

APPENDIX 1: GAME-THEORETIC MODEL. SOLUTIONS THROUGH BACKWARD INDUCTION

Depending on the different values of the various parameters (π , ε , v , ω) the game presents four alternative upshots: U1 (silent acceptance of the unfair deal), U2 (compromise), U3 (compliance after the whip), U4 (breakaway). However, only three outcomes (U1, U2, U4) are stable equilibria and they can be found by backward induction.

1) The minority faction (F) chooses to accept the unfair proposal bringing the game to the outcome U1 under two scenarios:

a) when $\varepsilon > \pi$, provided that: $\pi - \varepsilon < 0 - v$

Last stage: when $\varepsilon > \pi$, provided that: $\pi - \varepsilon < 0 - v$, the minority's reward after exit is lower compared to the payoff gained when choosing comply (given that: $\pi - \varepsilon < 0 - v$). Then F will choose to comply.

Second stage: the payoff of the leader (L) for negotiating a compromise, $(1 - \alpha) * \mu - v$, is always lower than the reward of playing whip ($\mu - v$) as we know that the minority will be prone to comply in the last stage. Assuming that μ is equal to 1, for any value of $\alpha \in (0, .5)$ we observe that: $1 - \alpha - v < 1 - v$. In view of that, L would always choose to whip the minority faction when the game reaches this stage.

First stage: being aware that the expression of voice will lead the game to U3, in the first stage F would rather play accept because its payoff in U1 (which is 0) is higher than the gain available after compliance ($0 - v$).

Therefore, when $\varepsilon > \pi$, provided that: $\pi - \varepsilon < 0 - v$, the equilibrium is (accept, comply; whip) and the payoffs will be $(0; \mu)$. Note that the ratio between ω and v then does not alter the dynamics of the game under this scenario so that the conditions described above always lead to the equilibrium U1, no matter whether $\omega > v$ or vice versa.

b) when $\varepsilon > \pi$ and $\pi - \varepsilon > 0 - v$, tough only if $\omega < v$

Last stage: the minority's payoff due to exit is greater than its reward after comply insofar as $\pi - \varepsilon > 0 - v$. Then F will always play exit.

Second stage: given that the minority would choose exit in the last stage, L faces the choice between playing whip, which leads to the outcome U4, or compromise that provides the payoff displayed in U2. For any $\omega < v$ we observe that $(1 - \alpha)*\mu - \omega > (1 - \alpha)*\mu - v$; as a consequence the leader's reward is larger when playing whip, as this move leads to the outcome U4, instead of looking for a compromise.

First stage: from this backward induction we discover that, at this stage, F has to compare its payment in U1 (when it plays accept) and U4 (which will be the consequence of choosing voice). Given that $\varepsilon > \pi$ and therefore $\pi - \varepsilon < 0$, the minority faction would rather play accept.

Therefore, when $\varepsilon > \pi$ and $\pi - \varepsilon > 0 - v$, provided that $\omega < v$, the equilibrium will be (accept, exit; whip) and the payoffs are $(0; \mu)$.

2) The minority faction decides to voice and the leader will negotiate a compromise leading to the outcome U2 when $\pi - \varepsilon > 0 - v$, tough only if $\omega > v$.

Last stage: Given that: $\pi - \varepsilon > 0 - v$, playing exit guarantees to the minority a reward larger than that provided by choosing comply. Accordingly, F will play exit in the last stage.

Second stage: as long as the minority would choose exit in the last stage, L compares the payoff of playing whip (which opens the route to the outcome U4) or compromise that leads straightly to the outcome U2. For any $\omega > v$ we notice that $(1 - \alpha)*\mu - v > (1 - \alpha)*\mu - \omega$; given these payoffs, the leader is more willing to negotiate a compromise instead of enacting the whip.

First stage: in the first stage F faces the choice between accept and voice, which allows to reach U2. As we assumed that $\mu = 1$, and $v < \alpha$, we can easily verify that $\alpha*\mu - v > 0$. In view of that, the minority faction finds it convenient to play voice instead of accept.

Therefore, when $\pi - \varepsilon > 0 - v$ and $\omega > v$, the equilibrium is (voice, exit; compromise) and the payoffs are $(\alpha*\mu - v; (1 - \alpha)*\mu - v)$.

3) The minority plays voice in the first stage, the leader's reply is whip and, as a consequence, the minority decides to exit in the last stage bringing the game to the outcome U4, if and only if $\varepsilon < \pi$ and $\omega < v$

Last stage: when $\varepsilon < \pi$, we observe that $\pi - \varepsilon > 0 - v$. For that reason, the minority would rather play exit, which gives back a larger payoff compared to comply.

Second stage: the leader has to choose between compromise (U2) and whip, which ultimately leads to U4. Given that $\omega < v$, and accordingly $(1 - \alpha)*\mu - \omega > (1 - \alpha)*\mu - v$, L discovers that it is more profitable to play whip instead of compromise.

First stage: F has to choose between the payoff available in U1 and U4. As far as $\varepsilon < \pi$, we notice that $\pi - \varepsilon > 0$ and consequently the minority will pick up the voice option.

Therefore, when $\varepsilon < \pi$ and $\omega < v$, the equilibrium is (voice, exit; whip) and the payoffs are $(\pi - \varepsilon; (1 - \alpha)*\mu - \omega)$.

APPENDIX 2: ESTIMATES OF THE POLICY POSITIONS OF PARTY FACTIONS
ON THE LEFT-RIGHT DIMENSION WITH 90% CONFIDENCE INTERVAL

Table A2 List of Factions and Policy Positions, by Congress

	Left-right position	90% Confidence interval	
AN 2002			
D-Destra	1.459044	1.485683	1.432405
Destra Sociale	1.093735	1.144662	1.042807
Nuova Alleanza	1.054985	1.094671	1.015299
Destra Protagonista	1.047826	1.093606	1.002046
DC 1954			
Iniziativa Democratica	-0.10293	0.140836	-0.3467
Forze Sociali	-0.25895	-0.07443	-0.44347
DC 1959			
Primavera	0.044498	0.202993	-0.114
Centrismo Popolare	-0.4425	-0.33624	-0.54876
Nuove Cronache	-0.49352	-0.31728	-0.66976
Dorotei	-0.56809	-0.46694	-0.66923
Base	-0.67718	-0.55135	-0.80301
DC 1962			
Centrismo Popolare	0.641803	0.698768	0.584839
Linea Moro-Fanfani	0.210654	0.28651	0.134799
DC 1964			
Impegno Democratico (Dorotei)	0.316847	0.487083	0.146611
Centrismo Popolare	-0.23121	-0.10856	-0.35385
Forze Nuove	-0.32324	-0.21761	-0.42886
Nuove Cronache	-0.35662	-0.23211	-0.48113
DC 1967			
Pontieri (Taviani)	0.373126	0.518119	0.228132
Base	-0.07593	0.007413	-0.15927
Impegno Democratico (Dorotei)	-0.13272	0.019215	-0.28465
DC 1969			
Forze Libere	1.16876	1.242064	1.095455
Ponte	0.593023	0.698929	0.487116
Impegno Democratico (Dorotei)	0.296835	0.393225	0.200444
Nuove Cronache	0.278839	0.368514	0.189163
Morotei	0.041232	0.140069	-0.0576
Base e Forze Nuove	-0.05006	0.005196	-0.10532
Nuova Sinistra	-0.072	0.026217	-0.17021
DC 1980			
Forze Nuove	0.366017	0.481962	0.250073
Iniziativa Popolare (Dorotei)	0.04033	0.143144	-0.06248
Nuove Cronache	-0.14284	0.008392	-0.29407

Area Zac e Andreottiani	-0.22031	-0.10931	-0.33131
Amici di Prandini	-0.43351	-0.25608	-0.61095
DC 1982			
PAF (Piccolo-Andreotti-Fanfani)	1.864879	1.888122	1.841637
Area De Mita	1.236874	1.285403	1.188345
Area Forlani	0.985618	1.07242	0.898817
DC 1984			
Impegno Riformista (Scotti) e Forze Nuove	1.363929	1.397582	1.330275
De Mita	0.907559	1.013135	0.801983
DC 1986			
Andreottiani	1.991661	2.01807	1.965252
De Mita	1.156328	1.229845	1.082811
Forze Nuove	1.076898	1.115697	1.038099
DC 1989			
Nuove Cronache	1.269407	1.326826	1.211988
Primavera	0.684833	0.817315	0.552351
Forze Nuove	0.460728	0.516572	0.404883
Area del Confronto (Base)	0.089685	0.169675	0.009695
Azione Popolare (Dorotei)	-0.1364	-0.07538	-0.19742
DS 2000			
Veltroniani	-0.34151	-0.23741	-0.4456
Sinistra Ds	-0.42636	-0.33845	-0.51426
DS 2001			
Libertà Eguale (Liberal Ds)	0.043891	0.088681	-0.0009
Riformisti (Fassino)	-0.16876	-0.12746	-0.21005
Correntone (Sinistra Ds)	-0.25832	-0.19951	-0.31714
DS 2005			
Ecologisti Ds	0.541943	0.578301	0.505586
Riformisti (Fassino)	0.218535	0.257227	0.179843
Sinistra Ds per il Socialismo	-0.22081	-0.17017	-0.27145
Correntone (Sinistra Ds)	-0.22448	-0.16613	-0.28283
DS 2007			
Riformisti (Fassino)	0.299215	0.349348	0.249082
Socialisti ed Europei	0.031947	0.08301	-0.01912
Correntone (Sinistra Ds)	-0.09264	-0.01597	-0.16931
FV 2008			
Progetto Ecologista Federalista	0.984066	1.066869	0.901263
Ecologisti e Riformisti	0.903524	0.979039	0.828008
Futuro	0.153346	0.22287	0.083821
FV 2009			
Futuro	0.649128	0.717027	0.581229
Nuovi Verdi Nuovo Ulivo	0.56409	0.690028	0.438152
Ecologisti per la Costituente	0.320015	0.435168	0.204862
MSI 1965			
Sinistra	1.098466	1.194647	1.002284

Spiritualisti	0.937569	1.043872	0.831265
Unità	0.508837	0.642314	0.37536
MSI 1977			
Linea Futura	1.843722	1.877652	1.809792
Destra Popolare	1.434709	1.494799	1.374619
Unità nella Chiarezza	1.181517	1.248977	1.114057
MSI 1979			
Spazio Nuovo	1.751017	1.766837	1.735197
Continuare e Rinnovare	1.502459	1.52852	1.476397
MSI 1987			
Andare Oltre	1.699732	1.723975	1.67549
Destra in Movimento	1.654327	1.677449	1.631205
Impegno Unitario	1.557026	1.610413	1.503639
Proposta Italia	1.466879	1.499151	1.434608
Nuove Prospettive	1.461168	1.499067	1.423269
Destra Italiana	1.349408	1.404746	1.294071
MSI 1990			
Andare Oltre	0.73048	0.775861	0.685099
Destra in Movimento	0.652029	0.678661	0.625396
Nuove Prospettive	0.606023	0.651643	0.560404
Impegno Unitario	0.493075	0.555647	0.430502
Proposta Italia	0.464933	0.507376	0.422491
Destra Italiana	0.415289	0.459649	0.37093
NPSI 2003			
Maggioranza (De Michelis)	0.468652	0.518261	0.419044
Socialismo e Libertà	0.409608	0.513195	0.30602
NPSI 2005			
Unità e Rinnovamento	0.364814	0.410932	0.318697
Maggioranza (De Michelis)	0.121822	0.180006	0.063638
PCI 1989			
Riformisti (Occhetto)	-0.66631	-0.62925	-0.70337
Cossuttiani	-1.24124	-1.20618	-1.27629
PCI 1990			
Riformisti (Occhetto)	-0.93862	-0.88885	-0.9884
Rinnovamento (Ingrao)	-1.04965	-0.99408	-1.10522
Cossuttiani	-1.39972	-1.34384	-1.45561
PCI 1991			
Antagonisti e Riformatori	-0.83808	-0.76843	-0.90773
Per il Partito Democratico della Sinistra	-1.03121	-0.96029	-1.10212
Per la Rifondazione Comunista	-1.12998	-1.07255	-1.18742
PD 2009			
Cambia l'Italia (Marino)	0.895547	0.932423	0.858671
Area Democratica (Franceschini)	0.890285	0.922231	0.858339
Riformisti e Democratici (Bersani)	0.588933	0.642131	0.535735
PDA 1946			

Maggioranza (Codignola)	-0.5467	-0.38866	-0.70475
Democrazia Repubblicana	-0.9333	-0.54904	-1.31756
Autonomisti (Lombardi)	-1.3212	-0.88709	-1.75532
PDCI 2008			
Unire la Sinistra	-0.28469	-0.23255	-0.33683
Comunisti e Comuniste	-0.99195	-0.94852	-1.03538
PLI 1966			
Minoranza	-0.05876	0.102814	-0.22034
Maggioranza	-0.06283	0.09192	-0.21757
PLI 1969			
Italia Liberale	1.449138	1.479245	1.419031
Presenza	0.954442	0.998675	0.91021
Libertà Nuova	0.497743	0.582455	0.41303
PLI 1971			
Presenza	1.13387	1.212801	1.05494
Rinnovamento	1.098191	1.139679	1.056702
Italia Liberale	0.953366	1.027506	0.879225
Libertà Nuova	0.265224	0.433559	0.09689
PLI 1973			
Italia Liberale	1.456425	1.500153	1.412698
Rinnovamento	1.374896	1.409857	1.339935
Presenza	0.677456	0.80292	0.551992
Libertà Nuova	0.056205	0.226116	-0.11371
PLI 1974			
Italia Liberale	1.382144	1.452421	1.311866
Rinnovamento	1.162102	1.203217	1.120987
Concordia	0.7087	0.864972	0.552428
Libertà Nuova	0.307407	0.44167	0.173144
Unità Liberale	0.062677	0.371199	-0.24584
Presenza	-0.20775	-0.03132	-0.38418
PLI 1976			
Autonomia Liberale	1.135356	1.235552	1.035161
Democrazia Liberale e Libertà Nuova	0.780794	0.88382	0.677767
PLI 1979			
Autonomia Liberale	1.025126	1.119371	0.93088
Democrazia Liberale	0.644463	0.79558	0.493347
PLI 1981			
Nuove Iniziative	1.407666	1.48469	1.330642
Autonomia Liberale	1.222621	1.336616	1.108626
Democrazia Liberale	0.9578	1.03362	0.88198
PLI 1984			
Nuove Iniziative	1.687732	1.732815	1.642649
Autonomia Liberale	1.3084	1.348183	1.268618
Democrazia Liberale	0.913655	0.989825	0.837485
PLI 1986			

Nuova Democrazia Liberale	1.267091	1.393315	1.140867
Politica delle Libertà	1.242215	1.476801	1.007628
PLI 1988			
Progetto Liberale	1.545205	1.620091	1.47032
Nuova Democrazia Liberale	1.419383	1.461151	1.377615
Politica delle Libertà	1.213491	1.303871	1.123111
PRC 1996			
Bertinottiani e Cossuttiani	-1.65048	-1.60896	-1.69201
Progetto Comunista	-1.69118	-1.65867	-1.72369
PRC 1998			
Pontieri	-0.73156	-0.48376	-0.97936
Cossuttiani	-1.12543	-0.9816	-1.26926
Bertinottiani	-1.4339	-1.31912	-1.54868
Progetto Comunista	-1.90545	-1.83168	-1.97922
PRC 1999			
Bertinottiani	-1.3623	-1.33076	-1.39383
Progetto Comunista	-1.94549	-1.92768	-1.9633
PRC 2002			
Progetto Comunista	-2.02456	-2.01159	-2.03752
Bertinottiani	-2.12725	-2.11631	-2.13819
PRC 2005			
Essere Comunisti	-1.30026	-1.26219	-1.33834
Bertinottiani	-1.41344	-1.34735	-1.47953
Sinistra Critica	-1.49916	-1.45979	-1.53853
Falce e Martello	-1.60312	-1.56711	-1.63913
Progetto Comunista	-1.90193	-1.87638	-1.92748
PRC 2008			
Pacifisti	-0.9056	-0.84357	-0.96763
Rifondazione Per la Sinistra	-1.05695	-1.01694	-1.09696
Rifondazione in Movimento	-1.28998	-1.25182	-1.32814
Falce e Martello	-1.36915	-1.32713	-1.41117
L'Ernesto	-1.57714	-1.53897	-1.6153
PRI 1950			
Minoranza	-0.89741	-0.62686	-1.16795
Maggioranza	-1.2807	-0.97888	-1.58252
PRI 1952			
Maggioranza	-0.64111	-0.44822	-0.834
Sinistra Repubblicana	-1.42395	-1.17991	-1.66799
PRI 1954			
Sinistra Repubblicana	-1.03067	-0.82214	-1.23919
Maggioranza	-1.05419	-0.89071	-1.21767
PRI 1956			
Minoranza	-0.13007	0.102029	-0.36217
Maggioranza	-0.44984	-0.29731	-0.60237

PRI 1958			
Unione Democratica	-0.62423	-0.4385	-0.80995
Sinistra Repubblicana	-1.12898	-0.92233	-1.33563
Maggioranza	-1.17106	-1.00894	-1.33319
PRI 1960			
Maggioranza	-0.75133	-0.59502	-0.90764
Unione Democratica	-0.89322	-0.68476	-1.10169
Sinistra Repubblicana	-0.90833	-0.70723	-1.10943
PRI 1965			
Destra	0.059085	0.188346	-0.07018
Maggioranza	-0.57298	-0.38728	-0.75868
PRI 1968			
Maggioranza	-0.80026	-0.64348	-0.95705
Minoranza	-0.83361	-0.69012	-0.9771
PRI 1984			
Maggioranza	0.582068	0.698544	0.465592
Sinistra Repubblicana	0.400917	0.55332	0.248514
PRI 1987			
Sinistra Repubblicana	1.016489	1.132776	0.900202
Base	0.314384	0.418078	0.21069
Maggioranza	0.094476	0.230134	-0.04118
PRI 1989			
Sinistra Repubblicana	0.217558	0.405171	0.029944
Maggioranza	0.128819	0.304511	-0.04687
PS 2008			
Unità Identità Autonomia e Sinistra Socialista	0.477024	0.524201	0.429847
Prima la Politica	0.247721	0.33353	0.161911
Un Nuovo Inizio	0.06582	0.153484	-0.02184
PSDI (PSLI) 1948			
Maggioranza	-0.88527	-0.76772	-1.00282
Sinistra	-1.42855	-1.28936	-1.56774
PSDI 1957			
Democrazia Socialista	-0.93143	-0.80036	-1.0625
Autonomia Socialista	-1.07786	-0.99976	-1.15595
Fedeltà Socialista	-1.16277	-1.0641	-1.26145
Unità Socialista	-1.22229	-1.1284	-1.31618
PSDI 1959			
Autonomia e Unità Socialista	-0.70292	-0.60252	-0.80333
Democrazia Socialista	-0.78663	-0.64299	-0.93026
Rinnovamento Socialista	-0.79571	-0.67784	-0.91358
Centrosinistra	-0.93436	-0.88324	-0.98548
PSDI 1962			
Iniziativa Socialdemocratica	-0.4892	-0.33965	-0.63875
Centrosinistra	-1.007	-0.94737	-1.06663
Rinnovamento Autonomia e Unità Socialista	-1.00984	-0.95408	-1.0656

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PSDI 1974			
Democrazia Socialista	0.130791	0.191825	0.069756
Rinnovamento	-0.02612	0.200245	-0.25249
Maggioranza	-0.24421	-0.09261	-0.39582
PSDI 1976			
Socialismo Democratico	0.058287	0.306575	-0.19
Sinistra Socialdemocratica	-0.56642	-0.36448	-0.76837
PSDI 1982			
Socialismo Democratico	1.086165	1.114666	1.057663
Sinistra Socialdemocratica	0.777116	0.819669	0.734563
Sinistra Riformista	0.529498	0.593854	0.465142
PSDI 1987			
Prospettiva Socialista Democratica	1.078622	1.150074	1.00717
Iniziativa Socialdemocratica	0.458467	0.542114	0.374821
PSDI 1989			
Autonomia Socialdemocratica	0.282067	0.352475	0.21166
Iniziativa Socialista	-0.63268	-0.50124	-0.76413
PSI 1946			
Iniziativa Socialista	-1.22752	-1.06759	-1.38746
Critica Sociale	-1.28284	-1.11821	-1.44746
Base (Sinistra)	-1.40143	-1.21991	-1.58295
PSI 1947			
Concentrazione Socialista (Critica Sociale)	-0.93963	-0.80524	-1.07403
Sinistra	-1.25024	-1.12735	-1.37314
Iniziativa Socialista	-1.48961	-1.3982	-1.58103
PSI 1948 (Jan)			
Autonomisti	-1.16378	-1.00297	-1.32459
Fronte	-1.44416	-1.32573	-1.5626
Liste Separate	-1.45709	-1.34128	-1.5729
PSI 1948 (Jul)			
Per il Socialismo	-1.15795	-1.06402	-1.25188
Riscossa Socialista	-1.47544	-1.39676	-1.55412
Sinistra	-1.5952	-1.52837	-1.66203
PSI 1949			
Per il Socialismo	-1.3833	-1.29107	-1.47554
Per il Partito e la Classe	-1.42129	-1.35015	-1.49243
Sinistra	-1.86065	-1.81457	-1.90673
PSI 1959			
Alternativa Democratica	-0.9693	-0.92657	-1.01204
Autonomia	-1.35067	-1.32024	-1.38111
Sinistra	-1.52821	-1.50125	-1.55517
PSI 1961			
Alternativa Democratica	-1.17569	-1.14476	-1.20662
Autonomia	-1.34419	-1.29979	-1.38859
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Sinistra	-1.38606	-1.35805	-1.41406
PSI 1963			
Autonomia	-1.13249	-1.10353	-1.16146
Sinistra	-1.43178	-1.40004	-1.46352
PSI 1965			
Autonomia	-0.78757	-0.7169	-0.85825
Sinistra Socialista	-0.99181	-0.93629	-1.04733
PSI (PSU) 1968			
Rinnovamento Socialista	-0.25559	-0.17619	-0.335
Autonomia	-0.52009	-0.45302	-0.58717
Riscossa e Unità Socialista	-0.65095	-0.57881	-0.72309
Impegno Socialista	-0.71212	-0.63196	-0.79228
Sinistra Socialista	-0.93808	-0.87505	-1.0011
PSI 1978			
Riformisti (Craxi)	0.326119	0.360212	0.292027
Sinistra per l'Alternativa	-0.07566	-0.00062	-0.15069
Presenza Socialista	-0.33449	-0.2422	-0.42678
Unità e Autonomia per l'Alternativa	-0.58677	-0.50828	-0.66526
PSI 1981			
Riformisti (Craxi)	0.470275	0.501876	0.438675
Sinistra per l'Alternativa	-0.01699	0.051091	-0.08507
Presenza Socialista	-0.26096	-0.19185	-0.33007
Sinistra Socialista	-0.38106	-0.32356	-0.43857
PSIUP 1972			
Per la Confluenza nel PSI	-1.18405	-1.12556	-1.24253
Continuità e Rinnovamento Nuovo PSIUP	-1.20445	-1.14676	-1.26214
Per la Confluenza nel PCI	-1.4575	-1.41363	-1.50137
UDC 2007			
Popolari Liberali	1.233613	1.290021	1.177204
Maggioranza	0.858187	0.885997	0.830376

APPENDIX 3: ROBUSTNESS TESTS

The robustness of the model has been tested in several ways. The main concerns could be related to temporal dependence, the influence of particular observations, inclusion of other control variables, or the fact that the dependent variable is a rare event (i.e., the share of positive outcome is very low). To test these aspects I run 7 different analyses but none of them seem to alter the main findings of my work. The results are shown in table A3 and discussed below.

The baseline model (1) here is the third model presented in the corpus of the article (see model 3, table 3 therein). Model 2 and 3 control for temporal dependence. The likelihood of a breakaway a time t could be affected by the occurrence of another party fissions at time $t - x$. In model 2 I test serial correlation through a set of temporal dummy variables for each period or ‘spell’. Each dummy accounts for the amount of time elapsed since the last party fission during the same ‘congress period’. Instead of estimating coefficients on each temporal dummy, in model 3 I adopt another technique proposed by Beck, Katz, and Tucker (BKT).¹ This technique relies on a temporal count variable (*Spell Variable*), which counts the time periods since the last positive event (*Fission*) within each ‘congress period’, and a set of variables (‘cubic splines’) that act as a smoothing mechanism for the temporal count variable. However, controlling for serial correlation does not alter the main findings and I do not find any significant effect due to temporal dependence.²

¹ See Beck, Katz, and Tucker 1998.

² This holds when measuring temporal dependence within each party congress as well across congresses.

Model 4 is based on a rare events logistic regression ('relogit').³ This corrects any potential bias that occur when explaining rare outcomes (i.e., when there are many more zeros than ones like in this case). The 'relogit' model does not alter the results.

In model 5 and 6 I consider the effect of peculiar observations. Approximately 25 per cent of the observations are related to the Socialist family (PSDI and PSI) and one-third of the breakaways involve these two parties. Then, in model 5 I include a dummy variable for this political family (*Socialist Party*). This variable is not significant and does not affect any of the other findings. Model 6 controls for the impact of parties with few observations. The dataset is unbalanced as there are more observations for some parties (e.g., thirty-eight PSI factions), but only two motions for the Party of the Italian Communists (PDCI) and the Union of Christian and Centre Democrats (UDC). However, excluding these two parties from the analysis does not alter the results.⁴

Finally, I also controlled for the impact of the electoral cycle (*Years Before Elections*), in model 7, and party left-right position (*Party Position*), in model 8. *Years Before Elections* records the number of years remaining before the next general elections, while *Party Position* corresponds to the weighted mean of all factions. These two variables are not significant and do not affect my findings.

³ Tomz, King, and Zeng 2003.

⁴ When considering only parties with a large number of observations (i.e., AN, DC, DS, MSI, PLI, PRC, PRI, PSDI, and PSI) the total number of cases drops to 727 but this does not affect the main findings. Excluding parties with higher rate of missing cases (PD, PDSI, and Greens) does not alter the results.

Table A3 Logit Regression of Faction Breakaway

Parameters	DV: <i>Fission</i>							
	(1) Baseline	(2) Temporal dummies ^a	(3) BKT splines w/ random effects ^b	(4) Rare events logistic ^c	(5) Socialist parties	(6) Omit parties w/ few obs.	(7) Electoral cycle	(8) Party position
Faction side								
<i>Distance</i>	2.480*** (0.769)	2.523*** (0.784)	2.747*** (1.040)	2.412*** (0.760)	3.038*** (0.987)	2.230*** (0.793)	2.477*** (0.766)	2.536*** (0.752)
<i>Share of Ministers</i>	-4.551* (2.664)	-4.330* (2.529)	-4.147* (2.469)	-4.387* (2.630)	-4.423* (2.545)	-4.445* (2.581)	-4.589* (2.713)	-4.691* (2.724)
<i>Disproportionality</i>	-0.378* (0.200)	-0.509* (0.275)	-0.401** (0.174)	-0.340* (0.198)	-0.355* (0.191)	-0.348* (0.201)	-0.373* (0.198)	-0.417 [†] (0.254)
<i>Closed List</i>	2.584*** (0.739)	3.163*** (0.906)	2.604*** (0.796)	2.364*** (0.730)	3.370*** (0.992)	2.581*** (0.825)	2.574*** (0.747)	2.838*** (0.815)
<i>Party Age</i>	-0.071** (0.033)	-0.064** (0.030)	-0.063*** (0.024)	-0.069** (0.032)	-0.066** (0.033)	-0.066* (0.034)	-0.070** (0.032)	-0.055 [†] (0.035)
Leader side								
<i>Democratic Centralism</i>	2.453*** (0.650)	2.471** (0.959)	2.106 [†] (1.312)	2.352*** (0.642)	1.930*** (0.676)	3.133*** (0.958)	2.483*** (0.749)	1.875** (0.738)
<i>Ruling Party</i>	-7.732*** (2.875)	-7.049** (2.820)	-7.126** (3.474)	-6.799** (2.838)	-6.070* (3.299)	-8.484** (3.353)	-7.706*** (2.813)	-6.301** (2.955)
<i>Parliamentary Support</i>	-7.580* (4.584)	-7.945* (4.695)	-7.517 [†] (4.804)	-6.199 [†] (4.525)	-6.268 (5.487)	-8.949* (5.358)	-7.581* (4.550)	-5.421 (4.679)
<i>Ruling Party X Parliamentary Support</i>	14.580*** (5.490)	13.600** (5.559)	13.604** (6.463)	12.865** (5.420)	11.511* (6.374)	16.180** (6.556)	14.506*** (5.324)	11.719** (5.833)
<i>Time Dummy 1</i>		0.989 (1.491)						
<i>Time Dummy 2</i>		0.933 (1.604)						
<i>Time Dummy 3</i>		-0.582 (1.465)						
<i>Time Dummy 4</i>		0.316 (1.813)						
<i>Spell Variable</i>			-2.522 (434.655)					
<i>Spline(1)</i>			-1.605 (761.320)					
<i>Spline(2)</i>			-7.120 (2607.919)					
<i>Spline(3)</i>			9.256 (3706.484)					
<i>Socialist Party</i>					1.454 [†] (0.899)			
<i>Years Before Elections</i>							-0.023 (0.191)	
<i>Party Position</i>								0.494 [†] (0.342)
<i>Constant</i>	1.823 (2.726)	1.535 (3.021)	2.023 (2.539)	1.200 (2.691)	0.071 (3.558)	2.328 (2.899)	1.874 (2.891)	0.347 (2.716)
Observations	766	714	766	766	766	762	766	766
Log pseudolikelihood	-93.57	-89.66	-88.19		-90.97	-91.25	-93.55	-91.94

Note: Standard errors clustered by cabinet in each party congress are shown in parentheses.

Significance (two tailed): * 0.1; **0 .05; *** 0.01. [†]Indicates confidence intervals from 0.8 to 0.9.

^a Three dummy variables and 52 observations dropped due to outcomes being perfectly predicted.

^b Standard errors in parentheses.

^c Log pseudolikelihood not displayed because the rare events logistic regression is not a likelihood technique.

ADDITIONAL REFERENCES

Beck, Nathaniel, Jonathan Katz, and Richard Tucker. 1998. Taking Time Seriously: Time-Series-Cross-Section Analysis with a Binary Dependent Variable. *American Journal of Political Science* 42:1260-88.

Tomz, Michael, Gary King, and Langche Zeng. 2003. Relogit: rare events logistic regression. *Journal of Statistical Software* 8:246-7.