Chapter 4

Civil War

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Abstract

Civil wars are intricate social, political and psychological phenomena. However, economics can offer analytical insights which are useful alongside the more conventional approach of case-studies. Indeed, the policy conclusions drawn from economic analysis sometimes cast doubt on conventional advice. The use of economic theory and statistical evidence help to guard against excessive generalization from individual civil wars that inevitably suffer from both a surfeit of possible explanations and advocacy. Rigorous empirical study of civil war requires a precise definition of an imprecise and poorly observed phenomenon, a process that provides considerable room for legitimate disagreement. Hence, we begin by discussing the choices made in constructing the major data sets that describe the duration and severity of civil wars.

Ideological, religious or ethnic differences are conventionally regarded as the causes of civil war. Economic theory explains civil war in the framework of incentives and constraints rather than ideologies or identities. This framework enables economists to analyse the distinctive feature of civil war: the emergence and persistence of a rebel army: some conditions make rebellion both more attractive and more feasible than others. Consistent with this emphasis on incentives and constraints, statistical studies suggest that economic characteristics, notably the level, growth and structure of income, are important influences on the risk of war. In addition to the explanation of the initiation and duration of civil wars, economic methods can also generate estimates of their costs and consequences. This is an essential step towards the cost-benefit analysis of policy interventions.

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Civil war, post-conflict, development, aid, natural resources, game theory, prevention, intervention, cost, data collection, panel data, health, refugee

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1. Introduction

This chapter aims to cover the economic analysis of civil war. It focuses on the application of economic theory and econometrics to its causes, duration, consequences and costs. Much of the literature of civil war lies outside economics. While we have drawn on this literature, we do not aim to provide a comprehensive treatment of it. All civil wars are intricate social, political and psychological phenomena and each requires its own analysis. For example, conflicts invariably involve personalities: leadership matters. Nevertheless, modern economics can offer insights and explanations which are useful alongside such case-specific study. It helps to guard against excessive generalization from individual situations that inevitably suffer from both a surfeit of possible explanations and highly polarized advocacy.

Rigorous empirical study of civil war requires a precise definition of an imprecise and poorly observed phenomenon, a process that provides considerable room for legitimate disagreement. In Section 1 we discuss the choices made in constructing the major data sets that describe the dates and scale of civil wars. In Section 2 we turn to explanations of civil war, both theoretical and empirical. In Section 3 we consider the scale of conflict. Potentially, scale can be described in various dimensions, such as duration, mortality, and geographic spread, but as yet only the duration of conflict has been investigated sufficiently to warrant discussion. In the following two sections we consider the costs and consequences of civil war, and the processes of recovery or relapse that occur during the

post-conflict decade. Section 6 discusses policy implications and their efficacy. In the final section we consider promising avenues for future research.

2. Concepts and data

'What is a civil war?' – this question is difficult to answer in a decisive way and we start with a presentation of the most commonly used definitions and data sets. We then discuss three measures of the severity of civil war: fatalities, duration and geographic spread.

2.1 Definition of civil war

The two most commonly used data sets are the Correlates of War (COW) project as described in Singer and Small (1982, 1994) and the more recently collected 'Armed Conflict Dataset' (ACD) by Gleditsch et al. (2002). Both data sources provide data on inter as well as intra state wars. Further significant data collection efforts are the State Failure Project[1], as well as data sets collected by individual researchers such as for example Fearon and Laitin (2003). Typically the definition of civil war used in these data sets is based on the use of violence and not on the aims of the protagonists or on the outcome of the conflict.

Both COW and ACD are huge data collection efforts and their distribution in electronic format has enabled many researchers to work with the data. The COW definition of civil

[1] Available at http://www.cidcm.umd.edu/inscr/stfail/sfdata.htm

wars is based on four main characteristics. It requires that there is organized military action and that at least 1,000 battle deaths resulted. In order to distinguish wars from genocides, massacres and pogroms there has to be effective resistance, at least five percent of the deaths have been inflicted by the weaker party. A further requirement is that the national government at the time was actively involved. This excludes of a number of internal wars from the civil war definition, most notably wars of liberation from colonialism. Thus, Angola (1961-75), Mozambique (1964-75) and Western Sahara (1975-83) are not defined as civil wars but are instead listed as 'extra-systemic wars'.

The definition of war as used by Gleditsch et al. (2002) has two main dimensions. First, they distinguish four types of violent conflicts according to the participants and location: (1) extra-systemic conflicts (essentially colonial or imperialist wars), (2) interstate wars, (3) intrastate wars and (4) internationalized intrastate wars. The second dimension defines the level of violence. *Minor* conflicts produce more than 25 battle related deaths per year, *intermediate* conflicts produce more than 25 battle related deaths per year and a total conflict history of more than 1,000 battle related deaths and lastly *wars* are conflicts which result in more than 1,000 battle related deaths per year.

Figure 1 uses these definitions and shows the global incidence of civil war. There is a marked upward trend in the incidence of violent internal conflict during the cold war, with a peak of 37 violent conflicts globally in 1992. Since then the number of violent conflicts has decreased to 21 in 2004.

Figure 1 about here

The absolute number of deaths as a threshold criterion is commonly used to define conflicts. Relative thresholds, such as categorizing wars according to the proportion of a country's population killed in the conflict, are rarely used. A relative threshold would lead to categorizing conflicts of widely varying intensities as wars. In small countries only a few deaths would be interpreted as a civil war while a very large number of deaths would have to occur in larger countries.

These definitions leave one phenomenon as ambiguous, namely popular uprisings. Such uprisings can easily lead to mass fatalities but they differ from rebellions in lacking an organized rebel army and are unlikely to be prolonged. Examples include the Iranian revolution 1978-79, and the revolutions in Romania and other East European countries in 1989. The theory of such uprisings has been analyzed by Kuran (1989, 1991), and Epstein (2002) presents an interesting simulation model. However, we do not consider the phenomenon further in this chapter.

2.2 Quantitative measures of the severity of civil wars

Closely related to the definition of civil war is the issue of measuring the severity of the civil war. As discussed above, most definitions of civil wars are based on the absolute number of battle related deaths. Fatalities are one measure of the severity of the civil war,

however there are many other dimensions researchers may want to analyze. Here we concentrate on the duration, the human costs of conflict and the geographic spread.

2.2.1 Duration

Recent work [Fearon (2004), Collier et al. (2004)] analyzes the duration of civil war. Issues in the analysis of the duration of civil war are why some wars last much longer than others and whether the duration of conflict can be explained by the same determinants as the causes of conflict. Duration analysis of conflict requires that the start and the end of the conflict can be dated. Often trigger events can be dated and thus the beginning of the violence dated, e.g. the assassination of Rwanda's president on 6 March 1994 marks the start of the civil war in a number of data sets. However, often the violence escalates over some period of time before it reaches the relevant threshold and can thus be defined as a civil war. Wars end either with a military victory, settlement or truce. About half of all civil wars end in military defeat [Sambanis (2000)] which makes dating somewhat easier than using dates of peace agreements which may not have resulted in an end to all military action.

The duration of the war does not only depend on being able to date a start and end but also on the definition of violence thresholds. Data sets which define a civil war by 1,000 battle related deaths per annum have on average shorter wars than data sets with lower thresholds. Take for example a war with more than 1,000 battle related deaths during the first year, if the number of battle related deaths falls beneath the threshold in the second

year but reaches it again during the third year a rigid application of the absolute threshold criterion leads to the classification of two conflicts for a high threshold definition and to the classification of one conflict for a low threshold definition. Thus, the problems with respect to dating the start and end of the conflict are not only of importance for the analysis of the duration of conflicts and peace but also for the analysis of the recurrence of civil wars. Walter (2004) defines recurrent civil wars as those fought by the same combatants for the same goals as the original war.

2.2.2 Human cost

As discussed in Section 1.1 the number of battle related deaths is one of the main defining characteristics of civil war. Exact numbers are difficult to obtain because both parties in the conflict tend to understate their fatalities and overstate the opponent's fatalities. Lacina and Gleditsch (2005) provide the best estimates for the human cost on an annual basis for all wars since 1946. They classify the human costs into three categories: 'combatant deaths', 'battle deaths' and 'war deaths'. Most other data sets only offer mortality statistics for the entirety of the conflict and do not clearly distinguish between battle and war deaths. Typically 'combatant deaths' can be used to assess strategic choices in warfare and are often quoted in order to evaluate normative questions such as the proportionality of the use of force. 'Battle deaths' include all people, military and civilian, killed in combat. This measure is regarded as the most suitable to assess the scale, scope and nature of the military engagement. A more accurate account of the human cost of war also accounts for deaths due to increased violence as well as due to starvation and increased disease. Lacina and Gleditsch term this category 'war deaths'. A

number of stylized facts can be drawn from their research. Since the end of the cold war most battle deaths were caused by civil wars of which a large number occur in Africa. As Table 1 illustrates the proportion of battle deaths in total war deaths is small, for example surveys in the Democratic Republic of Congo suggest that only about six percent of the war deaths were a result of direct military action.

Table 1 about here

There are a variety of reasons for the low proportion of battle deaths in total war deaths. Poorly equipped and organized armies may often not engage in direct battles with the opposing forces but government as well as rebel armies injure and kill civilians [see for example Herbst (2000), Cairns (1997)]. Most wars are fought in low income countries where a poor infrastructure and limited medical services increase the war related mortality rates. This is particularly tragic in countries where the war caused famines, such as in Ethiopia and the Sudan.

2.2.3 Geographic spread

A further measure of the severity of civil war is the geographic spread of the war. As a first step this requires to determine the country in which the conflict was fought. Data sets such as COW and Gleditsch et al. (2002) provide information on the primary participants and interventions as well as where the war was fought. Thus, making it possible to treat intervening countries differently from the countries in which the war was fought.

However, there is very little information on the nature of the interventions, i.e. whether countries only supported the military intervention logistically or whether troops were sent.[2] For cases in which the rebellion spans several countries (e.g. the Kurdish rebellion) researchers assume two different war locations (in this example Turkey and Iraq).

Only very few data sets give some estimate of the geographic spread within the civil war country. The State Failure Project provides an ordinal indicator for the proportion of the country affected by fighting. However, the data set does not provide information on which part of the country was affected. Buhaug and Gates (2002) provide much more detailed geographic measures of the geography of war. Based on information on where military action took place they define the conflict center and area. The absolute scope of the conflict is measured by the circular area around the conflict center and the authors also provide the geographic distance between the conflict center and the capital city.

3. Causes of civil war

3.1. Motivation and feasibility

The distinctive feature of civil war is the emergence and persistence of a rebel army: this is the phenomenon that must be explained. A satisfactory explanation should include both motivation and feasibility, and in principle either could provide the bulk of explanatory power. Thus, civil wars may be rare because the circumstances which motivate the

[2] Regan (2002) provides data on interventions and divides them into three categories: diplomatic, economic and military.

formation of private armies are rare, or because the circumstances in which such armies are feasible are rare.

In practice, there has been a greater focus on motivation than on feasibility. Within motivation, a recent and somewhat contentious distinction has been ‘greed or grievance’. The rebel discourse invariably provides an account of motivation in terms of the need to redress objective grievances and this is often taken at face value. However, potentially, rebels may also be motivated by the opportunities that organized violence generates for private gain. A large number of studies provide a categorization of conflicts based on the different grievances. The ‘issues of the conflict’ are commonly seen as: territory, land and sea-borders, national independence or decolonization, ethnic, religious or regional autonomy, ideology and system conflicts, national power conflicts, international and geo-strategic power conflicts and conflicts over the access to and the distribution of resources. This type of classification into different types of conflict makes explicit but often uncontested assumptions about their causes. The motivation for violent conflict can sometimes be inferred as a revealed preference, providing at least some independent check on the rebel account of motivation. Further, alleged grievances can sometimes be measured: for example, it is to an extent possible to test whether societies that are more unequal are more prone to rebellion.

3.2 Theories of Rebellion

There are a number of theoretical studies on the causes of violent conflict and a growing body of empirical literature. Economic theories of the causes of civil war follow two distinct approaches. The first approach focuses on motivation and applies game theory, usually with the rebels aggregated into one player and the government into the other. The second approach is to focus on feasibility and views the rebel group as an unusual type of business which can only prosper in special conditions. We consider them in turn.

3.2.1 Game-theoretic analyses

The standard game-theoretic model of civil war has its foundations in the work of Hirshleifer (1991, 1994, 2001). It postulates economic differences between agents that can generate predatory behavior. Typically, agents can be productive or unproductive in an output-generating activity, and strong or weak. Unproductive but strong agents then have an incentive to engage in predation against productive but weak agents. Such predation can be glossed as justice, equity, or extortion depending on the political perspective of the analyst, but the underlying structure is the same. Even within its own terms, this sort of model runs into several difficulties.

Since predatory behavior is costly, both agents can improve on redistribution-through-violence if the productive-but-weak agent engages in pre-emptive redistribution. In effect, the endowment differences should produce redistribution rather than rebellion, a line of analysis most closely associated with Azam (1995) and Roemer (1985). Within this framework the explanation of rebellion remains a challenge. There are three broad

possibilities. One is to postulate asymmetric information: neither agent knows the military capabilities of the other. If both agents are over-optimistic, there may be no peaceful outcome that both recognize as mutually beneficial. Somewhat analogous to the 'winner's curse', once at war players discover that they have over-played their hand. A second possibility is to invoke hatred, and possibly reciprocal hatred, so that players get utility from inflicting harm on the other party. A third possibility is to introduce constraints upon the ability to make preemptive redistributions. The explanation for civil war then becomes not the differences in endowments but these additions.

A second area of difficulty is that each party to a civil war is comprised of a large group of actors. If rebellion generates costs that are borne by the rebel group and confers benefits that accrue to a much wider community, that is if the rebellion is aiming to generate a public good (a claim of many rebel groups), it will face a standard free-rider problem. In the absence of a government, public goods are radically undersupplied, and since government is not going to supply rebellion, those rebellions that are seeking to provide a public good will also be radically undersupplied: civil wars will be rare but bountiful. A way out of this difficulty is to think of rebellion as supplying a joint product, partly a public good and partly a private good which accrues only to participants.

3.2.2 The organization of rebellion

An alternative to the game-theoretic approach is to see civil war as the result of unusual conditions that enable a business organization – the rebel group – to be viable during what is typically a very long period of violent conflict. This need not imply that the organization is motivated by the profits to be made during the conflict. Indeed, the approach can be entirely agnostic as to motivation. In the limit it can hypothesize that where a rebel organization is viable it will develop, with the motive being whatever happens to be the agenda of the first group to occupy the available niche. Potentially, the conditions for viability might collapse the analysis back into a study of motivation: for example, rebellion might only be viable where a particular group had a sufficiently strong grievance to tolerate danger and hardship. However, the approach emphasizes rather different requirements for viability: the ability to equip and finance an army [Collier (2001)], and the ability to survive against a government army, an issue which has been extensively explored through the concept of contest success functions (see Chapter 3 of this Handbook).

Although the approach is agnostic about motivation, given that conflicts typically last many years it is natural to look to benefits that accrue during conflict. The most cynical interpretation of rebellion is to regard it as motivated by the opportunities for profit that accrue during violence. In a brilliant paper, Weinstein (2005) develops a theory of rebel recruitment. He shows that where there are opportunities for large profits, the composition of the rebel group will gradually shift towards those with an intrinsic motivation for private gain: the rebellion experiences adverse selection in intrinsic motivation. An alternative way of invoking intrinsic motivation is to recognize that

rebellion is fundamentally about power through violence. Hence, it is likely to attract those who place an atypically high value on these features. Many rebellions depend upon child soldiers and drug addicts, features which are insufficiently recognized in economic models. Rebel leaders generally do well out of war, but cannot be bought off *ex ante* by government because they cannot be identified. Rebellion may therefore simply require the combination of child poverty, an initial supply of arms, and opportunities for continuing finance whether through predation or donations.

Gates (2002) and Grossman (1991, 1999) provide somewhat complementary microeconomic models of the rebel organization in which private gain motivates decisions. Gates takes the perspective of the rebel leader, emphasizing the agency problems that must be overcome. Grossman takes the perspective of the potential peasant recruit with households deciding how to allocate their labor time to production, soldiering, or participation in an insurrection. The interaction between the ruler and the peasants generates an equilibrium allocation of labor time and a probabilistic distribution of income from the various activities. One possible equilibrium outcome is a higher expected income if time is allocated to insurrections despite its opportunity cost.

Kuran (1989) investigates the likelihood of joining a rebel movement. Individuals with a strong preference for revolution are most likely to join first. Individuals with a less strong preference are more likely to join if the probability of success is higher. They are more likely to join if others have already joined. This ‘bandwagon’ effect is most likely to

result in strong rebel support if preferences are uniformly distributed. Societies with clustered preferences are less likely to experience rebellion.

The issue of motivation and mobilization of national militaries has not received much attention. Herbst (2004) provides an analytical narrative for Africa. African armies are, by comparative standards, small but weak or failing states often have great difficulties to respond to the threat of civil war. Poor institutional environments and a lack of public finances contribute to the lack of intelligence and early warning systems. Once a civil war has started mobilization to mount a successful counter-insurgency is difficult and in a number of cases mobilization failed when faced with a credible internal threat. Herbst argues that additional sources of finance such as aid and income from natural resources (most notably from oil) can help to overcome mobilization problems.

3.3 Evidence on the Causes

The most commonly cited causes of large scale violent conflict are probably differences due to religion, ethnicity and class/economic inequality. Examples include the 'Clash of Civilization' hypothesis [Huntington (2002)] and the assertion that `the relation between inequality and rebellion is indeed a close one' [Sen (1973, Chapter 1)]. It is probably true that certain conflicts are due to some or a number of these causes but they may not be universal drivers of violence. Until recently none of these commonly held beliefs were subjected to empirical testing. A number of papers have tackled these issues [Fearon and Laitin (2003), Miguel et al. (2004), Collier and Hoeffler (2004a)]. Due to the electronic

availability of conflict data various researchers have coded civil wars as a dichotomous variable and analyzed the initiation of war using panel data analysis. While the debate on the determinants of civil war is ongoing there is a consensus regarding some of the factors which make countries more prone to civil war.

Collier and Hoeffler (2004a) find that a higher degree of ethnic and religious diversity makes a country *less* conflict prone. However, this is not the case if there is one dominant ethnic group, when there is a higher risk of civil war. Thus, the relationship between ethnic diversity and war is nonlinear. History is also important, countries with a past history of conflict are more likely to experience renewed conflict. This risk is about 44% during the immediate five post-conflict peace years. However, this conflict risk fades as the peace period continues, the risk of conflict is reduced by about one percent per year. Their most important finding is that that economic factors such as the level, growth and structure of income to be significant in the analysis of war initiation. Poorer countries, countries with low growth rates and a high proportion of primary commodity exports in their GDP were more likely to experience war during 1960-99.

The econometric analysis has moved from correlations to statements that can reasonably be seen as causal. For example, despite the evident reverse causality from conflict onto both growth rates and income, it has been possible to separate out that part of the correlation that is due to causal relationships from low growth and low income onto the risk of conflict. However, several interpretations of these causal relationships remain possible. One is that low incomes and growth rates indicate a lack of opportunities, thus

making recruitment to rebel forces much easier. This is at least consistent with the evidence from the World Values Survey on reported preferences. Faster economic growth reduces the taste for revolution [Pezzini and MacCulloch (2004)].

The evidence that countries with a high proportion of primary commodity exports in their GDP are more prone to conflict is sometimes interpreted as evidence that rebels use these natural resources to fund their warfare. Financing a private army can be done in a number ways and looting natural resources is one of them. This result and its interpretation initiated a wide debate. Apart from the financing argument natural resource rich economies have specific policy characteristics and the reason for increased risk could be found in their political economy [see the special issue of Journal of Conflict Resolution (2005)]. Countries rich in natural resources suffer from a resource curse, they do not only have lower growth rates on average but also weaker institutions. At the core of the institutions' argument is the idea that leaders in resource rich economies do not have to tax the population and thus are less subject to electoral scrutiny [Bates (1981), Robinson et al. (2002), Collier and Hoeffler (2005)]. Support is typically bought through patronage in the public sector. Both the financing as well as the political economy reasoning seem plausible. The work by Lujala et al. (2005) suggests that conflicts last longer if the rebels control naturally resource rich regions, i.e. presenting evidence for the rebel finance rather than for the weak state argument. In addition rebel recruitment may be affected by natural resources. Weinstein (2005) suggests that where resources permit, opportunistic rebel leaders crowd out ideological leaders. As a result these opportunistic rebellions are

even less likely to produce economic and social development than ideologically motivated rebellions.

One of the most contested issues is the apparent lack of significance of some variables, particularly those that can most naturally be interpreted as proxying objective grievances. The degree of political rights is variously found to be either insignificant [Collier and Hoeffler (2004a)], or to have ambiguous effects. Some researchers suggest that the effect of political rights is non-monotonic, with 'anocracy' more dangerous than either autocracy or full democracy [Hegre et al. (2001), Gurr and Marshall (2005)]. However, these results have been questioned. Hegre (2003) finds that the effect of democracy is contingent upon the level of income, increasing the risk of conflict in low-income societies but reducing it in middle-income societies. Reynal-Querol (2005) suggests that representation is more important than level of democracy per se. Her results suggest that the design of political systems is important, violence is less likely in proportional representation systems. There is also some evidence that abuses of civil rights as monitored by Amnesty International are a leading indicator of violent conflict [Fearon (2004)], and political rights and civil liberties reduce the taste for revolution [Pezzini and MacCulloch (2004)].

Similarly, overall household inequality generally appears to have little effect on the risk of conflict despite the massive attention that it attracts. Stewart (2001) suggests that inequality between culturally defined groups, termed 'horizontal inequality', as opposed to vertical inequality between households, explains conflict. She presents a number of

country studies but there is no empirical measure available to test this hypothesis in a cross-section of countries. Fearon and Laitin (2003) test the related hypothesis that there is a relationship between the discrimination faced by a minority group and the likelihood that the group will rebel. Using a large carefully constructed global sample they find no significant effect. Similarly, they find no significant effect from the intensity of inter-ethnic hatreds.

Two studies have assessed the robustness of the accumulating empirical results. Sambanis (2004) examines the sensitivity of results to different definitions of civil war. Because of the wide range of legitimate disagreement on definitions this is an important issue. He finds that a large number of results are robust across a wide range of definitions. Hegre and Sambanis (2004) assess the robustness of the various results to the choice of model specification and country-year coverage. They generate a common data set and use the methodology of comprehensive permutations of regressions previously applied to growth regressions by Sala-i-Martin (1997). They find that the robust risk factors are a large population, low income, low growth rates, recent political instability, inconsistent democratic institutions and a location in a war-prone or undemocratic neighborhood.

Such quantitative empirical research is contentious, partly because it is in such sharp contrast to the case study approach which has predominated in the study of civil war. Necessarily, the large-n quantitative approach misses much important detail. Partly for this reason it is not appropriate either for understanding or forecasting particular

conflicts. However, it does have useful applications at the level of international policies towards reducing the global incidence of conflict, essentially pointing to the importance of economic development as critical to peace.

4. Duration

4.1 Theories

The most striking feature of civil war is that it typically lasts a long time: more than ten times longer than international war. The duration of civil war is thus an important phenomenon in itself. Aspects of it also have the potential to illuminate the causes of the conflict. However, duration studies suggest that the factors which determine war duration are different from the ones which initiate a war [Fearon (2004), Collier et al. (2004)]. It seems therefore problematic to conflate duration and initiation in analyzing the incidence of civil war.[3] All economic theories of the duration of civil war focus on the incentives for peace: wars continue when the incentives for peace are weak. There are three different explanations of why incentives are often weak: the absence of lock-in, the presence of finance for rebel groups, and the adjustment of initial asymmetries in information.

[3] One paper examining the incidence of civil war is Elbadawi and Sambanis (2002). Reynal-Querol (2002) uses their methodology and finds that religious polarization increases incidence of war. This result may be due to the duration aspect of the incidence variable. Maintaining cohesion within the rebel army during the war may be easier in polarized societies.

Participants in civil wars are likely to be unable to negotiate a credible peace settlement because of the lack of lock-in mechanisms [Addison and Murshed (2002)]. Two such mechanisms that are available to enforce the settlements of international conflicts are unavailable in the context of civil war. One is enforcement through international treaties. Until very recently the international community was not in a position to use such treaties to guarantee the terms of internal settlements. The other is that after the settlement of an international war both sides can continue to maintain military forces, so that peace does not necessarily decisively advantage either side militarily. After the settlement of a civil war, government forces can continue to be maintained: after all, peace is the normal state for government armies. By contrast, prolonged peace inevitably leads to the gradual disintegration of distinct rebel forces whether due to the lack of finance or the lack of career prospects.

For a civil war to go on a long time, the rebel organization must be generating income during the conflict. This may come from the predation of natural resources or the related phenomenon of war booty futures [Ross (2005)], from diasporas, or from friendly governments. Whatever the source, the rebel organization becomes a viable business. It is not necessary to appeal to notions of ‘greed’ to suggest that the default option for the leadership of any viable organization is persistence [Collier (2001)]. Peace may be hazardous for those interests that have developed a comparative advantage in violence.

If, as suggested in Section 2, one cause of conflict is military over-optimism, we would expect such errors in expectations to be adjusted by experience. This would predict not

the length of a conflict but rather the chance that it would end in any particular period. Specifically, if information asymmetries are important in generating conflicts we would expect that as participants learn about military realities the chances of peace occurring in any particular time period would gradually rise.

4.2 Evidence

The core empirical results on the duration of conflict are consistent with the theoretical framework of incentives for peace. There are strong empirical relationships between the duration of conflict and both the level and inequality of income. Conflicts last much longer in societies with low income and high inequality [Collier et al. (2004)]. Such societies are indeed likely to have lower incentives for peace. Low-income societies have lower relative costs of conflict so that the mutual gains from ending conflict are lower than in higher-income societies. Large inequalities imply a greater difference between winning and losing. Hence, any given impediment to peace - whether an asymmetry in information, a lack of credible lock-in, or the profitability of violence - is more likely to be more critical in these conditions.

Turning to the three explanations, there is considerable evidence for the difficulties of locking in to internal settlements. At the econometric level the strongest evidence is perhaps the high risk that conflicts restart: a risk that is much higher if conflicts are ended by settlements than if they are ended by outright military victory. However, the strongest evidence is probably from the interpretation of case studies [Walter (2001)]. She

examines how the hazard of peace evolves over time. Since information should improve, the hazard of peace should gradually rise. In fact there is little sign that the hazard of peace follows such a pattern: typically it seems to be rather flat. While this is not decisive, it cautions against emphasis upon this explanation. The effect of the profitability of violence on the duration of conflict has received little empirical investigation. One study finds that in countries with substantial natural resource exports when the world price of these exports are high the chances of peace diminish, which is consistent with the explanation [Collier et al. (2004)].

5. Consequences of civil war

When translated into economic terms, the glorifying language of 'armed struggle' implies that rebellion is usually a socially productive investment. Whether this is a reasonable characterization depends upon the costs incurred during the conflict and the post-conflict consequences. The attempt to put civil war into a cost-benefit framework is still in its infancy, but there is sufficient evidence to challenge the presumption of 'armed struggle' as being fundamentally misleading. The legacy effects of civil war are usually adverse: rather than being viewed as an unavoidably costly but valuable investment, it is an avoidable calamity with highly persistent adverse effects. For example, the country tends to get locked into persistently high levels of military expenditure, capital continues to flow out of the country at an unusually high rate, and the incidence of infectious disease remains much higher. Even economic policies, political institutions and political freedom appear to deteriorate. Of course, it is always possible to find some modern civil wars that

can reasonably be seen as ushering in social progress, but these are exceptional. On average, modern civil war has been development in reverse.

5.1 Economic consequences

Unsurprisingly, civil war reduces growth during the period of conflict. The most obvious economic costs arise from the direct destruction of infrastructure and other capital. Collier (1999) distinguishes four further effects. Public resources are diverted from productive activities to violence; there is an increase in opportunism as time horizons shorten; capital, both financial and human leaves the country; and there is a shift away from vulnerable economic activities towards those that are less vulnerable such as arable subsistence agriculture.

An estimate of the economic cost of the average civil war is presented in Collier and Hoeffler (2004c). They focus on the local and regional costs and their estimate should be interpreted as conservative since most of the global cost cannot be quantified. These global costs are massive in scale but difficult to assign a cost to. Three world scourges over the last 30 years have had civil conflicts as contributory factors: hard drug production, AIDS and international terrorism.

One year of conflict reduces a country's growth rate by around 2.2%. Since, on average, civil conflict lasts for seven years, by the end of the conflict the economy will be 15% smaller than if the war had not taken place. Post-conflict the economy recovers, at about one percent above its normal growth rate, although this effect probably peters out.

Overall, it takes around 21 years to get back to the level of GDP that would have prevailed without the conflict, so that many of the costs accrue after the war has ended. The loss of GDP during this 21 years cumulates to a present value at the start of the conflict of 105% of initial GDP. The welfare of a country's population is further reduced because of increased military spending during and after the war. The present value of this additional cost is estimated at 18% of GDP.

At the regional level, the research indicates that the growth rate and military expenditures of neighboring countries are affected during and after the war.[4] On average, each country has 2.7 neighbors and applying the same concepts as detailed above the loss of income is 115% of the initial GDP of one country: greater than the direct effect in the conflict country itself. Due to neighborhood arms races the regions military expenditure will also rise, causing a cost of about 12% of one country's GDP.

Other costs which are too difficult to quantify are incurred both in the country at war and in the region as a whole, including forced migration and increased disease. With the proviso that the figures so far are therefore underestimated to some degree, the total cost of the "typical" civil war sums to around 250% of initial GDP. The average GDP of conflict-affected low-income countries just prior to war is around $20 billion, so that the cost of a single war is around $50 billion.

[4] For a detailed analysis of the spatial effects of civil wars see Murdoch and Sandler (2002, 2004). For estimates of regional arms race effects see Collier and Hoeffler (forthcoming).

In addition to these direct economic costs, conflict has a severe effect on human health. One way of costing this effect is to express it in terms of Disability Affected Life Years (DALYs): An average war causes an estimated 0.5 million DALYs each year. Assuming a recovery period of 21 years gives a figure of 5 million DALYs as the net present value of health costs when hostilities start. If each DALY is valued at $1,000 (roughly the per capita income in many at-risk countries), the economic cost of harm to human health in a typical war is around $5 billion.

A further layer of costs arise because of the "conflict trap": countries that have just experienced a civil war are more likely to have further conflict[5]. Among the 21 countries in which wars started and ended in the period 1965-99, the risk of conflict over the five years before the war averaged 22.3%, but rose to 38.6% post-war. Over the 15 year period needed for the risk to reach the pre-war level again, the additional discounted cost is around $10 billion. Thus, the total national and regional cost of a single war is around $65 billion.

These estimates are gross approximations. Nevertheless, they can provide a useful benchmark for a cost benefit analysis of possible policy instruments.

5.2 Social consequences

Mortality rates only capture one dimension of the human consequences of conflict; however they are a useful summary measure of the crisis and its impact. Mortality

[5] The dynamics of conflict traps are also analyzed in Bloomberg and Hess (2002). An important addition to the conflict trap analysis is presented in Murdoch and Sandler (2004). They do not only investigate conflict risk for one country over time but extend the analysis of temporal aspects to neighboring countries.

estimates can be highly inaccurate, but they are often better and more easily captured than other health indicators, which may be subject to different definitions and cultural interpretations [Keely et al. (2000)]. There is other human damage as a consequence of conflict such as psychological effects, but mortality rates have been one of the most easily and accurately measured indicators in emergency settings. Guha-Sapir and van Panhuis (2002) collected intensive case-study data on mortality rates following civil conflicts and find that mortality rates are higher post conflict and that the impact on adult mortality is generally even worse than that on infant mortality.

Moving beyond mortality Russett et al. (2003) find that civil wars significantly reduce this aggregate measure of national health performance. Using a World Health Organization measure of DALYs (disability-adjusted life-years) for 1999 they estimated that there were 8.44 million DALYs lost as a direct effect of all wars at that time. However, in the same year there were a further 8.01 million DALYs lost as a result of civil wars than had ended in the period 1991 to 1997. These past civil wars had increased the incidence of persistent infectious diseases that caused these additional DALYs. Thus, the legacy effect of civil wars on disability-adjusted life years was approximately as large as the effect during conflict. The most important cause of death in poor countries are communicable diseases and in post-conflict situations the excess mortality is largely due to these diseases. In Africa nearly 70% of all deaths are due to communicable diseases of which HIV, malaria and childhood diseases are the most common[6]. For example, in

[6] In Africa HIV accounts for about 18 percent of deaths caused by communicable diseases, malaria for 17 percent and childhood diseases for 15 percent. Own calculations, data source: WHO (2001).

Rwanda as of 1999 the effect of the rise in malaria as a result of the war has been estimated to have reduced healthy life by 15 years per 100 people.

HIV infection rates also increase due to civil war. Military recruits are typically young, sexually active men, often unmarried. Military personnel tend to have high rates of Sexually Transmitted Diseases including HIV, estimates indicate that they are two to five times higher than those of the general population even during peacetime. When stationed away from home social controls to engage in sexual relationships are lower and the risk of HIV infection is likely to be higher. Prostitution around army bases also increases the spread of infection. In times of war the risk of contracting HIV or other STDs may seem low relative to the risk of death in combat. There are some figures for HIV prevalence in the military available but there are no reliable figures for rebel forces. They are likely to be at least as high as for the regular armed forces. The incidence of rape increases often dramatically during war, refugees as well as displaced women and girls being particularly vulnerable. It is estimated that over 200,000 women refugees were raped during the Rwandan war [Carballo and Solby (2001)]. After the war many countries are thus left with a much higher prevalence of HIV infections than before the war.

The destruction of the social and physical infrastructure during wartime also contributes to the spread of the disease. The health system is less likely to detect the diseases associated with HIV/Aids infection or screen blood supplies. War also destroys the education system which makes the teaching of prevention more difficult. Aids also contributes to political instability by leaving millions of children as orphans and by

killing teachers, health workers and other civil servants. The relationship between conflict and HIV can therefore be seen as mutually reinforcing. Reconstruction of the physical infrastructure is likely to take precedence over many social development targets and with very limited resources many states will be unable to fund educational health programs to prevent a further spread of HIV infection. The re-integration of ex-combatants into civil society also poses a particular health problem due to their comparatively high levels of HIV prevalence [Carballo and Solby (2001)].

Displacement of people is a further dimension of the human costs. The UNHCR provides some statistics on 'people of concern' across countries and over time. Persons of concern to the UNHCR include refugees, asylum seekers, returned refugees and internally displaced persons. The most detailed and reliable data series are probably the number of asylum seekers in industrialized countries. The UNHCR's refugee statistics are mainly based on the number of people they have assisted. However, there is a large number of refugees not receiving aid from the UNHCR. Thus, UNHCR figures should be seen as conservative estimates. Analogously to the downward trend in the incidence of civil war the number of refugees has declined from the peak of 17.8 million in 1992 to 9.2 at the end of 2004 (Figure 2). Since the nature of war has changed over the past decades from interstate wars to internal wars the proportion of internally displaced persons in the overall assistance programs has increased significantly. At the end of 2004 about 28 percent of people assisted by the UNHCR were internally displaced persons.

Figure 2 about here

Psychological damage of civil war

Quantitative research on the effect of civil war on mortality is feasible because mortality is easy to measure. At the other end of the spectrum of measurability is the psychological damage done by civil war. Mental health services are typically highly inadequate in conflict and post-conflict situations and so the evidence is much more fragmentary. However, such evidence as is available suggests, unsurprisingly, that psychological effects are large and again highly persistent. Survivors from civil wars have lost family members, friends, livelihood, familiarity and identity. The experience of trauma does not end when shooting or bombing stops, but continues after wars. Moreover, living in a refugee camp or transitory settlement can constitute a "secondary wound". The majority of individuals will experience low-grade but long lasting mental health problems [MacDonald (2002)]. Russett et al. (2003) find an indirect effect of civil wars on suicides of woman of childbearing age. This probably reflects the trauma of rape.

5.3 Political consequences

Another persistent adverse legacy is the loss of social capital: civil war can have the effect of switching behavior from an equilibrium in which there is an expectation of honesty, to one in which there is an expectation of corruption. Once a reputation for honesty has been lost, the incentive for honest behavior in the future is much weakened. Clearly, civil war is not the only way in which a society can become corrupted; the point

is simply that the costs inflicted by the loss of honesty and trust are likely to persist long after the conflict is over.

Table 2 about here

For civil war to have some redeeming features the most hopeful areas would be policies, political institutions, and human rights. The impact of civil war on each of these can, to an extent, be measured. In Table 2 we present some political and economic indicators. As a benchmark we report the values for countries that remained peaceful throughout the period 1960-2004. On average peaceful countries experienced an annual increase in their per capita GDP of 1.7 percent. For countries in which a war broke out we measure average growth rates in the five years prior to the start of the war and in the last column we present the values for the five post war years. Prior to a war growth rates are less than half of the peaceful countries, growth averages only about 0.8 percent. During the five post war years the average growth rate is substantially higher, at about 3.6 percent. This demonstrates that post-conflict economies have the potential to reap a substantial peace dividend. Life expectancy indicates that health problems continue to cut people's lives short even after the war has ended. The average life expectancy is about three years shorter after the war. This exemplifies the need for economic and political change in post-conflict societies. In Table 2 we also present the values for political systems and institutions. Our measure for the extent to which political institutions are democratic is the standard political science index – 'Polity IV'. The typical peaceful aid recipient country has a score of 2.99 and war countries average 2.66 prior to their civil war.

Countries in the first five years of post-war peace average a score of only 2.38. Hence, on average civil war leads to a deterioration rather than an improvement in political institutions. A related measure is an index of political rights compiled by Freedom House. This is a seven point scale in which, unlike the other indices, a low score is better than a high score. The comparable numbers are 4.67 before war and 5.12 after war. Hence, again civil war leaves a legacy of reduced rather than increased rights. Likewise, civil war does not increase representation of minorities, the proportion of parliamentary seats held by minority parties is the same before and after the war. Human rights violations have been measured on a scale of 1 to 5. Again, civil wars make things worse, there are more human rights violations after the war than before the war. Post-conflict societies tend to be also much more violent, the average number of assassinations is considerably higher than in countries that never experienced civil war. The last row of Table 2 shows that civil war does not increase the proportion of societies that grant their citizens religious freedom. To summarize, although peace after a civil war can potentially generate considerable economic benefits it does not seem to be the case that civil war can be interpreted as a catalyst for policy improvement but rather for policy deterioration.

6. Post-Conflict

6.1 Theories of post-conflict recovery and relapse

Post-conflict situations are distinctive both in their risk of conflict and in their economic growth. Their risk of conflict is far above average. Their rate of growth is typically high

but subject to wide variations. Hence, post-conflict situations warrant theories both of the risk of repeat conflict and of the process of economic recovery.

Theories of why the risk of repeat conflict is so high include fixed effects and legacy effects: risks might be high because the country has underlying and unchanging characteristics that make it prone to conflict, or because the conflict increases the risks. Clearly, only the latter explanation warrants distinct theorizing. One such explanation is that preferences are endogenous: violence leaves a legacy of hatred. However, we have noted that hatred does not seem in general to be a very powerful explanation of large-scale organized violent conflict. Another explanation is that prolonged conflict reconfigures interests: organizations develop that have capital and skills that are useful only in the context of continuing violence. It is difficult to maintain transfers to all these groups so that they have a continuing interest in peace. For example, the new peace in Southern Sudan must contend against the problem that there are thirty separate armed groups. A third explanation has already been set out in our discussion of duration: peace settlements are fragile because the relative power of rebel groups erodes and so the government has an incentive to renege. In effect, settlements are liable to be time-inconsistent. Potentially, this gives the government the scope to signal its intentions through locking in to choices which diminish the risk of further conflict such as sharp reductions in military spending [Collier and Hoeffler (2006)].

Theories of economic recovery focus on reversing the specific effects of conflict on the economy discussed in Section 5: for example, there is a gradual reintegration of the rural

economy into the market. However, these effects are inevitably related to the high risk of repeat conflict. For example, given such a risk, investment will be strongly influenced by the perceived risk of conflict. If the risk is seen to be high, the capital flight that is typically substantial during conflict is likely to continue unabated [Collier et al. (2003)], whereas if it is seen to be low the very fact of substantial past capital flight provides a major opportunity for rapid recovery.

6.2 Evidence

The evidence on the risk of repeat conflict suggests that the high risk is typically approximately equally divided between that due to long term proneness and that due to the legacy of the previous conflict. The latter appears to decay over time, but its rate of decay has not yet been adequately measured. There is evidence that in response to the high risk of further conflict post-conflict governments adopt high levels of military spending. Typically, spending during the post-conflict decade is much closer to a war situation than to peace. Consistent with the signaling theory noted above, controlling for endogeneity, such high military spending appears to cause an increase in the risk of repeat conflict [Collier and Hoeffler (2006)]. There is also some evidence that, controlling for endogeneity, the existence of a large diaspora in developed countries increases post-conflict risks. This is consistent with evidence that diasporas tend to be more extreme than the home population, in part perhaps because they do not bear the cost of a reversion to conflict. However, considering that half of all civil wars are post-conflict

collapses, the evolution of post-conflict risk warrants much more quantitative empirical work than the subject has yet received.

The evidence on economic recovery is also rudimentary. Analysis of how the structure of the economy evolves, for example, investment and the return to the market, have only been investigated at the level of case studies. The relationship between overall growth, policy choices and aid has been the focus of only one quantitative study [Collier and Hoeffler (2004b)]. Using time dummies in a panel data analysis they find that while growth rates tend to be higher during the post-conflict decade, the main surge is in the middle of the decade rather than right after the end of conflict.

7. Policy interventions

Much of the previous analysis has implications for policy, both for governments in conflict-prone countries and for external actors. In some ways the key implication is that the costs of civil war are typically very high, and that many of these costs are external to the active participants, borne either by neighbors or the next generation. The high costs and dismal consequences of most civil wars suggest that those who launch them are usually fooling either themselves or others in claiming that they are means of social progress. Civil wars are best avoided. Because of the large externalities, external actors have a legitimate interest in promoting peace. Evidently, prevention is better than cure. However, whether the opportunities for prevention offer more scope for conflict reduction than the opportunities for ending current conflicts and reducing the risk of their

rapid recurrence is less clear. Because many societies face some risk that conflict can occur, prevention policies are highly diffuse. In contrast, interventions to end conflicts and to reduce the risks in post-conflict situations, can be highly focused on a few countries. Around half of all civil wars have been due to post-conflict relapses.

7.1 Policies for prevention

Policies for conflict prevention, outside the context of post-conflict, can be grouped into three categories: those which target the grievances of likely rebel groups; those that target the material feasibility of successful rebellion; and more general policies of economic and political development.

Governments at risk sometimes address grievances, but perhaps a more commonly suggested strategy is to buy off the leaders of potential rebel groups as they emerge. This strategy is for example presented in a formal way by Azam (2000). However, there is likely to be a trade off between buying off a rebel group and economy wide growth. Buying off now may secure current peace but compromises longer term growth. Not buying off threatens current peace but may enable the economy to grow and thus achieve peace in the longer run. A further problem with the buying off strategy is that it is not always obvious who should be bought off. *Ex post* it is obvious which rebel organization became a serious threat to the state, but *ex ante* it is often not clear which groups to buy off if there are several rebel organizations.

One illustrative example is the case of Chad, the country's small army has sixty generals, a structure better understood by this strategy than by operational military needs. Redistributions to entire groups are more common where there is a credible threat of secession, as in oil-rich regions. Evidently, the core reason for redressing the legitimate grievances of particular groups is built into the definition of the concept. It is more controversial whether such redressal also significantly reduces the risk of civil war. Groups with legitimate grievances may be too weak to rebel: powerful groups with manufactured grievances may be the most likely rebels. Our own view is that the apparent link between legitimate grievance and rebellion has been exaggerated.

The other extreme to appeasement is repression. There is some weak evidence that this is effective: autocratic societies are sometimes found to have lower risks of rebellion than partial democracies. However, correcting for the endogeneity implied by the dependence of military spending upon the risk of rebellion, there appears to be no significant deterrence effect of military spending [Collier and Hoeffler (2006)]. While the governments of countries at risk may thus have relatively little scope for effective deterrence, international actors may have considerable scope to reduce the feasibility of rebellion, through curtailing finance and armaments. These opportunities are just beginning to filter into international policy.

The surest prevention strategy is economic development. Recall that the level, growth and structure of income are all significant risk factors. Rapid economic development reduces the risk of rebellion directly through the growth rate, cumulatively through the

level of income, and indirectly, through diversification of the economy. Bad governance may matter for conflict more because it closes off opportunities for economic development than because of the grievances that it generates. Aid to low-income countries has some pay-off in terms of conflict prevention in addition to its more conventional benefits of poverty reduction. Aid appears to have no systematic direct effect on the risk of conflict, but through its effect on growth it is beneficial [Collier and Hoeffler (2002)]. However, an attempt to quantify the payoff suggests that it is fairly modest relative to the cost of the aid, and so is unlikely to be the core rationale for aid to low-income countries [Collier and Hoeffler (2004c)].

7.2 Policies for ending conflict

Governments in conflict end them either through victory or compromise. The evidence suggests that military victory, where feasible, leads to a more secure peace. However, the investment in victory may involve temporary very large increases in military spending. For example, the government of Angola reached peace by raising its military spending to around 20% of GDP, at which point the massive rebel group UNITA collapsed. By contrast, the government of Colombia, has set its military spending at around 2% of GDP and is still fighting the much smaller FARC despite four years of negotiations and concessions which included ceding part of the country to the rebel group.

International interventions to end civil war are evaluated in Collier et al. (2004). They find that neither military nor economic interventions have had any significant systematic

effects, although they have presumably been effective in individual instances. The time-consistency problem, discussed above, suggests that international interventions to guarantee the terms of a settlement could potentially make an important contribution as long as they are credible and long term, a combination that is difficult.

7.3 Policies for maintaining post-conflict peace

Given the importance of economic growth in building peace, and the highly variable post-conflict economic outcomes, it seems likely that the policy choices of post-conflict governments are particularly important. This is consistent with the results of Collier and Hoeffler (2004b) that growth is particularly sensitive to policy during the post-conflict decade. They also find some evidence that policy priorities should be distinctive, with greater attention to social inclusion relative to macroeconomic stability than in other situations.

Aid has long been seen as being important for post-conflict recovery. Indeed, the initial rationale for the World Bank was as an agency for postwar reconstruction. The same study finds that aid is atypically effective in the growth process during post-conflict, although the peak period for absorption may be around the middle of the decade rather than right at the beginning, which is when donors currently provide the bulk of their aid.

Given that the risk of reversion to conflict is so high, it is unsurprising that the typical post-conflict government reacts by maintaining high levels of military spending. Post-

conflict spending looks much closer to wartime than to peacetime. One study investigates whether such spending is effective, controlling for the evident endogeneity of spending to war risk. It finds that far from being effective, high military spending in post-conflict situations significantly and substantially increases the risk of further conflict [Collier and Hoeffler (2006)].

Since economic recovery even if well-managed typically takes around a decade to deliver substantial reductions in risk, some temporary remedy is needed to maintain the peace. If domestic military spending is counterproductive, the only remaining option is external military stabilization. The record here is mixed. An attempt to provide a cost-benefit analysis of the external military intervention in post-conflict Sierra Leone, based upon the estimated risk of reversion to conflict that it has suppressed, concluded that it was highly cost-effective [Collier and Hoeffler (2004c)]. However, external interventions are only likely to be successful in particular conditions.

The paths to post-conflict recovery are currently under-researched. Thus, donors tend to apply their general programs designed for poor countries irrespective of whether the country has a recent experience of war or not. The relative importance of various macroeconomic reforms and their sequencing is not well understood. Although there is a growing awareness of the relationship between security, conflict and development, there seems to be a lack of attention to security issues when designing policy instruments to promote economic growth and development in post-conflict societies. Chalmers (2005) is one of the few to advise treating security as an important service provision to poor people

in fragile states alongside other essential services such as the provision of health, infrastructure and education.

Given the extraordinary weakness of most post-conflict governments, there is usually an important role for international intervention across the spectrum of economic, political and military assistance. To date, international actors have met these needs without an adequate framework for coordination [Sandler (2004, Chapter 9)]. This problem was recognized in the decision of the UN in 2005 to establish a Peacebuilding Commission. The precise role of the Commission, and its effectiveness, will become important research issues.

8. Conclusions and research agendas

The economic analysis of civil war has undoubtedly challenged some anthropological pieties. At the theoretical level it has placed decisions into the framework of incentives rather than ideologies or identities. At the empirical level it has questioned whether the factors most emphasized in past literature can be correct depictions of the events they purport to analyze. Economic analysis can never be the whole story, yet there remains scope for far more economic work, both theoretical and empirical.

There is also scope for more work with other disciplines. To date, the study of civil war has been dominated by political scientists. Yet this prejudges the phenomenon as being essentially political. Many rebel movements are not, however, much like political parties or protest movements. One non-political analogy, between rebel groups and organized

crime, has already been explored. Others may also be fruitful. For example, rebel groups may resemble the fringe religious communities in which gullible recruits are trapped to the point of their own death by charismatic autocrats, as in Jonestown and Waco. Economists may need to link with psychologists to study the process of selection according to intrinsic motivation. There may also be scope to link with historians. Civil wars are often explained in terms of long histories of violence and animosity. We suspect that since most societies have some history of violent conflict there is no significant causal relationship from distant history. Rather, where current conditions favor rebellion, leaders will trawl through the past to endow their cause with the trappings of historical legitimacy. This could be formally tested once global historical data are suitably codified.

At the theoretical level, the most productive area may be more game-theoretic analysis that disaggregates each side. Indeed, *ex ante*, in civil war there is no rebel side: potentially anyone can recruit a small private army. To give two examples, Weinstein's work, discussed above is pioneering the rebel recruitment process. At the other end of the time spectrum of rebellion, there is new research on why in post-conflict political contexts voters tend to favor extremists.

At the empirical level progress is also likely to come through disaggregation. One obvious dimension is spatial: there is as yet little work analyzing the location of rebellions within countries. Another dimension is temporal: there is little work analyzing the evolution of risk in post-conflict situations. There would be a high pay-off to quantitative on-the-ground observation, something which is understandably rare.

Weinstein's insightful analysis of the rebel recruitment process depended upon such direct observation of rebel organizations. Analogous to the celebrated analysis of a Chicago drug gang [Levitt and Venkatesh (2000)], this probably implies collaboration with anthropologists.

In the end, the correct analysis of civil war matters. We estimate the social costs to be of the order of $100 bn per year. Policies, both by governments in risk-prone countries, and by international actors, have been informed by little more than popular prejudices. Yet this is surely a phenomenon akin to smallpox that with research-informed efforts will be eradicated during this century.

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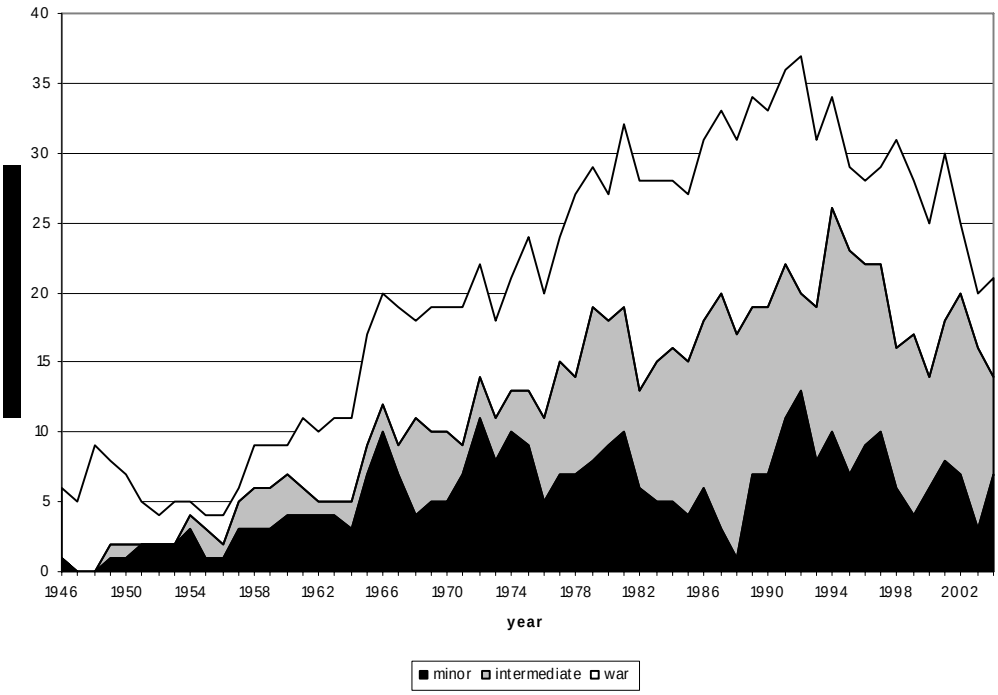
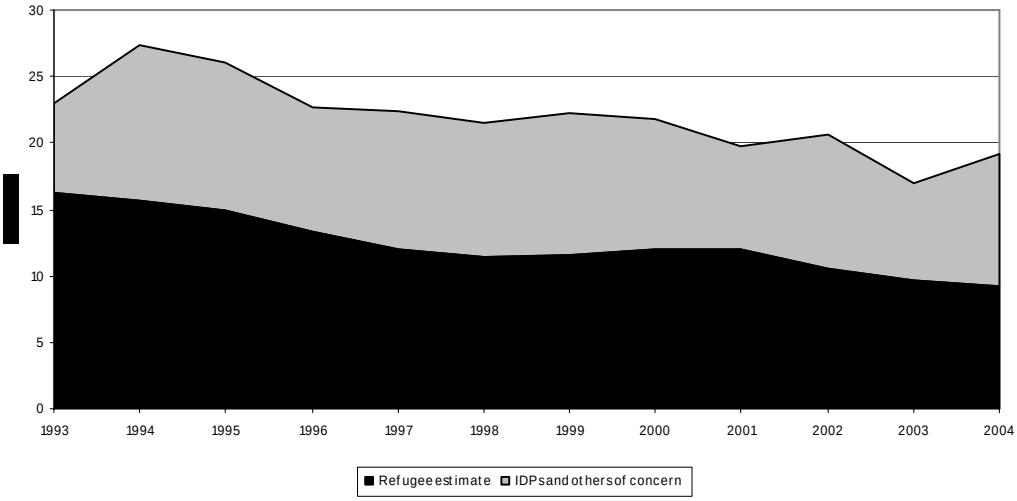
Tables and Figures

Figure 1: Global Incidence of Civil War: 1946-2004



Data Source: Gleditsch *et al*. (2002)

Figure 2: Refugees, IDPs and Others of Concern



Data Source: UNHCR Yearbooks, various issues.

Table 1: Deaths in selected conflicts in Africa

Country	*Years*	*Total War Deaths*	*Battle Deaths*	*Percentage Battle Deaths*
Sudan (Anya Nya rebellion)	1963-73	250,000-750,000	20,000	3-8%
Nigeria (Biafra Rebellion)	1967-70	500,000 to 2 million	75,000	4-15%
Angola	1975-2002	1.5 million	160,475	11%
Ethiopia (excluding Eritrean insurgency)	1976-91	1-2 million	16,000	<2%
Mozambique	1967-92	500,00 to 1 million	145,400	15-29%
Somalia	1981-96	250,000 to 350,000 (to mid 1990s)	66,750	19-27%
Sudan	1983-2002	2 million	55,000	3%
Liberia	1989-96	150,000-200,000	23,500	12-16%
Dem. Republic of the Congo	1998-2001	2.5 million	145,000	6%

Source: Lacina and Gleditsch (2005)

Table 2: Is civil war a catalyst for change?

	Peaceful countries	Five years prior to the war	Five years post war
Per capita GDP growth (%)[a]	1.73	0.82	3.64
Life expectancy (in years) [a]	62.85	57.79	54.97
Democracy (0-10)[b]	2.99	2.66	2.38
Political Rights (1-7)[c]	4.03	4.67	5.12
Civil Liberties (1-7)[c]	4.01	4.81	5
% of seats held by minority parties[d]	21.1	19.84	19.86
Human rights violations (1-5)[e]	2.50	3.15	3.58
Assassinations (total deaths)[f]	0.09	0.35	0.30
proportion of countries with religious freedom[g]	0.66	0.63	0.60

Note: Authors' calculations. Data Sources:
[a] World Development Indicators 2005.
[b] Polity IV, http://www.cidcm.umd.edu/inscr/polity/
[c] Freedom House http://www.freedomhouse.org/ratings
[d] Prio&Vanhanen http://www.prio.no/page/Project_detail//9244/42504.html
[e] Corbett and Gibney (2004).
[f] Banks (2002)
[g] Cingranelli and Richards (2004)