (0.051)	-0.117 (0.054)	-0.136 (0.059)
Mean dep.var	0	0	0	0
SD dep. var	1.939	1.939	1.939	1.939
Observations	443256	443256	443256	443256
MP x Term FE	YES	YES	YES	YES
Date FE	YES	NO	NO	YES
Date x Party FE	NO	YES	NO	NO
Date x District FE	NO	NO	YES	NO
MP trends	NO	NO	NO	YES
Cluster	MP	MP	MP	MP

Note: This table shows the difference-in-differences estimates for an effort index consisting of voting, speaking and sponsoring bills in Parliament. Voting, speaking and sponsoring bills are dummy variables taking the value one if an MP has conducted the following activities in Parliament on a given day 1) voted in Parliament, or 2) given a speech in Parliament, or 3) sponsored a bill. The index is a simple average of the (normalized) three effort measures. Standard errors clustered at the MP level are in parentheses.