Online Appendix for

Inequality, Grievances, and Civil War

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NOTES ON DATA

The replication data for each empirical chapter are based on the same underlying list of ethnonational ethnic groups that are represented in the current version of the Ethnic Power Relations dataset, EPR-ETH (available through http://growup.ethz.ch; for the original version, see Cederman et al. 2010). Information on the location and spatial characteristics of ethnic groups were derived from the geo-coded Geo-EPR dataset (Wucherpfennig et al. 2011). We code conflict involvement by ethnic group in accordance with the UCDP/PRIO Armed Conflict Dataset (Gleditsch et al. 2012) with supplementary information from the Non-State Actor dataset (Cunningham, Gleditsch, and Salehyan 2009). Wucherpfennig et al. (2012) details the mapping between rebel organizations and EPR-ETH gruops. Accordingly, the main conflict models adopt an inclusive definition of civil war as any armed contestation between a state and an organized non-state actor over a clearly identifiable issue of incompatibility (a specific territory or aspects of governance) that results in at least 25 battle-related deaths in a calendar year. In some robustness models reported below, we apply a stricter definition of civil war. The group-level analyses in Chapters 4–6 and 8 focus specifically on ethnonational groups and their organizations, whereas the country-level analysis in Chapter 7 compares the role of political and economic inequalities across both ethnic and non-ethnic conflicts. We refer to the book for further information on operationalization of key variables and the original data for details on definitions, sources, and coding procedures.

CHAPTER 4

The models reported in Chapter 4 are estimated for the full post-World War II period, 1946–2009. The unit of analysis is the ethnic group year, including all politically relevant groups that either have access to central power through a formal system of power sharing (as senior or junior partner) or are excluded from power (thus being classified as powerless, discriminated, regional autonomy or separatist autonomy). Groups that enjoy monopoly or dominance on state power are dropped from the analysis as they by definition cannot rebel against themselves. We also drop years of ongoing civil war, as a group already involved in an armed conflict with the state cannot be at risk of another conflict outbreak.

In a first sensitivity test, we consider possible regional differences in baseline conflict risk (Table A4.1). In Model A4.1, we include dummies for five world regions, using the Western world (i.e., developed countries in North America, Western Europe, Oceania) as the reference category. The coefficient suggests that some regions indeed seem significantly different from the West. However, the results for political status and size of ethnic groups differ little from the reference Model 4.1. In Model 4.2, we drop Sub-Saharan Africa, which has the highest share of ethnic conflict and widespread ethnopolitical exclusion. Unsurprisingly, this modification reduces the effects of exclusion and group size but not by a dramatic extent. Moreover, Model A4.3 demonstrates that the size effect of excluded groups remains similar, even if the separate coefficient for exclusion is smaller compared to Model 4.3.

Table A4.1. Regions

	(A4.1) Regions	(A4.2) w/o SSA	(A4.3) w/o SSA
Excluded	1.1544**	0.8033**	0.2739
	(0.196)	(0.288)	(0.412)
Downgraded	1.4345**	1.5803**	1.6143**
	(0.296)	(0.393)	(0.391)
Rel. group size	0.9472**	0.7307	
	(0.335)	(0.443)	
Rel. group size (excl.)			1.3878**
			(0.466)
Rel. group size (incl.)			-0.8677
			(0.769)
Previous conflicts	0.6247**	0.6857**	0.6797**
	(0.081)	(0.088)	(0.081)
Country-level controls			
Ongoing conflict lag	0.5634	0.9424**	0.9374**
	(0.297)	(0.310)	(0.306)
GDP/capita	-0.1062	-0.1927	-0.1822
	(0.107)	(0.104)	(0.106)
Population	0.0030	-0.0215	-0.0107
	(0.100)	(0.097)	(0.090)
Eastern Europe	12.9347		
	(.)		
MENA	0.3476		
	(0.327)		
SSA	13.3096**		
	(0.830)		
Latin America	11.9950**		
	(0.773)		
Asia	0.2669		
	(0.383)		
Constant	-17.8545**	-3.5475**	-3.2729*
	(1.735)	(1.324)	(1.365)
Observations	28,302	20,717	20,717

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

Next, we restrict the dependent variable to outbreaks of conflicts causing at least 1,000 casualties (77 onsets, down from 216). Some have suggested that smaller conflicts are over-representated in ethnically diverse countries, and that the significant link between ethnicity and armed conflict may stem from low severity threshold in the UCDP/PRIO Armed Conflict Dataset (Fearon 2010). Models A4.4 and A4.5 shows no support for a small-conflict bias; politically excluded and recently downgraded ethnic groups are much more likely to be involved in a major war with the state and the risk is positively associated with the relative population size of excluded (but not included) groups.

Table A4.2. Major civil wars

	(A4.4) Major wars	(A4.5) Major wars
Excluded	1.3601**	0.9048
	(0.364)	(0.479)
Downgraded	1.9987**	2.0053**
	(0.348)	(0.349)
Rel. group size	1.5732**	
	(0.433)	
Rel. group size (excl.)		1.7937**
		(0.527)
Rel. group size (incl.)		0.4940
		(1.017)
Previous conflicts	0.4854**	0.4900**
	(0.150)	(0.147)
Country-level controls		
Ongoing conflict lag	0.2332	0.2326
	(0.428)	(0.427)
GDP/capita	-0.3649**	-0.3553**
	(0.106)	(0.107)
Population	-0.0135	-0.0035
	(0.085)	(0.084)
Constant	-4.1684**	-3.9413**
	(1.208)	(1.209)
Observations	28,171	28,171

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

In a third set of robustness tests, we separate between civil conflicts according to the stated objective of the rebel group: increased local self-determination or outright separation from the central state (territory) or change aspects of the political system or replace the government altogether (government). The results, reported in Models A4.6 and A4.7, indicate that horizontal political inequality is important for both separatist and revolutionary ethnic conflicts. The effects of downgraded and group size are particularly large for governmental conflict.

Table A4.3. Multinomial model

	(A4.6)		(A4.7)	
	Terr	Govt	Terr	Govt
Excluded	1.1285**	1.1301**	0.7355*	0.2758
	(0.257)	(0.368)	(0.325)	(0.617)
Downgraded	0.9185*	1.8791**	0.9205*	1.9091**
	(0.383)	(0.441)	(0.383)	(0.443)
Rel. group size	-0.3446	2.6973**		
	(0.495)	(0.506)		
Rel. group size (excl.)			-0.0047	3.2052**
			(0.465)	(0.686)
Rel. group size (incl.)			-2.1062	1.2298
			(1.356)	(1.106)
Previous conflicts	0.5861**	0.9365**	0.5852**	0.9606**
	(0.090)	(0.156)	(0.087)	(0.143)
Country-level controls				
Ongoing terr conflict lag	0.9739**	-0.5726	0.9727**	-0.5562
	(0.341)	(0.756)	(0.339)	(0.745)
Ongoing govt conflict lag	-0.6290	0.1076	-0.6566	0.0879
	(0.393)	(0.585)	(0.387)	(0.586)
GDP/capita	-0.1459	-0.3409**	-0.1382	-0.3178*
	(0.126)	(0.121)	(0.127)	(0.124)
Population	0.0687	-0.2264*	0.0732	-0.1970
	(0.100)	(0.107)	(0.096)	(0.108)
Constant	-5.0514**	-3.5381*	-4.7925**	-3.3670*
	(1.441)	(1.559)	(1.443)	(1.455)
Observations	28,302	28,302	28,302	28,302

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

In Models A4.8 and A4.9, we document the results disaggregated by conflict type for major civil wars only. Again, we find that political exclusion and downgrading are positively and significantly associated with group-level civil war onset, and the risk is particularly high for relatively populous excluded groups.

Table A4.4. Multinomial model, major civil wars

	(A4.8)		(A4.9)	
	Terr	Govt	Terr	Govt
Excluded	1.1607*	1.7574**	0.8492	0.8693
	(0.465)	(0.550)	(0.490)	(0.947)
Downgraded	1.6504**	2.2000**	1.6524**	2.2259**
	(0.538)	(0.558)	(0.537)	(0.560)
Rel. group size	0.8191	2.6018**		
	(0.423)	(0.702)		
Rel. group size (excl.)			1.0288*	2.9915**
			(0.459)	(0.904)
Rel. group size (incl.)			-0.0993	0.9164
			(1.028)	(1.781)
Previous conflicts	0.1931	1.0176**	0.1903	1.0527**
	(0.204)	(0.225)	(0.202)	(0.209)
Country-level controls				
Ongoing terr conflict lag	0.7476	-1.2032	0.7529	-1.1990
	(0.607)	(0.997)	(0.606)	(0.998)
Ongoing govt conflict lag	-0.5581	0.1986	-0.5767	0.1790
	(0.792)	(0.665)	(0.792)	(0.659)
GDP/capita	-0.1879	-0.5959**	-0.1796	-0.5839**
	(0.130)	(0.193)	(0.131)	(0.193)
Population	0.1004	-0.2229	0.1065	-0.1982
	(0.084)	(0.147)	(0.084)	(0.151)
Constant	-6.1032**	-4.5622*	-5.9454**	-4.1909*
	(1.379)	(2.105)	(1.382)	(2.060)
Observations	28,171	28,171	28,171	28,171

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

The statistical analysis presented in the book supports our claim that horizontal political inequality increases group-level conflict risk. However, the reverse could also be true, namely that armed conflict increases inequality between groups. To reduce possible bias from reverse causality, we estimate in Table A4.5 models for a reduced sample, dropping all group years following an initial conflict onset. We also run separate models for the standard conflict definition (A4.10) and severe conflicts only (A4.11). Again, the robustness test are consistent with the main results reported in Chapter 4.

Table A4.5. First onset by group

	(A4.10) Conflicts	(A4.11) Major wars
Excluded	1.2194**	1.2894**
	(0.244)	(0.393)
Downgraded	1.8200**	2.2288**
	(0.310)	(0.387)
Rel. group size	1.1545**	1.0247*
	(0.444)	(0.463)
Previous conflicts	0.8743**	0.5334
	(0.289)	(0.494)
Country-level controls		
GDP/capita	-0.2644**	-0.4054**
	(0.086)	(0.134)
Population	-0.0377	-0.0736
	(0.092)	(0.108)
Constant	-3.0363**	-2.6712
	(1.084)	(1.374)
Observations	25,997	25,921

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

As a further step to limit endogeneity, we present a static model (A4.12) that is based on the first country year (either 1946 or independence) as a way to explain conflict occurring in any year from 1946 through 2009 (note that conflict in the first year can be included since the EPR dataset records the power status at the beginning of the year). Based on this coding, we find that the effect of exclusion on conflict onset is still very strong and clearly separate from zero.

Table A4.6. Static estimation based on first observation by country

	(A4.12) Conflict
Excluded	0.9580**
	(0.335)
Rel. group size	1.4353**
	(0.542)
Country-level controls	
GDP/capita	-0.4276**
	(0.142)
Population	0.2563**
	(0.067)
Constant	-1.4718
	(1.243)
Observations	486

Robust standard errors in parentheses.
** p<0.01, * p<0.05.

We find evidence that fear of future status loss and possible exclusion may apply to junior partners in power-sharing arrangements (see p. 86, footnote 14). Based on a subset restricted to this category of ethnic groups, Model A4.12 introduces a variable that measures whether there was a downgrading event affecting another group in the country during the preceding five years. This indicator has a substantively and statistically significant effect on conflict probability.

Table A4.7. Fear of downgrading

	(A4.13)	
	Terr	Govt
Rel. group size	-1.4114	3.4916**
	(2.451)	(1.088)
Downgraded	-12.4813**	2.3057*
	(0.777)	(0.934)
Other downgrading last 5y	-0.8857	1.2856*
	(1.118)	(0.629)
Previous conflict	0.8214	0.6748
	(0.944)	(0.433)
Country-level controls		
Ongoing conflict lag	1.1259	-0.7819
	(1.006)	(1.414)
GDP/capita	-0.4241	-0.5174*
	(0.350)	(0.235)
Population	0.2369	-0.1973
	(0.179)	(0.265)
Constant	-3.6878	-1.9098
	(3.012)	(2.495)
Observations	5,775	5,775

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

CHAPTER 5

The data structure for Chapter 5 is similar to Chapter 4, using the ethnic group year as the unit of analysis. However, we limit the sample period to the post-Cold War period, 1991–2009, that is only the period after the date for the static group-level economic data (1990).

In the main models presented in Chapter 5 we excluded very small groups (population < 500K) from the analysis. This helps avoid possible extreme per capita income estimates arising from inaccurate population estimates of tiny groups and the coarse spatial resolution of the G-Econ economic activity data (see Cederman, Weidmann and Gleditsch 2011). However, this also drops a number of civil conflict onsets as well as many poor groups. This could bias the results in favor of the stated hypotheses. Table A5.1 replicates Models 5.2 and 5.3 and demonstrates that this does not seem to the case, as the significance and magnitude of the effects for our economic and political inequality indicators remain remarkably similar to the original results when all groups are included.

Table A5.1. Drop size restriction criterion

	(A5.1) All groups	(A5.2) All groups
Excluded	1.1865**	1.1726**
	(0.324)	(0.310)
Low ratio	0.5129**	
	(0.088)	
High ratio	-0.0170	
	(0.068)	
Excluded x low		0.5477**
		(0.071)
Excluded x high		-0.0509
		(0.088)
Included x low		-0.7777
		(0.838)
Included x high		0.9967
		(0.633)
Downgraded	1.7219**	1.6825**
	(0.403)	(0.411)
Rel. group size	0.6915	0.6657
	(0.501)	(0.492)
Previous conflicts	0.2406	0.2556
	(0.134)	(0.134)
Country-level controls		
Ongoing conflict lag	0.6026	0.5882
	(0.375)	(0.372)
GDP/capita	-0.2013*	-0.1972*
	(0.088)	(0.091)
Population	0.0625	0.0540
	(0.118)	(0.118)
Constant	-4.1607**	-4.3656**
	(1.185)	(1.606)
Observations	8,766	8,766

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

Next, we investigate the sensitivity of H5.I to civil conflict severity by limiting the conflict sample to outbreak of civil wars that generated at least 1,000 deaths. After -1990 we only have 17 conflict outbreaks with this higher threshold. The direct effect of the exclusion dummy is no longer significant at 5% level of uncertainty, but the point estimate remains consistent with the other models. The effects for relative poverty (Model A5.3) and the interaction with exclusion (A5.4) remain highly significant, and there are few notable differences for the other covariates.

Table A5.2. Major civil wars only

VARIABLES	(A5.3) Major wars	(A5.4) Major wars
Excluded	0.8991	1.0445
	(0.543)	(0.643)
Low ratio	1.0569**	
	(0.169)	
High ratio	1.2335	
	(0.692)	
Excluded x low		1.0324**
		(0.169)
Excluded x high		-2.8633
		(2.787)
Included x low		-0.5231
		(1.737)
Included x high		1.9308*
		(0.816)
Downgraded	2.4370**	2.3843**
	(0.550)	(0.575)
Rel. group size	-0.6689	-0.6944
	(0.876)	(0.877)
Previous conflicts	-0.1668	-0.1679
	(0.732)	(0.742)
Country-level controls		
Ongoing conflict lag	0.1174	0.1427
	(0.734)	(0.765)
GDP/capita	-0.8383*	-0.8069*
	(0.340)	(0.347)
Population	-0.5170*	-0.5253*
	(0.225)	(0.230)
Constant	3.8716	6.4323*
	(3.494)	(2.923)
Observations	5,335	5,335

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

Following the logic of the sensitivity tests of Chapter 4, we also inspect how economic inequality and its interaction with political exclusion relate to the two main conflict types. We find that relative poverty seems especially relevant for territorial conflict. In fact, Model A5.5 suggests that relative wealth at the group level also is associated with higher risk of governmental conflict (see also Cederman et al. 2011). Model and A5.6 further shows that the inequality effect only applies to excluded groups.

Table A5.3. Multinomial models

	(A5.5)		(A5.6)	
	Terr	Gov	Terr	Gov
Excluded	1.3893*	0.9684	1.1769*	1.0077
	(0.540)	(0.547)	(0.486)	(0.597)
Low ratio	0.4449**	-0.6610		
	(0.111)	(0.830)		
High ratio	0.8162*	-10.1367*		
	(0.367)	(4.645)		
Excluded x low			0.4986**	-0.6069
			(0.098)	(1.074)
Excluded x high			0.7142**	-12.9718*
			(0.269)	(5.990)
Included x low			-1.5516	-1.1006
			(1.709)	(1.427)
Included x high			0.9494	-6.8397
			(0.835)	(5.460)
Downgraded	0.4649	2.7779**	0.4571	2.7778**
	(1.157)	(0.519)	(1.152)	(0.523)
Rel. group size	-0.4426	-0.0642	-0.6118	-0.0967
	(0.879)	(0.863)	(0.830)	(0.848)
Previous conflicts	0.0869	0.6358**	0.0977	0.6279**
	(0.211)	(0.222)	(0.205)	(0.216)
Country-level controls				
Ongoing terr conflict lag	0.2713	-1.7244	0.2490	-1.7259
	(0.489)	(1.087)	(0.484)	(1.091)
Ongoing govt conflict lag	0.0311	1.2597	0.0486	1.2633
	(0.587)	(0.889)	(0.590)	(0.897)
GDP/capita	-0.1542	-0.5157*	-0.1509	-0.5133*
	(0.181)	(0.256)	(0.182)	(0.260)
Population	0.1265	-0.1924	0.1129	-0.1929
	(0.220)	(0.155)	(0.223)	(0.157)
Constant	-5.5637**	10.4065	-4.6104	21.1113**
	(2.089)	(5.745)	(3.156)	(7.967)
Observations	5,377		5,377	

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

In the next set of models (Tables A5.4 and A5.5), we drop the observations that deviate the most from the national mean income level in positive (Ijaw) and negative (Chechens) direction (Models A5.7 and A5.9) and all groups located in Russia (Models A5.8 and A5.10). At first sight, these restrictions suggest that the results appear to be sensitive to extreme cases. In Models A5.7-A5.8, the non-interacted effect of low ratio loses its significance, and the same thing applies to the interactive effect in Model A5.9. However, it can be easily shown that these weak results depend crucially on the restrictive case selection applied. If the restrictive sampling is dropped as was done in Table A5.1, all results come back (models not shown). Furthermore, using a mix of G-Econ data and survey data from Huber and his colleagues at Columbia University, the sensitivity to extreme cases also disappears. Moreover, if rare events logit is used, the "exclusion x low" effect in Model A5.9 becomes significant.

Table A5.4. Drop influential cases

	(A5.7) w/o outliers	(A5.8) w/o Russia	(A5.9) w/o outliers	(A5.10) w/o Russia
Excluded	1.2348**	1.2615**	1.4507**	1.1555**
	(0.370)	(0.373)	(0.495)	(0.358)
Low ratio	0.2365	0.2867		
	(0.234)	(0.251)		
High ratio	0.9985	0.6378		
	(1.222)	(0.351)		
Excluded x low			0.3441	0.5278*
			(0.225)	(0.211)
Excluded x high			0.0523	0.5528*
			(1.340)	(0.269)
Included x low			-0.6589	-1.1222
			(0.881)	(1.087)
Included x high			2.6426	0.8949
			(2.894)	(0.875)
Downgraded	2.0088**	1.9387**	1.9355**	1.9138**
	(0.461)	(0.451)	(0.497)	(0.451)
Rel. group size	-0.0380	-0.1002	-0.1268	-0.1643
	(0.657)	(0.671)	(0.665)	(0.647)
Previous conflicts	0.2050	0.2091	0.2173	0.2081
	(0.183)	(0.178)	(0.181)	(0.175)
Country-level controls				
Ongoing conflict lag	0.4168	0.5132	0.4103	0.5080
	(0.417)	(0.411)	(0.413)	(0.412)
GDP/capita	-0.3232*	-0.2763*	-0.3082*	-0.2803*
	(0.130)	(0.126)	(0.138)	(0.129)
Population	0.0147	-0.0036	-0.0250	-0.0201
	(0.169)	(0.169)	(0.195)	(0.176)
Constant	-3.1214*	-3.0951	-4.1738	-2.7645
	(1.434)	(1.585)	(3.039)	(2.005)
Observations	5,351	5,199	5,351	5,199

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

Multinomial versions of Models A5.9 and A5.10 indicate that the effects of both low and high ratio among excluded groups remain robust for territorial conflict, see Models A5.11 and A5.12.

Table A5.5. Multinomial models without influential cases

	(A5.11) w/o outliers		(A5.12) w/o Russia	
	Terr	Gov	Terr	Gov
Excluded	1.9448	1.0118	1.1947*	1.0075
	(1.043)	(0.597)	(0.488)	(0.598)
Excluded x low	0.4298*	-0.6073	0.4793**	-0.5941
	(0.201)	(1.088)	(0.185)	(1.138)
Excluded x high	0.7448	-12.9579*	0.7292**	-12.9041*
	(1.257)	(5.993)	(0.273)	(6.006)
Included x low	-0.3898	-1.0946	-1.5307	-1.1032
	(1.021)	(1.426)	(1.722)	(1.428)
Included x high	4.2358	-6.8193	0.9604	-6.8250
	(4.570)	(5.477)	(0.857)	(5.446)
Downgraded	0.3770	2.7770**	0.4535	2.7751**
	(1.248)	(0.524)	(1.152)	(0.523)
Rel. group size	-0.4667	-0.0950	-0.6034	-0.0987
	(0.850)	(0.848)	(0.837)	(0.848)
Previous conflicts	0.0859	0.6276**	0.0628	0.6241**
	(0.227)	(0.216)	(0.202)	(0.215)
Country-level controls				
Ongoing terr conflict lag	0.2082	-1.7246	0.4160	-1.7002
	(0.502)	(1.091)	(0.522)	(1.097)
Ongoing govt conflict lag	0.0380	1.2618	0.0740	1.2638
	(0.581)	(0.897)	(0.582)	(0.896)
GDP/capita	-0.1734	-0.5138*	-0.1123	-0.5090
	(0.193)	(0.260)	(0.195)	(0.261)
Population	0.0778	-0.1935	0.1087	-0.1918
	(0.284)	(0.157)	(0.221)	(0.157)
Constant	-9.0177	21.0875**	-4.8650	20.9779**
	(4.897)	(7.985)	(3.138)	(8.025)
Observations	5,351		5,199	

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

Finally, we display a model restricted to the former Soviet Union and Eastern Europe. As we claim on p. 115, these cases exhibit an especially strong effect for wealthy groups, but low ratio also has a pronounced impact on conflict onset.

Table A5.6. Eastern Europe and former Soviet republics

	(A5.13) Eastern Europe
Excluded	2.6851
	(1.427)
low ratio	2.5996**
	(0.345)
High ratio	9.0199**
	(2.230)
Rel. group size	-0.5483
	(2.207)
Previous conflicts	-0.1433
	(2.162)
Country-level controls	
Ongoing conflict lag	-0.8048
	(2.040)
GDP/capita	-1.9395**
	(0.591)
Population	-3.4262**
	(0.390)
Constant	27.4519**
	(7.242)
Observations	652

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

CHAPTER 6

As a first sensitivity test, we replace the EPR categories by the simpler aggregate exclusion dummy. In line with earlier models, this indicator is strongly related to conflict risk but the results for the remaining covariates are in line with those reported in Table 6.1.

Table A6.1. Excluded instead of EPR categories

	(A6.1)	(A6.2)	(A6.3)	(A6.4)
Rel. group size	1.0840**	0.9097**	0.9159**	0.8860*
	(0.336)	(0.339)	(0.345)	(0.366)
TEK group	0.1480	0.0240	-0.3179	
	(0.182)	(0.195)	(0.237)	
Rel. TEK size		0.3971	3.7098**	
		(0.338)	(1.361)	
Rel. TEK size, sq.			-3.5832**	
			(1.305)	
Excluded TEK Group				-0.0909
				(0.194)
Rel. TEK size (excl)				2.3906
				(1.510)
Rel. TEK size, sq. (excl)				-1.5936
				(1.661)
Included TEK group				-0.3897
				(0.249)
Rel. TEK size (incl)				4.6009**
				(1.626)
Rel. TEK size, sq. (incl)				-5.1266**
				(1.721)
Excluded	1.0912**	1.0348**	1.0638**	1.0391**
	(0.203)	(0.213)	(0.207)	(0.209)
Downgraded	1.4801**	1.4895**	1.4639**	1.4586**
	(0.300)	(0.300)	(0.298)	(0.294)
Previous conflicts	0.6596**	0.6624**	0.6368**	0.6290**
	(0.071)	(0.070)	(0.067)	(0.067)
Country-level controls				
Ongoing conflict lag	0.6132*	0.6188*	0.6523*	0.6672*
	(0.288)	(0.288)	(0.296)	(0.298)
GDP/capita	-0.2005*	-0.1985*	-0.2020*	-0.2083*
	(0.079)	(0.080)	(0.080)	(0.084)
Population	0.0159	0.0280	0.0454	0.0596
	(0.093)	(0.099)	(0.101)	(0.103)
Constant	-4.2447**	-4.3511**	-4.5544**	-4.6838**
	(1.088)	(1.158)	(1.180)	(1.199)
Observations	28,302	28,298	28,298	28,298

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

Next, we rerun Models 6.3 and 6.4 using the rare events logit estimator. The results, presented in Table A6.2, are near identical to those reported in Chapter 6.

Table A6.2. Relogit

	(A6.5)	(A6.6)
Rel. group size	1.2694**	1.1820**
	(0.340)	(0.366)
TEK group	-0.3991	
	(0.244)	
Rel. TEK size	4.1744**	
	(1.341)	
Rel. TEK size, sq.	-4.1354**	
	(1.361)	
Excluded TEK Group		-0.1857
		(0.224)
Rel. TEK size (excl)		-0.3203
		(0.285)
Rel. TEK size, sq. (excl)		3.3076*
		(1.687)
Included TEK group		-2.5394
		(1.984)
Rel. TEK size (incl)		4.3677**
		(1.671)
Rel. TEK size, sq. (incl)		-4.9707**
		(1.685)
Junior	0.7322	0.7265
	(0.524)	(0.532)
Autonomy	1.1101	1.0526
	(0.581)	(0.585)
Powerless	1.3038*	1.2373*
	(0.539)	(0.545)
Discriminated	1.8631**	1.8286**
	(0.516)	(0.517)
Separatist	3.1834**	3.1382**
	(0.662)	(0.665)
Downgraded	1.5725**	1.5658**
	(0.292)	(0.290)
Previous conflicts	0.5185**	0.5074**
	(0.096)	(0.093)
Country-level controls		
Ongoing conflict lag	0.4438	0.4642
	(0.286)	(0.285)
GDP/capita	-0.1771*	-0.1911*
	(0.073)	(0.076)
Population	0.1192	0.1375
	(0.096)	(0.097)
Constant	-6.0193**	-6.1226**
	(1.132)	(1.127)
Observations	28,298	28,298

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

In the next two models, we consider the additional influence of ethnic diversity (ELF) and EU member status (member or prospective member=1) in the TEK country. We find no evidence that failure to consider these introduce omitted variable bias for our main features of interest.

Table A6.3. Additional controls

	(A6.7) ELF	(A6.8) EU
Rel. group size	1.1544**	1.1604**
	(0.385)	(0.366)
TEK group	-0.3185	
	(0.216)	
Excluded TEK group		-0.1777
		(0.221)
Rel. TEK size (excl)	3.3089*	3.2224
	(1.437)	(1.669)
Rel. TEK size, sq. (excl)	-2.5969	-2.4939
	(1.785)	(1.961)
Included TEK group		-0.3523
		(0.285)
Rel. TEK size (incl)	4.0541**	4.4650**
	(1.203)	(1.660)
Rel. TEK size, sq. (incl)	-4.6958**	-5.0762**
	(1.296)	(1.670)
ELF	0.5551	
	(0.573)	
tek_lgegip_elf	-0.2672	
	(0.230)	
EU member + prospect		-0.8441
		(0.565)
Junior	0.7112	0.7642
	(0.533)	(0.530)
Autonomy	1.0733	1.0985
	(0.572)	(0.587)
Powerless	1.2862*	1.2962*
	(0.531)	(0.542)
Discriminated	1.9148**	1.8847**
	(0.505)	(0.515)
Separatist	3.3066**	3.1879**
	(0.663)	(0.661)
Downgraded	1.5369**	1.5516**
	(0.277)	(0.290)
Previous conflicts	0.4971**	0.5082**
	(0.090)	(0.093)
Constant	-6.5293**	-6.3070**
	(1.312)	(1.120)
Observations	28,298	28,298

Robust standard errors in parentheses; estimates for country-level controls and peace-year corrections not shown. ** p<0.01, * p<0.05.

Table A6.4 replicates Model 6.4 for three subsets of the global sample; Eurasia, Sub-Saharan Africa, and all groups except Russians. These models reveal that the size effects of TEK groups are particularly prominent for the Eurasian region but less so in SSA. The main results are robust to the exclusion of Russians.

Table A6.4. Regions

	(A6.9) Eurasia	(A6.10) SSA	(A6.11) w/o Russia
Rel. group size	0.3864	1.1118	1.1618**
	(0.563)	(0.751)	(0.366)
Excluded TEK Group	-0.2996	0.0695	-0.1914
	(0.267)	(0.395)	(0.223)
Rel. TEK size (excl)	7.0477*	2.1210	3.4338*
	(2.839)	(2.368)	(1.685)
Rel. TEK size, sq. (excl)	-7.1621*	-0.8132	-2.6973
	(3.351)	(2.526)	(1.980)
Included TEK group	-0.4091	-0.3841	-0.3285
	(0.358)	(0.612)	(0.282)
Rel. TEK size (incl)	5.8801**	2.7259	4.4257**
	(2.052)	(3.405)	(1.673)
Rel. TEK size, sq. (incl)	-6.3038**	-4.0164	-5.0331**
	(2.068)	(3.457)	(1.701)
Junior	-0.0503	1.9284*	0.7675
	(0.803)	(0.923)	(0.530)
Autonomy	0.3798		1.0866
	(0.829)		(0.585)
Powerless	0.3059	2.7507**	1.2969*
	(0.793)	(0.999)	(0.542)
Discriminated	0.8920	3.5718**	1.8742**
	(0.729)	(1.049)	(0.516)
Separatist	2.4410**		3.1942**
	(0.848)		(0.660)
Downgraded	1.6907**	1.2157**	1.5526**
	(0.410)	(0.426)	(0.290)
Previous conflicts	0.4068**	0.5483**	0.4993**
	(0.089)	(0.204)	(0.093)
Country-level controls			
Ongoing conflict lag	0.7785*	-0.5861	0.4564
	(0.343)	(0.501)	(0.284)
GDP/capita	-0.1138	-0.0993	-0.1895*
	(0.126)	(0.146)	(0.076)
Population	0.1868	0.2577	0.1420
	(0.136)	(0.151)	(0.096)
Constant	-6.4176**	-9.2781**	-6.2511**
	(2.039)	(2.137)	(1.119)
Observations	18,007	7,379	27,983

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

Accounting for material capability (CINC) of neighboring states with included TEK groups reduces the effect of the size of excluded TEK groups but the overall pattern remains consistent with those reported in Model 6.4. The interaction terms with CINC contribute little to the overall fit of the model.

Table A6.5. CINC scores

	(A6.12)
Rel. group size	1.0493**
	(0.390)
Excluded TEK Group	-0.1769
	(0.220)
Rel. TEK size (excl)	2.5251
	(1.657)
Rel. TEK size, sq. (excl)	-1.4395
	(1.944)
Included TEK group	-0.0337
	(0.386)
c_cinc_sum	1.5785
	(1.874)
c_cinc_sum2	-1.9308
	(1.677)
Junior	0.6646
	(0.539)
Autonomy	1.2690*
	(0.603)
Powerless	1.1929*
	(0.544)
Discriminated	1.7319**
	(0.525)
Separatist	2.9763**
	(0.665)
Downgraded	1.6261**
	(0.286)
Previous conflicts	0.3882**
	(0.111)
Country-level controls	
Ongoing conflict lag	0.2533
	(0.256)
GDP/capita	-0.1029
	(0.091)
Population	0.4245**
	(0.082)
Constant	-16.4273**
	(4.271)
Constant	-9.0598**
	(1.314)
Observations	28,298

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

We also investigate how the size and role of transnational ethnic groups may differ in their influence on separatist and governmental conflict. Model A6.13 shows that the TEK effect applies primarily to ethnic governmental conflict, even if the parameter estimates for the TEK variables point in the same direction for territorial conflict.

Table A6.6. Multinomial logit model

	(A6.13)	
	Terr	Gov
Rel. group size	-0.7314	2.9358**
	(0.641)	(0.488)
Excluded TEK Group	-0.2197	-0.0389
	(0.243)	(0.513)
Rel. TEK size (excl)	3.8439	3.6734
	(2.231)	(2.375)
Rel. TEK size, sq. (excl)	-3.7833	-2.5147
	(2.620)	(2.504)
Included TEK group	-0.2199	-0.3696
	(0.331)	(0.439)
Rel. TEK size (incl)	2.8264	7.0664**
	(2.114)	(2.281)
Rel. TEK size, sq. (incl)	-3.6777	-8.1696**
	(2.342)	(2.412)
Junior	0.1488	1.4932
	(0.855)	(0.783)
Autonomy	0.6223	0.2780
	(0.878)	(1.313)
Powerless	0.8184	1.9029*
	(0.837)	(0.844)
Discriminated	1.3432	2.5717**
	(0.846)	(0.807)
Separatist	2.8848**	-11.7679**
	(0.925)	(1.175)
Downgraded	1.1023**	1.8208**
	(0.413)	(0.429)
Previous conflicts	0.4248**	0.7844**
	(0.110)	(0.144)
Country-level controls		
Ongoing conflict lag	0.6748*	-0.2179
	(0.326)	(0.445)
GDP/capita	-0.0711	-0.3742**
	(0.124)	(0.128)
Population	0.2190	-0.0959
	(0.118)	(0.114)
Constant	-7.2223**	-6.1090**
	(1.710)	(1.579)
Observations	28,298	28,298

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

List of TEK groups

Country	Group
Afghanistan	Baloch
Afghanistan	Pamir Tajiks
Afghanistan	Pashtuns
Afghanistan	Tajiks
Afghanistan	Turkmen
Afghanistan	Uzbeks
Albania	Albanians
Albania	Greeks
Albania	Macedonians
Algeria	Arabs
Algeria	Berbers
Angola	Bakongo
Angola	Lunda-Chokwe
Angola	Ovimbundu-Ovambo
Argentina	Indigenous peoples
Armenia	Armenians
Armenia	Kurds
Armenia	Russians
Austria	Slovenes
Azerbaijan	Armenians
Azerbaijan	Azeri
Azerbaijan	Lezgins
Bangladesh	Bengali Hindus
Bangladesh	Bengali Muslims
Belarus	Byelorussians
Belarus	Poles
Belarus	Russians
Belgium	Germans
Benin	South/Central (Fon)
Benin	Southeastern (Yoruba/Nagot and Goun)
Benin	Southwestern (Adja)
Bolivia	Aymara
Bolivia	GuaranÃƒÂ and other eastern indigenous groups
Bolivia	Quechua
Bosnia and Herzegovina	Bosniaks/Muslims
Bosnia and Herzegovina	Croats
Bosnia and Herzegovina	Roma
Bosnia and Herzegovina	Serbs
Botswana	Herero/Mbanderu
Botswana	Kalanga
Botswana	San
Botswana	Tswana

Botswana	White
Brazil	Indigenous peoples
Bulgaria	Macedonians
Bulgaria	Pomaks
Bulgaria	Roma
Bulgaria	Turkish
Burkina Faso	Gur
Burundi	Hutu
Burundi	Tutsi
Cambodia	Cham and Malays
Cambodia	Chinese
Cambodia	Khmer
Cambodia	Thai-Lao
Cambodia	Vietnamese
Cameroon	Fulani (and other northern Muslim peoples)
Central African Republic	Mbaka
Central African Republic	Northern groups (Baya, Banda, Mandjia, Sara, Goula)
Central African Republic	Riverine groups (Mbaka, Yakoma, Banziri etc.)
Central African Republic	Sara
Chad	Arabs
Chad	Sara
Chad	Toubou
Chad	Zaghawa, Bideyat
Chile	Mapuche
Chile	Other indigenous peoples
China	Chinese (Han)
China	Dai
China	Jing
China	Jingpo
China	Kazakhs
China	Kirgiz
China	Koreans
China	Miao
China	Mongolians
China	Russians
China	Tajiks
China	Uyghur
China	Uzbeks
China	Wa
China	Yao
China	Zhuang
Colombia	Indigenous peoples
Congo	Bakongo
Congo	BatÃƒÂ©kÃƒÂ©
Congo	Lari/Bakongo

Costa Rica	Afro-Costa Ricans
Croatia	Bosniaks
Croatia	Croats
Croatia	Hungarians
Croatia	Italians
Croatia	Roma
Croatia	Serbs
Czechoslovakia	Hungarians
Czechoslovakia	Roma
Democratic Republic of the Congo	Azande-Mangbetu cluster
Democratic Republic of the Congo	Bakongo
Democratic Republic of the Congo	Lunda-Yeke
Democratic Republic of the Congo	Ngbaka
Democratic Republic of the Congo	Tutsi-Banyamulenge
Djibouti	Afar
Ecuador	Indigenous peoples
Egypt	Arab Muslims
El Salvador	Indigenous peoples
Eritrea	Afar
Estonia	Byelorussians
Estonia	Russians
Estonia	Ukrainians
Ethiopia	Afar
Ethiopia	Other Southern Nations
Ethiopia	Somali (Ogaden)
Finland	Finns
Finland	Swedes
France	Basques
France	Roma
Gabon	MbÃƒÂ©dÃƒÂ© (BatÃƒÂ©kÃƒÂ©, Obamba)
Gambia	Diola
Gambia	Fula
Gambia	Mandinka
Gambia	Wolof
Georgia	Armenians
Georgia	Azeri
Georgia	Ossetians (South)
Georgia	Russians
German Democratic Republic	Germans
German Federal Republic	Germans
Germany	Germans
Ghana	Ewe
Greece	Greeks
Greece	Macedonians
Greece	Muslims

Greece	Roma
Guatemala	Mayas
Guinea	Malinke
Guinea	Peul
Guinea-Bissau	Peul
Guyana	Indigenous peoples
Honduras	Indigenous peoples (Lenca, Maya-Chorti, Miskito, Tawahka/Sumu, Xicaque, Pech, Nahua)
Hungary	Hungarians
Hungary	Roma
India	Bengali (non-SC/ST)
India	Hindi (non-SC/ST)
India	Kashmiri Muslims
India	Mizo
India	Other Backward Classes/Castes
India	Other Muslims
India	Punjabi-Sikhs (non-SC/ST/OBCs)
India	Scheduled Castes & Tribes
India	Tamil (non-SC/ST/OBCs)
Indonesia	Chinese (Han)
Indonesia	Dayak
Indonesia	Malay
Indonesia	Papuans
Iran	Arabs
Iran	Armenians
Iran	Azeri
Iran	Baloch
Iran	Jews
Iran	Kurds
Iran	Turkmen
Iraq	Kurds
Iraq	Shi'a Arabs
Iraq	Sunni Arabs
Ireland	Irish
Israel	Israeli Arabs
Israel	Palestinian Arabs
Israel	Palestinians (Arab)
Italy	Italians
Italy	Roma
Ivory Coast	Kru
Ivory Coast	Northerners (Mande and Voltaic/Gur)
Ivory Coast	Southern Mande
Jordan	Jordanian Arabs
Jordan	Palestinian Arabs
Kazakhstan	Germans

Kazakhstan	Kazakhs
Kazakhstan	Russians
Kazakhstan	Tatars
Kazakhstan	Uighur
Kazakhstan	Ukrainians
Kazakhstan	Uzbeks
Kenya	Kalenjin-Masai-Turkana-Samburu
Kenya	Luo
Kenya	Somali
Kosovo	Albanians
Kosovo	Roma
Kosovo	Serbs
Kosovo	Turks
Kuwait	Kuwaiti Shi'a (Arab)
Kuwait	Kuwaiti Sunni (Arab)
Kyrgyzstan	Kyrgyz
Kyrgyzstan	Russians
Kyrgyzstan	Uyghur
Kyrgyzstan	Uzbeks
Laos	Hmong
Laos	Lao (incl. Phuan)
Laos	Lao Sung (excl. Hmong)
Latvia	Byelorussians
Latvia	Russians
Latvia	Ukrainians
Lebanon	Alawites
Lebanon	Druze
Lebanon	Maronite Christians
Lebanon	Palestinians (Arab)
Lebanon	Sunnis (Arab)
Lesotho	Sotho
Liberia	Gio
Liberia	Indigenous Peoples
Liberia	Krahn (Guere)
Liberia	Kru
Liberia	Mandingo
Libya	Arabs
Libya	Toubou
Lithuania	Poles
Lithuania	Russians
Macedonia	Albanians
Macedonia	Macedonians
Macedonia	Roma
Macedonia	Serbs
Macedonia	Turks

Malawi	Central (Chewa)
Malawi	Northerners (Tumbuka, Tonga, Ngonde)
Malawi	Southerners (Lomwe, Mang'anja, Nyanja, Yao)
Malaysia	Chinese
Malaysia	Dayaks
Malaysia	Malays
Mali	Arabs/Moors
Mali	Blacks (Mande, Peul, Voltaic etc.)
Mali	Tuareg
Mauritania	Black Africans
Mauritania	Haratins (Black Moors)
Mauritania	Sahrawis
Mauritania	White Moors (Beydan)
Mexico	Indigenous peoples
Moldova	Moldovans
Moldova	Russian speakers
Mongolia	Kazakh
Mongolia	Mongols
Montenegro	Albanians
Montenegro	Bosniak/Muslims
Montenegro	Croats
Montenegro	Montenegrins
Montenegro	Roma
Montenegro	Serbs
Morocco	Arabs
Morocco	Berbers
Morocco	Sahrawis
Mozambique	Makonde-Yao
Mozambique	Shona-Ndau
Mozambique	Tsonga-Chopi
Myanmar	Buddhist Arakanese
Myanmar	Chinese
Myanmar	Indians
Myanmar	Kachins
Myanmar	Mons
Myanmar	Muslim Arakanese
Myanmar	Shan
Myanmar	Wa
Myanmar	Zomis (Chins)
Namibia	Herero, Mbanderu
Namibia	Ovambo
Namibia	San
Namibia	Whites
Nepal	Adivasi/Janajati
Nepal	Madhesi

Nicaragua	Miskitos
Niger	Hausa
Niger	Peul
Niger	Toubou
Niger	Tuareg
Nigeria	Hausa-Fulani and Muslim Middle Belt
Nigeria	Yoruba
North Korea	Koreans
Pakistan	Baluchis
Pakistan	Bengali
Pakistan	Hindus
Pakistan	Mohajirs
Pakistan	Pashtuns
Pakistan	Punjabi
Panama	Afropanamanians
Panama	Choco (Embera-Wounan)
Papua New Guinea	Papua New Guineans
Paraguay	Tupi-Guarani and other indigenous groups
Peru	Aymara
Peru	Indigenous peoples of the Amazon
Peru	Quechua
Poland	ByelorussiansÃ‚Â Ã‚Â Ã‚Â
Poland	GermansÃ‚Â Ã‚Â Ã‚Â
Poland	PolesÃ‚Â Ã‚Â Ã‚Â
Poland	Roma
Poland	UkrainiansÃ‚Â Ã‚Â Ã‚Â
Republic of Vietnam	Hoa (Chinese)
Republic of Vietnam	Kinh (Vietnamese)
Romania	Germans
Romania	Hungarians
Romania	Roma
Romania	Romanians
Russia	Armenians
Russia	Azerbaijanis
Russia	Byelorussians
Russia	Finns
Russia	Germans
Russia	Jews
Russia	Kazakhs
Russia	Kirghis
Russia	Koreans
Russia	Lezgins
Russia	Ossetes
Russia	Pamir Tajiks
Russia	Poles

Russia	Roma
Russia	Russians
Russia	Tajiks
Russia	Tatars
Russia	Turkmens
Russia	Uighurs
Russia	Ukrainians
Russia	Uzbeks
Rwanda	Hutu
Rwanda	Tutsi
Saudi Arabia	Ismaili Shia (South) (Arab)
Saudi Arabia	Ja'afari Shia (Eastern Province) (Arab)
Saudi Arabia	Sunni Shafii/Sofi (Hijazi) (Arab)
Saudi Arabia	Sunni Wahhabi (Najdi) (Arab)
Senegal	Diola
Senegal	Mandingue (and other eastern groups)
Senegal	Pulaar (Peul, Toucouleur)
Senegal	Wolof
Slovakia	Hungarians
Slovakia	Roma
Slovenia	Albanians
Slovenia	Bosniaks
Slovenia	Croats
Slovenia	Hungarians
Slovenia	Italians
Slovenia	Serbs
Slovenia	Slovenes
Somalia	Somali
South Africa	Afrikaners
South Africa	Blacks
South Africa	Ndebele
South Africa	Pedi (North Sotho)
South Africa	San
South Africa	South Sotho
South Africa	Swazi
South Africa	Tsonga
South Africa	Tswana
South Korea	Koreans
Spain	Basques
Spain	Roma
Sudan	Azande
Sudan	Other Arab groups
Sudan	Shaygiyya, Ja'aliyyin and Danagla (Arab)
Sudan	Zaghawa
Swaziland	Swazi

Sweden	Swedes
Syria	Alawi
Syria	Christians
Syria	Druze
Syria	Kurds
Syria	Sunni Arabs
Taiwan	Mainland Chinese
Tajikistan	Kyrgyz
Tajikistan	Russians
Tajikistan	Tajiks
Tajikistan	Tatars
Tajikistan	Uzbeks
Tanzania	Maasai
Tanzania	Mainland Africans
Thailand	Chinese
Thailand	Hill Tribes
Thailand	Malay Muslims
Thailand	Shan
Thailand	Thai
Togo	Ewe (and related groups)
Tunisia	Arabs
Turkey	Kurds
Turkey	Roma
Turkey	Turkish
Turkmenistan	Kazakhs
Turkmenistan	Russians
Turkmenistan	Turkmen
Turkmenistan	Uzbeks
Uganda	Banyarwanda
Uganda	South-Westeners (Ankole, Banyoro, Toro, Banyarwanda)
Ukraine	Hungarians
Ukraine	Romanians/Moldovans
Ukraine	Russians
Ukraine	Ukrainians
United Arab Emirates	Emirati Arabs
United Kingdom	Catholics In N. Ireland
Uzbekistan	Kazakhs
Uzbekistan	Russians
Uzbekistan	Tajiks
Uzbekistan	Uzbeks
Venezuela	Indigenous peoples
Vietnam	Dao
Vietnam	Hmong
Vietnam	Hoa (Chinese)
Vietnam	Khmer

Vietnam	Kinh (Vietnamese)
Vietnam	Nung
Vietnam	Tay
Vietnam	Thai
Yemen	Northerners
Yemen	Southerners
Yemen Arab Republic	Sunni Shafi'I (Arab)
Yemen Arab Republic	Zaydis
Yemen People's Republic	Southern Yemenis
Yugoslavia	Albanians
Yugoslavia	Bosniak/Muslims
Yugoslavia	Croats
Yugoslavia	Hungarians
Yugoslavia	Macedonians
Yugoslavia	Montenegrins
Yugoslavia	Roma
Yugoslavia	Serbs
Yugoslavia	Slovenes
Zambia	Lunda (NW Province)
Zambia	Nyanja speakers (Easterners)
Zambia	Tonga-Ila-Lenje
Zimbabwe	Africans
Zimbabwe	Manyika (Shona sub-group)
Zimbabwe	Ndau (Shona sub-group)
Zimbabwe	Ndebele-Kalanga-(Tonga)
Zimbabwe	Shona
Zimbabwe	Shona (minus Manyika & Ndau)
Zimbabwe	Shona (minus Ndau)

CHAPTER 7

All country-level models reported in Chapter 7 are estimated for the period 1991–2009, since the indicator for horizontal economic inequality, max low ratio, is static and reflects 1990 values. However, the early post-Cold War years saw a number of new conflicts in locations that previously had been stable such as the Balkans and former Soviet republics. Thus, the results might not be representative for a longer time period. Since the spatial distribution of wealth and poverty within states does not change much over time, regressing our measure of inter-group inequality in income on conflicts in earlier times can be defended in order to expand the number of observations and consider a larger number of civil war onsets. In Tables A7.1-A7.4 we replicate the models from Tables 7.2 and 7.3 in the book using to alternative time series: 1960-2009 and 1946-2009. These extensions further support the findings reported in Chapter 7.

Table A7.1. Logit models with expanded sample, 1960–2009

	(A7.1)	(A7.2)	(A7.3)	(A7.4)
Democracy	0.2797	0.2742		
	(0.3058)	(0.2983)		
Gini	-0.0056	-0.0057		
	(0.0083)	(0.0086)		
Max exclusion	0.3568		0.3067	
	(0.3453)		(0.2966)	
Max discrimination		0.8858**		0.9028**
		(0.2994)		(0.2651)
Max low ratio	0.2196**	0.2265**	0.2168**	0.2236**
	(0.0833)	(0.0853)	(0.0829)	(0.0863)
Ethnic diversity	0.9030*	0.9326*	0.6701	0.6983*
	(0.3780)	(0.3694)	(0.3506)	(0.3367)
Population size	0.1458	0.1459	0.1733*	0.1779*
	(0.0835)	(0.0822)	(0.0812)	(0.0814)
GDP/capita	-0.2537*	-0.2457*	-0.2471**	-0.2458**
	(0.1030)	(0.1015)	(0.0856)	(0.0840)
Previous conflicts	0.5127*	0.5185*	0.4656*	0.4682*
	(0.2322)	(0.2300)	(0.2089)	(0.2076)
Constant	-3.9696**	-4.1053**	-4.1978**	-4.3438**
	(1.2767)	(1.2693)	(0.9675)	(0.9820)
Observations	5,758	5,758	6,691	6,691

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

Table A7.2. Multinomial logit models with expanded sample, 1960–2009

	(A7.5)			(A7.6)		
	Eth terr	Eth govt	Non-eth	Eth terr	Eth govt	Non-eth
Democracy	0.0232	-0.3925	0.4299	0.1447	-0.5942	0.3663
	(0.4121)	(0.9091)	(0.3418)	(0.4272)	(0.8703)	(0.3301)
Gini	-0.0308	-0.0480	0.0234**	-0.0315	-0.0451	0.0231*
	(0.0196)	(0.0250)	(0.0090)	(0.0196)	(0.0268)	(0.0092)
Max exclusion	-1.5127	2.0350*	0.5366			
	(0.8934)	(0.8329)	(0.4735)			
Max discr.				-0.4136	1.6329*	1.1768**
				(1.0633)	(0.7557)	(0.3779)
Max low ratio	0.2784**	-0.0310	0.1042	0.2756**	0.0656	0.1024
	(0.0818)	(0.3915)	(0.1302)	(0.0879)	(0.3781)	(0.1404)
Ethnic diversity	1.6228	1.2584	0.3421	1.5515	1.5567	0.3690
	(0.8405)	(1.0140)	(0.3730)	(0.8994)	(1.0246)	(0.3655)
Population size	0.2385	-0.2095	0.1448	0.2865	-0.2605	0.1420
	(0.1986)	(0.2006)	(0.0812)	(0.1968)	(0.1862)	(0.0814)
GDP/capita	-0.2088	-0.4466	-0.1695	-0.1925	-0.4860	-0.1511
	(0.1840)	(0.3173)	(0.1116)	(0.1826)	(0.3148)	(0.1109)
Prev. conflicts	0.8071	1.1847**	-0.0024	0.7932	1.1276**	0.0060
	(0.5321)	(0.3716)	(0.2153)	(0.5417)	(0.3613)	(0.2160)
Constant	-5.4964	-1.2989	-5.7400**	-6.3281*	-0.4193	-5.9049**
	(3.2351)	(3.3722)	(1.1813)	(3.1770)	(3.3114)	(1.1861)
Observations		5,758			5,758	

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

Table A7.3. Logit models with expanded sample, 1946–2009

	(A7.7)	(A7.8)	(A7.9)	(A7.10)
Democracy	0.3301	0.3259		
	(0.2710)	(0.2666)		
Gini	-0.0047	-0.0046		
	(0.0085)	(0.0088)		
Max exclusion	0.2739		0.2282	
	(0.3120)		(0.2767)	
Max discrimination		0.6345*		0.6381**
		(0.2670)		(0.2365)
Max low ratio	0.2000**	0.2029*	0.1813*	0.1835*
	(0.0773)	(0.0788)	(0.0759)	(0.0785)
Ethnic diversity	0.8614**	0.8656**	0.6630*	0.6648*
	(0.3121)	(0.3077)	(0.2869)	(0.2743)
Population size	0.1240	0.1230	0.1602*	0.1616*
	(0.0712)	(0.0699)	(0.0672)	(0.0676)
GDP/capita	-0.3032**	-0.2988**	-0.2876**	-0.2871**
	(0.0996)	(0.0996)	(0.0727)	(0.0720)
Previous conflicts	0.5887**	0.6035**	0.5194**	0.5333**
	(0.1919)	(0.1885)	(0.1763)	(0.1735)
Constant	-3.4222*	-3.4979**	-3.7111**	-3.7837**
	(1.3574)	(1.3403)	(0.9344)	(0.9367)
Observations	6,695	6,695	7,771	7,771

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

Table A7.4. Multinomial logit models with expanded sample, 1946–2009

	(A7.11)			(A7.12)		
	Eth terr	Eth govt	Non-eth	Eth terr	Eth govt	Non-eth
Democracy	0.2305	-0.3457	0.3885	0.3517	-0.5548	0.3455
	(0.3600)	(0.8345)	(0.3444)	(0.3768)	(0.8067)	(0.3342)
Gini	-0.0214	-0.0406	0.0177*	-0.0224	-0.0377	0.0177*
	(0.0203)	(0.0241)	(0.0084)	(0.0205)	(0.0257)	(0.0085)
Max exclusion	-1.5345	1.9625*	0.4516			
	(0.8068)	(0.7836)	(0.4189)			
Max discr.				-0.7845	1.3285	0.9629**
				(0.9561)	(0.7143)	(0.3367)
Max low ratio	0.2986**	-0.1224	0.0776	0.2925**	-0.0648	0.0701
	(0.0755)	(0.4066)	(0.1318)	(0.0791)	(0.4122)	(0.1410)
Ethnic diversity	1.1419	1.1853	0.5736	1.0517	1.5122	0.5636
	(0.6783)	(1.0145)	(0.3735)	(0.7361)	(1.0356)	(0.3612)
Population size	0.2550	-0.2378	0.0894	0.2961	-0.2872	0.0864
	(0.1797)	(0.1861)	(0.0869)	(0.1778)	(0.1746)	(0.0871)
GDP/capita	-0.4101	-0.3743	-0.1842	-0.3988	-0.4149	-0.1743
	(0.2131)	(0.3103)	(0.1051)	(0.2126)	(0.3153)	(0.1037)
Prev. conflicts	0.8945*	1.3410**	0.0661	0.8696*	1.3246**	0.0937
	(0.4119)	(0.3316)	(0.1719)	(0.4148)	(0.3300)	(0.1744)
Constant	-4.4449	-1.8890	-4.9334**	-5.0814	-1.0026	-5.0199**
	(3.8077)	(3.2565)	(1.1361)	(3.7915)	(3.3006)	(1.1277)
Observations		6,695			6,695	

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

Next, we consider an alternative operationalization of civil war. Since the Uppsala Conflict Data Program (UCDP) uses a low severity threshold for conflict (minimum 25 battle deaths per calendar year) our findings may be driven by the less severe conflicts in the dataset. As an alternative civil war indicator, we use Fearon's (2010) updated civil war data, which only includes conflicts that caused at least 1,000 deaths in total, at least 100 killed on each side, and at least 100 casualties per year on average.[1] Again, we find that our main results hold: Horizontal economic and political inequality are both positively associated with civil war risk, and countries with groups far below the national average income level are particularly prone to separatist conflict whereas countries with extensive political exclusion or discrimination are at greater risk of governmental conflict.

Table A7.5. Logit models with Fearon's (2010) civil war data, 1946–2009

	(A7.13)	(A7.14)	(A7.15)	(A7.16)
Democracy	-0.2950	-0.3534		
	(0.4319)	(0.4292)		
Gini	-0.0023	-0.0015		
	(0.0118)	(0.0119)		
Max exclusion	0.5733		0.7228**	
	(0.3343)		(0.2764)	
Max discrimination		0.8793**		0.9273**
		(0.3246)		(0.2616)
Max low ratio	0.2310*	0.2311*	0.2555**	0.2559**
	(0.0938)	(0.0943)	(0.0823)	(0.0838)
Ethnic diversity	0.4037	0.4387	0.2343	0.3176
	(0.4207)	(0.4074)	(0.3321)	(0.3203)
Population size	0.2198**	0.2170**	0.2376**	0.2308**
	(0.0700)	(0.0680)	(0.0630)	(0.0605)
GDP/capita	-0.2895	-0.2790	-0.3903**	-0.3943**
	(0.1702)	(0.1650)	(0.1009)	(0.0986)
Constant	-4.3061*	-4.3628**	-3.9592**	-3.8518**
	(1.7487)	(1.6758)	(1.0179)	(0.9686)
Observations	6,562	6,562	7,621	7,621

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

[1] We thank James Fearon for making a BETA version of his new data available to us.

Table A7.6. Multinomial logit models with Fearon's (2010) civil war data, 1946–2009

	(A7.17)			(A7.18)		
	Eth terr	Eth govt	Non-eth	Eth terr	Eth govt	Non-eth
Democracy	-0.6295	0.3050	-0.5902	-0.6826	0.0978	-0.5183
	(0.5607)	(0.7092)	(0.9473)	(0.5659)	(0.6754)	(0.9325)
Gini	-0.0092	-0.0182	0.0360	-0.0091	-0.0144	0.0361
	(0.0192)	(0.0199)	(0.0203)	(0.0191)	(0.0200)	(0.0204)
Max exclusion	0.3805	1.7418**	-0.9078			
	(0.5097)	(0.5457)	(0.6408)			
Max discr.				-0.6042	2.3213**	0.0455
				(0.8009)	(0.4891)	(0.9082)
Max low ratio	0.3274**	-0.4758	-1.0489	0.3267**	-0.5356	-1.0573
	(0.0978)	(0.5144)	(0.7757)	(0.0993)	(0.5248)	(0.7633)
Ethnic diversity	1.4651**	0.1685	-0.7439	1.5533**	0.3346	-0.9224
	(0.5506)	(0.8219)	(0.7188)	(0.5505)	(0.6891)	(0.7435)
Population size	0.4271**	0.0797	0.1006	0.4026**	0.0801	0.1062
	(0.0966)	(0.1581)	(0.1450)	(0.0907)	(0.1566)	(0.1464)
GDP/capita	-0.1433	-0.5580	-0.1116	-0.1575	-0.5068	-0.1113
	(0.2240)	(0.3344)	(0.3190)	(0.2271)	(0.3141)	(0.3128)
Constant	-8.4794**	-1.3682	-5.1480	-8.0133**	-1.8166	-5.3486
	(2.1143)	(3.2716)	(3.6910)	(2.0028)	(3.0396)	(3.6724)
Observations		6,562			6,562	

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

Our country-aggregated inequality indicators are highly right-skewed since few countries have inequality scores much higher than the sample mean. In an effort to reduce the influence of outliers, we reran all models using log-transformed inequality measures (Tables A7.7-A7.8). Again, the original findings hold up well.

Table A7.7. Logit models with logged HIs

	(A7.19)	(A7.20)	(A7.21)	(A7.22)
Democracy	-0.1761	-0.0286		
	(0.5426)	(0.5607)		
Gini	-0.0245	-0.0267		
	(0.0144)	(0.0149)		
Max exclusion (ln)	-0.1884		0.0398	
	(0.9331)		(0.6987)	
Max discrimination (ln)		1.4746		1.5254
		(1.1073)		(0.8445)
Max low ratio (ln)	0.8108*	0.8827*	0.7630*	0.8251*
	(0.3486)	(0.3742)	(0.3710)	(0.3970)
Ethnic diversity	0.7064	0.7319	0.5296	0.5341
	(0.5698)	(0.5636)	(0.4999)	(0.4970)
Population size	0.1025	0.1076	0.1818	0.1927
	(0.1290)	(0.1328)	(0.1141)	(0.1197)
GDP/capita	-0.2818	-0.3039	-0.3253**	-0.3342**
	(0.1759)	(0.1777)	(0.1152)	(0.1163)
Previous conflicts	0.4736	0.4399	0.3868	0.3529
	(0.3407)	(0.3426)	(0.3279)	(0.3296)
Constant	-1.9142	-1.9151	-3.2765*	-3.4115*
	(2.0761)	(2.1564)	(1.4304)	(1.5412)
Observations	2,467	2,467	2,860	2,860

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

Table A7.8. Multinomial logit models with logged HIs

	(A7.23)			(A7.24)		
	Eth terr	Eth govt	Non-eth	Eth terr	Eth govt	Non-eth
Democracy	-0.0972	-1.0692	-0.0932	0.2521	-1.0219	-0.0820
	(0.6669)	(1.3699)	(0.6677)	(0.7983)	(1.2759)	(0.6792)
Gini	-0.0632**	-0.0217	0.0017	-0.0651*	-0.0209	0.0015
	(0.0240)	(0.0340)	(0.0187)	(0.0282)	(0.0368)	(0.0187)
Max excl. (ln)	-6.7928**	3.5719*	0.0103			
	(2.0327)	(1.4615)	(1.1610)			
Max discr. (ln)				-1.8855	4.6648**	0.3096
				(3.0784)	(1.4560)	(2.2842)
Max low r. (ln)	0.8542**	0.4809	0.6648	0.9012*	0.7527	0.6748
	(0.2983)	(1.2396)	(0.4662)	(0.3734)	(1.0570)	(0.4837)
Ethnic diversity	1.0885	-0.0407	0.3410	1.0497	0.3935	0.3362
	(1.2045)	(1.1068)	(0.7575)	(1.4277)	(1.1520)	(0.7428)
Population size	-0.0854	-0.1086	0.2357	-0.0009	-0.1821	0.2340
	(0.1884)	(0.3303)	(0.1857)	(0.2029)	(0.3342)	(0.1898)
GDP/capita	-0.1650	-0.3816	-0.2799	-0.1371	-0.5171	-0.2823
	(0.2666)	(0.4290)	(0.2194)	(0.2730)	(0.4369)	(0.2185)
Prev. conflicts	1.4282*	0.2155	-0.2812	1.3660	0.1390	-0.2858
	(0.6768)	(0.5624)	(0.4011)	(0.7579)	(0.4549)	(0.3975)
Constant	-1.2273	-1.4064	-4.0351	-3.0453	0.3574	-4.0118
	(3.2650)	(5.5175)	(2.5701)	(3.2798)	(6.0843)	(2.5858)
Observations		2,467			2,467	

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

In Table A7.9, we replicate the models in Table 7.2 using the rare events logit estimator (King and Zeng 1999). This has little impact on the results.

Table A7.9. Rare events logit models

	(A7.25)	(A7.26)	(A7.27)	(A7.28)
Democracy	-0.2333	-0.0989		
	(0.5459)	(0.5540)		
Gini	-0.0201	-0.0220		
	(0.0149)	(0.0154)		
Max exclusion	-0.0796		0.0896	
	(0.7220)		(0.5241)	
Max discrimination		1.1413		1.2637*
		(0.8419)		(0.6289)
Max low ratio	0.2901**	0.3083**	0.3014**	0.3217**
	(0.0947)	(0.0982)	(0.0957)	(0.0999)
Ethnic diversity	0.7445	0.7799	0.5741	0.5941
	(0.5565)	(0.5537)	(0.4895)	(0.4884)
Population size	0.1360	0.1450	0.2003	0.2138
	(0.1212)	(0.1228)	(0.1083)	(0.1125)
GDP/capita	-0.2564	-0.2726	-0.3201**	-0.3275**
	(0.1717)	(0.1714)	(0.1140)	(0.1136)
Previous conflicts	0.4683	0.4324	0.3867	0.3510
	(0.3361)	(0.3394)	(0.3259)	(0.3279)
Constant	-2.7869	-2.8624	-3.7511**	-3.9290**
	(1.9414)	(1.9850)	(1.3057)	(1.3761)
Observations	2,467	2,467	2,860	2,860

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

In the next two tables, we drop observations with ongoing civil conflict since these cases may have a systematically different baseline conflict risk and different effects of inequality. This removes almost 1/3 of the onset observations since several large states experience multiple simultaneous conflicts. However, the findings for the inequality indicators remain similar to those reported in Chapter 7. Political inequality is most strongly associated with ethnic governmental conflict, whereas economic inequality is positively related to all forms of civil conflict. None of the measures for vertical inequality are statistically significant.

Table A7.10. Drop years with ongoing conflict

	(A7.29)	(A7.30)
Democracy	-0.4565	-0.4362
	(0.6403)	(0.6329)
Gini	-0.0198	-0.0198
	(0.0159)	(0.0159)
Max exclusion	0.8296	
	(0.6371)	
Max discrimination		1.5355
		(1.0800)
Max low ratio	0.5868**	0.5858**
	(0.1324)	(0.1358)
Ethnic diversity	0.6808	0.7775
	(0.6314)	(0.6189)
Population size	0.0753	0.0622
	(0.1166)	(0.1160)
GDP/capita	-0.4489*	-0.4668*
	(0.2029)	(0.2028)
Constant	-0.7611	-0.4815
	(2.1340)	(2.1795)
Observations	2,079	2,079

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

Table A7.11. Multinomial logit without ongoing conflict

	(A7.31)			(A7.32)		
	Eth terr	Eth govt	Non-eth	Eth terr	Eth govt	Non-eth
Democracy	-0.0089	-0.7286	-0.6481	0.2230	-0.7931	-0.7274
	(1.1479)	(1.3148)	(0.8024)	(1.1799)	(1.2208)	(0.7740)
Gini	-0.0461	-0.0270	-0.0089	-0.0483	-0.0234	-0.0080
	(0.0266)	(0.0339)	(0.0221)	(0.0286)	(0.0353)	(0.0218)
Max excl.	-3.0542	2.4721*	0.2669			
	(1.5655)	(1.1360)	(0.7743)			
Max discr.				1.3658	3.1788*	-5.2782
				(1.3996)	(1.3627)	(6.6714)
Max low ratio	0.3726	0.2645	0.7048**	0.4614**	0.2299	0.6681**
	(0.2087)	(0.4298)	(0.1760)	(0.1769)	(0.4435)	(0.1924)
Ethnic diversity	2.9279**	0.0952	0.0615	2.6320**	0.4957	0.1375
	(0.8467)	(1.3095)	(0.8812)	(0.9184)	(1.3227)	(0.8747)
Population size	0.3032	-0.0337	-0.0026	0.3036	-0.0931	0.0326
	(0.1745)	(0.3445)	(0.1494)	(0.1639)	(0.3445)	(0.1704)
GDP/capita	0.1075	-0.5705	-0.7536**	0.0697	-0.6682	-0.7614**
	(0.3135)	(0.4286)	(0.2380)	(0.3377)	(0.4370)	(0.2394)
Constant	-8.2285**	0.6830	1.1679	-8.4613**	1.9897	1.1056
	(2.9390)	(5.5180)	(2.8083)	(2.9875)	(5.9235)	(2.9276)
Observations		2,079			2,079	

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

Finally, we test alternative specifications of democracy by replacing the SIP scale with the more widely used Polity2 index and a squared term or simpler regime type dummies from Xpolity, using autocracies as the reference category. These modifications support our overall observation that vertical political inequality – in contrast to its horizontal counterpart – is at most only weakly and insignificantly related to civil war risk.

Table A7.12. Alternative democracy indicators

	(A7.33) Polity	(A7.34) Polity	(A7.35) Xpolity	(A7.36) Xpolity
Democracy	-0.0203	-0.0136		
	(0.0244)	(0.0259)		
Democracy sq.	-0.0000	-0.0007		
	(0.0062)	(0.0065)		
Democracy dummy			-0.0038	0.0225
			(0.4320)	(0.3953)
Anocracy dummy			0.1333	0.1072
			(0.3936)	(0.3740)
Gini	-0.0219	-0.0234	-0.0237	-0.0248
	(0.0144)	(0.0148)	(0.0154)	(0.0155)
Max excl. (ln)	-0.1264		0.0280	
	(0.6480)		(0.6714)	
Max discr. (ln)		0.9640		1.0452
		(0.7764)		(0.6977)
Max low r. (ln)	0.2771**	0.2910**	0.2736**	0.2933**
	(0.0969)	(0.0987)	(0.0902)	(0.0948)
Ethnic diversity	0.6342	0.6465	0.6042	0.6303
	(0.5016)	(0.5024)	(0.5040)	(0.5044)
Population size	0.1594	0.1692	0.1616	0.1669
	(0.1212)	(0.1238)	(0.1201)	(0.1231)
GDP/capita	-0.2775	-0.2834	-0.3060*	-0.3174*
	(0.1683)	(0.1701)	(0.1301)	(0.1285)
Constant	-2.6711	-2.7379	-2.4683	-2.4723
	(1.7217)	(1.7610)	(1.5786)	(1.6342)
Observations	2,572	2,572	2,569	2,569

Robust standard errors in parentheses; estimates for peace-year corrections not shown.
** p<0.01, * p<0.05.

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