Chapter 1: On the Causes of Civil War

Anke Hoeffler

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1. Introduction

Since World War II about 16 million people have been killed in 'civil' wars. What causes these civil wars? Why is there costly violent conflict when most people would be better off by settling their disputes peacefully? What makes individuals take up arms and risk their lives in an insurgency? Economists, among other social scientists, have tried to investigate these important questions by using economic theory as well as empirical tests. These analytical searches are driven by the hope that if we can gain a better understanding of the causes of civil war we may be able to prevent future violent conflict and help to resolve ongoing wars. This chapter of the Handbook provides an overview of the existing research efforts. It starts with a discussion of the theory and then provides an examination of the empirical evidence. In most cases the empirical tests are not rooted in theory and the results do not allow us to distinguish between rival theoretical explanations. Defining and measuring various theoretical concepts, such as for example motivation and opportunity, is problematic and adds to the difficulties of interpreting the empirical results. Although there is still a disconnect between the theory and the empirics of the causes of civil war there is now a large body of empirical studies. In this very active research area economists and political scientists study the causes of war by examining individuals, groups and nation states. The cross-country studies on the causes of war constitute the largest part of the empirical research and some robust patterns seem to be emerging. Countries are more likely to experience a civil war when they had a war in the past, their income is low, they have poor growth and a large population. Other measures have a less robust correlation with the outbreak of war and this will be discussed in detail in section 3 in this chapter.

Even when we find robust partial correlations in regressions of civil war onset, can we call these 'causes of war'? Many variables, for example income and growth, are endogenous to the risk of civil war. Endogeneity issues are not addressed in a large number of studies, thus it is probably better to talk about correlates of war, rather than causes of war.

If we cannot really distinguish between rival theories and have no clear evidence on the empirical 'causes' of war, is it useful to pursue this line of research with the aim of conflict prevention and intervention in mind? This chapter argues that the research on the causes of war is unlikely to be helpful to settle civil wars. Irrespective of the original causes of the conflict, a number of other issues will have arisen during the conflict. For example, an increase in poverty and grievances are likely to have added to the complexity of conflict resolution or may have even become more important than the original dispute. Thus, knowing and addressing the 'causes' of a war is not synonymous with resolving the conflict. However, our knowledge of the correlates of war onset may be very useful in conflict prevention. The knowledge that post-conflict societies are more prone to conflict recurrence and that poverty is highly correlated with conflict should help us to focus our attention. Worldwide there are about 60 fragile states that are home to 1.2 billion people. Their lives are plagued by insecurity and poverty. This group of countries includes countries at war, post-conflict countries and poor countries that have so far not experienced large scale violent conflict. Since there is only a small number of post-conflict countries, the academic community should be able to provide in depth studies and suggest ways out of the conflict trap. In addition, we should pay particular attention to the development challenges faced by very poor but so far peaceful countries. Turning our attention to these countries could potentially have large benefits. These countries face a high risk of war and based on a large body of empirical research we know that once a civil war has started they are difficult to stop, tend to go on for a very long time and produce large spillover costs to the international community, for example in the form of terrorism, drug production and people trafficking.

2. Theories of the Causes of War

Which theories could help us to explain the outbreak of civil war? This section provides a brief overview of the main theoretical approaches and comments on the testable hypotheses. An excellent overview is provided by Blattman and Miguel (2010) and other chapters of this Handbook develop detailed theoretical models of conflict.

2.1 The Organisation of Rebellion

In a civil war rebels challenge the government and rebellion can be thought of as a public good. If the rebellion succeeds everybody will live under the new regime, whether they actively supported the rebellion or not. This violent strive for change requires the formation and persistence of a rebel army. According to the theory of collective action (Olson, 1965), common interests within a group are insufficient to produce a public good. Individuals in any group have incentives to 'free ride' on the efforts of others since they cannot be excluded from the consumption of the public good. The incentive to 'free ride' is reduced if only active participants receive private benefits. Thus, without theses selective incentives to motivate participation, collective action is unlikely to occur even when groups have common interests. Olson also argued that group size is critical in achieving collective action. Not only do large groups face relatively high costs of organization, but their members will also gain relatively less per capita on successful collective action. The incentive for group action diminishes as group size increases; as a consequence large groups are less able to act in their common interest than small ones. Thus, according to the theory of collective action, smaller groups are more likely to rebel and in order to recruit followers they will have to provide selective incentives.

Typically rebellions do start with a small group of rebels and then swell to large, self-sustaining organisations that require finance and some 'glue' to hold them together. The initial motivation to rebel is the centre of much controversy and a lot of the discourse has been based on the 'greed versus grievance' debate. Invariably, rebel leaders provide an account of motivation in terms of common interests. The need to address grievances due to religion, ethnicity or class is commonly cited as joint interests that motivates rebellion. At the same time, rebels may also be motivated by the opportunities of private gain that organized violence can offer. Thus, theories of rebellion should consider common interests as well as private gain as possible motivation. Since motivation cannot be directly observed it is difficult to decide whether the cited underlying causes of the conflict are indeed the motivation to take up arms, or whether private gain plays a significant role. Revealed preferences can sometimes provide clues as to which motivation is dominant. Rebellions may also start off as addressing grievances but justice-seeking can turn into loot- seeking during the course of the war. Weinstein's model of rebel recruitment suggests that where there are opportunities for large profits, the composition of the rebel group will gradually shift towards those with a motivation for private gain: the rebellion experiences adverse selection in motivation (Weinstein, 2005).

The benefits of selective incentives are key features in microeconomic models of rebel organisation. Grossman (1991, 1999) presents a model in which peasant households decide how to allocate their labour time to production, soldiering, or participation in an insurrection. The interaction between the ruler and the peasant households results in an equilibrium allocation of labour time and a probabilistic distribution of income from the three activities. One possible equilibrium outcome is a higher expected income if time is allocated to rebellion despite its opportunity cost. Gates (2002) argues that the leader faces a principal-agent problem and he tries to overcome this by the offer of selective incentives. The greater the geographic or social distance between leader and recruits, the greater the supervision problem and thus the need for private gain.

These economic models assume that potential recruits make a rational decision to join, based on a cost-benefit analysis. However, many rebel armies use coercion in their recruitment process. Beber and Blattman (2008) argue that threats and punishments can be used as selective incentives. They provide a framework in which it is rational for the rebel leader to use force rather than rewards to solve the collective action problem.

Other models do not rely on the provision of selective incentives because the free rider problem will not arise due to varying preferences for the public good within the group. Kuran (1989) assumes that there are a number of individuals who are sufficiently motivated by their common interests to get a rebellion started. In other words, individuals with a strong preference for revolution are likely to be the first joiners. Individuals with a less strong preference are more likely to join once the there is an increased chance of success. Thus, they are more likely to join once the rebellion has reached a certain size. This ‘bandwagon’ effect is most likely to result in strong rebel support if preferences are uniformly distributed. Clustered preferences make rebellion less likely.

The discussion on the causes of war focuses on rational explanations of civil war which tend to emphasise economic motivations for conflict. Psychological or sociological factors are less well integrated into formal approaches. For example, charismatic leadership may be crucial to the formation of a rebel army. There is already some empirical evidence that leadership matters for economic outcomes (Jones and Olken, 2005) and it would be interesting to consider leadership in the study of civil war. Other, ‘irrational’, behaviour by leaders (Gartzke, 2003) and followers

(Mueller, 2004) may be more difficult to integrate into formal modelling and a critique of rational choice approaches in the study of war is presented by Cramer (chapter in this Handbook).

2.2 Theories of violence

The above discussion centred on rebellion as a collective action problem because the key feature of civil war is the formation and persistence of a rebel army. Theories of rebellion should therefore focus on the explanation of this phenomenon. However, there are a number of other economic theory approaches to conflict which may help us to explain the causes of conflict. Following Blattman and Miguel (2010) the theories can be loosely grouped into two categories: contest and bargaining models.

Contest Models

In contest models two competing groups decide on the allocation of resources to production and appropriation (Hirshleifer, 1988, 1989; Garfinkel, 1990; Skaperdas, 1992). Production is modelled in the standard way and appropriation depends on the 'contest success function'. This function describes the relative military capability of the two groups to capture the likelihood of successful appropriation. Contest models use a general equilibrium framework in which some arming is regarded as the normal outcome. Another assumption of these models is that they typically treat the contestants as unitary actors, not as leaders who have to overcome collective action problems. Predictions regarding the role of resources are ambiguous in this framework. In contest models the winner consumes the resources of the winning as well as the losing side. The larger national income and assets are the more effort will be devoted to fighting. However, in low productivity situations appropriation might be attractive but the rewards are also smaller, making fighting less likely.

Bargaining Models

Predatory behaviour is risky and costly and a violent contest for resources can be avoided by pre-emptive redistribution (Azam, 1995; Roemer, 1985). Rational actors should prefer a bargained solution over violent conflict. The literature lists a number of mechanisms why bargaining over resources fails. Fearon (1995) suggests three mechanisms which are compatible with rationalist

explanations for war. First, asymmetric information results in opponents not knowing their relative military capability. If agents are over-optimistic, there may be no peaceful outcome that both recognize as mutually beneficial. This is analogous to the 'winner's curse'; when the fighting starts the players discover that they are too weak to win the contest. Thus, models of asymmetric information are more suited to explain short, rather than prolonged civil war. A second reason for bargaining failure is commitment problems. Powell (chapter in this Handbook) argues that commitment problems are due to large shifts in the future distribution of power. Parties are more likely to renege on the agreement once their relative power has changed. When the government regains strength during the post-conflict period they are more likely to renege on the settlement negotiated in the aftermath of the war when the government was relatively weak. This limits the credibility of the promise of transfers made in the initial bargaining process. Weak institutions and an absence of external contract enforcement exacerbate the commitment problem. A third rationalist explanation relies on issue indivisibilities. Some contests are fought over issues which do not allow compromise. Examples are places of special religious or cultural significance. As there are few indivisible issues, this explanation is unlikely to be a general cause of civil war. Indivisibilities can also be interpreted a special case of the commitment problem. Without commitment problems the parties would accept a lottery that awards the indivisible prize to one party (Powell, chapter in this Handbook).

The various theories of conflict provide us with a wide array of testable predictions. The collective action based approaches suggest that common interests as well as selective incentives can be causes for large scale violent conflict. Contest models are ambiguous in their predictions of the effect of resources on violence and bargaining models suggest that state capability should reduce commitment problems and thus facilitate peaceful settlements. We now turn to review the empirical evidence.

3. Empirical Evidence

3.1 Definition of Civil War

The study of the causes of civil war requires a definition of civil war. Civil war is a poorly observed phenomenon because it is often difficult to determine the start, end and intensity of deadly conflict. However, rigorous empirical analysis must be based on a precise definition. At

present, the most commonly used database is the UCDP/PRIO Armed Conflict Dataset which is a collaborative effort between the Uppsala Conflict Data Program (UCDP) the International Peace Research Institute, Oslo (PRIO). Details of the data set are discussed in Gleditsch *et al.* (2002). Other data sets include the Correlates of War (COW) project (Singer and Small, 1982, 1994), the Political Instability Task Force (PITF)[1], and data sets collected by individual researchers such as for example Fearon and Laitin (2003a). Typically the civil war definitions are based on the use of violence and not the aims of the protagonists or on the outcome of the conflict. Civil wars are defined as internal to a country, where one or more organized groups fight against the government. If the groups are fighting each other this does not constitute a civil war, but communal violence. The rebel groups must be able to inflict fatalities on the government side; otherwise the violence is classified as a massacre, pogrom or genocide. The internal war can be internationalized through international support on the rebel or government side. Most countries have experienced violent conflict over the past five decades (Blattman and Miguel, 2010) but when is a violent conflict a war? A convention in this research area is to classify large scale violence that causes at least 1,000 military and civilian battle related deaths per year as a civil war. This excludes other war deaths, such as a higher incidence of deaths due to malnutrition and communicable diseases. The beginning and end of civil war are difficult to date. Sometimes civil war scales up slowly from low level violent conflict, sometimes a specific event, such as a coup d'état, triggers the start of a civil war. The end of the civil war is probably even more difficult to date, for example the end of the hostilities and the peace agreement can be months apart. Less violent periods during a war are also problematic and decisions have to be made as to whether this period constitutes war or peace. Considering all these issues it is unsurprising that the various data sets construct different civil war lists. Interestingly, the empirical results seem to be robust to the use of different civil war data (Sambanis, 2004).

Constructing global data sets of civil wars and using them in large n-studies requires not only quantification of a complex phenomenon but also the belief that general patterns can be found and that these can further our understanding of civil war. This level of generalization has its problems but it is important to keep in mind that large n-studies are not a substitute for case study work, but should complement them.

[1] http://globalpolicy.gmu.edu/pitf/

We now move on to the discussion of the different types of empirical civil war studies.

3.2 A Typology of Empirical Civil War Studies

Empirical studies on the causes of civil war can be broadly classified into studies of individuals, groups and countries.

Attitudes to Revolution

One strand of the literature analyses individuals' attitudes to rebellion (MacCullogh, 2004; MacCullogh and Pezzini, 2007). The World Value Survey provides survey data over the past 25 years for 61 countries and one of the questions asks about attitudes regarding the society they live in. Participants can choose their response among three options; one option is the answer 'The entire way our society is organized must be radically changed by revolutionary action." This answer categorizes the participant as having a taste or preference for revolution. Using probit regressions MacCullogh and Pezzini (2007) find that a number of characteristics seem to be robustly correlated with a taste for revolution. Men, the young, the unmarried and individuals with left of centre political opinions are more likely to have a taste for revolution. Growth in the country's average income, being Christian and belonging to the top three income quintiles reduced the likelihood of having a taste for revolution. Average income per capita and individual school attainment are not significant. These results tell us something about the taste for revolution but there is currently no research linking these attitudes to actual actions. There may be a considerable gap between having a taste for revolution and joining one. We also have to be careful about generalizing these results because the World Value Survey is not conducted in many poor countries; the information is mainly based on rich and middle income societies. But these studies may provide useful pointers as to which personal characteristics and socio-economic circumstances are most likely to make an individual more inclined to join a rebellion.

Participation

There is now a very small number of surveys used to analyse participation in an armed organization (for example Arjona and Kalyvas, 2006; Verwimp, 2005). Since it is dangerous to conduct these surveys they are either based on recall questions (Humphreys and Weinstein,

2008) or they take place in situations that have not fully escalated (Oyefusi, 2008). In their seminal study Humphreys and Weinstein (2008) examine participation in the rebel and regular forces based on survey data in Sierra Leone. A large proportion of the rebel (RUF) recruits (88%) claim to have been abducted and forced to join, raising the question whether their participation can be modelled as a choice. Interestingly, abductees and volunteers do not seem to be systematically different from each other. Humphreys and Weinstein attempt to distinguish the various explanations of why individuals joined the rebellion by grouping the explanatory variables into explanations of grievance, selective incentives and social sanctions. Men were more likely to participate if they were poor and/or had low levels of education. Poverty, here measured as living in a dwelling with mud walls, could be interpreted either as a grievance factor or as evidence that these individuals are facing low opportunity costs. However, Humphreys and Weinstein carefully try to disentangle grievance factors from selective incentives. They provide additional evidence by estimating the likelihood of joining the regular armed forces. Like joining the rebel forces, poverty seems an important driver in joining the government army. This evidence makes it hard to reconcile joining the rebellion as a result of grievances. Thus, in this context poverty is less likely to be a proxy for grievances than for the likelihood to be receptive to selective incentives due to low opportunity costs.

Monetary incentives made participation more likely, as did social sanctions. Thus, there is evidence that positive and negative incentives were used to address the free rider problem. [2] Volunteer participants were more likely to join because they felt safer inside the group. Abductees and volunteers only differ in respect to this last variable, unsurprisingly abductees did not feel safer inside the group.

Why do Groups turn to Violence?

Civil war requires an organized group that challenges the government. The micro survey work determines factors that make it more likely for an individual to join a rebellion. A further interesting line of inquiry is what makes groups decide to pursue their aims in a violent way. The Minorities at Risk (MAR) data set provides information for about 280 ethnopolitical groups

[2] For a different perspective on free riding in civil wars see Kalyvas and Kocher (2007).

worldwide.[3] Jenne, Saideman and Lowe (2007) and Toft (2003) use these data to analyse why groups rebel. Their findings with respect to geography are very similar: groups which are concentrated in rural areas are more likely to turn violent than groups that are concentrated in urban areas or that are dispersed across the country. Toft (2003) interprets these results as support for the hypotheses that these concentrated groups have a higher capability and greater legitimacy. Jenne, Saideman and Lowe (2007) also find that external military support and low average national income make a violent campaign against the government more likely. They do not find any evidence that either political discrimination or economic differences make it more likely for organisations to turn to violence.

Although this gives some interesting insights into which groups may be more likely to turn to violence to pursue their demands, this work suffers from the impossibility to define the universe of groups that are likely to rebel. As Fearon (2003) points out 'ethnicity is a slippery concept' and it is impossible to draw up a complete list of ethnic groups. The MAR data set tracks minorities 'at risk', defined as groups that have to collectively suffered, or benefitted from, systematic discriminatory treatment vis-à-vis other groups in a society. Thus, this definition is likely to introduce a selection bias. Ideally, comprehensive surveys would identify all sizeable groups in the population, irrespective of whether they have suffered or benefitted from discrimination.[4]

What Makes Countries Prone to Civil War?

The studies of individual and group behavior are instructive as to why people join rebel organizations and what characterizes the organizations that turn to violence in pursuit of their aims. The majority of the studies, however, examine the causes of civil war at the country level.. There is a large body of case studies, examining the causes of civil war for individual countries. An excellent compilation of some important case studies can be found in Collier and Sambanis (2005). A different literature draws on cross-country data to examine what makes counries more prone to civil war. Core papers of this literature on civil war onset include Hegre *et al* (2001), Collier and Hoeffler (2004) and Fearon and Laitin (2003a). Although they used different data

[3] http://www.cidcm.umd.edu/mar/

[4] The MAR code book claims that more recent updates have addressed this selection issue.

sets, methods and models they share a number of results. Countries with higher per capita income, larger populations and primary commodity exporters are more likely to experience war. There is no linear relationship between democracy and civil war risk; Hegre *et al* (2001) suggest that there is an inverted u-shaped relationship, i.e. the risk of a war breaking out is lower when countries are either undemocratic or fully democratic. Fearon and Laitin (2003a) also suggest a non-linear relationship; anocracies are at higher risk of war.

Incidence or Prevalence?

So far the discussion centred on the onset of civil war. There is also some research on the prevalence of civil war (Elbadawi and Sambanis, 2002; Reynal-Querol, 2002; Besley and Persson, 2008; Djankov and Reynal-Querol, 2010). The terminology of incidence and prevalence is borrowed from epidemiology and in the study of civil war the use of these terms is sometimes confusing. Epidemiologists define prevalence as the *total* number of cases at a given time and by incidence the number of *new* cases at a given time. Incidence analysis thus corresponds to the analysis of civil war onset, where only starts of wars in a particular period are considered, not their continuation. In contrast, the analysis of prevalence of civil war considers all civil war observations, irrespective of whether it denotes the start of the war or its continuation. Studies of prevalence are problematic because they conflate two research objectives: the study of civil war onset and of duration. Licklider (2005) argues that irrespective of the original causes of the conflict, a number of other issues will have arisen during the conflict. For example, an increase in poverty and grievances are likely to have added to the complexity of the problems that started the conflict and these new issues may have even become more important than the original dispute. Fearon and Laitin (2003b) use a dynamic logit (or Markov) model to examine the probability of war onset and continuation.[5] The sum of the onset and continuation coefficients can be interpreted as the effect of the explanatory variable on the duration of civil war. The results suggest that the same explanatory variables have different effects on civil war onset and duration. This is confirmed by studies of the duration of civil war (Collier, Hoeffler and Söderbom, 2004; Fearon, 2004).

[5] Fearon and Laitin (2003b, p 12, model 2).

The remainder of this section scrutinizes the results obtained from various measures included in empirical studies of civil war. The measures capture historic, economic, sociologic, demographic and geographic explanations for civil war.

3.3 A More Detailed Look at the Evidence

3.3.1 History

There is strong evidence that countries that had a civil war in the past are much more likely to experience another one (for example Hegre *et al*, 2001, Collier and Hoeffler, 2004). In a large proportion of countries the civil war recurs within a decade; Collier, Hoeffler and Söderbom (2008) find that this is the case for about 40 per cent of the post-conflict societies that they study. However, they do not distinguish whether it is the same civil war, i.e. fought over the same issues and by the same belligerent groups. They only analyse civil wars that occurred in the same country[6]. However, despite the high likelihood of spiralling into a conflict trap there is hope for post-conflict societies. The longer the peace lasts, the less likely it is for countries to experience a further civil war (Hegre and Sambanis, 2006). One possible explanation is that the conflict specific capital that the rebels accumulated during the fighting is either destroyed or depreciates rapidly during peace time. As the peace holds, economic recovery sets in and the opportunity cost of participation rises, making it more difficult to recruit a rebel army. How lasting peace can be achieved and maintained is the topic of other parts of this Handbook.

3.3.2 Income

The relationship between income and civil war has been examined in its many different aspects. Researchers have analysed the correlation between the level, the growth, the structure and distribution of income.

Level of Income

The level of per capita income is included in most empirical studies of civil war. It was found significant in the studies of attitudes to rebellion (MacCullogh and Pezzini, 2007), in the analysis of participation (Humphreys and Weinstein, 2008) and in the behaviour of groups (Jenne

[6] See Walter (2004) for an analysis of recurrent conflict.

Saideman and Lowe, 2007). Cross-country results also show a strong link between income and civil war (Fearon and Laitin, 2003a; Collier and Hoeffler, 2004; Hegre and Sambanis, 2006). The sign of this partial correlation is unambiguously negative, i.e. low average income makes civil war more likely. Although this is one of the most common results in this literature there are concerns whether we can really interpret this as a causal relationship. As the historical evidence shows, many countries are caught in a conflict trap (Collier *et al* 2003; Collier, 2008), so low income could be the consequence of previous conflict and a cause new conflict. Collier and Hoeffler (2004) try to address this endogeneity issue by excluding repeat civil wars from their analysis. The results are robust to this exclusion, thus providing some evidence that income may be causal to war. Another feature of their panel study is that they measure income every five years and examine civil war onset in the following five years. Thus, income is arguably predetermined in their study. Most other studies use annual data and here it is less clear whether income is predetermined. Anticipation of civil war could already depress economic activity and income. A further hotly debated issue is how to interpret this result. What does average per capita income proxy? It does not only proxy economic outcomes, which are largely due to state capacity, but also proxies grievance due to poverty as well as opportunity costs of recruitment. Thus, it is unclear which type of explanation (feasibility or grievance) receives more support from this empirical result.

Income Growth

Income growth is another variable that is robustly correlated with civil war onset. Typically studies measure growth before the outbreak of the civil war. However, measuring growth before the war still raises concerns about endogeneity, growth rates may be low because economic agents perceive the risk of war as high. Miguel, Satyanath and Sergenti (2004) present an instrumental variables approach to tackle this issue. They restrict their analysis to civil war in Africa and use rainfall data to instrument for growth rates. Rainfall is an excellent instrument in their study, because African growth is to a high degree determined by agricultural output and this output is almost exclusively produced through rainfed, not irrigated, agricultural activity. This instrumentation does allow us to state with a larger degree of certainty that growth shocks cause civil wars (in Africa).

Structure of Income

There is a large literature analysing whether dependency on primary commodities makes countries more conflict prone. Primary commodity dependence generates rents and shocks depress long run income. Reliance upon primary commodities is generally associated with a large share of location-specific "rents" in national income. In turn, rents are associated with large non-tax income for the state or any other organisation that can control the territory on which the rents are generated. A dependence on primary commodities is also associated with proneness to shocks: the global prices of primary commodities are much more volatile than other prices. Such shocks imply volatile growth rates; make economic management far more difficult. Thus, rents and shocks create multiple routes by which primary commodity dependence may be linked to the risk of conflict. It is therefore unsurprising that the evidence of a link between natural resources and conflict is mixed. [7]

Collier and Hoeffler (2004) find that countries with a high ratio of primary commodity exports to GDP are more conflict prone. They interpret this as support for the hypothesis that local rents can help to finance rebellion. They use a general primary commodity export measure first used by Sachs and Warner (2000); it includes agricultural products, oil and minerals but does not include diamonds. This measure has been criticized because it aggregates such a variety of resources. As le Billon (2001) argues it is likely that point resources (for example oil) and diffuse resources (for example coffee, alluvial diamonds) generate different types of rents. Rents from diffuse resources may be used to finance rebellion while point resources motivate rebellion. Ross (2004) and Fearon (2005) raise doubt over whether the Sachs and Warner (2007) measure is robustly correlated with civil war. A number of studies, for example Fearon and Laitin (2003a) find that oil exporters have a higher risk of civil war. This may be interpreted in different ways. Oil producing countries tend to have weaker institutional capacity (Isham *et al*, 2005). These states may not be capable or willing to distribute their oil wealth evenly, thus causing grievances which lead to civil war. They may not be capable to deter rebellion effectively or the oil wealth is a honey pot that motivates rebellion. Humphreys (2005) examines this last possibility by

[7] A detailed discussion of the relationship between natural resources and development can be found in Auty (2001). The special issue of the Journal of Conflict Resolution (2005, vol. 49 issue 4) examines the relationship between natural resources and conflict.

examining the role of oil reserves rather than current oil production. His results are not conclusive; this may be due to the fact that current oil production and known reserves are highly correlated. 'Proven' reserves is more likely to be an economic rather than geological concept. For example Collier (2010) shows that the known subsoil resources for African countries are only about one fifth of the resources in OECD countries. There are two possible explanations for this. Either Africa has indeed far fewer resources than other regions or more likely sub-soil assets are only explored if the political and economic situation is conducive for exploitation. (Collier and Hoeffler, 2005).

Basedau and Jay (2009) distinguish between oil abundance and dependence. They define resource abundance as the resource wealth per capita and dependence the degree to which the economy depends on rents from resource exploitation. They show that high resource wealth per capita tends to be associated with less violence. They suggest that governments use the large resource revenues to maintain internal peace by combining a huge security apparatus with generous distributional policies. Compared to countries with lower oil per capita revenue, the institutions of oil-wealthy countries do not seem to be particularly characterized by patronage and clientelism. However, their conclusions are based on a small sample and further analysis of the relationship between natural resources, institutions and civil war seems a promising area of future research.De Soysa and Neumayer (2007) use a measure of resource rents to distinguish between the two rival hypotheses; (1) that resources provide finance and motive and (2) that resources weaken state capacity. They find that higher rents from the energy sector are positively associated with the risk of civil war. This supports the state capability hypothesis. They find no evidence that mineral rents increase the risk of civil war. Since energy rents are more likely to accrue to the state, while mineral rents can be appropriated by the state or the rebels, they reject the finance and motive hypothesis.

This stands in contrast to the work by Lujala, Gleditsch and Gilmore (2005). They use sub-national data and find a positive relationship between the location of violent conflict and the location of diamonds, providing some evidence that they might have been used to finance conflict. Ross (2006) shows that onshore oil production is associated with civil war onsets, but offshore oil production is not. Since both types of production produce similar revenues for the

government but only onshore facilities can be looted by rebels, this suggests that oil is linked to civil war onset not through a state capability effect but by providing rebels with finance.

Dube and Vargas (2006) use event data for Colombia to examine the effect of different primary commodity price shocks on violence. They find that when coffee prices fell, violence in coffee areas rose dramatically. The opposite was true for oil: higher prices intensified conflict in areas with productive oil wells or pipelines. This contrasting micro evidence indicates that the effect of a price shock depends on whether it affects the labour or capital intensive sector. A shock to the labour intensive sector (coffee) caused poverty among the farmers. Increased economic suffering and a lower opportunity cost of fighting lead to an increase in violence. A positive price shock to the capital intensive (oil) sector increased the value of the resource and motivated increased fighting.

To summarize, even if the channels of transmission are not always well defined, there is a lot of evidence that resource dependence can make countries more conflict prone. However, there is also a related literature on whether resource scarcity and climate change cause conflict. Homer-Dixon (1999) suggests that environmental scarcity is a key factor in causing violent conflict. De Soysa (2002) finds no evidence for ecoviolence and Gleditsch (1998) argues that environmental degradation is strongly correlated with poverty, thus environmental conflict is most likely to be an underdevelopment problem.

Homer-Dixon's (1999) prognosis suggests that climate change will lead to more conflict worldwide. There is a growing literature on the subject. Hendrix and Glaeser (2007) examine the relationship between climate change and civil war onset in Sub-Saharan Africa. First, they confirm the Miguel, Satyanath and Sergenti (2004) result that rain fall shocks trigger conflict. This can also be interpreted as evidence that water shortages cause conflict. However, Hendrix and Glaeser (2007) also use other water measures and find that countries with more freshwater resources per capita are more likely to experience conflict. They do not find evidence that environmental degradation, defined as the temporary or permanent reduction in the productive capacity of land as a result of human action, is a cause of conflict. In short, apart from the rainfall result they find no evidence that scarcity causes conflict. The climate projections used in their

study suggests that rainfall will be scarcer in Southern Africa, but not in all parts of Sub-Saharan Africa.

Income distribution

One of the most commonly cited cause of war is inequality. Examples include the hypothesis that aggression is caused by frustration, which in turn is rooted in 'relative deprivation' (Gurr, 1970). Another one is the assertion that 'the relation between inequality and rebellion is indeed a close one (Sen, 1973, chapter 1). To our knowledge commonly used measures of inequality are not significant in any of the civil war onset regressions.

The assumption, that inequality matters to people sufficiently to start rebellions may simply be wrong. Stevenson and Wolfers (2008) suggest that individuals place much more importance on their absolute rather than relative income.

However, there may be a number of other reasons why there is no statistical evidence for a link between inequality and the risk of civil war onset. First, the availability of cross-country data is poor. For many countries inequality has only been measured once or twice over the past four decades. The data availability and quality may simply be too poor to pick up any effects from inequality to civil war. Second, as the work by MacCullogh and Pezzini (2008) indicates the poorest in society are more likely to be frustrated, angry and have a taste for rebellion but they may lack the means to mount a large scale rebellion. Thus, although there is no lack of motivation for a rebellion, it is simply not feasible. Third, it has been argued that the commonly used measures of inequality, for example the Gini coefficient, only capture 'vertical' inequality, i.e. equality between individuals. What might matter more is the inequality between groups, termed 'horizontal' inequality (Stewart, 2005). This inequality is the result of discrimination against groups in an inequitable society. Regan's concept of 'structural' poverty seems to be based on the same idea (Regan, 2009). Stewart (2005) presents nine case studies in which 'horizontal' inequality lead to serious political instability.

Further country evidence is provided by Murshed and Gates (2006) and Macours (2009). Both studies use district and household level data and show convincingly that the increase in inequality fuelled the Maoist rebellion in Nepal. More micro based research may be useful to

understand the relationship between inequality and civil war. However, the studies on Nepal and other cases do not allow us to draw general conclusions on the relationship between inequality and civil war.

Østby (2008) provides a cross-country study on the subject. She hypothesizes that horizontal inequalities enhance both grievances and group cohesion among the relatively deprived and thus facilitate mobilization for conflict. She uses 'horizontal' inequality data for 36 developing countries and her sample includes 22 civil wars. She finds evidence that 'horizontal' inequality does increase the risk of war. However, her sample size is relatively small and the high incidence of war in her sample is very different from other large n-studies, in which war onset tends to be a rare event.

There is no evidence that vertical inequality causes conflict and some limited evidence that horizontal inequality may contribute (in some cases) to the risk of civil war. This research area could benefit from some further investigation. It is not clear how the two concepts and proxies of inequality relate to each other. If the groups are of reasonable size and horizontal inequality is large, this should also manifest itself in vertical inequality measures. The role of within group inequality would also make an interesting research area. The theoretical paper by Esteban and Ray (2008) suggest that although within group heterogeneity might make it more difficult to achieve collective action; the heterogeneity may enable a useful division of labour. The richer members of the group provide the finances while the poorer members provide conflict labour. They hypothesise that groups defined by ethnicity have larger within group heterogeneities than class based groups. Ethnic groups can use these differences within the group to finance and organize a rebellion.

3.3.3 Ethnicity

The most cited causes of large scale violent conflict are probably differences due to ethnicity, religion and class. Fearon and Laitin (2010) classify civil wars since World War II and code 57 per cent as ethnic civil wars. Since most of the empirical research has been done on the impact of ethnicity on the risk of civil war, the discussion in this section will focus on ethnicity as a cause of war.

In an ethnic group people identify with each other, bound together through a common heritage that is real or presumed. Broadly speaking, primordialists believe groups are formed by people with the same biological features, beliefs and cultural traditions. They argue that the deep and long standing differences between groups cause conflicts in diverse societies (Horowitz, 1985; Huntingdon, 1996). Constructivists on the other hand stress the importance of the socially constructed nature of ethnic groups, drawing on Anderson's concept of the imagined community (Anderson, 1983). People have to imagine themselves as part of a group because unlike in an actual community they cannot interact on a 'one on one' basis with all the other group members. Anthropological work by Dunbar (1992)[8] suggests that the number of direct personal contacts of an individual is around 150. This means that any group beyond 150 members might have to rely on this constructed sense of community in order to forge a common identity.

Ethnic Diversity

There is strong evidence that ethnically diverse societies tend to grow more slowly (Easterly and Levine, 1997, Mauro, 1995) and have a low level of public goods provision (Alesina, Baqir and Easterly, 1999; Habyarimana *et al,* 2005; Miguel and Gugerty, 2005). The cross-country growth literature uses a measure of ethno-linguistic fractionalization; it measures the probability that two randomly drawn individuals from a given country do not speak the same language. At first researchers used data from the Atlas Narodov Mira (1964) but the use of the fractionalization data by Alesina *et al* (2003) is more common in recent studies. Fearon and Laitin (2003a) and Collier, Hoeffler and Rohner (2009) find a positive relationship, Collier and Hoeffler a negative one, Hegre *et al* (2001) find no significant correlation between ethnic fractionalization and civil war. Wimmer et al (2009) come to the same conclusion, However, they code 'ethnopolitical groups', defined as groups that are excluded or discriminated against. Countries with a relatively large excluded ethnopolitical groups are more likely to experience civil war. Hegre and Sambanis (2006) conclude that the relationship between ethnic diversity and civil war onset is not robust. However, they find that ethnic diversity is robustly correlated with the onset of lower level violent conflicts.

[8] This result was popularised by Gladwell (2000).

Why are we not able to find a robust link between ethnic diversity and civil war onset? If a society is very diverse, i.e. the various groups are very small, ethnic grievances may motivate a group to take up arms but they are too small to mount a sizable rebellion. Cooperation across different groups is difficult to achieve due to differences in group preferences and any resulting coalition is fragile.

More fundamentally it may be that the case that civil wars are not 'ethnic wars' in the sense that people fight because of their ethnicity (Regan, 2009, chapter 7). Rebel leaders may be motivated by grievance or greed, but they do not recruit randomly from the entire population. Ethnic groups provide an ideal recruitment pool. Their shared experiences (possibly of real or perceived discrimination) make it easier to motivate the members of one group. Their shared language and preferences make it easier to achieve coordination and collective action. The threat and use of social sanctions curbs free riding. The circumstances that lead to a civil war outbreak are often complex and ethnicity is a tool for mobilization.[9] But it is not a cause of the war.

There is very little systematic evidence that religious diversity and class are linked to civil war onset. Montalvo and Reynal-Querol (2005) find no robust relationship between measures of religious diversity and civil war. MacCullogh and Pezzini (2007) find that leftist attitudes are correlated with a preference for revolution and Macours (2009) finds that the Maoists in Nepal predominantly recruited from the bottom of the income distribution. Groups defined by religion and class are possibly not as cohesive as ethnic groups. It may also be the case that class based rebellions have less access to resources and thus find it difficult to finance a civil war. Esteban and Ray (2008) suggest that rebel movements may need to make use of within group heterogeneities; the rich finance the armed struggle while the poor fight. Class based wars are perhaps rare since class is by definition low in within group heterogeneity.

One interesting line of inquiry is how ethnicity interacts with other social cleavages. Selway (2010) uses cross-cutting data on ethnicity and religion. In societies in which members of ethnic groups adhere to the same religion, the social cleavages of ethnicity and religion are said to be 'reinforcing'. If ethnicity is completely independent from religion a society is defined as

[9] A detailed account of mobilisation in Rwanda can be found in Yanagizawa (2009).

perfectly cross-cutting. Countries with low cross-cuttingness are more conflict prone, suggesting that groups defined by their ethnicity as well as by their religion find it easiest to mobilize their members for civil war. If ethnicity and religion are cross-cutting, the ethnic sub- groups sharing the same religion are smaller and insurgency based on the interests of such small groups becomes infeasible.

Toft (2003) examines the link between territory and ethnicity. When ethnic groups are concentrated in a rural area, they are more likely to turn to violence. Conflict is over the control of territory and when ethnic groups are concentrated in one area they can more easily claim a legitimate right to self-determination. This might help to motivate the group members to participate. Distance to the capital makes it difficult for the government to police the ethnic group's activities. Geographic concentration makes coordination and communication easier and therefore strengthens the group's capability to mobilise a rebel army.

Polarisation

One reason why ethnicity does not seem to explain civil war is the way we commonly measure ethnic diversity. Group size and cultural distance between groups matter. If groups are very small they may not be able to mobilise sufficient support and ethnic groups which are similar to each other may not perceive ethnicity as a salient cleavage. There is some evidence that ethnic dominance, defined as a society where the largest ethnic group makes up between 45 and 90 per cent of the population, is associated with a higher risk of conflict (Collier and Hoeffler, 2004; Hegre and Sambanis, 2006). This is an unsophisticated measure of ethnic division. As Montalvo and Reynal (2005) point out, the existence of a majority ethnic group is not sufficient. The minority has to be large and not divided into many different groups. Esteban and Ray (1994) present a theoretical concept for the measurement of polarization and Montalvo and Reynal (2005) apply this concept to measure ethnic and religious polarization. Countries with a bipolar distribution of ethnic groups (1/2, 0, ... 0, 1/2) have the highest level of polarization. Using this measure of polarization they find that more polarized societies are more at risk of conflict. However, their study considers civil war prevalence, not onset. The concept of polarization is closely related to fractionalization and there is some evidence that fractionalization prolongs civil wars (Fearon and Laitin, 2003b; Collier, Hoeffler and Söderbom, 2004). Thus, the polarization

result may be driven by its effect on the duration of conflict. Collier and Hoeffler (2004) find no evidence that neither ethnic nor religious fractionalization is correlated with civil war onset.

3.3.4 Political system

In democracies leadership change can be achieved through voting which is far less risky and costly than fighting. Fully democratic systems allow peaceful collective action and make it unnecessary to use force to pursue political goals. Discrimination that causes between group inequality, and thus a source for grievance is less prevalent in democratic societies. Thus, democracies should be less prone to violent conflict. However, the empirical evidence is mixed. Collier and Hoeffler (2004) and Fearon and Laitin (2003a) find no evidence for a linear relationship between democracy and civil war. There is some evidence for a non-linear relationship; anocracies are more at risk of violent conflict (Hegre et al, 2001; Fearon and Laitin, 2003a). Typically democracy is measured on a 21 point scale using the Polity IV measure as described in Jaggers and Gurr (1995)[10] and anocracies are defined as regimes with scores between -5 and 5. The Polity IV measure of democracy is made up of five different components and as Vreeland (2008) points out when a country is at civil war, this has implications for the coding of two components. This implies that Polity IV is not a legitimate explanatory variable since it may produce tautological results. One possible solution is to use only the sub-components of the Polity IV index which do not include information on political violence. Vreeland (2008) finds that the anocracy result disappears when he uses this modified index. He suggests that future research on the subject should employ more sharply defined variables to capture the effects of political institutions.

There is also evidence that political instability is correlated with civil war (Hegre and Sambanis, 2006). This result suffers from the same problems as the analysis of the relationship between the level of democracy and war. Political instability is partly defined by civil war in the Polity IV data set.

State capacity is often cited as cause of civil war. However, statistical analysis is limited due to measurement issues. Data on institutions and governance have only become recently available for a large sample of countries. Bates (2008) weaves together the empirical evidence with an

[10] Yearly updates are available from http://www.systemicpeace.org/polity/polity4.htm

analytical narrative of state foundation and the logic of political order. He provides a political economy account of how a large number of African countries slid into political chaos and civil war. 3.3.5 Demography

One of the few robust results in this literature is that larger countries have more armed conflict (Hegre and Sambanis, 2006). The definition of civil war is defined by an absolute threshold of 1,000 battle related death, larger countries have more people with the potential to start a fight and more people who can be killed. However, countries may be large in terms of population or in terms of territory. Size may matter because larger countries can have a large number of distinct groups living in the territory; have large distances over which a government must be able to exert control and long international borders. Raleigh and Hegre (2009) examine why larger countries are more conflict prone.[11] They use sub-national data for Africa from the ACLED (Armed Conflict Location and Events Dataset)[12] which allows them to test which aspect of country size matters for the risk of civil war. They find that conflict events are clustered in peripheral regions with high population densities. This result is somewhat related to Collier and Hoeffler (2004) who use a measure of population concentration in their cross-country study. They find that countries with a more dispersed population are more at risk of civil war. Raleigh and Hegre (2009) suggest that the size of the population proxies the value of a location, thus conflict is fought over more valuable territory. These interesting findings may be due to the sample they study; the conflict in the Democratic Republic of the Congo may be driving these results. Although plausible, there is currently no evidence that this result is a general one. This is a promising area for future research[13].

Youth Bulges

Research on attitudes and participation indicates that young men have a taste for rebellion and that they are more likely to join one. Urdal (2006) examines youth bulges as a cause of war in cross-country studies. Youth bulges, defined as the proportion of 14-25 year olds in the population, could either provide the opportunity or the motivation for rebellion. If there are large

[11] An earlier study on the subject is Buhaug and Gates (2002).
[12] Data are available from http://www.acleddata.com/
[13] Rustad et al 2009 examine the sub-national variation in conflict risk in Asia and come to similar conclusions.

youth cohorts, the opportunities for youths in the labour market are limited and thus recruitment costs are lower. On the other hand large youth cohorts face unemployment, institutional bottlenecks and the crowding of urban centres which lead to grievances. Urdal (2006) finds no evidence that youth bulges are significant in civil war onset regressions. This confirms the findings of Collier and Hoeffler (2004) and Fearon and Laitin (2003a). However, Urdal (2006) shows that youth bulges are significant in regressions seeking to explain terrorism, rioting, violent demonstrations and low level violent conflict.

Populations beyond national borders

There is some evidence that large diasporas and transnational ethnic linkages make countries more conflict prone. For example, the Eritrean, Kurdish and Tamil diasporas are large and have provided a major source of insurgency finance (Angoustures and Pascal, 1996). A cross-country examination of the role of the diaspora is difficult due to two reasons. First, international migration data is currently very sketchy and second, diasporas are endogenous to the risk of civil war. Collier and Hoeffler (2004) use data on diasporas settled in the US and address the endogeneity issue by concentrating on the part of the diaspora which is not due to the war. They find that countries with large diasporas in the US are more likely to experience civil war.

A further example of a population that may be able to support an insurgency are transnational ethnic or religious groups. For example, insurgents in Afghanistan and Pakistan receive financial support from beyond their borders. Many countries have also transnational ethnic linkages. Co-ethnics across the border may not only be able to provide financial support, but also fighters, a safe area for training camps and opportunities for retreat between violent episodes. Gleditsch (2007) shows that the number of ethnic groups that span national borders is positively correlated with civil war onset.

Support from beyond the national borders seems to be an important factor in making a rebellion feasible.

3.3.6 Geography

Certain geographic characteristics are likely to favour rebellion. Mountainous and densely forested terrain is more difficult to control. As the above discussion showed, the linkages

between ethnicity, demography and geography seem to be crucial as to whether or not certain characteristics make countries more conflict prone. There is some evidence that mountainous terrain makes countries more conflict prone (Fearon and Laitin, 2003a; Hegre and Sambanis, 2006; Collier, Hoeffler and Rohner, 2008). The evidence for forested areas is not robust.

Another geographic characteristic that can make government control difficult is 'noncontiguity'. Fearon and Laitin (2003a) code countries with territory holdings that are separated from the capital city by either land or water 'noncontiguous'. These countries are more conflict prone, indicating that noncontiguity makes rebellion more feasible.

There is no strong evidence that war in neighbouring countries makes civil war more likely (Hegre and Sambanis, 2006). However, there is some evidence that islands are less at risk of war (Chauvet, Collier and Hoeffler, 2010). Geographical isolation seems to make countries safer.

4. Conclusions

This chapter highlights a number of problems with the literature on the 'causes' of civil war. There is a gap between the theoretical and statistical models. The theory suggests a number of causes of civil war but the empirical models are often *ad hoc* and the results are difficult to interpret and do not allow us to distinguish between different theories. Many explanatory variables are endogenous and it is probably more appropriate to refer to correlates of war, rather than causes. A number of explanatory factors, such as for example grievances, are difficult to proxy. Some variables allow for multiple interpretations. Poorer countries are more conflict prone, but is this due to lower opportunity costs to join a rebellion or low state capacity? Some explanatory factors, such as inequality and ethnicity, receive a lot of attention but there is little evidence that they are robustly correlated with civil war onset. Other explanatory variables are highly correlated with each other, for example there is a close relationship between income, democracy and natural resources. This makes it difficult to disentangle the transmission mechanisms. The effect of some other variables seems to depend on their interaction. The discussion showed that certain combinations of ethnicity, geography and history are likely be

associated with conflict risk while others are not. Large countries with clusters of ethnic groups in the periphery seem more at risk of conflict.

It is also important to note that most explanatory variables are time invariant or change slowly over time and the associated conflict risks also change slowly over time. Tipping points or trigger factors that typically precipitate the onset of civil war are not considered in this research and the models are not suited for forecasting the occurrence of civil wars. Early warning systems require much more detailed, locality specific data. One example of how events data can be used for early warning systems is Bond *et al* (2003).

Even if we were able to pinpoint the 'causes' of civil war, it is unlikely that this knowledge would help us in conflict resolution. Studies of civil war onset and duration show that they are correlated with different factors. Once a war has started new problems, such as increased poverty and grievances, are added to the original causes and might even supersede them.

What is the use of large n-studies if they cannot distinguish between different theories on the causes of civil war, nor be used for conflict resolution or forecasting? Researchers have only relatively recently turned to using quantitative data in panel studies of civil war onset. Previously our knowledge was based on case study evidence, which provided detailed accounts of individual wars but does not allow us to generalize. The discourse was dominated by explanations of grievances as the causes of war. Large n-studies are informative for policy shapers. First, they help to set priorities in the development and security debate. Post-conflict societies face a particularly high risk of war. Research suggests that development aid and peace keeping operations can help to build lasting peace (see other parts of this Handbook). Second, there is now evidence that the feasibility of rebellion depends on access to finance. This does not exclude grievance explanations but offers different policy options. One example is the Kimberly Process, a certification scheme which imposes extensive requirements on its members certify shipments of rough diamonds as 'conflict-free'.[14] This results in reduced financing opportunities of rebel movements and thus reducing the risk of large scale violent conflict. A further international initiative is the Extractive Industries Transparency Initiative (EITI) which supports improved governance in resource-rich countries through the verification and full publication of

[14] More information at http://www.kimberleyprocess.com/

company payments and government revenues from oil, gas and mining.[15] This should improve government accountability and thus the use of resource incomes for development.

[15] More information at http://eitransparency.org/

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