Square Pegs in Round Holes: Inequalities, Grievances, and Civil War[1]

Halvard Buhaug
Peace Research Institute Oslo

Lars-Erik Cederman
ETH Zurich

AND

Kristian Skrede Gleditsch
University of Essex and PRIO

Much of the recent research on civil war treats explanations rooted in political and economic grievances with considerable suspicion and claims that there is little empirical evidence of any relationship between ethnicity or inequality and political violence. We argue that common indicators used in previous research, such as the ethno-linguistic fractionalization (ELF) and the Gini coefficient for income dispersion, fail to capture fundamental aspects of political exclusion and economic inequality that can motivate conflict. Drawing on insights from group-level research, we develop new country-level indices that directly reflect inequalities among ethnic groups, including political discrimination and wealth differentials along ethnic lines. Our analysis reveals that these theoretically informed country profiles are much better predictors of civil war onset than conventional inequality indicators, even when we control for a number of alternative factors potentially related to grievances or opportunities for conflict.

Despite decades of scientific debate and numerous cross-national studies, the link between inequality and internal conflict remains persistently contested and frustratingly unclear. This assessment remains as valid today as in the late 1980s, when Lichbach (1989) published a comprehensive but inconclusive review of the literature. Whether framed as a Marxist proposition (Boswell and Dixon 1993) or a psychologically inspired thesis along the lines of "relative deprivation" (Gurr 1970), the idea that inequality triggers civil war and other forms of political violence has drawn plenty of criticism (for example, Tilly 1978; Skocpol 1979). More recently, many other prominent studies of civil war fail to uncover any systematic relationship and reject the influence of inequality together with other grievance-related explanations more generally (for example, Collier and Hoeffler 2004; Fearon and Laitin 2003; though see also Boix 2008; Cederman,

Weidmann and Gleditsch 2011; Østby 2008).[2] We argue that the contradictory findings of the civil war literature to a large extent stem from the use of empirical measures of inequality and grievances that lack strong theoretical justification and of assumptions of causal homogeneity that fail to distinguish between different types of internal conflict. In trying to "push square pegs through round holes," scholars of civil war have failed to adequately operationalize both the independent and dependent variables in the grievance–conflict nexus.

To overcome these limitations, we propose replacing conventional individualist measures of grievances with new indicators that more clearly tap plausible political and economic inequalities at the group level, thus shifting the analytical focus from so-called vertical inequality to horizontal inequality. This study is certainly not the first to advocate that a group perspective can inform our understanding of civil war (see, for example, Gurr 1993; Regan and Norton 2005; Stewart 2008), and a number of recent empirical studies have examined the effect of ethno-political and economic inequalities on civil war onset (for example, Østby 2008; Hegre, Østby and Raleigh 2009; Østby, Nordås and Rød 2009; Cederman et al. 2011). However, many of these studies are restricted in geographic scope, and most consider groups or other subnational entities as the units of analysis. As such, they do not lend themselves easily to comparison with the

Halvard Buhaug is Research Professor at the Peace Research Institute Oslo and Professor of Political Science at the Norwegian University of Science and Technology. His research covers geographic dimensions of armed conflict and security implications of climate change. Recent publications include articles in *Global Environmental Change*, *International Organization*, *International Security*, *Journal of Conflict Resolution*, *Journal of Peace Research*, and *PNAS*.

[2] Many studies of inequality and conflict, such as Muller and Seligson (1987), examine forms of political violence much more encompassing than civil war, including deaths due to events such as riots, and often consider counts of the number of events rather than binary conflict measures.

country-oriented civil war literature at large nor allow comparison with the risk of civil war for countries without ethnic cleavages.

Our study is the first to combine an explicit group focus in theory building and data generation with propositions and an empirical framework that identify specific country profiles associated with elevated conflict risk. In so doing, we are able to capture the political underpinnings of social grievances, whether related to ethnic exclusion from national politics or systematic differences in economic opportunities and privileges between ethnic groups. The subsequent statistical analysis draws on new georeferenced economic and ethno-political data that also help remedy severe missing data problems characterizing most earlier comparative research on inequality and conflict. Crucially, the country-level approach allows us to systematically compare our group-based inequality measures with standard indicators of vertical inequality. Unlike group-level analyses, we can consider non-ethnic as well as ethnic civil wars. Finally, we can evaluate the scale sensitivity of findings from subnational studies and to what extent these can be scaled up and replicated at the country level.

We find strong evidence that horizontal inequality and ethno-political discrimination matter. Countries with one or more ethnic group(s) radically poorer than the national average and countries with large groups discriminated from national politics have a significantly higher risk of armed anti-governmental opposition. Moreover, we find that horizontal economic inequality is primarily associated with separatist attempts whereas widespread ethno-political discrimination appears to motivate challengers targeting central governmental power. In contrast, traditional proxies for individual-level grievances in a society, such as the Gini coefficient of income disparity and various fractionalization indices, have either no or much weaker impacts on the risk of civil war. We also show that our more theoretically informed grievance measures yield better out-of-sample predictions than do conventional models of civil war. Sensitivity tests reveal that these results cannot be dismissed as artifacts of a narrow conceptualization of conflict or inequality or a result of a specific sampling strategy.

We proceed as follows. We first review the literature on inequality, grievances, and civil war, with particular attention to common arguments for dismissing the role of grievances in conflict. We discuss the difference between vertical and horizontal inequality and argue that political and economic inequalities that coincide with group cleavages are much more likely to lead to violent mobilization than interpersonal inequalities unrelated to social structures. The following two sections provide a detailed discussion of our empirical measures and a presentation of the empirical analysis, before we conclude.

Inequality, Grievances, and Political Violence

The role of grievances in conflict research attracted critical scrutiny long before Collier and Hoeffler (2004) pitted "grievances" against "greed" as explanations of civil war. In contemporary conflict research, grievances are normally associated with relative deprivation theory, which postulates that frustration in response to failed material expectations tend to produce violence through psychological mechanisms (Gurr 1970; see also Davies 1962; Huntington 1968; Muller and Seligson 1987). Tilly (1978) and other resource mobilization theorists question

the explanatory power of such grievance-based accounts of political violence (see also Muller 1972; Oberschall 1978; Skocpol 1979). In particular, these critics argue that frustrations are simply too common to plausibly account for outbreaks of violence, especially since protest can be easily thwarted by powerful governments. Therefore, explanations of collective political violence need to gauge nonstate challengers' access to material and organizational resources rather than interpreting their motivations, which this line of reasoning deems to be largely irrelevant. More recent quantitative research on civil war tends to reach similar conclusions, although this literature consists mostly of cross-national comparative panel studies of civil wars involving the state as opposed to the focus on broader forms of political instability or dynamics of escalation in earlier sociological research (cf. new studies on micro-dynamics of civil war, for example, Kalyvas 2006; Tarrow 2007).[3]

How do researchers contributing to the empirical country-level literature on civil war attempt to capture grievances? Without pretending to exhaust all possibilities, we can divide the arguments into two main dimensions, namely those that focus on ethno-political and economic grievances, respectively.

Ethno-Political Grievances

The difficulty of measuring grievances directly has led many researchers to investigate how structural features such as societal divisions can generate violent conflict. Although different types of cleavages, including class-based ones, can theoretically be linked to conflict onset, the most obvious alternative is to focus on ethnic distinctions because of their ascriptive and highly visible nature as well as their clear importance in many actual conflicts (Horowitz 1985; Sambanis 2001).[4] However, arguments linking ethnicity to conflict are usually not associated with a distinctive set of causal mechanisms, and many remain quite vague. Political economists have long suspected that ethnic diversity leads to instability and unrest. In a classical study, Rabushka and Shepsle (1972) contend that ethnic pluralism is usually incompatible with democratic stability. More recently, a series of studies suggest that ethnically diverse societies harbor difficult-to-solve contention deriving from diverging preferences and differential skills and habits (for overviews, see Alesina and La Ferrara 2005; Kanbur, Rajaram and Varshney 2010). Drawing on sociobiological reasoning about ethnic groups, Vanhanen (1999) reaches a similar conclusion on ethnicity and nepotism. Based on an extensive cross-national sample, he finds that significant ethnic divisions tend to produce violent conflict. More broadly, Sambanis (2001) and Fearon and Laitin (2003) associate ethnic diversity with a larger class of arguments outlining the role of ethnic and nationalist grievances in conflict processes, whether profoundly primordialist like Vanhanen's argument, or explicitly modernist along the lines of Gellner (1983), Anderson (1991), and other prominent theorists of nationalism.

Ethnic fractionalization is the most common choice of indicator to test arguments linking ethnicity to conflict.

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[3] Our characterization here does not apply to all quantitative civil war scholarship, and we identify and discuss some notable exceptions below.

[4] Other potentially relevant social cleavages that we do not pursue further here due to lack of good data include caste, clans, and narrow religious movements (for example, Mormonism and Salafism).

Fractionalization indices are operationalized in accordance with Herfindahl's formula, which can be interpreted as the probability that two randomly selected individuals in a population belong to different groups. Initially introduced by Easterly and Levine (1997) in a study of economic development, the so-called ethno-linguistic fractionalization indices (ELF) are usually computed with data from the old Soviet ethnographic *Atlas Narodov Mira*. However, fractionalization indices can in principle be computed with other group definitions that reflect alternative and/or separate dimensions of ethnicity, including language and religion (see, for example, Alesina, Devleeschauwer, Easterly, Kurlat and Wacziarg 2003; Fearon 2003).

Some researchers have suggested alternative curvilinear relationships between diversity and conflict, where the risk of conflict will be lower at very high or low levels of fractionalization (for example, Sambanis 2001; Collier and Hoeffler 2004). Others have argued that it is not so much diversity that increases the risk of conflict but polarization, especially a situation where two large ethnic groups face one another (Forsberg 2008; Horowitz 1985; Montalvo and Reynal-Querol 2005; Østby 2008). Although these arguments are clearly distinct and suggest different empirical measures, they are essentially pure diversity measures that look at the demographic size of groups rather than their political status as the origin of insecurity and conflict.

The conflict literature has so far failed to yield a clear picture with regard to the effect of ethnicity on civil conflict. Whereas some authors find evidence of a positive effect of ethnic diversity on conflict, including Sambanis (2001) and Hegre and Sambanis (2006), other influential studies find no effect at all (for example, Fearon and Laitin 2003; Collier and Hoeffler 2004). Since fractionalization often has been seen as a general proxy for ethno-political grievances, many researchers have concluded that ethnic grievances have little or no explanatory power. Surveying up the recent literature, Laitin (2007: 25) argues that

> ethnic grievances are commonly felt and latent; the factors that make these grievances vital and manifest differentiate the violent from the nonviolent cases. Ex ante measures of grievance levels are not good predictors of the transformation of latent grievances into manifest ones. And it is the factor that turns latent grievances into violent action that should be considered as explanatory for that violence.

Despite such attempts to dismiss grievances as irrelevant for explaining conflict, our first hypothesis expresses the general expectation from individual-level arguments relating to ethno-political grievances:

Hypothesis 1: *The probability of civil war increases with ethnic diversity.*

Economic Grievances

The classical formulation of relative deprivation inspired by Davies (1962) assumes that conflict-inducing frustrations stem from a gap between actual outcomes and aspirations (Gurr 1970). However, relative deprivation can also be defined in relation to differences to wealthier members of a society. Income inequality is the most obvious way to measure grievances based on interpersonal wealth comparisons. Of course, Marxist interpretations of political violence as direct consequences of class conflict constitute the *locus classicus* (see, for example, Bosswell and Dixon 1993). Beyond this ideologically explicit theorizing, a long-standing tradition of studies in comparative politics and sociology focus on peasant rebellions targeting radically asymmetric land distribution in the developing world (for example, Russett 1964; Moore 1966; Scott 1976). For example, in an influential study, Booth (1991) argues that persistent inequality and exploitation of peasants by rich landowners in Central America triggered revolutionary challenges to incumbent regimes in the 1970s and 1980s. Focusing on conflict during this period, Booth (1991: 34) claims that

> economic development trends worsened the region's historically extreme maldistribution of wealth and income, intensifying grievances among negatively affected class groups. … Such problems led the aggrieved to demand change and sparked growing opposition to incumbent regimes by political parties, labor unions, religious community organizers, and revolutionary groups. Violent repression of opposition demands for reform … not only failed to suppress mobilization for change but actually helped forge revolutionary coalitions that fought for control of the state.

In this account, we can identify a distinctive causal chain starting with persistent inequality leading to grievances among the peasant population fueling demands for political change and redistribution. Denied such reforms, and possibly even encountering state-led repression, the aggrieved will see little choice but to rebel.

Because it is exceedingly difficult to measure grievances directly in a large-N cross-country setting, most relevant statistical studies rely on structural indicators of individual or household income inequality. The most widely applied such measure is the Gini coefficient, reflecting the extent to which the observed income distribution differs from an equal distribution, with higher values indicating greater inequality.[5] Using this indicator as a proxy for economic grievances, the most prominent studies of civil war find no evidence of a link between economic inequality and conflict. While acknowledging some possible data problems, these scholars interpret this non-finding as a confirmation that grievances are largely irrelevant for explaining civil war (Fearon and Laitin 2003; Collier and Hoeffler 2004).

Boix (2008) refines the standard argument about inequality and conflict by considering the impact of factor mobility. According to his logic, conflict is likely only in those cases where inequality relates to immobile resources since wealthy elites are unable to move their wealth abroad should political change threaten their assets. Relying on structural measures of landownership rather than comparisons of income levels directly, Boix reports strong support for a link between differences in wealth and conflict. Likewise, influential formal politico-economic models that take classes or social interests as actors, such as Acemoglou and Robinson (2006), postulate a strong relationship between income distributions, preferences for redistribution, and incentives for violent revolution.

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[5] Other studies, such as Muller and Seligson (1987), have relied on alternative measures of income distributions such as the share of income held by the poorest or wealthiest percentiles. These measures are also based entirely on the observed income distribution for individuals or households.

The following hypothesis captures the preceding arguments:

Hypothesis 2: *The probability of civil war increases with economic inequality among individuals.*

The conventional literature that pitches explanations of civil war outbreak either at the individual level or more generally at the level of entire societies says little about substate actors and structures operating between these two levels, such as ethnic groups and organizations. This lacuna may explain the divergent findings and lack of support for a relationship between grievances and civil war. We now turn to theories that specifically highlight the group-level perspective.

Linking Group-level Inequality and Grievances to Civil War

As we have seen, the most prevalent proxies for grievances depend on individualist principles and are insensitive to other social cleavages or group structures. However, civil wars are not primarily fought between individuals, but between governments and organized nonstate groups. According to Stewart (2008: 11):

> the majority of internal conflicts are organized group conflicts—they are neither exclusively nor primarily a matter of individuals committing acts of violence against others. What is most often involved is group mobilization of people with particular shared identities or goals to attack others in the name of the group.

In order to capture this important distinction, Stewart contrasts vertical inequality (VI) among individuals (VI) with the notion of horizontal inequality (HI) across groups. More specifically, HIs are defined as "inequalities in economic, social or political dimensions or cultural status between culturally defined groups" (p. 3). Of the four dimensions conceptualized by Stewart, we will focus on the economic and political aspects of horizontal inequality, which can be contrasted directly to vertical income inequality as a measure of economic grievances, and ethnic fractionalization as an indicator for ethno-political grievances.

Of course, the cohesion of ethnic groups cannot be taken for granted across the board (Brubaker 1996)—defection may occur in many cases (Kalyvas 2006) and identities sometimes shift as a result of conflict (Gurr 1993)—but social psychological theory offers strong reasons to believe that individuals often identify through groups (see Tajfel and Turner 1979). Rather than relying on direct personal relations, the massive scale of social systems in the modern world leaves actors little choice but to rely on categorization to simplify reality (Gellner 1964). Mass media, education, and other identity-conferring mechanisms allow political institutions to foster collective identities that often are associated with considerable emotional commitment. Political ideologies, especially those appealing to nationalist values, can engender a strong sense of solidarity. In such cases, individual preferences are trumped by collective motivations, implying that the individual acts on behalf of the group and is willing to make major sacrifices in the name of collective identities and abstract ideological principles (Anderson 1991).

Ethno-Political Grievances

Arguments hinging on ethnic diversity, measured through fractionalization and other individual-based indices, fail to capture group-level grievances and are thus poor proxies for most established theories of ethnic conflict and nationalism. Instead of focusing on merely ethno-demographic properties, it makes more sense to articulate an explicitly political account that characterizes the relationship between the ethnic group (s) in power and those that are excluded from access to executive power (Cederman and Girardin 2007). Importantly, tapping the political configuration of ethnicity implicitly also entails a temporal dynamic, since hold on national power and other political privileges in a society—unlike relative group sizes—can change over short time periods.

The French Revolution initiated a new era in world politics that made nationalism the dominant source of political legitimacy. The limited social intrusiveness of pre-nationalist states meant that borders could be adjusted primarily according to the geopolitical demands, but this flexibility was undermined in a system emphasizing that cultural and political borders should coincide (Gellner 1983). Fierce competition broke out in areas characterized by intersecting ethnic and political boundaries once the state became the coveted prize of aspiring national movements. By excluding entire ethnic groups from power, incumbent elites were able to hoard power and limit the distribution of the spoils to the in-group. Yet, despite the immediate advantages accruing to the favored group, such exclusionary policies are likely to trigger conflict as grievances grow among the powerless and discriminated parts of the population (Gurr 1993; Cederman, Wimmer and Min 2010).

This process requires a fair amount of political mobilization and leadership in order for a sense of moral outrage to spread in the concerned population. Indeed, emotional commitment is clearly not enough, because weak movements may be effectively crushed by powerful governments. Thus, only rebel organizations that control sufficient material and organizational resources are able to challenge the state through violent means (Tilly 1978; Regan and Norton 2005). Contrary to the beliefs of the resource mobilization school, however, it does not automatically follow that the effect of grievances is swamped by power differentials. Instead, we postulate that the stronger the emotional power of the grievances in the first place, the more readily the rebels will be able to overcome collective-action dilemmas blocking armed resistance (Goldstone 2001; Emirbayer and Goldberg 2005). Since grievances in turn depend on the severity of initial horizontal inequality, we arrive at the following hypothesis that measures horizontal inequality in terms of political discrimination:

Hypothesis 3: *The probability of civil war increases with political discrimination.*

Note that this hypothesis highlights the degree of discrimination in a country rather than merely focusing on the size of the excluded population (cf. Wimmer, Cederman and Min 2009). If the emotion-based mechanism outlined above holds, we should be able to detect an especially strong link between discrimination, viewed as a subset of exclusionary policies, and conflict onset. As our analysis is pitched at the level of entire coun-

tries, which in many cases feature a large number of excluded groups, discriminated groups should be especially important potential rebels, even if such groups are often numerically small and carry little weight in conventional aggregate measures of ethnic diversity at the country level.

Below, we explore additional aspects of the ethno-political environment, including the claim that a recent downgrading of ethnic groups' power status is particularly conducive to conflict, as well as the possibility that political power-sharing arrangements can undermine stability and peace (for example, Jarstad and Nilsson 2008).

Economic Grievances

By now it should be clear that vertical inequality, measured as the Gini coefficient, cannot fully capture all relevant dimensions of societal disparity. In a powerful critique of such individual-level conceptions of inequality that bears strong resemblance to Stewart's notion of horizontal inequality, Tilly (1999, 2007) advances a "relational" perspective that explains how durable inequality results from categorical differences. In Tilly's (2007: 9) words, "a view of inequality as outcomes of individual-by-individual competition according to widely shared standards of merit, worthiness, or privilege obscures the significance of organized distinctions and interactions among members of different social categories." Rather than being a mere reflection of differences in skills or changes in the supply of resources, then, inequality thus conceived can be seen as an outcome of "politics of exclusion" whereby political elites restrict distribution conditional on social categories or groups.

The explicit role played by political agency points directly to how wealth discrepancies may trigger political violence. The road from inequality to conflict leads via grievances, which can be seen as reactions to perceived injustice. Objective resource asymmetries are known to emerge in many ways, including through colonialism and internal domination (Williams 2003: 106–107), but do not themselves suffice to produce grievances. Members of disadvantaged groups must first be made conscious of their predicament through explicit intergroup comparison and convinced that the unequal distribution of wealth is not merely unjust, but also to be blamed on the state's incumbent elite (Gamson 1992).

Again, we expect other factors to influence the likelihood of conflict, including most importantly the power of the nonstate challenger vis-à-vis the incumbent state (for example, Butler and Gates 2009; Buhaug 2010). However, as argued in connection with Hypothesis 3, if the causal process is mediated by a grievance mechanism, the extent of structural inequality in a society should have a discernible impact on the outbreak of violent conflict.

In contrast to the at best mixed results of the large-N studies focusing on vertical inequality, Horowitz (1985) forcefully argues that both "backward" and "advanced" groups are overrepresented as conflict groups and provides case studies to support his claims. Likewise, Stewart (2008) reports on a series of case studies that strongly support the importance of horizontal inequalities. Using survey data from Africa, Østby (2008) and Hegre et al. (2009) have also been able to find confirming evidence for the thesis at the group level. More recently, Cederman et al. (2011) provide further support using spatial methods for deriving global estimates of wealth distribution and horizontal inequalities from disaggregated economic data.

We are now in a position to formulate our last hypothesis:

Hypothesis 4: *The probability of civil war increases with economic horizontal inequality.*

This section has shown that the recent literature provides ample evidence that political and economic horizontal inequality increase conflict risk, but so far, these results either have been limited to parts of the world due to data problems or relate to subnational units (groups or geographic areas) with little consideration of country-level dynamics. Likewise, earlier attempts to link ethnic grievances to civil war at the country level ignore the political configuration of ethnicity, whereas disaggregated (group-level) studies of ethno-political marginalization are limited to considering ethnic conflict and must by design exclude countries where ethnicity carries no political relevance.

This study provides the first truly global cross-country assessment of how intergroup inequalities in economic and political privileges are associated with civil war outbreak. In so doing, we will also assess whether the hypotheses advanced in disaggregated studies hold at the country level and what types of aggregate indicators are best suited to capture the theoretical arguments associated with horizontal inequality. Once such indicators have been found, we can compare their performance directly to established country-level correlates of civil war and assess their contribution to our ability to predict conflict out of sample. We now turn to these tasks.

Methods and Measurements

Our four hypotheses are evaluated empirically through a country-level regression analysis of civil war involvement among all members of the international system, 1960–2005 (see Gleditsch and Ward 1999). This seeming departure from the recent trend toward disaggregating civil war (Cederman and Gleditsch 2009) might seem counterintuitive as the logic underlying our theoretical framework explicitly refers to social groups within countries. However, our country-level approach here is complimentary and not inherently incompatible with a disaggregated focus. First, as we explain in further detail below, our operational measures of horizontal inequality build on the notion of the "weakest link" whereby conflict risk is considered a function of the relative discrepancy in wealth or privileges between the national average and the most marginalized group in society. Second, many social science phenomena and correlations are scale dependent, in the sense that apparent patterns in the data at one resolution or level of analysis may disappear or change at other scales.[6] Generating country-aggregated indicators from group-specific data thus permits evaluating the scale dependence of earlier findings (for example, Buhaug, Cederman and Rød 2008). Moreover, and importantly, it also facilitates comparing the performance of intergroup inequality with standard (vertical) inequality measures at the country level. Countries are arguably the most relevant units of observation for risk profiles as

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[6] For example, population size and oil dependence are found to increase a country's baseline civil war risk (Fearon and Laitin 2003), but it does not necessarily follow that subnational conflict risk is highest in the most densely populated or oil abundant regions of a country (Buhaug and Rød 2006).

well as forecasting, as available projected input data on core features such as economic development, democratization, and demographic changes almost exclusively pertain to countries (cf. Goldstone, Bates, Epstein, Gurr, Lustik, Marshall, Ulfelder and Woodward 2010; Hegre, Karlsen, Mokleiv Nygård, Urdal and Strand 2013).

Data on civil war onset and ethnic group involvement are derived from the Non-State Actor data set (Cunningham, Gleditsch and Salehyan 2009), which in turn is based on the UCDP/PRIO Armed Conflict Dataset, henceforth ACD (Gleditsch, Wallensteen, Eriksson, Sollenberg and Strand 2002; Themnér and Wallensteen 2011). The link from organizations to the ethnic groups in the Ethnic Power Relations data (Cederman et al. 2010) was established through the ACD2EPR coding project. We use the most inclusive definition of civil war, counting all conflicts between a state and one or more rebel groups that generated at least 25 battle-related deaths in a calendar year. We use two alternative dependent variables (DVs). The first is a standard binary indicator, where civil war onset is coded in the initial year of a new armed intrastate conflict and after a lull in fighting in excess of two calendar years (183 observations). In addition, we use a four-category onset indicator that separates between onsets of different conflict types (no onset is the reference group, coded zero):

1. Ethnic territorial conflict, 55 observations;
2. Ethnic governmental conflict, 42 observations; and
3. Non-ethnic conflict, 86 observations.[7]

The classification of territorial and governmental conflict is based on the ACD incompatibility indicator. Furthermore, conflicts are considered ethnic if a rebel group makes claims on behalf of a specific ethnic community and recruitment is based on ethnic affiliation. For both variants of the dependent variable, subsequent years of conflict activity are coded as zero except where a new conflict breaks out.[8] For sensitivity tests, we also use Fearon and Laitin's (2003) civil war data, which we classify in the same conflict subcategories based on their identification of ethnic/non-ethnic and center/exit wars.

We consider a number of potential proxies for ethnic grievances and inequality. The models presented below feature standard, individual-based measures of ethnic and economic diversity: Fearon and Laitin's (2003) ethnic fractionalization index (ELF) and a Gini index of income dispersion (World Income Inequality Database, WIID). To minimize missing data problems in the WIID data, we apply linear interpolation between data points and extended the time series by copying the earliest/latest known value to earlier/later years by country.

Measures of horizontal economic inequality were generated through a number of steps. First, we calculated group-level data on wealth for all ethnic groups in all countries by joining the G-Econ gridded data set on economic activity (Nordhaus 2006) with the GeoEPR data set on ethnic group settlements (Wucherpfennig, Weid-

mann, Girardin, Cederman and Wimmer 2011).[9] We then identified the richest and poorest group in each country, from which we constructed country-level inequality indicators that capture the relative gap between the mean national income and the income level for the poorest and richest group, respectively:[10]

NHI: Negative horizontal inequality = country-level GDP per capita/mean per capita income for poorest group.
PHI: Positive horizontal inequality = mean per capita income for richest group/country-level GDP per capita.

Since the G-Econ data represent the year 1990 and are time invariant, our economic inequality variables are static. This is unfortunate as we know that almost all countries experienced considerable economic growth during the sample period, and growth rates vary between cases and over time as well. Yet, this limitation may be acceptable if we do not have strong reason to believe that the spatial distribution of poverty and wealth changes significantly over time also *within* countries. Lack of good subnational data on economic activity hinders a comprehensive assessment of this issue, but much research suggests that social inequalities are often persistent, implying that static georeferenced income data may be less problematic than intuitively assumed (see, for example, Tilly 1999; Stewart and Langer 2008). For India, one of a handful of countries with reliable time-series data on economic activity at a subnational level, we have nearly identical economic growth rates for all states during the last 30 years, according to statistics from the Reserve Bank of India (see supplementary information for details). A similar stationary ordering of poor versus rich regions is evident in France (Combes, Lafourcade, Thisse and Toutain 2011), and other countries such as the Yugoslav Federation and the Sudan also seem to be well represented by the G-Econ data (Lang 1975; Buhaug, Gleditsch, Holtermann, Østby and Tollefsen 2011).[11]

A potentially more challenging problem is the possibility of reverse causality, as relative poverty at the group level may reflect past conflict. In other work (Buhaug et al. 2011), we have explored the relationship between local economic activity and conflict in detail and conducted various sensitivity tests such as limiting the analysis to the post-1990 period and accounting for (or excluding) areas that have hosted armed conflict in the past. These tests failed to reveal strong indication of an endogenous relationship between conflict and income.[12] From a policy perspective, a predictive link between economic marginalization and elevated conflict risk is in itself of considerable importance, regardless of the underlying reasons why economic inequality arose in the first place.

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[7] There is little value in disaggregating outcome category 3 with respect to incompatibility as virtually all non-ethnic civil wars fall in the governmental conflict category.

[8] Our definition of defining civil war implies that a country may host several distinct armed conflicts at the same time, involving distinct groups or incompatibilities (examples include Ethiopia, India, Myanmar, and Yugoslavia). Recoding observations with ongoing conflict as missing (that is, considering civil war countries not at risk of facing another challenger) does not substantively affect the results presented here.

[9] See Buhaug et al. (2008) for further documentation on how group-specific estimates can be constructed from spatial data by means of geographic information systems (GIS) software.

[10] In ethnically homogenous countries (for example, North Korea) and countries where ethnicity has no distinct spatial dimension (for example, Rwanda), these measures take on the value 1.

[11] Note that the problem of restricted temporal domain applies with equal force to the common proxies for vertical inequality. Most measures of ethnic fractionalization are based on Soviet data from the 1960s, whereas Gini measures of income inequality often depend on heavy interpolation and extrapolation.

[12] We do not dispute that major wars can have devastating and long-lasting impacts on the local and national economy, but few of the armed intrastate conflicts included in this analysis reach this magnitude.

To our knowledge, the G-Econ-based indicators constitute the only available data of intergroup inequality with a global coverage.

Our second intergroup grievance indicator captures systematic inequality in ethno-political opportunities, based on the Ethnic Power Relations data (Wimmer et al. 2009). The EPR project identifies political status for all politically relevant ethnic groups worldwide for all years since 1946. In this study, we focus on political discrimination as a potential source of ethnic grievance. At the country level, we consider the demographic size of the largest discriminated ethnic group (LDG) relative to the joint size of the discriminated group and the group (s) in power. This variable is naturally bounded within the interval [0, 1]. We further include two dummy variables to control for additional aspects of the ethno-political context. The first indicator flags whether one or more ethnic group(s) in the country lost political status during the preceding year (downgrade).[13] Second, we identify country years where the political system is founded on a division of executive power between leaders of different ethnic groups (power-sharing).

Figure 1 compares our group-based indices with conventional measures of ethnic and economic dispersion. Evidently, economic marginalization of ethnic minorities may be substantial even in countries with seemingly egalitarian wealth structures (for example, Russia). Similarly, discrimination of large ethnic groups is found in relatively homogenous (polarized) as well as very heterogeneous societies. We also note that many of the observations with high intergroup economic/political inequality scores (vertical axes) have a recent history of intrastate conflict.

In addition to the various inequality and dispersion measures, we consider a number of control variables that conceivably may be correlated with both horizontal inequality and conflict: logged GDP per capita (Heston, Summers and Aten 2009), democracy (Gates, Hegre, Jones and Strand 2006), and logged population size (Heston, Summers and Aten 2009). In addition, to account for possible serial dependence and a different risk pattern for countries already involved in intrastate fighting, we include a civil war lag indicator.[14] All controls are lagged by 1 year to minimize bias from possible reverse causality.

Regression Analysis

We estimate a series of binary and multinomial logit regressions to assess the hypotheses. We start with the conventional binary civil war onset indicator as the dependent variable. The first model, which we refer to as the "VI Model," is a standard model of civil war onset that contains the ELF and Gini proxies for vertical ethno-political and economic grievances plus controls. The "HI Model" additionally includes group-based (horizontal) measures of ethno-political discrimination and economic inequality. The third model, or the "Extended
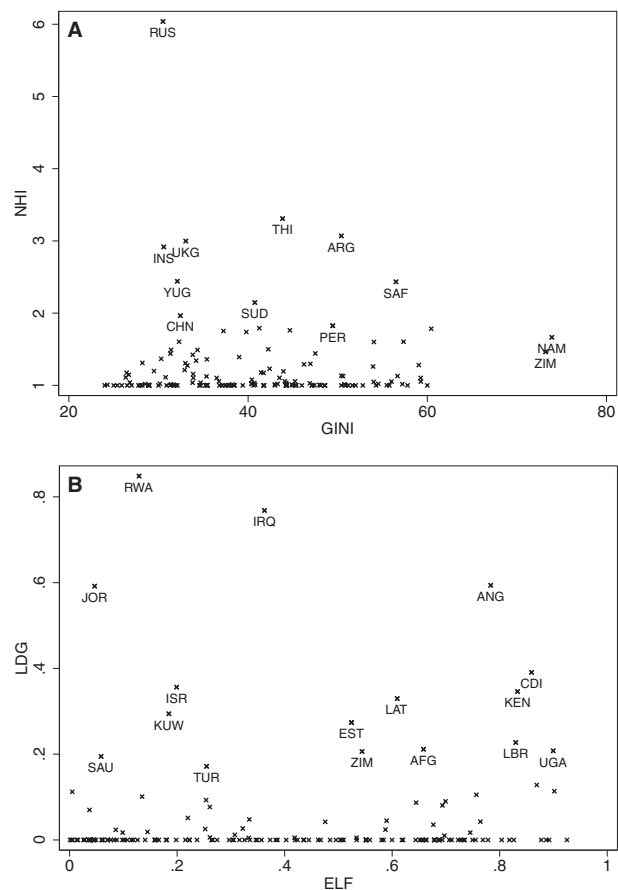

FIG 1. Vertical Versus Horizontal Inequality, Year 2000

HI Model," retains all right-hand-side regressors, but replaces the standard civil war onset variable with the four-category outcome variable that distinguishes between different types of conflict. The results are displayed in Table 1.

In line with some earlier research, Model 1 indicates that ethnic diversity is positively correlated with civil war onset. The estimated effect is quite large in substantive terms and statistically significant. All other factors held at median values, the predicted risk of civil is nearly three times higher when ELF is at the 95th percentile (ELF = 0.86) compared to the predicted value at the 5th percentile (ELF = 0.03). Vertical income inequality, in contrast, appears unrelated to civil war, in line with most earlier studies. We also note that national political configuration is largely unrelated to the likelihood of civil war. There is some indication of a parabolic effect of democracy with semi-democracies being more conflict prone (results not shown), although the results do not reach statistically significance by conventional criteria ($p > 0.1$). Consistent with Hegre and Sambanis (2006), we find that population size and level of development have significant positive and negative impacts on the risk of conflict in the conventional VI Model.

In the HI Model, we introduce the new horizontal grievance proxies as well as controls for power-sharing among ethnic groups and downgrading of their power status (see Model 2). We immediately note that the effect of ethnic diversity drops by about 15% while individual income inequality remains insignificant. More importantly, we now find that ethnic politics matter. In agree-

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[13] The EPR data set classifies politically relevant ethnic groups into one of seven possible categories according to their extent of access to central state power: monopoly, dominant, senior partner, junior partner, regional autonomy, powerless, and discriminated. Any shift downwards on this hierarchical ladder implies political downgrading.

[14] The results do not change if we replace the lagged conflict incidence dummy with Beck, Katz and Tucker's (1998) non-parametric approach to time dependence conditional on years at peace or time since independence.

Table 1. Determinants of Civil War Onset, 1960–2005

	(1) VI model All civil wars	(2) HI model All civil wars	(3) Extended HI model		
			Eth. terr.	Eth. gov.	Non-eth.
ELF	1.148**	0.974*	1.713	1.623	0.394
	(0.424)	(0.428)	(0.977)	(0.892)	(0.521)
Gini	−0.005	−0.004	−0.039	−0.029	0.024*
	(0.010)	(0.010)	(0.025)	(0.025)	(0.011)
LDG		1.288**	−0.219	3.476**	0.666
		(0.346)	(0.830)	(0.626)	(0.588)
PHI		−0.045	−0.036	−0.810	0.045
		(0.175)	(0.252)	(0.857)	(0.246)
NHI		0.321**	0.497**	−0.082	0.201
		(0.119)	(0.161)	(0.388)	(0.215)
Downgrade		0.860**	1.391**	0.944	0.422
		(0.255)	(0.418)	(0.526)	(0.448)
Power-sharing		−0.029	−0.769	0.862*	0.062
		(0.221)	(0.484)	(0.438)	(0.314)
Democracy	0.176	0.350	1.374*	−0.091	−0.157
	(0.319)	(0.345)	(0.607)	(0.819)	(0.452)
Population	0.249**	0.234**	0.408**	0.067	0.167
	(0.069)	(0.079)	(0.123)	(0.184)	(0.101)
GDP per capita	−0.382**	−0.432**	−0.773*	−0.405	−0.188
	(0.140)	(0.147)	(0.329)	(0.305)	(0.194)
Civil War lag	0.161	−0.026	0.193	−1.022	0.168
	(0.279)	(0.298)	(0.466)	(0.992)	(0.357)
Constant	−5.968**	−6.311**	−8.511**	−4.729*	−7.216**
	(0.782)	(0.850)	(1.729)	(2.043)	(1.095)
Pseudo-R^2	.06	.08	.11		
Observations	5,219	5,219	5,219		

(*Notes.* Binary (1 & 2) and multinomial (3) logit coefficients with standard errors clustered on countries in parentheses. LDG = largest discriminated group; PHI = positive horizontal inequality; NHI = negative horizontal inequality. **$p < .01$, * $p < .05$.)

ment with Hypothesis 3, regimes founded on political discrimination of sizable ethnic groups are disproportionately involved in civil war, and the magnitude of the effect is on par with that of ELF. Moreover, the HI Model supports our expectation that countries with economically highly marginalized groups are more conflict prone (see Hypothesis 4). We find little evidence that relative wealth increases conflict risk, thus contrasting the near symmetric U-shaped association between economic inequality and conflict at the ethnic group level reported by Cederman et al. 2011. Although we note that the latter study is limited to ethnic conflicts in the post-Cold War period, it remains to be determined whether the discrepancy is also in part an aggregation effect. Interestingly, including horizontal inequality also improves the performance of GDP per capita by some margin.[15] The other covariates are largely unaffected by the inclusion of the group-based grievance variables.

Models 1–2 offer empirical support for our claim that intergroup inequalities matter more for civil war risk than vertical disparities. Yet, not all conflicts are the same; prior research has shown that territorial (that is, primarily separatist) and governmental (that is, primarily revolutionary) conflicts differ on several dimensions (Buhaug 2006). Similarly, conflicts may be categorized as either ethnic or non-ethnic (the latter sometimes being referred to as ideological; see Sambanis 2001). Aggregating all civil wars could thus mask important differences in effects that

only pertain to a particular conflict type or run in opposite direction across distinct types of conflicts (Sambanis 2004).

In the Extended HI Model, we estimate the effects of the grievance proxies specifically for ethnic separatist wars (outcome 1), ethnic governmental wars (2), and non-ethnic wars (3), almost all of which are governmental (see Model 3).[16] The results are striking. ELF no longer exhibits a significant effect with conventional levels of confidence on any positive outcome (although the marginal impact for the point estimate on both ethnic conflict types—ignoring the large standard errors—remains quite high). At the same time, the positive coefficient for ethno-political discrimination nearly triples for ethnic governmental conflicts compared with the basic HI Model, while it remains insignificant for other conflict types. Indeed, the elasticity of discrimination with respect to DV outcome 2 amounts to a factor of five (estimated civil war risk increases from less than 0.003 to 0.013 with a shift from p5 to p95, all other variables held at their median values). This result supports the expectation that populous, politically discriminated ethnic groups are more likely to seek to overthrow the ruling regime or otherwise alter the political system through violent means if necessary. Moreover, countries with one or more very poor ethnic groups—which typically make up only a fraction of the country population—are more likely to see conflicts that aim for separation from the core or

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[15] The marginal impact of (negative) intergroup economic inequality should be interpreted with some care, however, as the parameter estimate shrinks significantly when the most unequal societies (Argentina, Russia, and Thailand in some years) are removed from the sample.

[16] Cf. Wimmer et al. (2009), who distinguish between secessionist and non-secessionist conflicts. We prefer the distinction between territorial and governmental conflicts since it circumvents the highly heterogeneous category of non-secessionist conflicts.

demand greater levels of autonomy rather that attempting to capture governmental power. This result actually becomes stronger if we drop the outliers. Lastly, we find some evidence for class-based mobilization in that higher individual income inequality is positively associated with the risk of non-ethnic, revolutionary civil war (see also Goldstone 2001).

Overall, our analysis shows that conventional explanatory variables of civil war are much better at accounting for territorial than governmental conflict. In fact, ethnic governmental conflicts are explained largely by a discriminatory political system and power-sharing. Whereas less than one-third of all observations in our sample have a system of ethno-political power-sharing, the share is above 60% for cases with ethnic governmental conflict outbreaks. The latter finding suggests that consociational regimes are particularly prone to factional fighting over control of the executive. Yet, there may also be a selection effect at play here, whereby countries with higher perceived interethnic competition are more likely to establish a system of institutional power-sharing. It is remarkable that the Gini coefficient is the only covariate that obtains moderate statistical significance for non-ethnic conflicts in the Extended HI Model. This may partly reflect greater heterogeneity among the so-called "ideological" civil wars that cannot be accounted for with conventional explanatory variables.

The results from Table 1 provide suggestive evidence that grievances and inequalities matter for violent conflict, although not in the simple, individualist manner implied by the demographic and rather apolitical arguments that have been operationalized with the ELF and Gini indices. Instead, supporting our group-based reasoning, political discrimination and economic marginalization of ethnic groups both exhibit positive and statistically significant effects on the risk of civil war. Inequity in political participation and power might in principle be associated with armed conflict of any kind; however, whenever access to these privileges is determined by ethnic affiliation and sizable groups of society are subject to systematic discrimination, the odds of mobilization and conflict aiming at restructuring the political system increase. Large politically discriminated groups constitute a larger threat to the ruling regime than small, peripheral minorities and are more likely to succeed in capturing and maintaining state control. The African National Congress' struggle against the Apartheid regime in South Africa and the Shiite resistance to Saddam Hussein's Ba'athist minority government constitute two relevant examples here. Conversely, countries with large intergroup discrepancies in wealth and economic opportunities are more likely to face separatist challenges.[17] The Chechen wars of 1994 and 1999 serve as near-ideal-type cases of this dynamic, occurring in Russia's least developed part of the country (Hale and Taagepera 2002). Other relevant examples include the Kurdish nationalist struggle in Turkey and the Albanian uprising in Kosovo in 1999.

Out-of-Sample Predictions

So far, we have shown that our new country-level indicators of ethnic and ethno-political inequalities, derived from data on intergroup discrepancies, are better able to distinguish between conflict and non-conflict observations than standard vertical measures of ethnic and economic diversity. Calculations of marginal effect for individual variables demonstrate that this difference is not only significant in statistical terms but also quite large in substantive terms. Next, we compare the predictive performance of the HI Model and a reduced version of the VI Model. Given the widespread interest in the disappointing out-of-sample prediction ability of conventional country-level statistical models of civil war and the aspirations of forecasting conflict through efforts such as the Political Instability Task Force project (see Goldstone et al. 2010; Ward, Greenhill and Bakke 2010), we wish to consider whether more theoretically grounded measures and disaggregated information can improve on standard models relying on conventional country-level indicators. We use the observations for the 1960–1999 period to train the models and then use the estimated probabilities for countries in 1999 to predict civil war onset out of sample, within the next decade, 2000–2009. To facilitate direct comparison, we exclude the VI indicators from the HI model (unlike Model 2) and estimate both models on the exact same sample of observations.[18] The selection of control variables is identical to the models presented above.

A first, simple test would be to apply a binary classification scheme and compare predicted outcomes for the two models with data on actual outbreaks of civil war. We first aggregate the yearly probabilities for 1999 into risk of conflict over the subsequent decade $p*$[19] and then convert the continuous prediction scores into a binary predicted onset/no onset outcome by using $p* = .5$ as the threshold criterion for predicted conflicts. As shown in Table 2, by this procedure the VI model predicts civil war onset in 14 of the 130 sample countries during the first decade of the new millennium ($p* \geq .5$). Four of these predictions were accurate, whereas there were another 22 civil wars not predicted by the model. The remaining 104 out-of-sample observations have $p* < .5$ and hence are classified as no onset. 94 of these predictions were true, while ten non-war observations are missed (false positives). The HI model fares better; it successfully predicts eight civil war onsets—twice as many as the VI model—while the number of false onsets drops to nine. At the same time, it correctly identifies 95 non-onset countries, whereas the number of false negatives (that is, missed civil wars) is 18. In other words, using $p* = .5$ as the classification criterion, the HI model correctly identifies 44% of all civil war onsets and 91% of the non-onsets during the subsequent decade; the corresponding figures for the VI model are 15% and 90%, respectively.

The appropriate prediction threshold c depends on our relative costs for identifying true events and false positives. A more comprehensive comparison of the models' forecasting capability across a range of different threshold values is provided by a receiver operating characteristic (ROC) plot. ROC curves visualize the rate of true posi-

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[17] As the income inequality measures are normalized by the average national income per capita, high inequality values by design are driven by small minority groups, which have little impact on the calculation of national mean income.

[18] A number of countries are dropped due to missing data on the Gini indicator. The results of the out-of-sample assessment do not change if we allow each model to be estimated on (and generate predictions for) the full valid sample.

[19] The probability of conflict over the decade is defined from the annual probabilities p by $p* = 1 - (1-p)^{10}$, that is, as the complement of the probability that an observation will not see conflict in any of the 10 years.

TABLE 2. Classification Table for Out-of-Sample Prediction, 2000–2009

Observed	VI model prediction		HI model prediction	
	No onset	Onset	No onset	Onset
No civil war onset	94	10	95	9
Civil war onset	22	4	18	8

(*Notes*. The table shows out-of-sample binary predictions using $p \geq 0.5$ as classification criterion for coding civil war onset, based on a training sample 1960–1999.)
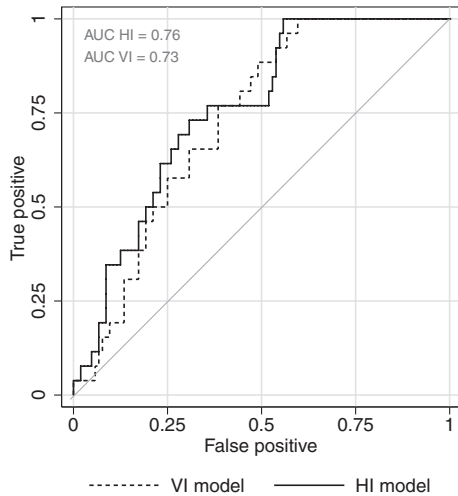

FIG 2. Receiver Operating Characteristic Curves for VI and HI Model Predictions, 2000–2009

FIG 3. Comparison of Out-of-Sample Predictions for HI and VI Models, 2000–2009

tives against the rate of false positives across the full range of possible cutoff points c for a binary variable $p^* > c$ (see Hosmer and Lemeshow 2000). The better a model predicts, the more steeply the curve rises and the larger the area under the curve (AUC, expressed as share of the total area of the plot). As seen in Figure 2, the ROC curve is higher for the HI model almost across the board and the AUC score is notably larger than that of the VI model.[20] Evidently, the predictions from the model with group-based indicators of horizontal inequality perform better in identifying the countries that see civil war onset out of sample than the predictions from a model that consider standard grievance proxies based on individual-level ethnic/economic dispersion indices.

Figure 3 provides a complementary assessment of the discrepancy in predictions between the VI and HI models. For most countries, the predictions of the two models are similar, but there are some notable exceptions. The estimated risk of conflict in Russia from 2000 to 2009, for example, is twice as high in the horizontal or group-based model compared with the vertical inequality model, reflecting the comparatively large between-group economic and political inequalities in the country. Similar patterns are found for Rwanda and Yugoslavia as well, although in the latter case, the HI model returned a

false-positive prediction (that is, false as there was no new conflict onset after 2000). Conversely, some countries seem more conflict prone when judged by their ELF and Gini indicators than by ethno-political discrimination and income deviation for the poorest group. Tanzania and the Philippines are both considered to be about 50% more at risk in the VI model, but neither experienced a civil war outbreak in the prediction period. The least likely case that actually saw civil war out of sample is the United States ($p^*_{HI} = .17$), which is perhaps a questionable classification of the 9/11 attacks in the Uppsala data.[21] Ethiopia is the most likely candidate for conflict that did not see a new civil war outbreak ($p^*_{HI} = .77$). Of the 18 false negatives for the HI model (triangles seen in the lower left quadrant of Figure 3), a majority either endured a civil war at the outset of the prediction period (six countries) or had not experienced conflict in at least a decade (six cases)—each of which condition lowers the a priori probability of a new civil war onset.

Sensitivity Analysis

Although the results presented thus far are encouraging and point toward a clear conclusion, we consider a number of additional robustness tests to address likely challenges. One possible concern relates to the inclusive nature of the ACD data, which cover all armed intrastate conflicts with at least 25 annual casualties. This comparatively low fatality threshold allows recording multiple conflicts in the same country at the same time. It could be that our results are driven by a number of low-intensive conflicts and that the reported relationship between inequality and conflict is not representative for more severe and (arguably) more politically relevant major civil wars.[22] In Table 3, we replace the ACD conflict data with

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[20] The predictive power of the VI model exceeds the HI model only in a narrow band where the true positive rate is very high (>0.75) and the false positive rate is also quite high. Since the left part of curve—where the rate of true vs. false positives is the highest—is the most relevant, it is difficult to see the higher performance of the VI model in this area as strong support for that model.
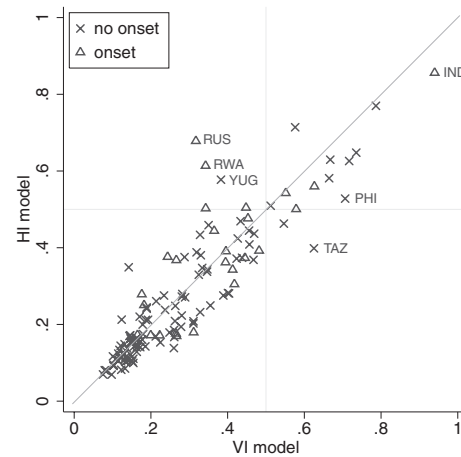
[21] Somewhat controversially, the UCDP/PRIO data project treats the 9/11 terrorist attacks as a civil war over the control of the US government. This conflict would not have fulfilled the data set's inclusion criteria for an armed intrastate conflict had al-Qaeda limited itself to striking civilian targets, but is included since the Pentagon qualifies as a government target.

[22] For example, Fearon (2010) speculates that the low fatality threshold of the UCDP/PRIO data leads to an overrepresentation of conflict observations in populous and highly ethnically fractionalized countries. However, we note that at least in our data set, the ELF score for conflict countries is actually marginally lower when all UCDP/PRIO intrastate conflicts are considered than when the sample is restricted to Fearon and Laitin's (2003) major civil wars.

TABLE 3. Alternative Civil War Data, 1960–1999

| | (4) HI Model | (5) Extended HI Model | | |
	All cw	Eth. terr.	Eth. gov.	Non-eth.
ELF	0.183	1.834*	−0.154	−1.316
	(0.562)	(0.909)	(0.825)	(0.944)
Gini	0.007	0.001	0.005	0.022
	(0.013)	(0.020)	(0.022)	(0.024)
LDG	1.501**	−0.767	3.654**	−0.300
	(0.473)	(0.978)	(0.749)	(0.982)
PHI	−0.179	−0.068	−0.070	−1.451
	(0.247)	(0.289)	(0.475)	(1.712)
NHI	0.526**	0.549**	0.456	0.370
	(0.148)	(0.153)	(0.414)	(0.596)
Downgrade	0.332	0.279	0.601	0.112
	(0.458)	(0.653)	(0.810)	(0.942)
Power-sharing	0.317	−0.349	0.871	1.066*
	(0.308)	(0.467)	(0.554)	(0.510)
Democracy	0.423	0.159	0.835	0.337
	(0.492)	(0.639)	(0.752)	(1.081)
Population	0.207*	0.461**	−0.266	0.252
	(0.084)	(0.117)	(0.187)	(0.146)
GDP per capita	−0.580**	−0.405	−0.878**	−0.444
	(0.186)	(0.231)	(0.291)	(0.415)
Civil war lag	−0.631	−0.619	−32.060**	−0.094
	(0.344)	(0.583)	(0.453)	(0.607)
Constant	−6.808**	−10.550**	−4.151*	−7.200**
	(1.121)	(1.588)	(1.980)	(2.634)
Pseudo-R^2	.06	.11		
Observations	4,433	4,433		

(*Notes.* Logit and mlogit coefficients with standard errors clustered on countries in parentheses. LDG, largest discriminated group; PHI, positive horizontal inequality; NHI, negative horizontal inequality. Civil war data from Fearon and Laitin (2003). **$p < .01$, *$p < .05$.)

Fearon and Laitin's (2003) civil war data. This data set is limited to armed conflicts that generated at least 1,000 deaths in total, with a yearly average of at least 100 deaths and with at least 100 killed on each side. Model 4 is a re-estimation of Model 2, whereas Model 5 is identical to Model 3 except for choice of DV.[23]

We immediately note the weak and insignificant effect of ethnic diversity in Model 4, which stands in contrast to its substantial impact in Model 2. Evidently, countries with many ethnic groups are more likely to be challenged by smaller (and almost always peripheral) insurgencies, but these are unlikely to escalate to large civil wars.[24] Vertical income inequality, too, appears irrelevant for major civil war risk, replicating the result for the Gini index reported above. Inequality in wealth and political rights, when measured between groups rather than individuals, however, still matters. Regimes consisting of relatively small political elites, with widespread discrimination of large ethnic groups, are systematically and substantively overrepresented in the conflict sample. These ethnocracies (LDG at 95th percentile) are twice as conflict prone

as democratic and inclusive societies (LDG at 5th percentile), all else held constant. The marginal impact of high negative economic inequality is comparable, increasing the estimated civil war risk more than twofold with a corresponding shift in values for the NHI indicator. We interpret this as additional empirical support for out claim that politically relevant ethnic inequality triggers conflict, whereby the (extent of) unequal distribution of economic and political privileges between ethnic groups has a consistent and positive impact on the probability of rebellion.

Next, we reassess the specific expectations on how ethno-political and economic grievances might relate to various types of civil war. Again, the results are encouraging in the sense that our key HI indicators replicate the pattern found in Table 1. The effect of intergroup ethnic and political disparities is evident even in the limited sample of severe civil wars. Economic marginalization of one or more ethnic minorities significantly increases the risk of separatist conflict, but not other forms of organized, state-based violence. In contrast, political discrimination of the most likely contenders for state power (that is, the largest groups not in government) increases the likelihood of governmental ethnic conflict by a factor of four, but has no systematic bearing on territorial or non-ethnic wars.[25] Interestingly, our group-based controls for downgrading and power-sharing lose much of their impact on major civil wars. While this might indicate that certain ethno-political constellations and events might carry greater potential for escalating conflict to all-out wars than others, we are reluctant to put too much emphasis on the observed differences since these outcomes are quite rare. Except for the positive and significant association between ethnic fractionalization and ethnic territorial wars, Model 5 reveals only trivial effects for the vertical inequality measures, adding further weight to our argument that it is the sociopolitical configuration of ethnicity, rather than diversity per se, that causes civil war.

Space constraints prevent a thorough presentation of all the additional sensitivity tests carried out to examine the robustness of the results, and we refer to our supplementary information for a complete documentation of these tests. Among other things, we sequentially replaced each of the four sets of inequality indicators with alternative measures. As an alternative measure of demographic diversity, we used Montalvo and Reynal-Querol's (2005) ethnic polarization index (RQ) and replaced the Gini index of income disparity with Boix' (2008) proxies for immobile economic assets. Neither of these changes substantively affected the behavior of the group-based inequality indicators. Furthermore, we replaced the weakest link-inspired measure of ethno-political discrimination (LDG) with a derivative of Cederman and Girardin's (2007) N* index, based on the EPR data and reflecting extent of political discrimination (instead of exclusion more generally). As expected, the N* index replicated our earlier finding; extensive ethno-political discrimination is associated with ethnic governmental conflict, but not with other forms of civil war. Finally, we replaced the relative wealth/poverty indices (PHI, NHI) with a unified between-group inequality measure, analogous to the Gini

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[23] In order to separate between different types of civil war, we relied on Fearon and Laitin's original classification of ethnic wars as well as their distinction between "center" (that is, governmental) and "exit" (territorial) civil wars. These models contain fewer observations as Fearon and Laitin's civil war data only run through 1999. In models not shown, we also use a beta version of Fearon's (2010) updated civil war data for an extended sample period, 1960–2008. The results do not change.

[24] A similar pattern is reported by Buhaug (2006) and Hegre and Sambanis (2006).

[25] Calculations based on a shift in discrimination from the 5th to the 95th percentile value, holding all other factors in Model 5 at median values.

index (see Stewart, Brown and Mancini 2005) and based on the G-Econ data set.[26] This indicator performed less well than the directed indices and failed to return a statistically significant coefficient on any type of civil war outcome. Evidently, large negative discrepancies from the country average income level (that is, where one of a few groups is comparably poor, and remaining groups are relatively equal) entail larger risks than large positive deviations (where a small elite is wealthy and most other groups are equally poor).

Additional sensitivity tests involved investigating a possible interaction effect between economic and ethno-political marginalization (cf. Stewart 2008; Cederman et al. 2011), without finding consistent evidence that the effect of either HI type is conditional on the other. Regression models limited to the post-Cold War period also yield largely similar results. We estimated logistic and linear fixed-effects regression to correct for possible unobserved time-independent factors that might correlate with civil war onset. Moreover, we explored the sensitivity of our findings to changes in model specifications, sample inclusion criteria, and outlier manipulation. These tests further increased our confidence in the importance of ethno-political and economic grievances for understanding where and when civil wars break out.

Conclusion

Despite widespread agreement among practitioners and laymen that material and political inequalities matter for popular unrest and civil war, several prominent scholars in the empirical civil war literature dismiss this link by referring to the alleged ubiquity of grievances that hinders separating between cases of peace and war. Our findings suggest that there are good reasons to be skeptical of this claim. Theoretical misspecification and, consequently, poor validity of applied measurements are a major reason why earlier research has failed to detect robust relationships between measures of societal inequalities and civil war. Instead of considering interpersonal differences in opportunities and privileges as the main causes of grievance in a society, we have shown that political and socioeconomic disparities increase the risk of civil war primarily when they overlap with ethnic cleavages.

While several recent disaggregated studies have been able to tease out such effects at the subnational level, this manuscript is the first to propose global country-level measures of both economic and political horizontal inequality that allow us to compare the effect of such mechanisms to standard indicators of vertical inequality on non-ethnic as well as ethnic wars. As a way to overcome the information loss associated with aggregation from substate- to state-level analysis, our new indicators operate according to the principle of the weakest link: Which parts of the chain are most likely to trigger civil war onset? Thus, we operationalize ethno-political grievances in terms of the size of the largest discriminated group within a country rather than considering the total excluded population. Furthermore, we measure eco-

nomic horizontal inequality by comparing the relative wealth of the poorest and most affluent groups in relation to the country average.

Once the conflict types have been properly unpacked, a clear picture emerges. First, we find that the presence of ethnic groups that are much poorer than the country as a whole increases the risk of territorial conflict. Since most of the very poor groups are quite small, demanding self-determination is more viable than attempting to overthrow the ruling elite. Second, our results indicate that large discriminated groups boost the probability of governmental civil wars, in part because of the evident disconnect between demographic power and political privileges. In contrast, conventional proxies for ethnic diversity and vertical economic inequality lose much of their effect when horizontal inequalities are accounted for. These findings are robust to a series of sensitivity tests. Of course, it could be that further improved data and more sophisticated indicators of individual-level inequality could lend support to conventional grievance arguments. However, our study casts doubt on the too-often unreflective reliance on standard proxies, such as ELF and the Gini coefficient, in the absence of explicit conflict mechanisms. It would seem that, despite their popularity in the econometric literature, the arguments that attempt to link ethnic diversity with the outbreak of civil war have been especially poorly articulated and insufficiently anchored in specific conflict-inducing mechanisms.

The findings presented here are of significant policy relevance, for at least two reasons. First, our group-based indices of horizontal inequalities make us better able to predict the locus and timing of future civil wars than do conventional measures of ethnic fractionalization and income disparity (for example, Goldstone et al. 2010). In particular, the inherently dynamic feature of ethno-political discrimination in many countries demonstrates a systematic pattern of covariation with civil war outbreak. Second, our results verify earlier findings on the importance of ethno-nationalist politics for translating societal inequalities into political violence. This perspective tells us that conflicts will remain extremely difficult to resolve and, if resolved, are likely to recur, as long as the underlying problems of political exclusion or horizontal economic inequality continue to fester. Thus, including and empowering previously discriminated populations, and reducing inequality along ethnic lines through a fairer distribution of public goods and privileges are more likely to promote peace and stability than short-sighted attempts to "strengthen the state" by supporting illegitimate and exclusionary regimes in the name of "stability."

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[26] In other tests not shown, we considered Baldwin and Huber's (2010) between-group inequality (BGI) data and Østby's (2008) horizontal economic inequality measure—both generated from various Demographic and Health Surveys (DHS). However, the limited, non-random coverage of those data implies that the results would not be directly comparable to the reported findings and hardly generalizable to the universe of cases.

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