

Rules that Matter

Political Institutions and the Diversity-Conflict Nexus

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One controversy in the study of civil war relates to the role that institutions play in ethnically diverse societies. ‘Constitutional engineers’ advance various institutional arrangements, ranging from democracy in general to specific constitutional and electoral rules, as those mechanisms that help divided societies to resolve disputes peacefully. Political sociologists, by contrast, maintain that political institutions are largely an epiphenomenon. Synthesizing the two conflicting schools of thought, we examine how different institutions in conjunction with three forms of ethnic diversity – fractionalization, dominance and polarization – affect the risk of civil war. We argue that groups perceive institutions as a constraint and that they consider the usage of political violence if they cannot achieve their goals peacefully. Our examination of these conditional institutionalist hypotheses for the period between 1950 and 2000 shows in accordance with recent theoretical work that fractionalization can indeed be linked to low-intensity civil wars and that this effect is particularly strong in democracies in comparison to autocracies. Interacting the measures of diversity with different democratic institutions, we show that rules that encourage power-sharing lower the risk of war in diverse societies. Duration models particularly show that the combination of fractionalization and majoritarian voting forebodes badly for the internal stability of a state. Within the set of democratic regimes studied in this article, presidential systems are the most war-prone institutional setting.

Keywords

Civil war – Democratic Peace - Ethnic Diversity - Fractionalization – Polarization –
Dominance

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Introduction

The attempts of the international community to democratize war-torn countries like Afghanistan, Bosnia or Iraq have reinvigorated the debate of whether or not political institutions help to mitigate the conflict potential in ethnically diverse societies. ‘Constitutional engineers’ of different theoretical vintage have for a long time maintained that proportional representation, the presence of multiparty systems, decentralization or strong presidencies either shield the political executive against the wishes of radical minorities or enable policy makers to co-opt these social forces into the political system.

In a path-breaking series of contributions to the theory of democracy, Lijphart (e.g. 1977, 1999) advanced the view that rules that force contending groups to share power are particularly helpful in this respect. Reynal-Querol (2002, 2005) recently bolstered this viewpoint by showing that inclusive political systems face a lower likelihood of conflict. Wilkinson (2004), despite his criticism of Lijphart’s work on India (1996), supports this viewpoint of the optimist school of thought, demonstrating that the exclusion of powerful social groups from political competition has gone hand in hand with increased militancy and violence in the Indian states. According to his results, an intermediate number of effective parties is an important predictor of ethnic conflict, while systems with two and more than four parties are more peaceful by comparison. Brancati (2006), Cohen (1997) as well as Saideman et al. (2002) let us expect that decentralized policy making is a source of peace, and Fearon and Laitin’s (2003) influential empirical study suggests that powerful executives might help to alleviate the centrifugal tendencies of multiethnic societies.

Political sociologists have, by contrast, argued in the tradition of Lipset and Rokkan (1967) that institutions reflect the cleavages within a society and that they consequently have only a limited pacifying capacity at best. This alternative perspective suggest that the ethnic or social composition of a state should – largely independently of the institutional context in which the competing groups act - affect the risk of internal war. Many articles that directly or indirectly examined this hypothesis relied on fractionalization or the presence of threatened minorities as indicators of diversity (e.g. Fearon and Laitin 2003). Examinations which focus on diversity, have, however, come up with inconclusive results so far (Hegre and Sambanis 2006) or were falling victim to different research design problems such as selection effects (Christin and Hug 2005). More recent scholarship thus advances the view that rather the dominance by one group (Collier and Hoeffler 2004), the polarization between competing ethnicities and religions (Montalvo and Reynal-Querol 2005) or the exclusion of significant ethnic groups from government (Cederman & Girardin 2007, but see also Fearon, Kasara & Laitin 2007) forebodes badly for the internal stability of a society.

This article evaluates some of the recent claims about the role of political institutions in pacifying ethnically diverse societies. We argue that the ethnic structure of a state mitigates this security-effect of political institutions and that inclusive rules that enable strong groups to participate in power alleviate social tensions. We justify this expectation of a conditional impact of institutions with an instrumentalist understanding of policy making. In our view, groups that try to achieve their goals might see rules as a constraint. If they are relatively small, they might not be powerful enough to profit from democratic rules. This increases the risk that they will resort to political violence to achieve their goals. Hence, we expect that fractionalization increases the risk of conflict in democracies in comparison to autocracies. Further, the more exclusive the rules are that a group is facing, the more conflict-oriented non-represented groups become.

We show with the help of duration models and in accordance with the theoretical work of Esteban and Ray (this issue) that fractionalization can indeed increase the risk for low intensity civil wars in democracies. The interactive effect of polarization in conjunction with the various institutional rules that we are examining is more ambiguous, but generally support the Lijphartian conjecture that inclusive rules pacify states. Further, presidential regimes do not empower the state against rebellion. They constitute rather the most conflict-prone setting of the democratic arrangements that we study in this paper.

The remainder of this paper is organized as follows: we will first discuss the arguments that have been made on the role of institutions in the diversity-conflict nexus. Next, we will present the research design and operationalize the key concepts. The article concludes with the discussion of our statistical findings and their implications for the study of civil war and diversity.

The Link between Ethnic Structure, Electoral Institutions, and Conflict

The institutionalist scholarship on civil war initially followed the research program on the *Democratic Peace*. It thus started out with general analyses on how regime type influences the risk of conflict. Hegre et al. (2001) find an inverted u-shaped relationship between democracy and civil war, suggesting that the probability of violent conflict in democracies and autocracies is lower than in semi-democracies. Recent contributions have started to disentangle for the subset of democracies how various institutions enhance or mitigate the likelihood of war. One example is Reynal-Querol (2002, 2005) who argues that proportional representation and, more generally, the inclusiveness of a political system make a difference. Her study draws on a rich literature in comparative politics which argues since the 1960s that institutions that force groups to share power are a key pacifying force.

However, there is a vivid debate over the specific institutional arrangement that might help societies to solve inter-group conflicts peacefully. A recent dispute on electoral arrangements on Fiji and in particular the alternative vote shows that we are still quite far away from a consensus on the impact that individual institutions have on social stability. Horowitz (2004, 2006) advances the alternative vote as a tool to pacify states. With regard to the situation on the Pacific island, he writes: ‘Countries such as Fiji, in which there is a struggle for domination between two sizable groups, need institutional support for their periodic, if oscillating, impulses toward compromise’. Fraenkel & Grofman (2004, 2006) speak in favor of proportional representation and conclude that ‘a proportional representation system would have given the moderate parties greater representation as well as rendering much more likely their inclusion in, and/or enhanced their influence over, postelection governments’ (Fraenkel & Grofman 2006:648)

What is more, some work done in political sociology even suggests in the tradition of Lipset and Rokkan (1967) that the institutions that a country has adopted largely reflect the key cleavages within a society and that carefully drafted rules have at best a marginal effect on the conflict propensity within a country. It has been noted for a long time that the installation of a majoritarian system is more probable for homogeneous societies. Lijphart (1992) has found for instance considerable support for this conjecture in a comparative analysis of the democratization processes in Czechoslovakia, Hungary, and Poland. Boix (1999), examining the determining factors for electoral system choice in advanced democracies, concludes that ethnic and religious fractionalization promotes the adoption of proportional representation.¹

One possible reaction to this alternative conjecture is to test whether the possible impact of institutions is endogenous. As Reynal-Querol (2005) shows through her endogeneity tests and the similar results reported in the webappendix to this paper confirm, institutions only partly reflect the social fabric surrounding them. It should, however, be noted that such tests face severe empirical and methodological problems in comparative institutionalist analyses like the one we are conducting here. We therefore agree with Acemoglu (2005:1044) that we “need to find other strategies, even more clever instruments, or other, perhaps new, econometric techniques to decide which specific dimensions of these institutions matter” for which we wish to establish a causal effect.

We follow an alternative route in this inquiry and examine how institutions in their interaction with a particular form of ethnic diversity affect the risk of civil war. Hence, we assume that the main effect of rules is mitigated by the social, ethnic or religious cleavage structure in which contending groups act. To understand the interaction between institutions

and the political space surrounding them, we distinguish between the three main manifestations of diversity – fractionalization, polarization and dominance – that have been used in the recent scholarship on civil war. The fractionalization (F) index, on which most quantitative studies on ethnic conflict have relied, derives from the Hirschman-Herfindahl measure of concentration:

$$F = \sum_{i=1}^N \pi_i (1 - \pi_i). \quad (1)$$

where π_i stands for the size of group i . The analytical problem of this measure in conflict research was first addressed by Reynal-Querol (2002). Simply put, fractionalization increases the more the groups split up in equally sized subgroups. Yet, the more groups there are, the more unlikely it is for them to overcome the collective action problem and to organize efficiently for military combat. Reynal-Querol (2002), therefore, proposed an alternative indicator which draws on the work of Esteban and Ray (1994).² Her measure (RQ), which is largest when a country consists of two equally powerful groups, can be summarized as follows:

$$RQ = 4 \sum_{i=1}^N \pi_i^2 (1 - \pi_i) \quad (2)$$

Reynal-Querol (2002) and Montalvo & Reynal-Querol (2005) show that the risk of conflict grows with increasing levels of polarization, but that fractionalization does not exert a systematic effect.³ The third diversity indicator was introduced by Collier (2001); it measures whether a large groups is dominated by another strong group. The dummy variable, which is prominently used by Collier and Hoeffler (2004), is 1 if the largest group contains between 45 and 90% of the overall population. We believe that this definition is unfortunate as it also contains cases of polarized societies. The more restrictive measure that we will introduce below is linked to the expectation that dominant groups can deter threats from challenging groups and that dominance is therefore expected to lower rather than to enhance the risk of civil war.

Ethnic Diversity and civil war in autocracies and democracies:

Our argument on the linkage between institutions, diversity and civil war builds on the assumption that dominant cleavages within a country mitigate the possible effects that political rules exert on the political competition within a society. We focus on one of the main cleavages within a society – ethnicity – and leave it to future work to explore how the

interaction between other cleavages and institutions affects the internal stability within a state.⁴

We adopt an instrumentalist understanding of political violence and believe that group leaders only consider this means if they cannot reach their goals in a peaceful fashion. The relative strength of the group and the institutional context in which a group acts ultimately influence the relative attractiveness of this costly instrument. In both democracies and autocracies, the chance to come to power – or at least to participate in it - and to influence redistributive questions grows with the size of the group. Yet, in polarized societies, the usage of political violence only looms large in the latter type of political regimes. This also means that we only have to expect those groups to revolt in democracies that do not face a reasonable chance to be co-opted into the government at some point. The consequence of this is that we should observe an increased chance of civil war the more fractionalized a democracy is. As Esteban & Ray (this issue) suggest, the resulting armed conflict might be only a minor one as the groups are fighting over a relatively small rent in comparison to conflicts in polarized societies where, in the most extreme case, two equally powerful, antagonistic groups are pitted against each other. In a state in which one side dominates the other side, we should observe that the larger group is able to deter possible leadership challenges. Hence, we expect that this form of diversity has a pacifying effect on the risk of conflict. In democratic states, we can, however, assume that ethnic dominance renders conflict more likely, as the smaller group has only a limited chance to come to power through regular means.

Our theoretical framework boils down to the expectation that the causal mechanisms that make civil unrest likely differ across political regimes. The key difference between autocracies and democracies is, obviously, the way in which political competition takes place. While democratic politicians need to commit themselves to broad societal goals in order to be elected, a similar need exists in autocracies only vis-à-vis the groups that select and elect their leaders (Keefer 2007). The varying size of the electorates and the ‘selectorates’ (Buono de Mesquita et al. 2003) leads to different levels of economic efficiency and also renders democratic leaders more timid towards the usage of force than autocratic ones. Golder (2005) additionally reports that some autocracies have become more stable following non-competitive elections.

Hypothesis 1 summarizes our theoretical argument on the difference between democracies and autocracies in the context of ethnic fragmentation. We distinguish between a direct impact of diversity (H1a) and an indirect one which is mitigated by the institutional context (H1b).

H1a: In autocracies ethnic polarization increases the risk of conflict, while ethnic dominance decreases it. Ethnic fractionalization is not directly linked to the internal stability of an autocratic regime. .

H1b: The risk of civil war is smaller in ethnically polarized democracies than in non-polarized ones; it is larger in democracies with a dominant ethnicity than without one, and internal instability increases the more fractionalized a country is.

Democratic institutions and civil conflict:

As the development of the *Democratic Peace* literature suggests, the institutionalist analysis of diversity and conflict should not stop with the dichotomy between democracies and autocracies. We will in the following present the main recommendations that institutionalists have made in their analyses of conflict in highly divided democracies. According to these 'constitutional engineers,' the careful selection of constitutional rules alters the power game within a democracy and influences its internal conflict propensity.

Electoral rules: Advanced democracies use a variety of rules to regulate the competition between contending social interests. These institutions have two important effects. First, they influence the probability that the diverging political interests are represented according to their relative strength within a society. Second, electoral rules structure how parties fight for office and influence. The canonical starting point of any institutionalist analysis of the effect of electoral rules is still Duverger's Law. This key result boils down to the hypothesis that majoritarian systems will have two-party systems, while proportional representation is characterized through multi-party systems. Cox (1990, 1997) and others have generalised this result and shown how electoral rules affect political competition.⁵

These results suggest that the inclusion of minorities in the political system might be advantageous as they otherwise employ non-parliamentarian means to pursue their political goals. Most empirical studies so far point out that electoral rules that induce power-sharing among competing groups pacify intrastate relations, while the winner-takes-all logic of majoritarian systems rather increases the risk of political violence. Reynal-Querol (2005) develops a formal model and shows empirically that inclusive political systems experience less civil war than less inclusive ones.

Other rules might add to the impact that proportional representation or majoritarian systems have on the risk of civil war. As Cox (1997) suggests, the importance of electoral rules is particularly mitigated by the size of the voting districts. Our empirical examination will in this vein control for the possibility that large voting districts - combined with plurality

rule – eases the chance of small groups to be represented politically and, ultimately, to influence political outcomes.

An informal rule of a democratic system that might furthermore prove to be important in the diversity-conflict nexus is the effective number of parties. In a pioneering study, Wilkinson (2004: 237) has found that this variable exerts a curvilinear impact on the conflict propensity within a nation state: ‘... in states with high levels of party fractionalization, such as Bulgaria, Malaysia, and the Indian states of Bihar and Kerala, governments will protect minorities in order to hold their existing coalitions together as well as preserve their coalition options for the future. In states with low levels of party fractionalization, things become much more dangerous for minorities...’

This result obviously begs the question of whether or not party systems are a consequence of institutions alone, as Duverger’s Law suggests. Various scholars have examined in the past the relationship between ethnic and party system fragmentation (Brambor et al. 2005; Moser 2001; Ordeshook and Shvetsova 1994).⁶ The main result of these studies is that ethnic fragmentation raises the number of parties, even more so in proportional electoral systems. However, as Amorim Neto and Cox (1997) have convincingly argued, electoral systems and in particular majority rule only lead to two-party systems if there are few social cleavages. Multiparty systems thus form in the presence of proportionality and a multitude of cleavages.

Federalism and presidentialism: Another form of power-sharing mechanism is federalism and thus the possibility that a political system co-opts regional elites into the political system. Focussing on the period between 1985 and 1998, Saideman et al. (2002) detect a significant reduction in the likelihood of conflict in decentralized polities. Brancati (2006: 681) offers similar evidence for the 1990s. According to his analysis, “decentralized systems of government are less likely to experience intercommunal conflict and antiregime rebellion than centralized systems of government”. Controlling for sample selection and endogeneity problems, Christian and Hug (2005) show, by contrast, that the pacifying effect of federalism is limited. Brancati (2006) similarly points out that the presence of regional parties can dampen the beneficial impact of decentralization. We follow the Lijphartian logic and expect that decentralized decision making appeases societies. This should particularly be the case for the interaction with polarization, while we expect an increased risk of civil war of this institutional feature in conjunction with dominance and fractionalization. In a polarized society, decentralization means an increased chance that the contending groups are part of a federal or a regional arrangement, while increased fractionalization and dominance render such a cooptation into power more unlikely.

Presidentialism, and thus a strongly majoritarian institution, could incite groups that are out of power to resort to political violence. Presidential regimes have frequently been associated with instability (e.g. Linz and Valenzuela 1994); also they exhibit a far worse human rights record than parliamentary systems (Spörer 2006). Fearon and Laitin (2003) demonstrate that the power of the state in fighting possible insurgents makes a considerable difference and reduces the likelihood of civil war. In a presidential system, the executive is at least theoretically empowered to resist challenges from opposition forces. We will nevertheless follow the general logic of this article and assume that presidentialism excludes strong groups from government and renders therefore the usage of political violence more attractive to these groups.

Hypothesis 2 sums up our expectation about the influence that the three forms of ethnicity have on the risk of civil war within a society and how institutions enhance or lower this risk. We generally expect in line with Lijphart and other advocates of power sharing mechanisms that inclusive features of a democracy reduce the risk of war, while rules benefiting ethnic majorities have the opposite effect. The comparative literature also lets us expect that the usage of violence will become a less attractive option if an ethnic group has a chance to participate in power. We therefore expect that the interaction of the majoritarian institutions with diversity characteristics makes civil war more likely.

H2: Majoritarian electoral systems, small district magnitude, decentralization and presidentialism in the interaction with polarization reduce the risk of war, while this danger increases in the combination with fractionalization and dominance. An intermediate number of parties in conjunction with the latter two features of diversity renders civil unrest more unlikely.

Research design

We examine whether political institutions – alone or in conjunction with three measures of ethnic diversity – affect the risk of civil war in the period from 1950 to 2000. To address hypothesis 1, the universe of cases encompasses all country years during the half century under examination, thus our sample includes 132 countries and 129 civil war onsets. For the second hypothesis we restrict the analysis to democracies. The sample used for this purpose contains 87 democracies and 34 civil war onsets.⁷ In the definition of a democratic regime we follow Przeworski et al. (2000) and Golder (2004, 2005). The former authors define a regime as a democracy when the chief executive and the legislature are competitively elected, if there is more than one party competing for office, and if there has been alternation in power. The latter criterion is important as elections might only be held because the opposition is unable to

win. For a given year, Golder (2004, 2005) considers also as democracies countries that experienced a competitive election prior to a transition to dictatorship in the very same year. We include these cases in our estimations.⁸

We estimate the risk of civil war onset with the help of survival analysis, a technique that takes the time into account until the occurrence of some event. This is in our case the onset of armed conflict. We rely on the conditional risk set model by Prentice et al. (1981, see also Box-Steffensmeier and Zorn 2002), which allows us to study civil war onsets as ordered multiple events. The multivariate technique, which we fitted based on time from entry and clustered on subjects which in our case are countries, is an extension of the Cox semiparametric approach. The conditional risk set approach assumes that an observation is not at risk for a subsequent event until all prior events have already occurred. This means in our case that the risk set at time t for the k th onset only contains those countries that have already experienced $k-1$ onsets, so our model is stratified on the failure order allowing for strata specific baseline hazards.⁹ Robust standard errors were calculated and tied survival times were handled with the Efron approximation, which is an especially convenient approach to handle this problem when the sample size is small and the data heavily censored (Hertz-Picciotto&Rockhill 1997). The key assumption of a proportional hazard structure does not necessarily hold with a stratified Cox model for the combined data, but nevertheless is assumed to hold within each stratum. For each model we tested the assumption based on the analysis of the Schoenfeld residuals, which provides more reliable results than residual plots, and find that this assumption is frequently violated within the single strata and for the combined case. As a consequence we interacted the respective variables with a log function of time and include these interactions in the model (Box-Steffensmeier et al. 2003).¹⁰

Operationalization of the main variables:

Event variable: To measure *civil war onset*, we have used the Uppsala/PRIO armed conflict data set (Version 3.0) (Gleditsch et al. 2002, Strand et al., 2004). Our analysis focuses on internal and internationalized internal conflicts and is thus limited to disputes that are located in the country of reference. The conflict indicator takes the value of 1 if the threshold of 25 battle-related deaths has been crossed for the first time and 0 if no internal civil war has started in the year under consideration. Subsequent years of an ongoing conflict are censored.

Explanatory variables: Except for our measure of federalism, all institutional explanatory variables are taken from the Golder (2004, 2005) dataset on democratic institutions.

Majoritarian System: This dichotomous variable amounts to 1 if a country uses a majoritarian electoral system; all other electoral systems receive a value of 0. The majoritarian category

includes political systems that employ plurality rule as well as those that use absolute and qualified majority requirements. We have also coded Papua New Guinea and Mauritius, the only countries using majoritarian multi-tier systems, as majoritarian electoral systems.

Proportional System: This dichotomous variable was similarly derived from the Golder (2004, 2005) dataset. It indicates with a value of 1 whether a country uses a proportional electoral formula with either a single tier or multiple electoral tiers.

Effective Number of Parties: This variable indicates the effective number of electoral parties in a country. It was calculated with the formula from Laakso and Taagepera (1979), $1/\sum v_i^2$, where v_i is the percentage of the vote received by the i^{th} party and independents or ‘others’ are treated as a single party. It was obtained from Golder (2004, 2005). To gauge the hypothesized curvilinear effect of this variable, we also use its square term.

Average District Magnitude: This variable is calculated as the total number of seats allocated in the lowest tier divided by the number of districts in that tier. It was taken from Golder (2004) and is used alone and in conjunction with the majoritarian variable as large districts offset the winner-takes all logic of the plurality rule. Because the distribution of this indicator is skewed, we use the natural logarithm.

Federalism: This institutional variable is included to measure the degree of centralization which may influence the risk of a civil war onset. As it is not available from the Polity IV dataset, this dichotomous variable was taken from Polity III and updated for the post 1994 years using Griffiths and Nerenberg (2005), Gerring and Thacker (2004), Gerring et al. (2005) and especially for African countries Kuenzi and Lambrigh (2005). It is 1 when a country is geographically decentralized in terms of decision-making authority, 0 otherwise.

Presidential System: This is a dummy variable, taken from the Golder (2004) data set, that amounts to 1 if a country is classified as a presidential democracy, 0 if not. The president may be elected directly or indirectly; the decisive criterion is whether or not a president is able to select a government and determine its survival. It was complemented for some African countries using Kuenzi et al. (2005) and changed to 1 in those cases where a country was not considered a dictatorship in the Golder dataset.

To test the effect of social and ethnic divisions within a society, we calculated our dominance and polarization variables making use of ethnic composition data. We mainly use data from Fearon (2003); the alternative measures based on Alesina et al. (2003) led to similar results that can be obtained from the authors upon request.

Ethnic fractionalization: We use a measure from Fearon (2003) who relied on the Encyclopedia Britannica and other sources. The fractionalization index ranges from 0 to 1; we updated the year 2000.

Ethnic Dominance: Collier (2001, see also Collier & Hoeffler 2004) introduced a dichotomous variable to measure ethnic polarization. Their concept is 1 if there is an ethnic group representing 45 to 90% of the population, which we believe – as indicated - to be misleading as it also includes the cases of highly polarized societies where two equally strong groups confront each other. We therefore constructed a dummy variable which is 1 if there is an ethnic group representing 60 to 90% of the population, 0 otherwise.

Ethnic Polarization: Our polarization measure was calculated based on the formula originally proposed by Reynal-Querol (2002) (see also Reynal-Querol 2005; Montalvo and Reynal-Querol 2005) and equals 1 for cases of high polarized societies and 0 otherwise. As we have shown elsewhere (Author), one of the problems of this index is its high correlation with ethnic fractionalization. To overcome this problem, our alternative measure tries to exclusively capture the cases within the medium range of ethnic fractionalization where the correlation is around zero. We thus constructed a dummy variable which excludes the cases above the 45° line of the correlation matrix between ethnic fractionalization and ethnic polarization and additionally uses a threshold of 0.5 of the Reynal-Querol polarization.

Control variables: We rely on some of those control variables that have been proven to exert a robust influence on the risk of conflict in the meta-analysis of Hegre and Sambanis (2006) and other recent statistical studies on the causes of civil war onset.

Population size: As we also include a variable for economic openness, population size is an important control variable since bigger countries produce for a larger domestic market and are less outward-looking economically as a consequence. Moreover, Collier and Hoeffler (1998, 2004) find a positive relation between the size of the population and the onset of conflict, indicating that the sources of conflict grow with the interaction opportunities. We use data from the Penn World Tables Version 6.1 (Heston et al. 2002). For balancing out the skewed distribution, we use the natural logarithm of this indicator.

Economic development: In line with Lipset (1959) and others, we expect a higher stage of development to increase political stability. Wealthier countries have, according to this logic, more resources at their disposition that could be invested in social insurance and other forms of redistribution that alleviate social tensions. In highly developed countries, the tax base is also broader than in developing economies and the individual opportunity costs of war are larger (Collier and Hoeffler, 2004). Economic Development will be measured through the

GDP per capita with data from the Penn World Tables Version 6.1. We again account for the skewed nature of the variable by using its log transformation in the statistical tests.

Regime Durability: We use this variable in our most general model as there is evidence that political instability increases the risk of civil war onset (Hegre et al. 2001, Fearon and Laitin, 2003). We use the Durability variable from the Polity IV data set (Marshall and Jaggers, 2000) which measures the polity durability since the last transition or since 1900.

Political Institutions and Civil War Onset, 1950-2000

Democracy vs. autocracy: The empirical tests start out with a general examination of whether the three measures of ethnic diversity - fractionalization, dominance or polarization - have a different impact across political systems. Due to the conditional nature of hypothesis 1, we interact the diversity variables polarization, fractionalization and ethnic dominance with the institutional variable of interest. To this end, we employ a democracy dummy based on Golder's (2004, 2005) classification. In the case of interaction models, results reported in conventional result tables do not present meaningful quantities (Brambor et. el 2006). Thus, for the sake of brevity and space, we directly report the combined marginal effect and the correct standard errors for the interaction terms used.¹¹ Table 1 presents the most general test of the recommendations that constitutional engineers have made and examines the impact of democracy on the likelihood of civil conflict. It also shows how the impact of ethnic diversity differs in the comparison of democracies and autocracies.

[[Table 1 about here]]

The results reported in Table 1 lend strong support to our conjecture that the societal causes of civil war differ across political systems. To begin, autocracies are much more exposed to internal instability; they experienced three times as many civil war onsets as democracies. The coefficient reported for the democracy dummy confirms this. As predicted, democracy exerts a highly significant and pacifying effect on the likelihood of experiencing an onset of civil war when there are no ethnic divisions present. Statistically, the log-rank test confirms the divergence in the way that autocratic and democratic states fall victim to political violence. This test rejects the hypothesis that the survivor functions of both regime types are the same. As we are dealing with a multiplicative interaction model, the hazard ratios of our diversity variables capture the effect for autocratic systems, i.e. when the democracy dummy equals 0. As expected, fractionalization does not have a significant effect in autocracies, whereas ethnic dominance is not threatening autocratic leaders. Its hazard ratio shows a significant negative effect. Ethnic polarization, however, constitutes a threat in autocracies.

In democracies, polarization exerts a negative influence on the hazard to experience an onset of civil war, although this effect loses its significance once the marginal effects are calculated. This result supports our expectation that the groups hope at some point to be in power and thus to resort to peaceful means to enact a political change in their favour. Thus, it seems that this most general form of institutional arrangement is able to pacify the situation of two contending groups. Ethnic dominance in turn poses a threat for democracies, although this relationship is only marginally significant with a p-value of 0.11. A fractionalized society seems to be the biggest challenge to a democratic country. This result is all the more surprising as fractionalization, especially in its religious form, hinders democratization in the first place (Papaioannou and Siourounis 2006). But the result reported in Table 1 clearly supports the fear that democracy as such is not a sufficient prerequisite to shield a society against the threat stemming from relatively small groups. The results raise the question, to which we will turn below, whether specific institutional arrangements might be appropriate to reconcile the differences between the leading groups and the militant minorities.

In general our control variables show the expected influence on the hazard of the onset of civil war and thus confirm the main empirical findings in the literature. While larger states face a higher risk of war than smaller (and more homogeneous) ones, the durability of the institutional setting reduces it. The only striking difference is the development variable. Per capita income seems to increase the risk for a state of falling victim to a civil war. This effect can be explained through the explicit modelling of the nonproportionality of the development variable.¹² The interaction with time assumes that the coefficient on development changes as a function of $\ln(T)$. The point at which the effects both cancel each other out occurs at about four and a half years.¹³ At a more theoretical level, the surprising effect might be due to the fact that development is at least partly an endogenous factor. Poverty creates the incentive to engage into political violence in the first place, but wars in return lead to poverty. We believe that this double nature of development has not been sufficiently addressed in the conflict literature so far.¹⁴ The results that we obtain for the control variables within the limited sample of democracies – reported below - match the ones in this global inquiry.

The impact of democratic institutions: As we cannot differentiate much between the institutional structures of autocracies, we turn now our attention exclusively to the potentially conflict reducing or conflict fostering impact that the individual electoral rules and constitutional provisions have on the risk of civil violence. Hypothesis 2 lets us expect that

some of the features of democratic regimes affect the risk of civil war in combination with their ethnic background.

Table 2 reports the results of six conditional risk set models where each model includes the same control factors as well as the ethnic fractionalization, dominance and polarization measures and their respective interaction terms. Equation (1) reports the results of a baseline model that only includes these control factors. As some political systems are based on a mixture of majoritarian and proportional elements, we add in equation (2) a measure to gauge the impact of electoral arrangements. Next, equations (3) and (4) explore the possible effects of decentralized decision making and presidential systems. We test for the effects of the effective number of parties in model (5). We use the effective number of electoral parties both in its simple and in its squared form. The usage of the interaction term helps us to test the hypothesis of Wilkinson (2004) that the relationship between the number of parties and the risk of conflict takes a curvilinear form. Model (6) checks the conjecture that the average magnitude of voting districts has a direct bearing on the resulting inclusiveness especially in democracies using proportional voting arrangements. To test this, we use three-way interaction terms (average magnitude of district, proportional systems and the different diversity variables).¹⁵ This allows us to control for the fact that increasing district magnitudes in majoritarian systems follow the winner-takes-all-logic.

[[Table 2 about here]]

The results reported in Table 2 lend some credence to the hopes of those constitutional engineers who advance certain institutions as a tool to alleviate social conflict. As expected, in equation (2) the marginal effects of the interaction terms indicate that especially ethnic fractionalization and polarization combined with majoritarian voting rules make civil war more likely. The hazard ratios for our constituting terms, our diversity variables, indicate the effect when the dummy variable for majoritarian representation equals 0, thus they indicate the effect for proportional and mixed systems. Although ethnic fractionalization still fans the flames of violent conflict, the statistical evaluation shows in support of Reynal-Querol (2002, 2005) and hypothesis 2 that, controlling for the presence of the ethnic structure of a country, more inclusive representation arrangements rather than majoritarian systems pacifies intrastate relations, as the magnitude of the hazard for fractionalization decreased by a factor of about 117. A similar effect is observable for the interaction of fractionalization with federalism, our variable indicating territorial organization. As indicated by the marginal effects of the interaction term, in power sharing arrangements fractionalization is at least less problematic compared to centralized countries. Like expected, ethnic dominance displays the

opposite effect and is, although highly significant, far less conflict fostering in centralized than in federalist systems. In presidential systems, diversity does not seem to be the driving force behind violent conflict outbreaks. However, without ethnic diversity present as captured by fractionalization, dominance and polarization, presidential systems are much more likely to experience internal war; almost half of the included civil war onsets in democracies took place in these regimes.

As our conditioning institutional variables in models (5) and (6) are continuous, the combined marginal effects and its corresponding standard errors are best presented graphically; the cell entries consequently represent the hazard ratios (Brambor et al. 2006). In model (5), we cannot confirm the curvilinear relationship of the effective number of parties for the case of ethnic dominance. Although the marginal effects of polarization show a similar relationship as in the case of fractionalization, the effect is never statistically significant. For the interaction term between the latter form of diversity and the effective number of parties, the solid sloping lines in Figures 1 and 2 show how the marginal effects of ethnic fractionalization and its squared term respectively change as the effective number of parties increases.¹⁶ The effect is significant whenever the upper and lower bounds of the 90% confidence intervals drawn around it are both above or below the zero line. The figures show that the effective number of parties influences the risk of conflict in a curvilinear way and that this effect fades away above a threshold number of parties of about four.

[[Figures 1 and 2 about here]]

In model (6) we examine the influence that the average magnitude of districts in proportional systems exerts on the hazard of the onset of civil war. Again, we illustrate the marginal effects of our variables of interest graphically. The results illustrated in in Figure 3 show the marginal effects of ethnic dominance and ethnic fractionalization on the hazard to experience an onset of minor armed conflict as the average district magnitude increases in proportional systems.¹⁷ To facilitate the visual inspection, we use stars on the solid lines instead of confidence intervals to indicate the range where the effect is statistically significant. As expected, fractionalization shows a conflict reducing effect. If the average magnitude of district falls in a range from 1.2 up to 1.5, fractionalization has a small positive effect on the hazard to experience an onset of civil war. When the district magnitude is bigger than about 1.5, however, as expected this type of social division has a strong conflict reducing effect.¹⁸ Interestingly, ethnic dominance has a pacifying effect when the size of the district falls between 1.35 and 3, although it has to be emphasized that the effect is far from being strong. Furthermore, the slope of the solid line indicates that the effect is fading the larger the average voting district in a country is.

Conclusion

This paper has evaluated some of the claims made by those constitutional engineers who propagate certain rules as precepts for mitigating ethnic conflict in ethnically fragmented countries. First, we show that the impact of ethnic diversity on the risk of civil war differs across political regime types. In an autocratic setting, two forms of ethnic diversity affect the risk of conflict: polarization makes such states more vulnerable to civil unrest, while dominance by one group reduces this risk. Ethnic fractionalization, by contrast, increases the risk of conflict in democracies. These countervailing effects confirm recent findings according to which political competition in democracies and autocracies follows a fundamentally different logic (Bueno de Mesquita et al. 2003, Keefer 2007). In democracies, the usage of political violence mainly seems attractive for small groups that do not stand a reasonable chance to influence policy-making. In autocracies, the repressive apparatus is generally so strong that only strong minorities or suppressed majorities resort with some prospect of success to war. Second, we have shown that power-sharing institutions, especially proportional electoral systems and the average magnitude of voting districts, have some potential to pacify intrastate relations even in the presence of strong divisions within a society. Third, the number of parties, which only partly reflects the ethnic composition of a country, is an important facet in the nexus between polarization and conflict. In line with Wilkinson (2004), an intermediate number of parties increases the conflict potential. The curvilinear relationship between the effective number of parties and the risk of conflict shows that only party systems with few and many parties force the governing groups to respect minority wishes. This effect, however, is only observable in fractionalized democracies. Fourth, our tests particularly revealed in line with the literature on the effects of constitutions that political institutions are not only a secondary phenomenon. They are, in other words, not completely determined by the social fabric of a country, but they can make a difference and alter the rules of the game.

Our statistical study adds to the recent ‘democratic civil peace’ examinations that have started to open the black box of democracy. We believe in line with the institutionalist literature that rules can make a difference, but it is too simplistic to call only for democracy if one wants to mediate social and ethnic conflicts within a country. As comparativists have argued for a long time, we need to take into account how centrifugal and centripetal the diverse rules are and whether a specific institution – or a mix of rules – really seems adequate for a particular country. As Lipset and Rokkan (1967) have taught us a long time ago, we also

need to consider the number of cleavages and whether these conflicts reinforce or dampen each other. This article is a first attempt to synthesize the insights of political sociology and constitutional political economy for the study of civil wars. Future studies will have to examine how other forms of diversity interact with institutions in reducing or enhancing the internal conflict potential of states.

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Table 1: Determinants of Civil War Onset, 1950-2000

	(1) rh	(2) t
Population (ln)	1.613*** (0.195)	0.914 (0.052)
Development (ln)	1.423** (0.230)	0.790*** (0.066)
Democracy	0.012*** (0.014)	
Fractionalization	1.405 (0.617)	
Ethnic Dominance	0.199*** (0.099)	1.986*** (0.447)
Polarization	3.582*** (1.717)	0.621** (0.144)
Polarization x Democracy	.2759208 (.3610227)	2.915** (1.412)
Fractionalization x Democracy	227.9864*** (332.5646)	
Dominance x Democracy	10.61245 (15.92504)	0.538 (0.245)
Durability	0.980** (0.008)	
Observations	4789	4789
Number of subjects	132	
N° of failure	129	
LR chi2	133.8	
Prob > chi2	0.000	

NOTE: Cell entries are hazard ratios. Robust standard errors in parentheses. In the case of the interaction terms with the diversity variables, cell entries report the combined marginal effect and the correct standard errors. Row t denotes the results for the interaction terms with ln(t).

*** p<0.01, ** p<0.05, * p<0.1

Table 2: Institutions and Civil War Onset in Democracies, 1950-2000

	(1) _t	(2) rh	(3) t	(3) rh	(4) t	(4) rh	(5) t	(5) rh	(6) t	(6) rh	(6) t
Population (ln)	1.670*** (0.229)	1.694*** (0.238)		2.195* (0.930)	1.030 (0.191)	1.981 (0.839)	0.950 (0.160)	1.535*** (0.247)		2.092*** (0.407)	
Development (ln)	1.028 (0.178)	1.505** (0.308)		1.146 (0.183)		1.125 (0.161)		1.254 (0.271)		1.893*** (0.442)	
Durability	0.977** (0.009)	0.967*** (0.008)		0.979* (0.011)		0.979* (0.011)		0.979** (0.010)		0.950*** (0.010)	
Fractionalization	397.949*** (554.435)	221.346** (470.741)		5272.159*** (10834.898)		36509.333*** (98510.254)		1192.260 (10967.970)		7463.610 (50445.299)	3.505 (7.240)
Ethnic Dominance	8.539*** (5.362)	0.482 (0.647)	2.661** (1.133)	8.016*** (5.639)		33.986*** (37.741)		267.057 (1,429.075)		7.178 (21.737)	3.474 (3.289)
Polarization	1.257 (0.591)	1.031 (0.927)		1.673 (0.921)		2.309 (1.376)		0.001 (0.004)	3.277 (2.470)	0.002*** (0.004)	25.166** (20.184)
Majoritarian		0.030 (0.070)									
Polarization x Majoritarian		3.953*** (1.600863)									
Fractio-nalization x Majoritarian		25977.13*** (83195.49)									
Dominance x Majoritarian		2.603534 (3.802182)									
Federalism				6.986 (13.046)							
Polarization x Federalism				.3059582 (0.415)							
Dominance x Federalism				64.252*** (90.409)	2.320 (1.724)						
Fractionalization x Federalism				51.43175** (92.722)							

Table 2 continued

<i>Presidentialism</i>	626.126***			
	(1,426.731)			
Polarization x Presidentialism	0.712 (0.461)			
Fractionalization x Presidentialism	21.471 (44.570)			
Dominance x Presidentialism	1.744078 (2.193)	1.243 (0.679)		
<i>Effective N° of Parties</i> <i>(ENEP)</i>			77.276 (219.650)	0.320 (0.299)
Effective N° of Parties Squared			0.663 (0.203)	1.123 (0.115)
Polarization x ENEP			10.317 (27.087)	
Polarization x ENEP squared			0.794 (0.233)	
Fractionalization x ENEP			1.818 (8.520)	
Fractionalization x ENEP squared			0.711 (0.442)	
Dominance x ENEP			0.145 (0.355)	
Dominance x ENEP squared			1.230 (0.326)	

Table 2 continued

<i>Magnitude (ln)</i>										7.291 (9.931)	
Proportional System (Prop)										0.000 (0.000)	
Proportional System x Magnitude (ln)										4.645e+12 (1.132e+14)	
Polarization Magnitude (ln)										35.421** (49.631)	0.161*** (0.089)
Fractionalization Magnitude (ln)										0.350 (0.803)	1.874 (1.534)
Dominance x Magnitude (ln)										0.001*** (0.002)	
Polarization x Proportional System										1.055e+76 (1.461e+78)	
Fractionalization x Proportional System										0.000* (0.000)	
Dominance x Proportional System										0.000** (0.000)	
Polarization x Magnitude x Prop										0.000 (0.000)	
Fractionalization x Magnitude x Prop										3650336.012 (44140761.996)	
Dominance x Magnitude x Prop										33297.161*** (100,693.905)	
Observations	2085	1999	1999	2033	2033	2085	2085	1933	1933	1964	1964
Number of subjects	87	87		85		87		85		87	
N° of failure	32	30		29		32		28		29	
LR chi2	55.44	85.79		52.36		61.68		127.9		135.9	
Prob > chi2	0.000	0.000		0.000		0.000		0.000		0.000	

NOTE: Cell entries are hazard ratios. In models (2) - (4), cell entries for the interaction terms are the correct hazard ratios for the combined marginal effects. Row t denotes the results for the interaction terms with $\ln(t)$. Robust and in the case of models (2) - (4) corrected standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Figure 1: The marginal effect of fractionalization on the hazard of civil war onsets with changes in the conditioning variable “Effective Number of Parties”

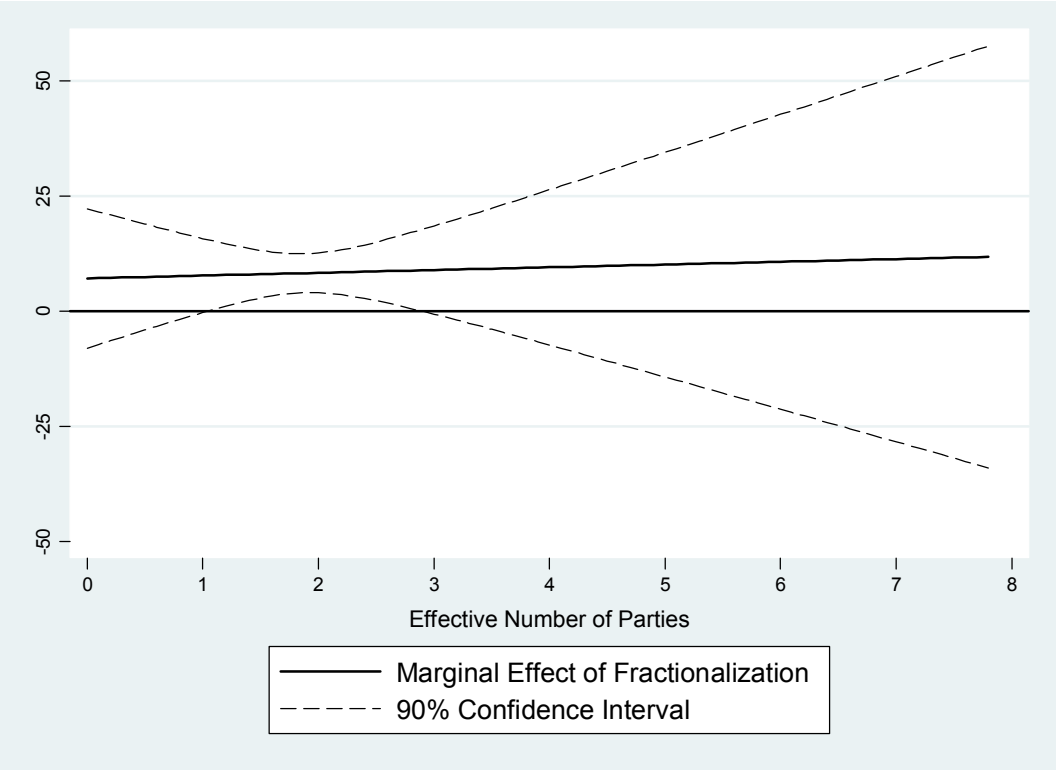


Figure 2: The marginal effect of fractionalization on the hazard of civil war onset with changes in the squared conditioning variable “Effective Number of Parties”

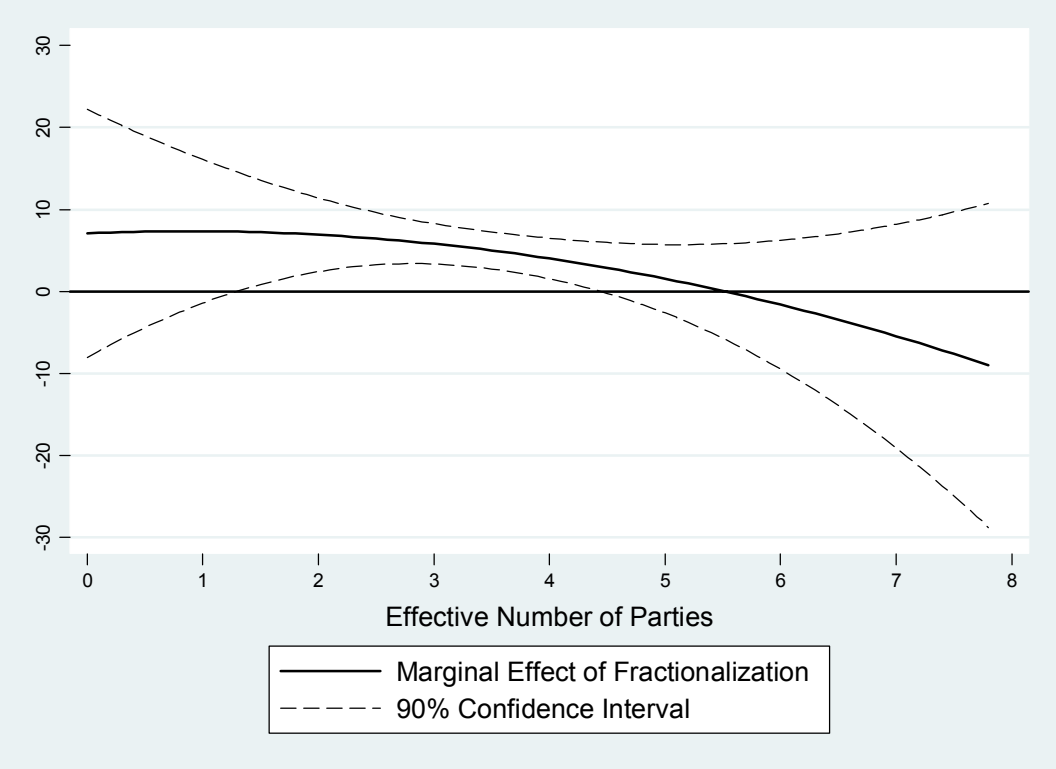
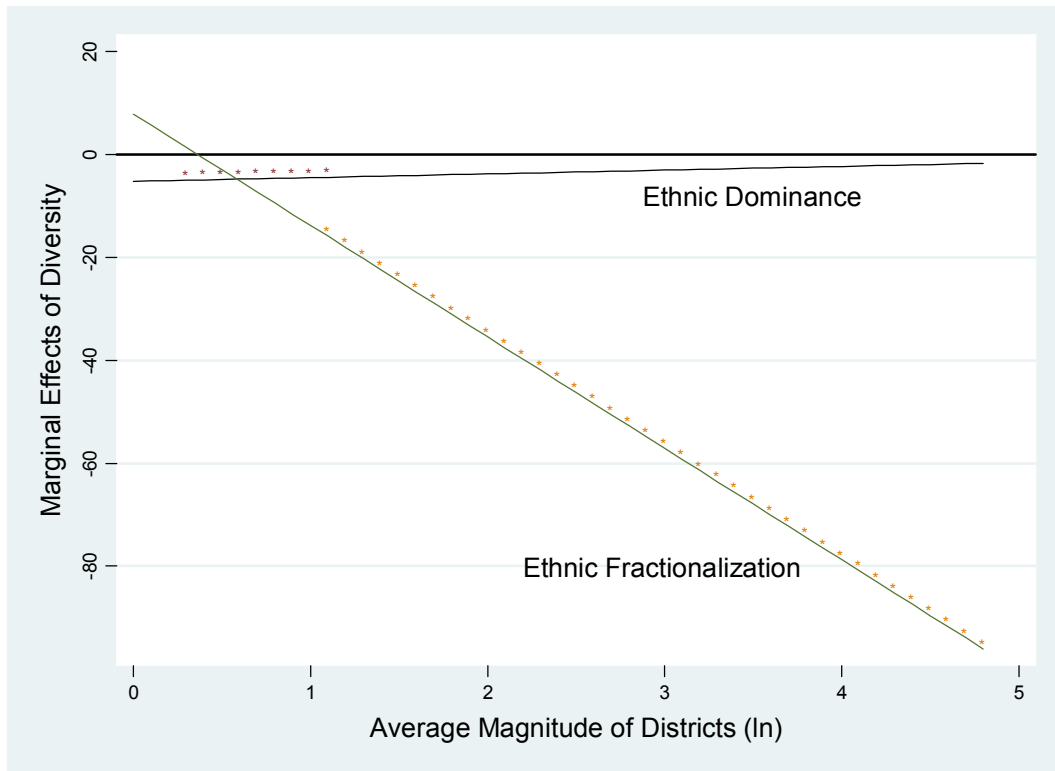


Figure 3: The marginal effect of fractionalization and dominance on the hazard of civil war onset with changes in the average magnitude of districts in democracies using proportional voting rules.



Footnotes

¹ Brambor et al (2005) point out in a replication study that the interaction model used by Boix is misspecified. Their analysis does not confirm the finding that ethnic divisions influence the adoption of electoral rules.

² The axiomatically derived measure of Esteban and Ray (1994) also includes information on the intra-group homogeneity of actors. The level of polarization grows the larger the distance between the competing groups, the more homogeneous the groups and the more pronounced the interaction between these variables is.

³ Authors show that this result is a consequence of the usage of 'incident' rather than 'onset' of civil war as the outcome variable.

⁴ Our empirical applications refer to ethnic diversity; corresponding analyses that refer to the religious cleavages within a state are available upon request.

⁵ Differentiating between systems with cumulative and non-cumulative voting, Cox (1990) has identified three 'centrifugal' and 'centripetal' incentives for candidates or parties that take an ideological positions in order to gain elections: '...ideological dispersion and minority representation can be promoted by (1) decreasing the number of votes per voter; (2) allowing partial abstention; and (3) increasing district magnitude' (Cox 1990: 927).

⁶ Brambor et al. (2005) reject in a replication study findings that contradict this Duvergerian perspective (Mozaffar et al. 2003).

⁷ The democratic periods and the civil war onsets that we have included in our analysis can be found in the web appendix.

⁸ The following countries experienced a competitive election prior to a transition to autocracy in a given year: Argentina (1962), Bolivia (1980), Chile (1973), Congo (1963), Guatemala (1982), Nigeria (1983), Pakistan (1977), Panama (1968), Peru (1962, 1990), Philippines (1965), Sierra Leone (1967), Sri Lanka (1977), Thailand (1976). Note that the estimations remained stable after the exclusion of these cases from the democracy data set. Our results were also not affected by the reliance on the more restrictive democracy definition that for example Hegre et al. (2001) used. They only classified regimes as full democracies if they received a score of 6 and more on the Polity scale.

⁹ The problem that for higher ranked events the risk set may be small can be addressed by combining several higher level risks (Box-Steffensmeier and Zorn 2002). We followed this recommendation and reran our models with combined risk sets.

¹⁰ In general, we followed the local residual tests, meaning that we included time interactions for individual variables indicating nonproportionality even though the global test could not reject the null hypothesis of proportional effects for the entire model. The tests can be found in the webappendix.

¹¹ The hazard ratios for the interaction terms before the combined marginal effects have been calculated can be found in the webappendix

¹² Without accounting for this, per capita income shows a negative, though insignificant effect on the hazard to experience an onset of civil war.

¹³ This has been calculated in the following way making use of the coefficients and not the hazard ratio: $T = \exp(0.353/0.235) = 4.467$ years

¹⁴ We are grateful to an anonymous reviewer for raising this point.

¹⁵ For models (2) to (4) again we directly report the combined marginal effect and the correct standard errors for the interaction terms used. As in models (5) and (6) continuous modifying variables are involved, the

combined marginal effect is best presented in graphical form, so cell entries report unaltered results from the Stata output.

¹⁶ For the sake of clarity, the x-axis was cut off at 8.

¹⁷ As ethnic polarization only has a statistically significant effect when the average magnitude equals 1, we refrain from including the result in the graph.

¹⁸ The x-axis presents the log of the average magnitude of districts. To get the average magnitude of districts, the log values are exponentiated.