

Do Ethnic and Nonethnic Civil Wars Have the Same Causes?

A THEORETICAL AND EMPIRICAL INQUIRY (PART 1)

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A booming quantitative literature on large-scale political violence has identified important economic and political determinants of civil war. That literature has treated civil war as an aggregate category and has not considered if identity (ethnic/religious) wars have different causes than nonidentity wars. The author argues that this is an important distinction and that identity wars are due predominantly to political grievance rather than lack of economic opportunity. Ethnic heterogeneity is also associated differently with identity than nonidentity wars. Some systemic variables are also important determinants of civil war, and these have been neglected in the existing literature. An important new result is that living in a bad neighborhood, with undemocratic neighbors or neighbors at war, significantly increases a country's risk of experiencing ethnic civil war.

Not all civil wars are the same. Conventional wisdom suggests that each war is as different as the society that produced it. However, broad comparisons among different wars are possible and can lead to the design of policy to better manage or prevent those wars. As we undertake further study of the causes of civil war, it is important to know if our conclusions apply equally to wars of different types. A wave of theoretical and empirical research has recently helped identify important economic and political determinants of civil war onset and prevalence. However, common to all these studies is the practice of aggregating civil wars in a single category.¹ By contrast, some studies of war termination have identified substantive differences between ethnic and nonethnic or revolutionary wars (Doyle and Sambanis 2000; Licklider 1995). This study is the first effort to systematically analyze any differences that may exist between the causes of identity (ethnic/religious) and nonidentity civil wars.

1. See Collier and Hoeffler (1998, 2000), Ellingsen (1999), and Hegre et al. (1999).

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This is the first of a four-part study on the causes of ethnic and revolutionary civil war. In this article, I focus on the onset of war and draw on a large literature on ethnicity and ethnic conflict to develop testable hypotheses on the causes of identity wars and explain why these may differ from the causes of revolutionary or other types of war. I test these hypotheses empirically, using a new data set that I compiled of 161 countries observed annually over a 40-year period. I also try to integrate economic theories of civil war with the core theories of international relations—neorealism and neoliberalism—by developing a parsimonious quantitative model that considers the impact of identities and interests in a geopolitical context—that is, by analyzing the impact of systemic variables (the cold war, regional levels of democracy, contagion, or diffusion effects of a war in a neighboring country) in conjunction with the impact of domestic determinants of war outcomes (especially levels of democracy and economic development and the degree of ethnic heterogeneity and the country's war history).

I find evidence of some systemic effects, which suggests that international relations theories are relevant in explaining patterns of civil war. This study represents the first effort to integrate these theories into large-*N* quantitative studies of civil war. I also find, in contrast to economic theories of civil war, that the lack of democracy is a significant predictor of the onset of ethnic civil war. Finally, I find a positive association between the level of ethnic heterogeneity and the onset of ethnic civil war, whereas other studies have found that relationship to be either nonsignificant or parabolic (these studies do not disaggregate wars according to war type). These conclusions suggest that important differences do exist between ethnic/religious (identity) and non-identity wars. We should take these differences into account when designing policy to prevent or terminate civil wars.

Three extensions of this study cannot be presented here. First, I conduct a technical analysis (extreme bounds analysis and/or other robustness tests) to test the robustness of my conclusions and the findings of other quantitative studies of civil war. I use different classifications and definitions of ethnic civil war and alternative measures of key explanatory variables used in this study. These robustness and specification tests make the analysis too technical and lengthy, and the results are relegated to a forthcoming article. Second, I analyze the concept of ethnic war prevalence and discuss proper ways to estimate it using the same data set. The coding of the dependent variable in studies of prevalence and the estimation methods differ markedly from the coding and methods used in a study of war onset. Existing studies of war prevalence in political science (e.g., Elbadawi and Sambanis 2001) use estimation methods that implicitly assume that the risk of war initiation is equal to the risk of war continuation. This assumption may not be problematic under some conditions and model specifications, but it is also important to check the applicability of different estimators that may be more applicable to this research question. This article is forthcoming and has substantive implications for the discussion on differences between ethnic and nonethnic wars. Third, in another study, I draw on the empirical evidence presented in other parts of my study on ethnic war, and I review the case study literature to develop a set of criteria for a more transparent coding of civil wars according to type. I discuss ambiguous cases at some length and provide a new classification of post–World War II civil wars.

I begin in the next section with a discussion of the theoretical basis for the distinction between identity (ethnic and religious) and nonidentity wars. I then proceed to develop the theoretical foundation from which I derive testable hypotheses on the causes of ethnic civil wars. I try to integrate political theories of ethnic conflict with the new economic theories of civil war. I describe the data set and briefly discuss the estimation methods. I discuss empirical results, highlighting important differences between ethnic and revolutionary war, and conclude with a discussion of future directions for this research.

THEORETICAL DISTINCTION BETWEEN IDENTITY AND NONIDENTITY WARS

The first step in uncovering systematic differences between ethnic and nonethnic wars is to define these categories clearly. A natural point from which to begin is the definition of *ethnicity*. In his seminal work on ethnic conflict, Horowitz (1985, 17-18) explains,

Ethnic groups are defined by ascriptive differences, whether the indicum is color, appearance, language, religion, some other indicator of common origin, or some combination thereof. . . . This is an inclusive concept of ethnicity [that facilitates] comparison.

Ethnicity

is close to Max Weber's conception of a "subjective belief" in "common descent" . . . ethnicity embraces groups differentiated by color, language, and religion; it covers "tribes," "races," "nationalities," and casts. (Horowitz 1985, 53)

Drawing on this definition of ethnicity, I understand ethnic war as wars among communities (ethnicities) that are in conflict over the power relationship that exists between those communities and the state. Kaufman (1996, 138) also uses this definition to argue that

opposing communities in ethnic civil conflicts hold irreconcilable visions of the identity, borders, and citizenship of the state. They do not seek to control a state whose identity all sides accept, but rather to redefine or divide the state itself.

However, not all wars that involve ethnic groups as combatants should be classified as ethnic wars.² The issues at the core of the conflict must be integral to the concept of eth-

2. An example of a similar dichotomy is Fearon and Laitin's (1999, 2) between "wars of secession or autonomy" and "violent contests over a recognized state apparatus." In this study, I refer to all nonethnic wars as "revolutionary and other" wars; this category includes the wars that Fearon and Laitin (2000) call "violent contests" over the state apparatus. Wars aimed at securing power for a new elite or the acquisition of control of economic resources territories are coded as nonethnic wars for the most part. The differentiating component between my two categories is the role of ethnicity as a cause of the conflict.

nicity as defined above. In coding war type, I rely heavily on the state failure project's coding, which defines ethnic wars as

episodes of violent conflict between governments and national, ethnic, religious, or other communal minorities (ethnic challengers) in which the challengers seek major changes in their status. . . . Rioting and warfare between rival communal groups is not coded as ethnic warfare unless it involves conflict over political power or government policy.³

In most cases, I follow the state failure project's coding. In ambiguous cases, where other scholars have coded the war differently, I rely on the coding of Doyle and Sambanis (2000).

To code an ethnic civil war, we must first observe a civil war (i.e., not all violent ethnic conflict should be coded as a civil war). Here, the coding used in the state failure project differs substantially from that used in other studies.⁴ My coding of civil war events follows Doyle and Sambanis (2000) and combines war events from the Correlates of War data set (Singer and Small 1994a, 1994b), Wallensteen and Sollenberg (1997), and the state failure project.⁵ I code a war event if (1) there were more than 1,000 thousand war-related deaths during the entire war and in at least a single year of the war,⁶ (2) the war challenged the sovereignty of an internationally recognized state, (3) the war occurred within the territory of that state, (4) the state was one of the principal combatants, and (5) the rebels were able to mount an organized military opposition to the state.

TOWARD AN INTEGRATED THEORY OF ETHNIC CIVIL WAR

There are several theoretical perspectives on the causes of ethnic violence.⁷ Primordialists view ethnicity as an exceptionally strong affiliation that charges interethnic interactions with the potential for violence. Believers in ancient group

3. See <http://www.bsos.umd.edu/cidcm/stfail/>. In the references, the state failure project is listed as Esty et al. (1997).

4. The state failure project uses a minimum threshold of 100 fatalities per year to code an ethnic conflict. I have adjusted the dates of these events to reflect a more standard definition of war consistent with the Doyle and Sambanis (2000) definition.

5. Sources used to code war events are listed in the online supplement to this article: <http://www.worldbank.org/research/conflict/papers/ethnicwar>.

6. Most of these conflicts have produced 1,000 deaths annually, and this is the preferred threshold for classification of a conflict as a civil war in the Singer and Small (1994a) and Uppsala University projects. However, the codebook of the Interuniversity Consortium for Political and Social Research (ICPSR) study, which includes the international and civil war data files, does not mention an annual death threshold (rather, this is mentioned in Singer and Small 1982), and no annual death data are available for the Correlates of War project. Thus, in my list of civil wars, I have included a small number of conflicts that may not necessarily have caused 1,000 deaths annually, but they produced more than 1,000 deaths in any single year of the war and more than 1,000 for the duration of the war, as well as more than 200 deaths per year for all other years (i.e., the conflict must have been classified as an intermediate- or low-intensity armed conflict by another data set if it did not cause more than 1,000 deaths per year for the entire period).

7. For a review of these perspectives, see Horowitz (1985).

hatred argue that ethnic conflict is rooted in old sources of enmity and memories of past atrocities that make violence hard to avoid. Proponents of primordial sociality theory argue that the strength of kinship ties promotes altruism in favor of the genetic evolution of the group. The clash of cultures (or civilizations) theory suggests that irreconcilable differences due to cultural gaps cause fear and conflict that beget violence. Fear is also at the heart of the theory of the ethnic security dilemma, which suggests that territorial intermingling and mutual vulnerability exacerbate assurance problems that may lead to preventive wars by ethnic minorities who want to secede to increase their security. Modernization may also cause conflict as economic and social change can accelerate and intensify group competition for scarce resources. This explanation may be particularly relevant when class cleavages and ethnic cleavages overlap. Finally, ethnic conflict may be the result of mobilization of ethnic groups by ethnic entrepreneurs or elites pursuing private interests and capitalizing on the availability of ethnic networks (i.e., ethnically defined groups that reduce transaction costs and uncertainty with respect to the enforcement of contracts). Elites may also socially construct ethnic identities or reinforce racial, religious, or linguistic cleavages in such a way as to produce new sources of friction and conflict.

Although none of these perspectives can fully explain the causes of every ethnic war, each can shed light on one or more wars. Together, they all share a conviction that ethnicity is a critical variable in explaining civil violence. Theories of international relations—neorealism and neoliberalism—are not fully capable of explaining the particularities of ethnic civil war. Neorealism is better at explaining war dynamics once war occurs but cannot explain why ethnic divisions occur in the first place within the state because neorealists typically assume that the state is a unitary actor. State failure parallels international anarchy, so neorealism—with its focus on the implications of anarchy—is relevant in explaining systemic influences on patterns of civil war. However, neorealism cannot explain the role of ethnic divisions in the collapse of the state, and anarchy is an endogenous outcome in the case of civil war, not a preexisting structural condition. Furthermore, neorealism cannot explain the role of leadership in mobilizing ethnic groups. Finally, according to some neorealists who believe in the stability of bipolar systems, the end of the cold war bipolar system would be expected to cause an upsurge in internal conflict. Neoliberalism, by contrast, would not necessarily see the end of the cold war as a catalyst for domestic conflict and would focus more on the role of domestic institutions as variables that might explain patterns of internal war. Neoliberalism is better able to explain why war breaks out or how war can be prevented by cultivating political institutions that increase government legitimacy and defuse the potential for violence due to ethnic conflict. It is also a theory that lends itself to a better understanding of the role of nonstate ethnic networks as well as the ideological and affective motives in ethnic conflict. Neoliberalism also explains the importance of economic motives in civil war because neorealism's hierarchy of interests would limit its focus to security motives as causes of civil war. Thus, it is important to borrow from these international relations (IR) theories a concern with systemic and international variables and to integrate these with the various theories of ethnic conflict surveyed previously.

The commonalities of these theoretical perspectives can be usefully combined in a theory of ethnic civil war that enriches the economic theories of civil violence that have recently been formulated in influential studies by Collier and Hoeffler (2000) and Fearon and Laitin (2000). These economic theories view war as the outcome of an expected utility calculation: potential rebels evaluate their expected gains from war, given their grievances, and compare these expected gains with the expected losses, which include the opportunity costs of foregoing productive economic activity. Rebellion is therefore a rational decision. What determines whether rebellion will be observed is the financial viability of a rebel organization, which depends on the material benefits of rebellion. Warring parties are assumed to be rational though not infallible, war is assumed to generate private and public gains and losses that are unevenly distributed among the parties, and private gains explain why war may be rational for some groups when it is collectively irrational.

Collier and Hoeffler (2000) draw on an insightful small economic literature on rebellion⁸ to model the demand for rebel labor as the outcome of underlying grievance and the supply of rebel labor as the result of an expected utility calculation of the economic costs and benefits of rebellion. As per capita income rises and the taxable base increases, the opportunity costs of rebellion also increase, as does the government's ability to defend itself. At the same time, the greater the tax base, the greater the potential economic gain from rebellion, which should increase the expected utility of rebellion. Financial support from diasporas and an abundance of lootable resources facilitate the financing of rebel movements and increase the probability of rebel victory. Finally, there are transaction and coordination costs to rebellion, which the authors proxy by the degree of ethnolinguistic fractionalization (ELF). Following much of the literature on ethnicity and kinship, they argue that ethnic kin groups facilitate within-group coordination and hinder cross-group coordination. Thus, they hypothesize that coordination for rebellion is easier at low levels of ELF and becomes harder as ethnic fractionalization increases. Thus, the authors argue that the more diverse a society, the less likely it is to experience a civil war.⁹

Fearon and Laitin (2000) also argue that the determinants of insurgency are mainly economic and not political. They test the empirical fit of their theoretical model and find that primordialism, nationalism, and cultural or civilizational cleavages have no explanatory power as determinants of civil war magnitude or prevalence. They contradict neoliberal theory by arguing that lack of democracy is not an important determinant of war prevalence once they control for the level of economic development and economic growth, which they find to be the most salient determinants of civil war prevalence. Fearon and Laitin consider economic development (which they measure by per capita income) as a proxy for (1) the economic opportunity cost of rebellion and (2) the level of resources and relative competence of the state; in both ways, a higher level of economic development should reduce the risk of civil war. They also argue that civil

8. Their model draws on Azam (1995), Grossman (1995), and Hirschleifer (1987).

9. Other authors (e.g., Elbadawi and Sambanis 2000) find that ethnic diversity has a parabolic association with the overall amount (prevalence) of civil war and that the probability of observing an event of civil war is highest in ethnically polarized societies.

war will occur when its economic opportunity costs are low and that lack of democracy and ethnic fragmentation are nonsignificant correlates of war.

The new economic theories of civil war do not consider if different war types have different causes, and their research designs, which aggregate all civil wars in a single category, implicitly suggest that there are no such differences. In what follows, I will draw on the theories of ethnic conflict surveyed previously and IR theory more generally to develop testable hypotheses that will lead to a more systematic test of the differences between war type and question the applicability of the economic theories of civil war to the subset of ethnic civil wars.

I begin by considering the significance of the degree of ethnic fragmentation or heterogeneity—should we expect that variable to behave similarly in cases of ethnic and nonethnic war? My first hypothesis is the following:

Hypothesis 1: The probability of ethnic war should be an increasing function of the degree of ethnic heterogeneity.

Collier and Hoeffler (2000) use the concept of ethnic fragmentation as a proxy for the coordination costs of a rebellion. They argue that the greater the ethnic fragmentation, the greater the coordination costs and the lower the risk of onset of civil war. They present empirical evidence that ELF is actually not a significant determinant of the onset of civil war and that ethnic dominance is actually harmful because it allows an ethnic group to oppress the minority and significantly increases the risk of onset of civil war. Elbadawi and Sambanis (2001) find a significant parabolic relationship between ethnic fragmentation and the prevalence of civil war, which lends support to Collier and Hoeffler, but this analysis combines the concepts of war onset and duration and should not be contrasted directly with the findings on war onset. Fearon and Laitin (2000), focusing on prevalence and conflict magnitude, find no evidence of a significant association between civil war risk and the degree of ethnic heterogeneity.

These studies do not ask if we should expect ethnic diversity to have the same impact on all types of civil war. If ethnic fragmentation is a proxy for the coordination and transaction costs that are associated with mounting a rebellion, then we would expect these costs to be lower or nonexistent in rebellions that are mounted by a single ethnic group aimed at satisfying demands/grievances of that group only. Such rebellions are closer to my definition of ethnic war rather than revolution or other resource-driven war. It follows that ethnic war should be less costly to organize than revolutions, which supports my hypothesis. The inverse U-shaped relationship that exists between civil wars defined broadly and ethnic heterogeneity need not hold for ethnic civil wars because greater ethnic fragmentation need not discourage a single ethnic group from mounting a rebellion.¹⁰ The costs of coordinating across ethnic groups—which, if high, could discourage ideology-based revolutions that are prone to collective action problems—are not relevant if the war is mounted by a single group

10. It is assumed that ethnic groups will be large enough to supply rebel labor. Rebel groups are typically small, which implies that even ethnic groups with a very small percentage of the total population can produce and sustain a rebel movement.

for the benefit of that group. Thus, the relationship between ethnic war and ethnic divisions should be linear and positive.¹¹

So, contrary to the economic theory of civil war, I would expect that ethnic heterogeneity should be among the most significant and robust determinants of the onset of ethnic war. Drawing on Horowitz (1985, 42-49), I argue that no single attribute of ethnicity need be more important than any other in determining group cohesion. Previous studies have focused disproportionately on linguistic differences, and this may have biased their findings. In this study, I use a more inclusive definition of ethnicity that combines racial, linguistic, and religious heterogeneity in a single index. This allows me to test my hypothesis using a measure that corresponds more fully to the concept of ethnicity shared by many theorists of ethnic conflict.

Next, I consider the relationship between civil violence, democracy, and poverty or underdevelopment. Following the economic theorists of civil war, I hypothesize that economic opportunity costs are also relevant in ethnic war: the greater these costs, the lower the likelihood of civil war. However, theorists of ethnic conflict have not been able to identify a straightforward relationship between economic antagonism and ethnic conflict. According to Horowitz (1985, 134-35),

Economic antagonism explains much more about conflict at the top than at the bottom of developing societies. Beyond that, the pursuit of economic interest in ways that might lead to ethnic conflict is actually impeded by certain features of ethnic pluralism itself. . . . Much more obviously, economic theories cannot explain the extent of the emotion invested in ethnic conflict. Finally, materialist theories leave unexplained the striving for such goals as domination (or autonomy), a "legitimate place in the country," and "the symbols of prestige," all of which may take precedence over economic interest in developing group behavior.

Although poverty and low levels of economic development could increase ethnic conflict as they would other types of conflict, ethnicity is a concept much more closely associated with political and cultural identity than with economic rights or class—hence the absence of class-based theories of ethnic conflict. Thus, one might expect a weaker relationship between poverty/underdevelopment and ethnic war.

Moreover, in the case of ethnic war, the rebels' motives are typically not simply economic. If ethnic war is defined as a struggle over the survival of ethnic identity, one would expect that rebels care more about changes that are likely to protect their identity. Such changes are typically political and not economic. Although the economic logic of opportunity cost should still be relevant, it should be less important in wars that threaten the survival of ethnic identity. In such wars, individual and group interests coincide, and rebels derive utility from preserving the group's cultural identity and political freedom. A desire to preserve one's ethnic identity may therefore lead a potential rebel who might otherwise require the promise of loot to fight a war to offer his or her rebel labor for free. This might help explain why we have observed some of

11. The mobilization base for ethnic war is clear and defined by ethnic identities, which are usually transparent and often territorially defined, improving the ease of coordination of an ethnic rebellion (see Kaufmann 1996, 140).

the longest or more intense ethnic wars in countries with relatively higher standards of living and development as compared with the average of all countries that have experienced a civil war (e.g., Israel, Northern Ireland, Yugoslavia, Cyprus). The protection of ethnic identity is much more closely associated with protecting political rights and supporting democracy than with economic gain. Ethnic grievance is likely to be exacerbated by the lack of political and civil rights, collapsing mechanisms for the peaceful adjudication of disputes, and an inability to nurture diverse ethnic identities within a given cultural and political system. Greater democracy rather than greater economic opportunity should have a more significant impact on issues at the core of ethnicity (i.e., preserving regional autonomy, linguistic education rights, ethnic representation, or religious freedom). I would therefore expect the lack of democracy to be a more robustly significant determinant of ethnic civil war than the lack of economic development. In this sense, I agree with neoliberal theorists who conceive democratic institutions as offering solutions to defuse ethnic conflict and prevent its escalation to large-scale violence. Survival of ethnic identity has utility in itself and can explain why members of an ethnic group would offer “free” labor to the rebellion as economic opportunity costs are outweighed by the higher expected costs of suppression of ethnic identity. I would therefore expect political variables to be much more robust and significant determinants of ethnic war than economic variables.¹² This reasoning leads me to state two more testable hypotheses:

Hypothesis 2: Greater levels of economic development should reduce the risk of ethnic civil war by raising the economic opportunity costs of violence.

Hypothesis 3: Lack of democracy should significantly and substantially raise the probability of ethnic civil war because it threatens the core of ethnic identity.

It is important to note that the relationship between ethnic civil war and political rights may not be linear. Hegre et al. (1999) develop a model that explains war as the result of political grievance and opportunity for violence.¹³ They show that countries at the middle of the autocracy-democracy spectrum are most at risk of civil war because they are neither autocratic enough to suppress any opportunity for rebellion nor democratic enough to prevent significant grievance. Their model is not as successful in identifying the economic determinants of the opportunity for rebellion. Civil war aimed at the overthrow of a regime is in effect a public good for the rebels (and a public bad for everyone else). As such, it will most likely be underproduced because its outcomes are nonexclusively consumed, yet its costs are disproportionately borne by those doing most of the fighting. Hegre et al. see the same political grievance as generating both the opportunity for war and the motivation for using violence. In empirical tests of the association between political rights and civil war onset, it will be important to test for any nonlinear effects.

Beyond these economic, social, and political determinants of ethnic war, I would also expect that regional characteristics should also influence patterns of civil war. It

12. Presumably, the pertinent question is whether poverty and underdevelopment or political repression tend to be more ethnically concentrated.

13. Their theory is based on earlier studies, such as Tilly (1978) and Gurr (1970).

has long been thought that some regions are more war prone than others, perhaps due to their ethnic makeup, resource endowments, and geography or the degree to which they include meddlesome countries. Neighboring ethnic groups in particular may become involved in ethnic conflicts in other countries. Moreover, wars in neighboring countries may increase the risk of war in the country in question through contagion and/or diffusion effects (Lake and Rothchild 1996). Good and bad neighborhoods can be distinguished by the openness of their political institutions and their proneness to internal conflict. Bad neighbors will have weak political institutions, which can only cause or exacerbate political and economic grievance in other countries as a result of uncontrolled domestic ethnic antagonisms. Good neighbors, by contrast, are able to help neighboring states overcome their political problems, offering guarantees and mediation that prevent conflict escalation. Moreover, in the case of war among ethnic groups in bordering regions, neighbors with good institutions may be better able to prevent their own ethnic groups from becoming involved in the fighting. Thus, I would posit two hypotheses:

Hypothesis 4: The greater the level of democracy in neighboring countries, the lower the probability of ethnic civil war.

Hypothesis 5: The presence of war in a neighboring country should increase the risk of more war in the neighborhood.

Finally, in addition to regional influences, neorealist theory would suggest that broad systemic forces and the balance of power may also influence the likelihood of civil war. Scholars have argued, for example, that the cold war effectively bottled up ethnic conflicts and that there was an explosion of such conflicts with the end of the cold war. This is reflected in my last testable hypothesis:

Hypothesis 6: The cold war should be negatively correlated with the onset of ethnic civil war.

At the same time, we would also expect other time trends to influence ethnic conflict. Specifically, there has been a positive time trend in the economic development and democratization of most countries, and this trend may have reduced those countries' propensity to war. Such a trend would work against the negative impact of the end of the cold war, according to the previous hypothesis. Therefore, the net effect of time on the risk of civil war occurrence may not be easily identifiable.

In the next section, I explain how I operationalize and test these hypotheses.

DATA SET, ESTIMATION METHODS, AND PROXY VARIABLES

I test these hypotheses using a new cross-sectional time-series data set I compiled, including economic, social, and political variables from 161 countries observed annually over the period from 1960 to 1999. I use proxy variables to test specific hypotheses. My proxy for the level of economic development is the natural log of energy con-

sumption per capita.¹⁴ I also use per capita real income (RGDP).¹⁵ My proxy for political rights is the level of democracy (POL), which is given by the difference between Gurr's democracy index (DEM) and autocracy index (AUTO) (Jagers and Gurr 1999).¹⁶ The relationship between levels of democracy and civil war may not be linear, so I enter polity as a quadratic in most specifications.¹⁷ The proxy for ethnic heterogeneity (EHET) is Vanhanen's (1999) measure of racial, linguistic, and religious division, ranging from 0 (*extreme homogeneity*) to 177 (*extreme heterogeneity*).¹⁸ A different measure is the index of ELF, which is available for fewer countries and uses data from the 1960s.¹⁹ Neighbor's median polity measures the median polity score of directly bordering countries, and neighbor at war measures whether a directly bordering country is at war during the preceding period. I coded nine regions of the world in the variable GEO, designed to pick up region-level effects.²⁰ COLDWAR is a dummy variable for the cold war years (coded 1 before 1990 and 0 after 1990, inclusive). Finally, LOGPOP is the natural log of population size, which I use as a control variable when testing the significance of ethnic diversity. All explanatory variables are used with lags to reduce problems of reverse causation (one-period lags are denoted by adding L1 after the name of these variables). Table 1 includes summary statistics for all the proxy variables, and Table 2 presents a correlation matrix for all key variables.

My coding of civil war events follows Doyle and Sambanis (2000), and the coding of ethnic civil wars follows the state failure project, making adjustments to the start and end dates of war events so that they are consistent with the above criteria and my additional sources.²¹ There are 5,378 observations of no war and 818 observations of war, of which 218 are revolutionary wars and 600 are observations of ethnic/religious war. There are 32 revolutionary war starts and 77 ethnic war starts in the data set.

14. The main source is Singer and Small (1994b), National Capabilities Data. Missing values are imputed from World Bank data on energy consumption. I use energy consumption as a proxy because it is less correlated with political rights, which reduces problems of collinearity between democracy and gross domestic product (GDP). Also, real per capita income is more likely endogenous to ongoing civil war, whereas overall energy consumption may be less directly affected by war. Finally, energy consumption also reflects levels of infrastructure, which is relevant in determining the level of development.

15. Various sources were used, which cause some problems with the comparability of GDP data. Missing values are imputed from World Bank data on GDP at market values (measured at current U.S. dollars) and GDP per capita for 1960 and 1985 (World Bank data).

16. The source is the Polity 98 data set. DEM is the democracy index (from 1 to 10, with 10 being the highest). AUTO is the autocracy index (from 1 to 10, with 10 being the highest). POL is the democracy index minus the autocracy index and ranges from -10 (lowest rights) to 10 (highest rights).

17. The polity (POL) variable has many missing values, which causes me to lose 166 observations of country war years and 1,158 observations of country peace years. However, it does not appear that the coding of polity is affected by ongoing civil war because the mean and standard deviation of polity during war years only differ from the corresponding figures for peace years by approximately 1.5 points out of a scale of 20. This reduces concerns about the potential endogeneity of polity.

18. The ethnic heterogeneity (EHET) index was created by Vanhanen (1999).

19. The ethnolinguistic fractionalization (ELF) index was created by Taylor and Hudson (1972); see also Mauro (1995).

20. Nine regions are identified: West Europe and North America (excluding Mexico), East Europe and the former USSR, the Middle East, North Africa, Asia, South America and Mexico, Oceania and South Pacific, sub-Saharan Africa, and Central America/Caribbean.

21. The state failure project codes several types of conflict at various levels of intensity. I follow my definitional criteria to code war events and the state failure project to classify the war event according to type for the corresponding period.

TABLE 1
Summary Statistics of Core Variables

<i>Variable</i>	<i>Observations</i>	<i>Mean</i>	<i>Standard</i>		
			<i>Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
Log of per capita energy consumption (LIENCL1)	5,421	-13.6	2.13	-23.82	-8.52
Real per capita income (with imputed missing values—IRGDPL1)	5,523	4217.1	3401.4	300	21642.84
Polity index (POLL1)	4,899	-.21	7.72	-10	10
Polity index squared (POL2L1)	4,899	59.67	30.9	0	100
Ethnic heterogeneity index (EHET)	6,289	44.22	36.03	0	177
EHET interacted with log of population size (EHETPOPL1)	5,924	689.04	553.74	0	2647.67
Ethnolinguistic fractionalization index (ELF)	5,921	40.41	28.46	0	93
Neighbor at war (NATWARL1)	6,123	0.319	0.46	0	1
Cold war (COLDL1)	6,213	0.768	0.42	0	1
Geographical region (GEOL1)	6,213	5.45	2.72	1	9
War in previous 10 years (PW10)	6,205	0.21	0.41	0	1
Log of population size (LOGPOPL1)	6,003	15.39	1.90	10.62	20.93
Neighbors' median polity index (NMDPOLL1)	4,917	-1.45	6.76	-10	10
Democratic change (annual) (DEMCHGL1)	4,691	0.008	0.86	-9	9

EWARST is the variable denoting the onset of an ethnic war; it is coded 1 for the onset of war, 0 if there is no ethnic war, or missing for all observations of ongoing war after the first observation. The variable RWARST is coded similarly for revolutionary/other wars. Collier and Hoeffler (2000) use the same coding method to study the onset of civil war. This is also the method recommended by Beck and Katz (1995) and Beck, Katz, and Tucker (1998) to reduce possible time dependence.

To correct for possible time dependence, I apply the estimation method developed by Beck, Katz, and Tucker (henceforth BKT, 1998). BKT show that it is possible to transform an ordinary probit (or logit) estimator to handle duration-dependent data by adding a series of dummy variables to the probit specification to capture the number of periods since the start of the period under study (or the number of previous events). Applying the BKT method, I test for duration dependence. If independence cannot be rejected, I use a simple probit estimator, controlling for the number of years at peace prior to the onset of war. I also compare this with a random effects panel estimator and test for the independence of observations. In simple probit models, I cluster same-country observations, which relaxes the assumption of cross-sectional independence for the same countries over time. Because I focus on internal war, I reasonably assume cross-sectional independence (i.e., independence across countries).

TABLE 2
Correlation Matrix: Core Variables ($N = 3,799$)

	<i>LIENCL1</i>	<i>IRGDPL1</i>	<i>POLL1</i>	<i>POL2L1</i>	<i>EHET</i>	<i>EHETPOP</i>	<i>ELF</i>
<i>LIENCL1</i>	1						
<i>IRGDPL1</i>	0.5959	1					
<i>POLL1</i>	0.4683	0.5478	1				
<i>POL2L1</i>	0.3555	0.5180	0.3173	1			
<i>EHET</i>	-0.3643	-0.3219	-0.2796	-0.2888	1		
<i>EHETPOP</i>	-0.3646	-0.3134	-0.2450	-0.2834	0.9852	1	
<i>ELF</i>	-0.3633	-0.3096	-0.2871	-0.2967	0.7259	0.7289	1
<i>NATWARL1</i>	-0.1736	-0.2664	-0.1566	-0.1781	0.1931	0.2217	0.1850
<i>COLDL1</i>	-0.3391	-0.1047	-0.2288	0.0320	0.0095	-0.0015	-0.0112
<i>GEOL1</i>	-0.5374	-0.6667	-0.3801	-0.4970	0.3830	0.3584	0.4385
<i>PW10</i>	-0.1827	-0.1884	-0.0645	-0.2060	0.2323	0.2717	0.1655
<i>LOGPOPL1</i>	-0.0356	0.0762	0.1082	-0.0878	0.0321	0.1650	0.0715
<i>NMDPOLL1</i>	0.4792	0.5414	0.6215	0.2701	-0.3486	-0.3311	-0.3205
<i>DEMCHGL1</i>	0.0434	0.0144	0.1211	0.0167	-0.0386	-0.0381	-0.0284

	<i>NATWARL1</i>	<i>COLDL1</i>	<i>GEOL1</i>	<i>PW10</i>	<i>LOGPOPL1</i>	<i>NMDPOLL1</i>	<i>DEMCHGL1</i>
<i>NATWARL1</i>	1						
<i>COLDL1</i>	-0.1115	1					
<i>GEOL1</i>	0.2367	-0.0124	1				
<i>PW10</i>	0.2545	-0.1160	0.1446	1			
<i>LOGPOPL1</i>	0.1689	-0.0873	-0.2061	0.2363	1		
<i>NMDPOLL1</i>	-0.1743	-0.2539	-0.3810	-0.1355	0.1036	1	
<i>DEMCHGL1</i>	0.0002	-0.0696	-0.0184	-0.0219	0.0118	0.0425	1

NOTE: For definitions of variables, see Table 1.

TESTING MODELS OF THE ONSET OF ETHNIC WAR

We get a first idea of the differences across war type by performing a test of the equality of means between ethnic and revolutionary wars. This test leads me to reject the null hypothesis of equality of means with a t statistic of 13.58 ($p > |t| = 0.00$) for the entire sample of 6,190 nonmissing observations (including observations of no war). Conducting the same test on a restricted sample of only war observations ($n = 826$) yields a t test of 15.50 ($p > |t| = 0.00$), which also rejects the null hypothesis. It is also possible to treat ethnic wars and nonethnic wars as two different samples with potentially unequal variances. In such a case, the equality of means test is slightly different, although it also resoundingly rejects the null hypothesis of equality with a t test of 21.61 ($p > |t| = 0.00$) and 1,649 Satterthwaite's degrees of freedom (only the 848 war years observations are considered). The t test of $\mu_x = \mu_y$ for paired observations (the first test used above) is given by the following formula:

$$t = (\bar{d} \sqrt{n}) / s_d,$$

where \bar{d} represents the mean of $x_i - y_i$, and s_d is the standard deviation. The t statistic is distributed as Student's t with $n - 1$ degrees of freedom. The two-sample t test of $\mu_x = \mu_y$ for unknown and unequal variance (the second test) is given by the following formula:

$$t = (\bar{x} - \bar{y}) / \sqrt{(s_x^2 / n_x) + (s_y^2 / n_y)},$$

with the resulting t statistic distributed as Student's t with ν degrees of freedom and is derived using either Satterthwaite's or Welch's formula.²² Furthermore, these tests show statistically significant differences between the means of core variables (e.g., political rights, ethnic heterogeneity, and war duration) sorted by war type. These tests suggest that we should inquire further into the differences between identity and non-identity wars. In the next section, I discuss such differences and present results of empirical models of the onset of ethnic and revolutionary war.

THE ONSET OF ETHNIC WAR

Economic theories of war aggregate across war types, and a model that is consistent with these theories would look like the regressions presented in Table 3. The results of regression 3.1 are representative of the key findings of these studies: economic variables—energy consumption in regression 3.1 and real per capita income in regression 3.3—are highly significant and negatively associated with war onset. By contrast, democracy is generally nonsignificant and entered linearly (in regression 3.2, however, the square of polity is significant). ELF is not significant in any of the regressions in Table 3. The cold war is also nonsignificant, and the variable with the greatest substantive effect is the log of population. This is consistent with the findings of Collier and Hoeffler (2000).²³

Next, I apply the classification according to war type discussed earlier and estimate probit models of the probability of the onset of ethnic war. The results are presented in Table 4, which allows me to test the hypotheses of the previous section. The BTSCS structure of the data implies that country-year observations may not be independent, so I also use a panel estimator (random effects probit). The test of the correlation coefficient ρ is significant in regression 4.3, which means that country-year observations are not independent. However, the random effects (RE) probit model generates almost identical results to probit controlling for peace years. Following the BKT (1998) model, I added a variable controlling for the number of years prior to the first war start in each of the regressions.

Regression 4.1 reveals significant differences with the previous results. High levels of democracy are robustly significant and much more so than economic development

22. See Greene (1997) and *Stata Reference Manual* (Stata Corporation 1999, 230-31).

23. The high coefficient of LOGPOP may reflect a selection effect due to the definition of civil war in terms of an absolute threshold of deaths (per year or overall). More populous countries may have violent conflicts that more easily generate casualties of the magnitude that is required to code a civil war event.

TABLE 3
 Probit Models of the Core Economic Theory of Civil War Onset

<i>Dependent Variable:</i> <i>War Start (WARST)</i>	<i>Regression 3.1</i>	<i>Regression 3.2</i>	<i>Regression 3.3</i>
Constant	-5.408** (0.699)	-5.095** (0.754)	-3.932** (0.580)
Log of per capita energy consumption	-0.099** (0.031)	-0.089** (0.031)	
Real per capita income			-0.00008** (0.00002)
Polity index	-0.008 (0.008)	-0.007 (0.009)	-0.006 (0.009)
Polity index squared		-0.004* (0.002)	
Ethnolinguistic fractionalization index	0.003 (0.002)	0.003 (0.002)	0.003 (0.002)
Log of population size	0.113** (0.029)	0.114** (0.030)	0.117** (0.030)
Cold war	-0.043 (0.174)	0.006 (0.176)	0.112 (0.164)
Observations (<i>n</i>)	3,890	3,890	3,897
Log likelihood	-344.756	-342.088	-343.237
Wald chi-square	$\chi^2(5) = 33.26$	$\chi^2(6) = 43.24$	$\chi^2(5) = 48.29$

NOTE: Coefficients and standard errors are reported (in parentheses).

* Significant at .05 level (one-tailed test). ** Significant at .01 level (one-tailed test).

(proxied by per capita energy consumption). Notice that the square of polity is significant and negatively correlated with ethnic war occurrence, which establishes a first important difference between the causes of ethnic wars and the causes of civil wars more generally (because other studies have argued that political variables are not significant in causing civil wars once they control for economic variables).

The log of per capita energy consumption is negative and generally nonsignificant or weakly significant in some specifications. Controlling for the geographical region (regressions 4.5-4.6) improves the significance level of this variable because there must be climatic and other geographical determinants of energy consumption. Replacing the log of per capita energy consumption with real per capita income actually reduces the significance of both the economic variable (in this case, real per capita income) and the polity variable (results not reported). There may be measurement error and problems with the comparability of sources used to construct the gross domestic product (GDP) variable, so I use the energy consumption variable instead.

Ethnic heterogeneity (EHET) is among the most robustly significant variables and is positively correlated with the onset of ethnic war: as a country becomes more heterogeneous, the probability of occurrence of an ethnic war increases. Interacted with the log of population size lagged once (LOGPOPL1) in regression 4.4, ethnic heterogeneity is still significant and positive. The square of EHET is nonsignificant, and its sign in regression 4.6 suggests that it does not enter the model as a quadratic.

Much of the political science literature has discussed the explosion of ethnic conflicts in the post-cold war era. Most authors and the popular press seem to argue that the end of the cold war exacerbated ethnic conflict. Others argue the opposite: Gurr (2000) presents data that show an increasing trend of ethnic conflict since the 1960s and a decline in such conflict since the mid-1990s. In my models and almost all specifi-

TABLE 4
 Probit Models of Ethnic War Onset

<i>Dependent Variable:</i>	<i>Regression 4.1</i>	<i>Regression 4.2</i>	<i>Regression 4.3</i>	<i>Regression 4.4</i>	<i>Regression 4.5</i>	<i>Regression 4.6</i>	<i>Regression 4.7</i>
<i>EWARST</i>							
Constant	-2.932** (0.486)	-2.897** (0.483)	-3.490** (0.598)	-3.291** (0.530)	-2.957** (0.480)	-2.987** (0.485)	-2.536** (0.524)
Log of per capita energy consumption	-0.052 (0.032)	-0.045 (0.032)	-0.047 (0.045)	-0.054 (0.033)	-0.060* (0.033)	-0.060* (0.033)	-0.025 (0.038)
Polity index	-0.002 (0.010)	-0.00009 (0.010)	0.004 (0.011)	0.004 (0.010)	0.001 (0.009)	-0.002 (0.010)	0.008 (0.011)
Polity index squared	-0.004* (0.002)	-0.004* (0.002)	-0.005* (0.003)	-0.005** (0.002)	-0.004* (0.002)	-0.004* (0.002)	-0.003 (0.003)
Ethnic heterogeneity	0.004* (0.002)				0.005** (0.002)	0.007 (0.006)	0.004* (0.002)
EHET • log of population		0.0003** (0.0001)	0.0005** (0.0002)	0.0003** (0.0001)			
EHET squared						-0.00001 (0.00004)	
Peace years (PeaceEds)	-0.016** (0.007)	0.015** (0.007)		-0.006 (0.007)	-0.015** (0.007)	-0.016** (0.007)	-0.017** (0.007)
Number of previous wars				0.253** (0.088)			
Neighbor at war	0.418** (0.122)	0.396** (0.123)	0.377** (0.144)	0.323** (0.125)	0.420** (0.123)	0.421** (0.123)	0.386** (0.133)
Cold war	-0.043 (0.186)	-0.025 (0.187)	0.132 (0.193)	0.168 (0.191)	-0.050 (0.184)	-0.046 (0.186)	-0.116 (0.199)
Geographical region					-0.178 (0.034)	-0.018 (0.034)	-0.002 (0.035)
Neighbors' median polity							-0.029* (0.016)
Observations (<i>n</i>)	4,175	4,175	4,175	4,175	4,175	4,175	3,651
Log likelihood	-249.338	-247.802	-245.915	-244.342	-249.149	-249.093	-229.496
Wald chi-square (<i>df</i>)	52.60	60.31	28.43	93.39	52.72	51.46	49.32

NOTE: Coefficients and standard errors are reported (in parentheses).

* Significant at .05 level (one-tailed test). ** Significant at .01 level (one-tailed test).

cations, I find the cold war to be a nonsignificant determinant of ethnic war onset, and its sign is usually negative, although this is not stable.

The random effects probit model (regression 4.3) affirms the previously discussed results with respect to the determinants of ethnic war onset. The significance level of energy consumption is reduced, whereas the significance of the square of the polity variable is increased. The likelihood test on the correlation coefficient ρ yields a chi-square of 9.95 with one degree of freedom, which rejects the assumption of independence. Because the results are similar, however, I use the simple probit estimator, but I control for peace years to capture some of the time dependence. Applying the BKT (1998) method in all the specifications of the model in Table 4, I find peace years to be quite robust, but the cubic splines computed using the BKT method are nonsignificant in any specification, so these results are not reported. This time dependence is theoretically consistent: the longer one is at peace, the more time to build institutions to manage conflict and the more distant any memories of past conflict. A related result is that war during the previous 10 years significantly increases the risk of a new war onset, but once we control for peace years, this relationship is no longer significant (results not reported). Collier and Hoeffler (2000) also find a similar result in their study.

One of my most robust results is the strength of the neighborhood effects. This is a new empirical finding that supports some of the theoretical literature on contagion and diffusion effects. I find that countries that have land borders with countries at war (this variable is also lagged) are significantly more likely to experience an ethnic war of their own. The neighbor at war variable is extremely robust to different specifications, and its marginal effect is very large. At this stage, my analysis cannot explain if this is due to contagion or diffusion effects (i.e., if ethnic war spreads physically across borders to other ethnic groups or if information effects influence patterns of mobilization and violent conflict in neighboring states). Both of these effects are possible and deserve further empirical study (see Lake and Rothchild 1996 for a theoretical discussion).

Adding the regional 5-year average of democracy and/or the once-lagged median level of polity for directly bordering states changes the results with respect to polity (refer to regression 4.7). The signs on the polity variable reveal a parabolic association with the onset of ethnic wars, but the significance level is now too low. The neighbors' democracy median is significant and negatively associated with the onset of ethnic war; more important, it seems to compete with the domestic level of democracy in terms of their influence on the probability of war occurrence. These results also hold if we use a broader regional democracy average, taking the mean level of democracy in nine geographical regions over 5-year periods (results not reported).

These results (significance levels) may be influenced by the potential endogeneity of core variables—specifically, economic and political variables such as energy consumption and polity. To test if that is the case, I estimated the core model of regression 4.1 and applied Rivers and Vuong's (1988) test of exogeneity. I estimated a model with two potentially endogenous continuous right-hand side variables (lagged versions of the log of per capita energy consumption and polity index squared) using population density, region-level income, and twice-lagged right-hand side variables as instruments. The null hypothesis of exogeneity of both polity and per capita energy con-

sumption could not be rejected (with a $\chi^2(2) = 3.46$; probability $> \chi^2 = 0.18$). Thus, I returned to the results presented in Table 4.

Beyond the discussion of the significance levels of these variables, it is also important to gauge their substantive impact on the probability of war onset. In this study, my main interest is to compare and contrast the significance and relative impact of economic as opposed to political variables. This is done in Figure 1, where it is easy to see that contrary to the arguments of the proponents of the economic theory of civil war, democracy and economic development have comparable effects on the likelihood of ethnic war onset. The two panels of Figure 1 show change in the estimated probability of ethnic war onset as a result of variation in these two key explanatory variables. I allow the level of ethnic heterogeneity to vary and observe changes in the estimated likelihood of ethnic war across levels of EHET as a result of changes in the level of POL and the log of per capita energy consumption. In panel A, I construct two hypothetical cases: an "undemocratic" case, in which the polity score is set at the bottom 10% of the range for that variable, and a "democratic" case, in which the polity score is set at the top 10% of its range. The other variables are held constant at their global medians. In panel B, one line corresponds to "less developed" countries, where the log of per capita energy consumption is set at the bottom 10% of the range for that variable, and a "more developed" case, where the log of per capita energy consumption is set at the top 10% of the range for that variable. It is easy to observe that higher levels of democracy and higher levels of development have roughly equally positive effects and reduce the estimated likelihood of ethnic war onset by approximately the same amount (note that the statistical significance of the democracy effect is greater). It is also important to note that the observed difference in the risk of war onset between less and more democratic countries or less and more developed countries is significantly greater at higher levels of ethnic heterogeneity, which shows that democracy and economic development are two good ways to manage ethnic conflict in most societies.

In sharp contrast to the models of ethnic war onset, the models of revolutionary war onset (RWARST) have very poor fit to the data (see Table 5). Few of the explanatory variables are significant. I find some striking differences in comparing these models with the models of ethnic war. First, if I replace energy consumption with real per capita income, I do see a marked increase in the significance level of that variable, which suggests that economic variables may be more important determinants of nonethnic war onset than ethnic war onset.

Second, polity is no longer significant, and a parabolic relationship is not evident because both polity and polity square have negative signs if entered in the model together (there is some significance to polity square in regression 5.1, but if we remove it from the model, polity is nonsignificant in all the other specifications; if we use real per capita income in regression 5.1, the significance level of polity square drops markedly).

Third, ethnic heterogeneity (EHET) is not significant or positive as in the case of ethnic war onset; in some specifications, one sees a weakly significant parabolic relationship between revolutionary war onset and the square of EHET, which is similar to some of the results from the economic theories of civil war (regressions 5.3-5.4). The interaction term of ethnic heterogeneity and population (EHETPOP),

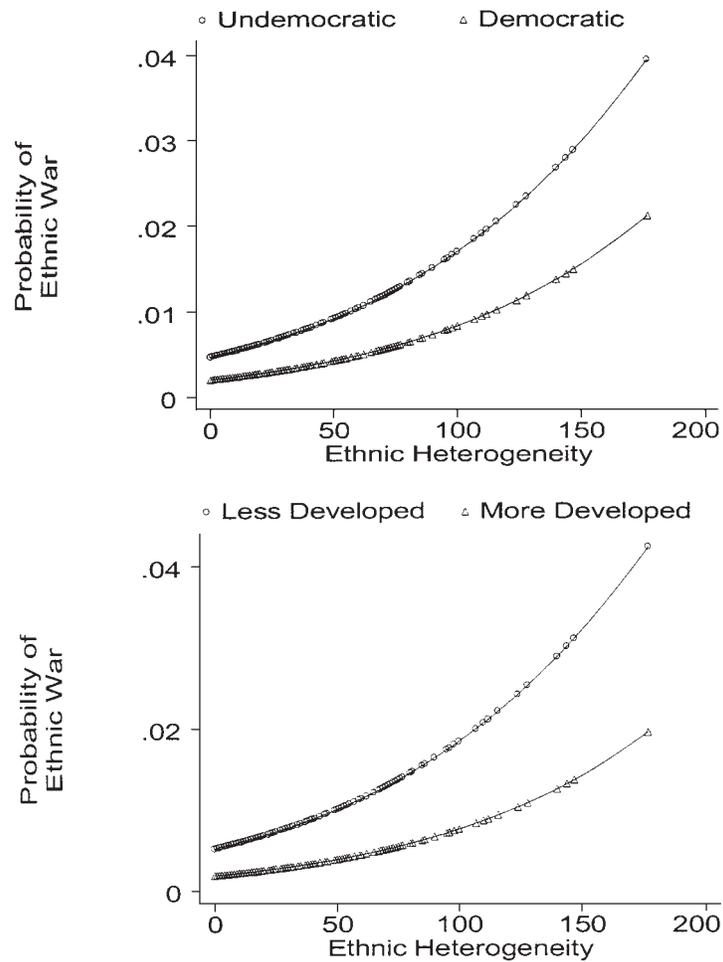


Figure 1: Effect of Changes in Political and Economic Variables on the Probability of Onset of Ethnic War across Levels of Ethnic Heterogeneity

which was highly significant in the case of ethnic war onset, is no longer significant (regression 5.5).

Fourth, there is no appreciable or significant relationship in this case between war onset and peace years, in contrast to the results for ethnic war onset presented previously.

TABLE 5
 Probit Models of Revolutionary and Other War Onset

<i>Dependent Variable:</i> <i>RWARST</i>	<i>Regression 5.1</i>	<i>Regression 5.2</i>	<i>Regression 5.3</i>	<i>Regression 5.4</i>	<i>Regression 5.5</i>	<i>Regression 5.6</i>	<i>Regression 5.7</i>
Constant	-3.060** (0.776)	-2.333** (0.358)	-3.427** (0.767)	-3.594** (0.755)	-2.699** (0.364)	-3.635** (0.372)	-3.554** (0.363)
Log of per capita energy consumption	-0.050 (0.045)		-0.027 (0.055)	-0.036 (0.057)		-0.080** (0.031)	-0.065** (0.029)
Real per capita gross domestic product (GDP)		-0.00007* (0.00004)			-0.00009* (0.00005)		
Polity index	-0.004 (0.013)	-0.002 (0.013)	0.001 (0.013)	0.001 (0.014)	0.0008 (0.014)	-0.001 (0.008)	0.0002 (0.008)
Polity index squared							
Ethnic heterogeneity	-0.004** (0.002)		0.011 (0.007)	0.012 (0.008)		0.004** (0.002)	0.003** (0.001)
Ethnic heterogeneity • population log		0.000007 (0.0001)			0.00003 (0.0002)		
Ethnic heterogeneity squared							
Peace years (PeaceEds)	-0.002 (0.010)	-0.004 (0.010)	-0.0001* (0.00005)	-0.0001* (0.00006)			
Neighbor at war	0.152 (0.169)	0.150 (0.177)	0.173 (0.165)	0.185 (0.162)	0.212 (0.191)	0.387** (0.112)	0.334** (0.112)
Cold war	-0.024 (0.290)	-0.009 (0.313)	-0.036 (0.284)	0.005 (0.268)	0.074 (0.223)	0.023 (0.153)	0.117 (0.157)
Geographical region			0.054 (0.039)	0.042 (0.036)		-0.050 (0.026)	-0.008 (0.024)
Democratic change				0.102** (0.045)			
War previous 10 years							
Observations (<i>n</i>)	4,445	4,452	4,445	4,256	4,452	4,036	4,036
Log likelihood	-134.342	-134.444	-133.493	-126.637	-132.930	-345.347	-339.173
Wald chi-square (<i>df</i>)	24.06	16.84	26.09	32.45	5.04	46.16	83.19

NOTE: Coefficients and standard errors are reported (in parentheses).
 * Significant at .05 level (one-tailed test). ** Significant at .01 level (one-tailed test).

Fifth, the neighborhood median polity index is nonsignificant and positive in this case, as opposed to a highly significant and negative relationship with ethnic war onset (results not reported).

Finally, it is worth noting another difference with reference to the impact of democratization. Democratic change may be dangerous and may spark ethnic conflict (Snyder 1999). In my data, I find weak support for this hypothesis but not with reference to ethnic war. I find that there is a significant and positive relationship between change in levels of democracy and the risk of onset of revolutionary war (regression 5.4), but I do not find the same significant relationship with respect to ethnic war (results not shown). It is worth noting that this relationship does not hold for autocratic change or net change in the polity index and that reference is made here only to annual change to the index (not percent change or change in an average over time). The relationship between democratic change and risk of war is complex and should be studied in a separate study. Here, I have added change in level of democracy mainly as a control variable.

Regressions 5.6 and 5.7 estimate more fully specified models of the core economic theories of civil war, aggregating civil wars (the dependent variable is now WARST). Here we see results similar to those discussed in the economic theories of war: economic variables (log of energy consumption per capita) are more significant than democracy (polity), and war in the previous 10 years (PW10) is highly significant and positive (regression 5.7). We find that the neighborhood effects discussed earlier are still significant, which is something that the economic theories of war should take into consideration.

Overall, there are some important differences between ethnic war onset and the onset of civil war more generally (i.e., aggregated civil wars and/or revolutionary wars specifically). Politics is more important than economics in causing ethnic civil war, and ethnic heterogeneity significantly increases the risk of such war. The core model of regression 4.1 explains many cases well, but quite a few cases are not well explained by the model. We need to develop more data and better theory to explain more of the variance in the onset of ethnic war (note that it is harder to predict accurately the first occurrence of an event; models of prevalence would have much better fit to the data). There are some cases that the model explains very well: countries such as Iceland and Japan have strong and transparent political institutions, developed economies, and homogeneous societies and have an infinitesimal predicted risk of ethnic civil war. Countries such as Zaire (now Democratic Republic of the Congo), Turkey in the 1970s and 1980s, India in the 1970s, and Ethiopia have among the highest estimated probabilities of onset of ethnic war. These are obviously correct predictions because war occurred in those countries within a few years of the prediction. However, the model errs significantly in some cases because two of the most influential cases (in terms of leverage statistics) are also outliers: Cyprus should not have had an ethnic civil war according to the model, and Nigeria should have experienced an ethnic war in the 1990s. It is interesting to think about these cases briefly. Cyprus has a high democracy score in the polity database, although students of that conflict know well that in the 1960s, Cyprus did not have a well-functioning government and that it faced a serious constitutional crisis that eventually helped spark the civil war. Thus, this may be a case

of poor data leading the model to make a wrong prediction. In the case of Nigeria, ethnic war seems imminent. The fact that recurrent pockets of violence do not rise to the level of a war would suggest that this is a country worth watching closely over the next few years.

CONCLUSION

Using annual frequency BTSCS data for 161 countries over a 40-year period, I have identified significant differences between the determinants of identity and nonidentity civil wars. Identity wars are predominantly caused by political grievance, and they are unlikely to occur in politically free (i.e., democratic) societies.

I find that ethnic heterogeneity is significantly and positively correlated with the onset of ethnic war, whereas the economic literature on war initiation has suggested that ethnic heterogeneity either decreases the risk of war onset or has no significant association with the risk of war. In ongoing research, I take a closer look at this important difference between ethnic diversity and the risk of the onset of different types of war. I explore differences in coding, the significance of various influential cases, and the properties of different variables that can be used to proxy ethnic heterogeneity. It is also important to unpack the concept of ethnic heterogeneity and to better understand which of its components is more closely linked to war initiation—is it racial division, linguistic difference, or religious heterogeneity?

The analysis in this study has also revealed significant systemic and regional determinants of war, which have not yet been incorporated in the literature on civil war. The cold war seems not to have been a major determinant of ethnic war onset, and a regional dummy variable failed to reveal robustness, although it improved the performance of other variables (mainly economic variables). Other regional factors, by contrast, are robust across the board. Regional democracy exerts a moderating influence on the probability of ethnic war, whereas it appears to encourage ideological rebellion in the neighborhood (the latter effect is nonsignificant in the case of war onset but seems to be significant in preliminary studies of war prevalence). Neighborhood wars and long periods of peace also seem to be much more significant for ethnic war onset than nonethnic war. These interesting and divergent effects should be studied more closely so that we can understand how systemic effects are transmitted to the domestic political sphere and how they might be managed to reduce the risk of civil war.

This study suggests that some theories are better suited to explain ethnic war than others: it appears that modernization theory, with its emphasis on economic variables, is less applicable than theories of political development or neoliberalism, whose emphasis on the role of political institutions seems highly relevant as an explanation of the onset of ethnic war. Neorealism so far seems not as relevant as some scholars have thought because we found no evidence of a security dilemma, although more precise tests are needed before we reach a final conclusion on this matter. Overall, however, much more research is needed to fully understand the causes of ethnic war and develop a comprehensive theory. The results presented in this article cannot distinguish fully between primordialism and ethnic networks theory because of lack of data on the role

of elites in mobilizing ethnic groups to use violence. The next step in this research is to conduct a number of specification and robustness tests with available data, and the step after that, which will have even greater usefulness, will be to develop new data that better capture the variables of theoretical interest. For example, time-variant measures of ethnic diversity would tell us more about how ethnicity is felt by people over time and how the intensity of these feelings are shaped by sociopolitical conditions. Group-specific measures of inequality, political representation, and wealth distribution as well as territorial concentration of ethnic groups are all variables that should be coded and used in further refinements of this work. Until we have a much more detailed data set, the findings in this study should be interpreted as intermediate results, whose robustness must be tested further as our theoretical understanding of ethnic violence improves.

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