

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, the authors examine how different institutions in conjunction with three forms of ethnic diversity – fractionalization, dominance and polarization – affect the risk of civil war. It is argued that groups perceive institutions as a constraint and that they consider the usage of political violence if they cannot achieve their goals peacefully. The 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, the authors confirm that rules that encourage power-sharing lower the risk of war in diverse societies. The event-history models, moreover, 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.

Introduction

The attempts of the international community to democratize war-torn or formerly authoritarian countries have reinvigorated the debate about 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 policymakers to co-opt these social forces into the political system.

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In his path-breaking contribution 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) and Saideman et al. (2002) lead us to expect that decentralized policymaking is a source of peace, and Fearon & Laitin's (2003) state capacity approach suggests that powerful executives might help to alleviate the centrifugal tendencies of multi-ethnic societies.

Political sociologists have, by contrast, argued in the tradition of Lipset & Rokkan (1967) that institutions reflect the cleavages within a society and that they exert no or only a limited pacifying influence at best. This alternative perspective suggests 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 direct or indirect examinations of this hypothesis relied on fractionalization or the presence of threatened minorities as indicators of diversity (e.g. Fearon & Laitin, 2003). This literature has, however, come up with inconclusive results so far (Hegre & Sambanis, 2006) or fallen victim to research design problems such as selection effects (Christin & Hug, 2005). More recent scholarship advances the view that the dominance

by one group (Collier & Hoeffler, 2004), the polarization between competing ethnicities and religions (Montalvo & 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 advance the double argument that political institutions mitigate the conflict potential of diverse societies and that inclusive rules, which enable strong groups to participate in power, alleviate social tensions. According to this logic, fractionalization increases the risk of conflict in democracies in comparison to autocracies, as ruling groups are better able to shield themselves against demands from small groups in the latter setting. Further, the more exclusive the rules of a polity, the more conflict-oriented those groups become that do not have a reasonable chance to ever participate in the political game.¹

We show with the help of event-history models and in accordance with the theoretical work of Esteban & Ray (2008) 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 supports 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 examine.

¹ Our argument that we need to focus on the interactions of power-sharing institutions with the wider social context is in line with the qualitative analysis of Lemarchand (2007) and in opposition to Roeder & Rothchild (2005), who advocate the separation of ethnic groups and the establishment of more flexible institutional settings than sharing mechanisms.

Ethnic Structure, Electoral Institutions and Conflict

The institutionalist scholarship on civil war 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 violence in democracies and autocracies is lower than in semi-democracies. Recent contributions have started to disentangle the subset of democracies to discover 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 and argues that, since the 1960s, institutions that force groups to share power are a key pacifying force.

However, there is a vivid debate on the specific institutional arrangement that might help societies to solve inter-group conflicts peacefully. A recent dispute over electoral arrangements in Fiji shows that we are still a long way from a consensus on the impact that 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 states: '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), conversely, 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 & Rokkan (1967), that the institutions adopted by a country largely reflect its key cleavages and that carefully drafted rules have at best a marginal effect on its conflict propensity. Accordingly, the installation of a majoritarian system is more probable for homogeneous societies. In a comparative analysis of Central European democratization processes, Lijphart (1992) has found considerable support for this conjecture. 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.²

One possible reaction to this alternative conjecture is to test whether the possible impact of institutions is endogenous. As Reynal-Querol (2005) shows and the similar results reported in the web appendix to this article confirm, institutions only partly reflect the social fabric surrounding them. It should, however, be noted that endogeneity 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. To understand the mediating effect of institutions on 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.

² Brambor, Clark & Golder (2006) point out that the interaction model used by Boix is misspecified. Their replication does not confirm that ethnic divisions influence the adoption of electoral rules.

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 . One analytical problem of this measure in empirical studies was first addressed by Reynal-Querol (2002). Put simply, fractionalization increases the more the groups split up into equally sized subgroups. Yet, the more groups there are, the more unlikely it is that they will overcome the collective action problem and organize efficiently for military combat. Reynal-Querol (2002), therefore, proposed an alternative indicator that draws on the work of Esteban & Ray (1994).³ 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.⁴ The third diversity indicator was introduced by Collier (2001); it measures whether a large group is dominated by another strong group. The dummy variable, which is prominently used by Collier & 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 real or potential challengers and 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.⁵

We adopt an instrumentalist understanding of political violence and believe that group leaders consider using this extreme means only if they cannot reach their goals peacefully.⁶ 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, as strong groups can credibly count on coming to power at some point in the former setting, the usage of political violence looms large in the latter type of political regimes only if they are ethnically polarized. This also means that, in democracies, we have to expect revolt only by those groups that do not face a reasonable chance of

³ The axiomatically derived measure of Esteban & Ray (1994) also includes information on the intragroup homogeneity of actors.

⁴ Schneider & Wiesehomeier (2006) show that this result is a consequence of the usage of 'incident' rather than 'onset' of civil war as the outcome variable.

⁵ Corresponding analyses that take religious cleavages within a state into account are available upon request.

⁶ Note that we consider only the size of the group as a potential source of power here. A rich literature in bargaining theory discusses other facets of social influence (cf. Schneider, 2005).

being co-opted into the government at some point. The flipside of this argument is that we should observe an increased chance of civil war the more fractionalized a democracy is. As Esteban & Ray (2008, 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 and where the possible gains and losses are quite large. 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 of coming to power through regular means.

Our theoretical framework boils down to the expectation that the causal mechanisms making civil unrest more likely differ across political regimes. The crucial difference between autocracies and democracies is, obviously, the way in which politicians compete for office. While democratic politicians need to commit themselves to broad societal goals in order to be elected, a similar need exists in autocracies vis-à-vis only the small groups that select and elect their leaders (Keefer, 2007). A growing size of these groups increases economic efficiency and also renders governments more timid towards the usage of political violence (Bueno de Mesquita et al., 2003). Golder (2005) additionally reports that some autocracies have become more stable following non-competitive elections.

The varying influence of the population across the two settings means that groups face different chances of influencing political decisions and the attractiveness of resorting to violence grows the more costly other instruments are to reach the goals of a particular ethnicity. Hypothesis 1 summarizes our theoretical

argument on ethnic fragmentation in the different contexts of autocracies and democracies.

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

H1b: Ethnically polarized democracies face a relatively small risk of civil war, whereas democracies with a dominant ethnicity are more prone to internal conflict. Internal instability increases the more fractionalized a democratic 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. In the following, we will present the main recommendations that institutionalists have made in their analyses of 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 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 multiparty systems. Cox (1990, 1997) and others have generalized this result and shown how electoral rules affect political competition.⁷

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, which induce power-sharing among competing groups, pacify intrastate relations, while the winner-takes-all logic of majoritarian systems rather increases the risk of internal violence. Reynal-Querol (2005) develops a formal model and shows empirically that inclusive political systems experience fewer civil wars 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 the existence of large voting districts – combined with plurality rule – increases the chance of small groups being represented politically and, ultimately, being able 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 (Amorim Neto & Cox, 1997; Brambor, Clark & Golder, 2006; Ordeshook & Shvetsova, 1994).⁸ The main result of these studies is that ethnic fragmentation raises the number of parties in combination with proportional electoral systems.

Federalism and Presidentialism Another power-sharing mechanism is federalism and thus there is the possibility that a political system co-opts regional elites into the political system. Focusing 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 & 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 decisionmaking appeases societies. This should particularly be the case for the interaction with polarization, while we expect an increased risk of civil

⁷ Differentiating between systems with cumulative and non-cumulative voting, Cox (1990: 927) has identified three ‘centrifugal’ and ‘centripetal’ incentives for candidates or parties that take ideological positions in order to gain in 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’.

⁸ Brambor, Clark & Golder (2006) reject, in their replication study, findings (Mozaffar, Scarritt & Galaich, 2003) that contradict this Duvergerian perspective.

war for 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 co-optation 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 & Valenzuela, 1994); they also exhibit a far worse human rights record than parliamentary systems (Spörer, 2006). Fearon & Laitin (2003) demonstrate that the power a state possesses to fight 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 the three forms of ethnic composition exert on the risk of civil war within democracies and how institutions enhance or lower it. 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. Therefore, we expect that the interaction of the majoritarian institutions with diversity characteristics makes civil war more likely.

H2: Ethnic polarization has a conflict-reducing effect in countries using majoritarian electoral systems or employing small

district magnitudes. Also, decentralized and presidential systems decrease the risk of internal violence in the interaction with polarization. Fractionalization and dominance, in combination with these settings, in turn increase the risk of small-scale war, but render it more unlikely in conjunction with a low or high number of parties.

Research Design

We examine whether the institutional context of a given country mitigates the effect of ethnic cleavages on 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; our sample thus 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.⁹ 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. For a given year, Golder (2004, 2005) also considers countries that experienced a competitive election prior to a transition to dictatorship in the very same year as democracies. We include these cases in our estimations.¹⁰

⁹ The democratic periods and the civil war onsets that we have included in our analysis can be found in the web appendix.

¹⁰ 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) and Thailand (1976). Note that the estimations remained stable after the exclusion of these cases from the democracy dataset. Our results were also not affected by the reliance on the more restrictive democracy definition that, for example, Hegre et al. (2001) used. They classified regimes as full democracies only if they received a score of 6 or more on the Polity scale.

We estimate the risk of civil war onset with the help of survival analysis, a technique that allows us to model the time until the occurrence of the onset of armed conflict. We rely on the conditional risk-set model by Prentice, Williams & Peterson (1981; see also Box-Steffensmeier & 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 countries, is an extension of the Cox semi-parametric 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 contains only those countries that have already experienced $k-1$ onsets, so our model is stratified on the failure order, allowing for strata-specific baseline hazards.¹¹ Results are reported as hazard ratios that correspond to the ratio of the predicted hazard for a member of one group to that for a member of the other group. Thus, hazard ratios are equivalent to a measure of relative risk and give an intuitive understanding of relative differences between groups.¹² Robust standard errors were calculated and tied survival times handled with the Efron approximation, which is an especially convenient approach for addressing 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

¹¹ The problem, that for higher-ranked events the risk-set may be small, can be addressed by combining several higher-level risks (Box-Steffensmeier & Zorn, 2002). We followed this recommendation and reran our models with combined risk-sets.

¹² A shortcut to understand hazard ratios (hr) is as follows: hr of 1: there is no difference between the groups; hr > 1: the event is more likely to occur in that group; hr < 1: the event is less likely to occur in that group.

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 included these interactions in the model (Box-Steffensmeier, Reiter & Zorn, 2003).¹³

Operationalization of Main Variables

Event Variable To measure *civil war onset*, we have used the Uppsala/PRIO armed conflict dataset (Version 3.0) (Gleditsch et al., 2002; Strand, Wilhelmsen & Gleditsch, 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 excluded from the analysis.

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 is given the value 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

¹³ In general, we followed the local residual tests, meaning that we included time interactions for individual variables indicating non-proportionality, 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 web appendix.

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 & 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 & Nerenberg (2005), Gerring & Thacker (2004), Gerring, Thacker & Moreno (2005) and, for African countries, Kuenzi & Lambright (2005). It is 1 when a country is geographically decentralized in terms of decisionmaking authority and 0 otherwise.
- *Presidential system*: This is a dummy variable, taken from the Golder (2004) dataset,

that is given the value 1 if a country is classified as a presidential democracy and 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 & Lambright (2005).

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, relying on data from Fearon (2003).¹⁴

- *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. This concept is 1 if there is an ethnic group representing 45–90% 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 60–90% of the population and 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 & Reynal-Querol, 2005). As we have discussed elsewhere (Schneider & Wiesehomeier, 2006), one of the problems of this index is its high correlation with ethnic fractionalization – in our case

¹⁴ Alternative measures, based on Alesina et al. (2003), led to similar results. In some cases, the magnitude of the effect differed. See our web appendix for further information.

it amounts to 0.68 – which leaves us with the question of whether or not these measures ultimately represent different concepts. 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 that 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. Hence, our dummy variable equals 1 for cases of high polarized societies and 0 otherwise.¹⁵

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 & Sambanis (2006) and other recent statistical studies on the causes of civil war onset.

- *Population size*: This is an important control variable, since bigger countries produce for a larger domestic market and are less outward-looking economically as a consequence. We use data from the Penn World Tables Version 6.1 (Heston, Summers & Aten, 2002). For balancing out the skewed distribution, we employ the natural logarithm of this indicator.
- *Economic development*: We expect, in line with recent scholarship, that political stability increases with economic development (e.g. Hegre & Sambanis, 2006). Wealthier countries have, according to this logic, more resources at their disposition that could be invested in social insurance and other forms of redistribution with the aim to alleviate social tensions. In highly developed countries, the tax base is also broader than in developing

economies (Collier & 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.

- *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 & Laitin, 2003). We use the *durability* variable from the Polity IV data set (Marshall & 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 and polarization – have different impacts across political systems. Owing 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. Note that we directly report the combined marginal effects and the corresponding standard errors for the interaction terms used. This makes sense in our application, as we are particularly interested in the effect that a particular form of diversity exerts within a specific institutional setting.¹⁶

¹⁶ It is perfectly possible to obtain a statistically significant effect for the coefficient of the interaction term in the standard result table which loses its statistical significance once the marginal effect and the corresponding standard error are calculated and vice versa (see Brambor, Clark & Golder, 2006). The hazard ratios and the standard errors for the interaction terms that we obtained before the calculation of the combined marginal effects can be found in the web appendix.

¹⁵ This reduces the correlation to 0.22.

Table I 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. The results 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. Democracy accordingly 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, that is, when the democracy dummy equals 0. As expected, fractionalization does not have a significant effect in autocracies, whereas an autocratic regime dominated by one ethnic

Table I. Determinants of Civil War Onset, 1950–2000

	(1) <i>Rh</i>	(2) <i>t</i>
Population (ln)	1.61*** (0.20)	0.91 (0.05)
Development (ln)	1.42** (0.23)	0.79*** (0.06)
Democracy	0.01*** (0.01)	
Fractionalization	1.41 (0.62)	
Ethnic dominance	0.20*** (0.10)	1.99*** (0.45)
Polarization	3.58*** (1.72)	0.62** (0.14)
Polarization x democracy	.28 (.36)	2.92** (1.41)
Fractionalization x democracy	227.99*** (332.56)	
Dominance x democracy	10.61 (15.93)	0.54 (0.25)
Durability	0.98** (0.01)	
Observations	4,789	4,789
Number of subjects	132	
N° of failure	129	
Wald chi2	133.8	
Prob > chi2	0.00	

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 corresponding standard errors. Row *t* denotes the results for the interaction terms with ln(*t*).

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

group experiences less civil war than more diverse autocracies. Ethnic polarization, conversely, constitutes a threat in autocracies – they are about three and a half times more likely to experience civil unrest than non-polarized ones.

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 to be in power at some point and are thus more inclined 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. Our results suggest, since fractionalization, especially in its religious form, hinders democratization in the first place (Papaioannou & Siourounis, 2006), that political participation is often not sufficient remedy to solve the internal tensions of highly divided countries. But the result reported in Table I clearly supports the fear that democracy as such is not a sufficient prerequisite to shield a society against violent threats 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 influence of

the development variable. Per capita income seems to increase the risk that a state falls victim to a civil war. This effect can be explained through the explicit modelling of the non-proportionality of the *development* variable.¹⁷ The interaction with time assumes that the coefficient on *development* changes as a function of $\ln(T)$. The point at which the effects cancel each other out occurs at about four and a half years.¹⁸ 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 in 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. 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 now turn our attention exclusively to the potentially conflict-reducing or conflict-fostering impact that 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 II 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 encompasses

¹⁷ Without accounting for this, per capita income exerts a negative, though insignificant, effect on the hazard to experience an onset of civil war.

¹⁸ 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.

Table II. Institutions and Civil War Onset in Democracies, 1950–2000

	(1) <i>t</i>	(2) <i>rb</i>	(3) <i>Rb</i>	(4) <i>Rb</i>	(5) <i>rb</i>	(6) <i>rb</i>	<i>t</i>
Population (ln)	1.67*** (0.23)	1.69*** (0.24)	2.20* (0.93)	1.98 (0.84)	1.54*** (0.25)	2.09*** (0.41)	
Development (ln)	1.03 (0.18)	1.51** (0.31)	1.15 (0.18)	1.13 (0.16)	1.25 (0.27)	1.89*** (0.44)	
Durability	0.98** (0.01)	0.97*** (0.01)	0.98* (0.01)	0.98* (0.01)	0.98** (0.01)	0.95*** (0.01)	
Fractionalization	397.95*** (594.44)	221.35** (470.74)	5272.16*** (10834.90)	36509.33*** (98510.25)	1192.26 (10967.97)	7463.61 (50445.30)	3.51 (7.24)
Ethnic dominance	8.54*** (5.36)	0.48 (0.65)	8.02*** (5.64)	33.99*** (37.74)	267.06 (1,429.08)	7.18 (21.74)	3.47 (3.29)
Polarization	1.26 (0.59)	1.03 (0.93)	1.67 (0.92)	2.31 (1.38)	0.00 (0.00)	0.00*** (0.00)	3.28 (2.47)
Majoritarian							
Polarization x Majoritarian		0.03 (0.07)					
Fractio nalization x Majoritarian		3.95*** (1.60)					
Dominance x Majoritarian		25977.13*** (83195.49)					
Federalism							
Polarization x Federalism		2.60 (3.80)	6.99 (13.05)				
Dominance x Federalism			0.31 (0.42)				
Fractionalization x Federalism			64.25*** (90.41)				2.32 (1.72)
			51.43** (92.72)				25.17*** (20.18)

(continued)

Table II. (Continued)

	(1) \bar{t}	(2) rb	(3) T	(4) Rb	(4) t	(5) rb	(5) T	(6) rb	(6) t
Presidentialism				626.13*** (1,426.73)					
Polarization x Presidentialism				0.71 (0.46)					
Fractionalization x Presidentialism				21.47 (44.57)					
Dominance x Presidentialism				1.74 (2.19)	1.24 (0.68)				
Effective number of sparties (<i>ENE</i>P)						77.28	0.32		
Effective number of parties squared						(219.65)	(0.30)		
Polarization x ENE <i>P</i>						0.66 (0.20)	1.12 (0.12)		
Polarization x ENE <i>P</i> squared						10.32 (27.09)			
Fractionalization x ENE <i>P</i>						0.79 (0.23)			
Fractionalization x ENE <i>P</i> squared						1.82 (8.52)			
Dominance x ENE <i>P</i>						0.71 (0.44)			
Dominance x ENE <i>P</i> squared						0.15 (0.36)			
Magnitude (ln)						1.23 (0.33)			
Proportional system								7.29 (9.93)	0.00

only these control factors. As some political systems are based on a mixture of majoritarian and proportional elements, we add into Equation (2) a measure to gauge the impact of electoral arrangements. Next, Equations (3) and (4) explore the possible effects of decentralized decisionmaking 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 with proportional voting arrangements. To test this, we use three-way interaction terms (average magnitude of district, proportional systems and the different diversity variables).¹⁹ This allows us to control for the fact that increasing district magnitudes in majoritarian systems follow the winner-takes-all logic.

The results reported in Table II lend some credence to the hopes of those 'constitutional engineers' who advance certain institutions as a tool to alleviate social conflict. As expected, the marginal effects of the interaction terms in Equation (2) indicate that especially ethnic fractionalization and polarization combined with majoritarian voting rules make civil war more likely. The hazard ratios for the constituting terms, our diversity variables, stand for the effect when the dummy variable for majoritarian representation equals 0; in other words, they represent the impact for proportional and mixed systems. Although ethnic frac-

tionalization 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 arrangements pacify 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, which stands for territorial forms of power-sharing. As the marginal effects of the interaction term show, fractionalization is at least less problematic compared with centralized countries in such an ethnic context. As 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; 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 the corresponding standard errors are best presented graphically; the cell entries consequently represent the hazard ratios (Brambor, Clark & Golder, 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 to the case of fractionalization, the effect never reaches statistical significance. For the interaction term between the latter form of diversity and the effective number of parties, the solid sloping lines in Figure 1 show how the marginal effects of ethnic fractionalization change as the effective number of parties and its squared term increase.²⁰ To facilitate the

¹⁹ For Models 2–4, again we directly report the combined marginal effect and the corresponding 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 the results directly obtained through the calculations from the statistical software.

²⁰ The x-axis was cut off at the value of 8.

visual inspection, we use stars on the solid lines instead of confidence intervals to depict the range where the effect is statistically significant at the 10% level. 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. This confirms the importance that electoral systems and party competition have.

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, with stars on the solid lines indicating the range where the effect is statistically significant. The results illustrated in Figure 2 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.²¹

As expected, fractionalization reduces conflict. 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 exceeds a value of about 1.5, however, this type of social division has, as expected, a strong conflict-reducing effect, as increasing district magnitudes tend to produce outcomes which are favourable to minorities.²² Interestingly, ethnic dominance has a pacifying effect when the size of the district falls to 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 article has evaluated some of the claims made by those ‘constitutional engineers’ who propagate certain rules as precepts for mitigating ethnic conflict in ethnically fragmented and polarized 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 of the three diversity indicators across political systems 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 of influencing policymaking. In autocracies, the repressive apparatus is generally so strong that only strong minorities or suppressed majorities resort to war with some prospect of success. 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 limitedly 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 observable only in fractionalized democracies. Fourth, our tests particularly revealed, in line

²¹ As ethnic polarization has a statistical significant effect only when the average magnitude equals 1, we refrain from including this result in the graph.

²² The x-axis presents the log of the average magnitude of districts. To calculate the impact of the average magnitude of districts, the log values are exponentiated.

Figure I. The Marginal Effect of Fractionalization on the Hazard of Civil War Onsets with Changes in the Conditioning Variable *Effective Number of Parties* and its Squared Term

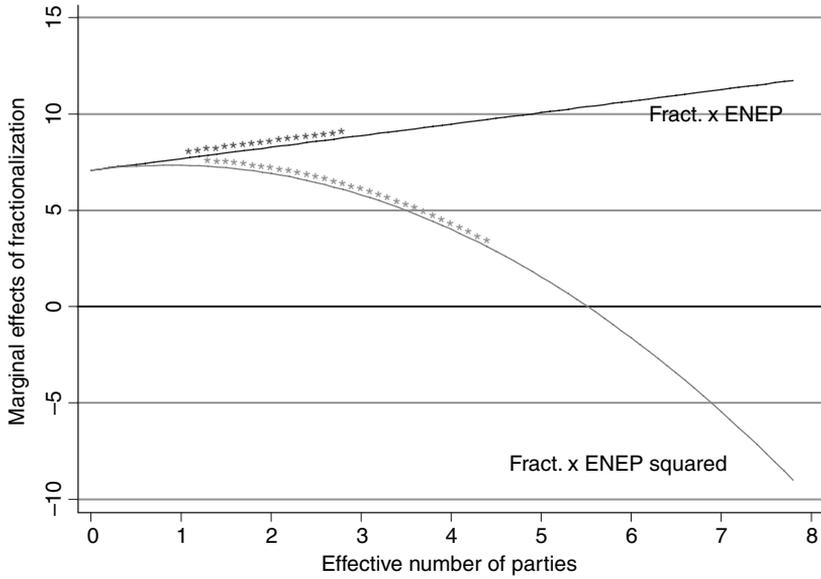
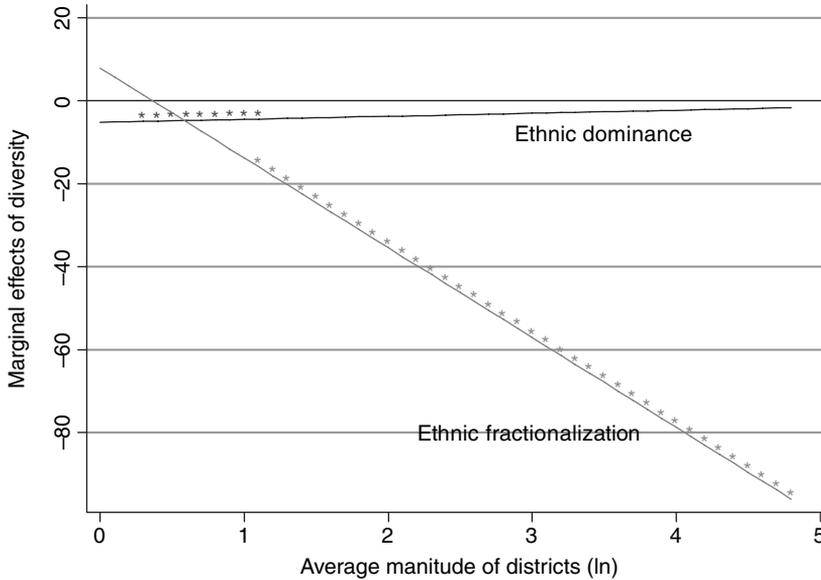


Figure II. The Marginal Effect of Fractionalization and Dominance on the Hazard of Civil War Onset Modified by the Average Magnitude of Districts in Democracies Using Proportional Voting Rules



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 results generally confirm the hypotheses that Esteban & Ray (2008, this issue) have developed, especially their qualification of the role of fractionalization. We believe that this correspondence between the predicted and the real effects is quite remarkable for a cross-country comparison.

Our 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 & Rokkan (1967) 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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