

International Policies on Civil Conflict: an Economic Perspective

Jean-Paul Azam, Paul Collier and Anke Hoeffler

14th December, 2001

Abstract

In this paper we review the economic theory of conflict and the empirical evidence. Armed conflicts can be analysed by applying standard micro-economic models. Rebellions will be economically viable when the rebels' revenues are sufficient to cover the cost of armed conflict. This holds for all rebellions, whether they are motivated by greed or non-economic factors. International policies for conflict reduction should therefore be aimed at increasing the cost of rebellion and at reducing the revenues from it. Policies aimed at reducing the rebels' income from natural resource loot through stricter international controls (e.g. certification of diamonds) seem promising. In addition, we suggest that donations from diaspora communities should be curtailed by the international community. The cost of rebellion can be raised through increasing the opportunity costs of rebel recruitment. Higher levels of income and economic growth significantly reduce the risk of conflict and international aid and trade policies should be targeted in such a way as to maximize developing countries' economic growth.

1. Introduction

Globally, over the last 40 years large scale, violent, civil conflicts have started up at the rate of about two per year. This exceeds the rate at which they have been resolved, so the global incidence of civil conflict has been rising. Further, the only unambiguous time trend is for conflicts to become more prolonged – conflicts now last around a third longer than twenty years ago. Even when conflicts are settled, they have a disturbingly high risk of repetition. Indeed, there is a ‘conflict trap’: there is a 50% risk of a conflict re-starting within five years of a settlement.

The high and rising incidence of conflict is too important for policy makers to ignore. As well as the direct impact of civil conflict on human misery, it has wider adverse effects. Within the affected country, civil war evidently reduces income and accentuates poverty. Conflict also has spillover effects on to neighbors, raising their risk of civil conflict, raising their military spending, and reducing their growth. Finally, the existence of territory outside the control of any recognized government, which is a by-product of civil war, provides safe havens for international terrorism.

To date, the international policy community has viewed the problem of civil war from three predominant angles: political, military and humanitarian. In this paper we review new research which suggests that economic policy may have a considerably more important role to play in reducing the incidence of conflict than has previously been appreciated. In Section 2 we review the new econometric evidence on the causes, spread and duration of civil conflict. While the evidence permits more than one interpretation, it is strikingly at variance with the prevailing popular and policy discourse. We find little evidence that objectively measurable grievances have any bearing on either the initiation or the duration of conflict. Rather, the risk of conflict appears to be related to the opportunities for it to be financially and militarily feasible. In Section 3 we sketch a theory of rebellion as the activity of a not-for-profit organization. As a matter of definition, a civil war requires the existence of rebels who engage in organized killing,

some of whom die in the process. There may be many people in all societies who are willing to kill and to die for their particular political objectives - worthy, mischievous or eccentric. This may explain why objective grievances provide so little explanation for conflict – such grievances may increase the supply of those willing to kill, but this is not the constraint upon rebellion. Only in relatively rare circumstances is a rebel organization viable. Where it is viable it will exist. Its agenda may or may not relate to objective grievances. The section explores the rebel profit function, and so considers the factors likely to determine viability. In Section 4 we draw the likely implications for international policy. What strategies are both data-consistent and theory-consistent in reducing the incidence of conflict?

2. The Initiation, Persistence and Spread of Conflict: the Econometric Evidence

The analysis of civil wars is dominated by case studies, mainly conducted by political scientists. However, in order to generalize about the initiation and duration of conflict political scientists and economists recently started using global data sets. The phenomenon we intend to explain, conflict, and potential determinants have been quantified and social scientists are now able to use large cross-country data sets spanning several decades. Thus, all conclusions drawn from these studies are of a general nature and provide us with some evidence as to why some countries are more conflict prone than others.

A common definition of civil war used in the literature are internal conflicts with a minimum of 1,000 battle related deaths (Singer and Small, 1984, 1992). These are also referred to as major armed conflicts (SIPRI Yearbooks) and a variety of possible causes of conflicts have been empirically tested. We first discuss the initiation of conflicts. Economists, for example Grossman (1991, 1999), use rational choice models to explain conflict. Individuals decide whether or not to join the rebel forces and weigh up their forgone income from other activities, such as for example farming, against the possible gains from rebellion. Empirically these opportunity costs are an important determinant of the risk of conflict and economic variables such as the level, growth and structure of

income have been identified as important explanatory factors of conflict. Collier and Hoeffler (1998, 2002) find that countries with low average per capita incomes have a higher risk of conflict. Low economic growth also increases the risk of conflict, because income opportunities from peaceful activities are diminished. An alternative measure of economic opportunities is the number of young men enrolled in secondary education. The advantage of this measure is that it concentrates on the group from which a rebel movement draws most of its recruits. Empirically a higher enrollment rate is associated with a lower risk of conflict.

Sources of finance for rebels are a further economic explanatory factor in the analysis of conflict. Rebel movements, like regular armies, must recruit and train their combatants and acquire equipment. Possible sources of finance are foreign governments, natural resources and donations from a diaspora population. Contrary to popular belief that the world is becoming more dangerous (for example Kaplan, 2000) the number of new war starts decreased since the end of the cold war. There is some weak evidence from cross-country regressions that the risk of civil war declined in the 1990s, thus, indicating that the subventions from the two super powers during the cold war were fuelling the risk of war. Much stronger evidence emerges from the analysis of natural resources as a source of finance. There is strong case study evidence that countries with a high share of natural resources in their exports are more likely to experience a war (see Klare 2001) because resources such as diamonds and timber can be looted and used to finance the war. Cross-country regressions provide strong evidence to support this causal link between natural resources and the risk of war. As further source of rebel finance are donations from diaspora populations. There is a wealth of case study evidence on the importance of diasporas in the finance of conflicts (for an overview see Angousteres and Pascal, 1996). One example are the exile-Tamils in Europe and Northern America supporting the Tamil Tiger's rebellion against the government of Sri Lanka. Collier and Hoeffler (2002) present some statistical evidence that this is a general phenomenon. On average countries with a relatively large diaspora populations have a higher risk of conflict.

In addition, the risk of rebellion depends on a number of social and geographic characteristics. Typically, rebels recruit from a particular ethnic or religious group in order to maintain cohesion in their newly formed army. Thus, the recruitment opportunities may be more constrained in fragmented societies. Indeed, statistical evidence shows that more ethnically and religiously diverse societies have a lower risk of conflict. Certain geographic characteristics also seem to favour rebellion, for example mountains offer good hiding and training sites for rebel forces. The location of the population also seems to be important. When the population is dispersed rather than concentrated in certain areas the government may be less able to control all parts of the country and it is easier for the rebels to obtain support from the civilian population. Both factors, mountainous terrain and the geographic dispersion of the population, are statistically significant. However, there is no evidence that a higher proportion of forests increases the risk of a civil war breaking out.

The political science literature has typically concentrated on grievances as the motivating factor of rebellion. Hegre *et al.* (2001) find the type of political regime to be an important determinant of conflict. Democracies have a much lower risk of conflicts than repressive regimes except when this repression is very severe. Using the same political regime data Collier and Hoeffler (2002) only find weak evidence to support the hypothesis that more democratic countries have a lower risk of war. However, the same study shows that the ethnic composition is important for the risk of conflict. When a society is dominated by one large ethnic group and political allegiance is based on ethnicity, this group can exploit the other groups even if the country is democratic. Collier and Hoeffler (2002) also analyse the importance of ethnic polarization and do not find more polarized societies to be characterized by a higher conflict risk.

Economic inequality is often quoted as one of the main causes of war (for example Sen, 1973). Collier and Hoeffler (2002) use various measures of income and asset inequality and do not find any evidence for a systematic relationship between inequality and the risk of conflict. While the poor may rebel to induce redistribution, rich regions may mount secessionist rebellions to pre-empt redistribution.

A number of theoretical studies, for example Grossman (1991, 1999), interpret the initiation and the duration of conflict as interdependent. The length of the war determines the discounted gains from the conflict and since the rebels base their decision on whether or not to go to war on these gains they may not fight if they anticipate the war to last for a very long time. However, the empirical work by Collier, Hoeffler and Söderbom (2001) shows that the duration of civil wars is more consistent with the notion that rebellions are a going concern rather than driven by the prospect of ultimate victory. The duration of civil wars is determined by completely different factors than their initiation.¹ According to their study civil wars will last longer if the country is characterised by ethnic dominance, extensive forest cover and a conflict start after 1980. Furthermore, civil wars do not seem to be duration dependent, i.e. there is no systematic relationship between how long the war has already lasted and how likely it is to end. In general, the causal factors that lead to the outbreak of the rebellion become unimportant once the war has started. Rebellions seem viable as going concerns and can thus be interpreted as steady states. These processes will not lead to peace unless significant changes take place. Regan (2002) investigates the role of third party interventions as conflict management tools and finds that only biased interventions in favour of one party will shorten the war². Impartial and multilateral interventions on the other hand will in general not end a civil war, presumably because they do not change the relative military capabilities. Thus, the empirical evidence so far suggests that policies designed for conflict prevention should be radically different to the ones aimed at ending a war and impartial external support may be more effective in post-conflict situations rather than trying to end a civil war.

Once a war has ended countries face a very high risk of recurrent conflict, empirically there is a 50 percent risk of a conflict re-starting within five years of a settlement.³ Walter (2001) argues that a focus on grievances to prevent recurrent wars is in general less successful than policies aimed at improving the standard of living and political

¹ Fearon (2001) comes to a similar conclusion. In Collier and Hoeffler (1998) the study of the initiation and duration is conflated. Their main conclusions are only valid for the initiation of conflict, but not for their duration.

² Regan (2002) examines military as well as economic interventions.

participation. Collier and Hoeffler (2002) provide strong evidence that the risk of recurrent conflict subsides over time, as the peace period since the end of the last civil war increases the lower the risk of a renewed conflict becomes, i.e. 'time heals'. There are different ways to explain this effect. First, this may be due to hate fading over time or second, due to the depreciation of conflict specific capital, such as arms and the organisational structure of the rebel forces. In their study Collier and Hoeffler (2002) present some evidence that larger diaspora populations slow down this peace effect. Their donations are more likely to be used to maintain conflict specific capital rather than to achieve reconciliation. Therefore, the peace effect is more likely to be driven by the depreciation of conflict specific capital than by the fading of hate.

Due to this increased risk of recurrent war peace does not necessarily lead to an automatic recovery of the economy. Collier (1999) examines the consequences of civil war and finds that the peace dividend is higher after very long wars, because the capital stock has been fully adjusted to the high risk environment. Consequently the returns to new investment are high and the economy begins to grow rapidly. During short wars the capital stock may not have been fully adjusted and may still decrease after the conflict. Thus, the economy may contract further rather than take advantage of post-war peace. This in turn increases the risk of renewed conflict.

Civil wars are not only devastating for the countries in which they were fought, but also generate international spillovers. Murdoch and Sandler (2001) find that civil wars do not only substantially reduce the growth in the war torn country but also their neighbours' growth. This reduction is due to multiple factors, such as disruption to trade, heightened risk perception by investors, a reduction of input supplies and resources spent on the assistance to refugees. These growth reducing effects seem to be immediate with no discernible lag.

³ Bigombe, Collier and Sambanis (2000).

In addition to these direct and indirect growth effects there are military spillover effects. Conflicts tend to be clustered in particular regions⁴ and Collier and Hoeffler (2001) find that the risk of a civil war starting significantly increases once there is a war in one of the neighbouring states. Furthermore, the study shows that neighbouring governments also increase their defence budget in response to the increase of the military spending in the civil war country. To make matters worse, these larger defence budgets may actually not deter rebellion (Collier and Hoeffler, 2001). Thus, many poor countries waste scarce resources on regional arms races.

To summarize, the empirical evidence shows that economic factors are important determinants of civil wars. Opportunity costs as well as sources of finance are found to be significant variables in the analysis of conflict risk. Empirical studies also indicate that the initiation and the duration of conflicts are distinct processes and are not explained by the same determinants. Furthermore, civil wars generate a number of spillover effects, such as an increased risk of conflict in neighbouring countries, a reduction of economic growth in the region as well as neighbourhood arms races.

3. An Economic Theory of Conflict: Rebellion as Business

Economists tend to concentrate on the analysis of production and exchange, however, some have applied economic tools to the analysis of predation and conflict. Hirshleifer (1995, 2001) classifies the possible causes of conflict into preferences, opportunities and perceptions. Political scientists have typically concentrated on the analysis of preferences in the study of conflict. Rebellion is interpreted as political protest, caused by grievances due to inequality, oppression or ethnic and religious hatred. In contrast, the small economic literature tended to concentrate on the analysis of opportunities. Rebellions are modelled as an industry that generates profits from looting, so that 'the insurgents are indistinguishable from bandits or pirates' (Grossman, 1999:269). Greed is thus the main motivating factor, because 'no one will ever pass up an opportunity to gain a one-sided

⁴ Gleditsch and Ward (2000) show that interstate wars are clustered in certain regions.

advantage by exploiting another party'.⁵ However, people have to act on perceptions since the true opportunities and preferences are not known. Thus, rebellions can be motivated by misperceived or exaggerated grievances and opportunities.

Grossman (1991) develops a micro-economic model in which he analyses the behaviour of the incumbent ruler, the rebel leader and the peasant population. The rebels are defined as a group of people using unlawful force to defy the established system and property rights. They recruit from the peasant population. Peasant families maximize their expected income from different sources, production or soldiering for either the government or the rebel leader and their decision is based on rational choice. The rebel organization generates revenues and faces costs like legal businesses. In the case of a successful insurrection the rebel organization take as booty all of the ruler's revenue. Therefore, the rebels' revenue depends on the probability of victory, the current gross income of the government as well as the expected value to the rebel supporters of having the rebel leader become the ruler. Then, this revenue is compared to the cost of running the rebel organization, which is captured by the wage bill of the insurgent fighters. The rebellion's profit is determined by the difference between the revenue and cost functions and the rebels will start a civil war if these profits are non-negative. Since the probability of toppling the government is assumed to be a function of the number of fighters engaged in the fight, the rebel leader will hire soldiers up to the point where the marginal increase in the expected rebellion revenue is equal to its marginal cost, i.e. the compensation of the marginal soldier hired.

However, rebellions have statistically a fairly low chance of succeeding, and if they do, this only comes after a long and protracted struggle. Hence, the prospect of taking over and enjoying the benefits of state power must be heavily discounted by a rational rebellion leader and unlike legal businesses rebel movements cannot borrow money in the regular capital market. Due to this finance restriction many rebellions have to generate revenue during the civil war, for example through looting. However, unlike stipulated in the Grossman model this does not mean that rebellions are exclusively

⁵ Hirshleifer (2001:10-11) calls this Machiavelli's Theorem.

motivated by greed, they can be motivated by different, non-economic determinants. Thus, as an alternative comparing rebel organisations to businesses we can define them as not-for-profit organizations. What is common to both interpretations of rebel organisations is that as long as the rebels cover their costs a rebellion is viable.

Due to the borrowing restriction looting is thus a crucial dimension of rebellion. It is by looting resources, hopefully from the other side, that rebellion leaders can hope to acquire most of their current revenues. This has been modelled analytically by Collier (2000) and Azam (2002). Analytically, looting is not much different from taxation, in so far as it involves the use of coercion, or the credible threat of some severe punishment, for extracting funds, or other resources, from producers. Rebellion leaders will typically try to get hold of some mining resources, and diamonds have recently hit the headlines because of the evident role in the wars over Liberia and Sierra Leone, leading to the diversion of Marilyn Monroe's well known line: 'Diamonds are a guerrilla's best friend'.⁶ However, other examples abound, in particular from Africa. Ever since the early post-independence days, countries like Angola and Congo have been torn apart by rebellions and warlords trying to get control of copper mines, diamond fields, and other mineral resources. The Biafra war in the late sixties in Nigeria was about the control of oil, that happened to be discovered in the south-east, the land of the Ibo. The other two groups, the Hausa and the Yoruba, were able to form a winning coalition for crushing this rebellion, despite its large resources. Examples come less easily of countries where a civil war broke out for controlling agricultural products. The land does not produce much once the peasants are dead, while some mining resorts can be taken over more directly, and exploited by soldiers. However, Colombia is a clear example of a civil war about the control of an agricultural resource, as most of the fighting is related to the cultivation and processing of coca. The looting of timber in Cambodia is a further example.

In fact, in this context, state control is best regarded as the art of deterring entry into the extortion business. The government typically seeks to defend its monopoly power over the extraction of natural resources from the population by coercion, while

⁶ New York Times, June 2000.

rebellion is precisely a challenge by a contender entering this market with a view to carve a slice of this pie for himself, and maybe, eventually, to control the whole lot. Competition between the tax-collector and the looter involves some duplication and some inefficiency, that a tax monopoly is keen to avoid. The problem is akin to the wastage imposed by a 'roving bandit', compared to the 'stationary bandit' that has a clear incentive not to 'kill the goose that lays the golden eggs', as analysed by McGuire and Olson (1996). Excessive extraction of the producers' incomes has negative incentive effects, that reduce the expected catch from the tax net and other levies by the state. Therefore, the government is in general inclined to take action for reducing this type of competition, either by disabling the rebels, through a fight, or by buying them off, or co-opting them into the ruling elite.

One additional problem entailed by competitive extortion between a government and a rebel movement, or between two factions in a collapsed state society, is that it reduces drastically the returns to productive labour, and thus reduces the cost of hiring soldiers. This pecuniary externality results in some inefficiency, involving standard multiplier effects: as a new entrant in the extortion business starts its activity, the cost of hiring soldiers falls, which induces both sides to hire more soldiers and to expand their extortion activity. Often, rebellion organisations will compensate soldiers with a non linear payment schedule, including a low wage, which might even be paid at irregular intervals, and a free hand on lootable resources from a designated portion of the population. By making the raiders residual claimants on their looting activity, the rebellion leaders are thus able to save on monitoring cost, as no shirking is expected in this case. In other cases, the rebel leaders will exert some control on looting, with a view to extract a share of the booty. This is in particular the case when mineral resources are concerned, like diamonds and other gems, for example. Among others, Charles Taylor is known for having organised the illegal mining of diamonds by his troops in a rational way, extracting a significant levy for himself (Reno, 1999).

An alternative to looting are subventions from foreign governments. In the days of the cold war, many rebel leaders could count on the two super-powers for funding their

activity. The end of the cold war not only changed the rebels' revenue function but also their cost function. Arms used to be heavily subsidized by the super-powers but more recently have to be purchased by the rebel armies which has led to a commercialization of civil war. During the past decade the trade in arms, in particular small arms, has increased significantly.⁷

Another important difference between rebel organizations and ordinary businesses is that the negative externalities that they entail are often much more damaging than the type of pollution or health hazards that result from some industrial activities, at least in the short run. Many human lives are lost, and resources are destroyed in the process. A particularly striking effect of civil wars is that most of the casualties involved are concerning civilians. Estimates vary widely, but a safe guess is that between 60 and 80 percent of the war-related deaths are civilians.⁸ Two potential causes come to mind for explaining this phenomenon, which are not exclusive of one another. First, it is clear that the competition between looting bands reduces the incentive to keep producers alive, as this might benefit the other side. Moreover, desperate peasants sometimes simply put up a fight against the looters, without any hopes of winning anything, and get crushed by the looters in the process. Another important reason why soldiers victimise civilians is that they may serve as a shield or a hide for guerrillas. Then, killing some of them is used as an intermediate target by the soldiers in order to clear the land before fighting the rebels, by frightening the survivors to flee.

A testable implication of this analysis is that, in the latter case, the raiding camp is investing resources for inflicting violence against civilians, while in the looting case, it works the other way round, as the raiders are inflicting violence on the civilians in order to collect resources. Hence, a test can be devised to choose among the two views, although they are not exclusive. Azam and Hoeffler (2002) have tested econometrically the impact of foreign aid and export revenues on the stock of refugees from countries at war, using African data. Their results suggest that the scorched earth strategy sketched

⁷ Small Arms Survey (2001).

⁸ See for example Cairns (1997).

above is probably quite important, as an increase in the resources available to a government at war seems to have a positive impact on the outflow of refugees, suggesting that better endowed governments are able to perform more raiding on the civilians. Therefore, as an extension to the so called ‘Geneva conventions’, that ban violence against civilians in wartime, these results suggest that foreign aid to governments should be curtailed when they are involved in a civil war, and that their export revenues should be restricted. However, this involves a trade off between protecting civilians and encouraging rebellion, that the international community would not consider lightheartedly.

Thus, a review of the economic models suggests that policies for conflict reduction should be aimed at increasing the cost of rebellion and at reducing the revenues from rebellion since financial viability is a necessary condition for a rebellion, irrespective of the motives of rebellion.

4. Policies for Conflict Reduction

The theory of rebellion sketched above has suggested three distinct types of policy intervention which might reduce the incidence of conflict: conceding the rebel political objective, reducing the finance available for rebellion, and raising the cost of rebellion.

Political concessions

The econometric evidence has suggested that as a strategy for conflict *prevention*, the first strategy is likely to be the least effective. The objective grievances that are so prominent in the discourse on rebellion – political rights and inequality - do not appear to be the major causes of rebellion. Where rebellion is viable, even were one group to be placated, there may be many other groups with demands which the government cannot in aggregate accommodate. There is a further reason why the initiation of rebellion is unlikely to be very sensitive to the extent to which political goals are accommodated without the need to fight. The political goals articulated at the start of a rebellion are

seldom realised: only around 20 percent of conflicts end in victory for the rebels. Even when the goals are realized it is on average after around a decade of conflict. The discount for the low probability of success and for the long delay in reaching it, may make the expected political benefits of the post-conflict era relatively unimportant in the calculus of rebellion. Hence, reducing these benefits through preemptive political concessions may have little leverage over the calculation of net benefits.

As a strategy for conflict *settlement* and post-conflict peace *maintenance*, political concessions may be more effective. Any benefits are immediate, rather than discounted by a decade of waiting, and so will have a greater impact on the rebel calculus. Further, the problem that if one group's objectives are met it will simply be replaced by other groups, is greatly diminished. Recall that conflict appears to create rebellion-specific capital, which is probably why there is such a high risk of repeat conflict. However, much of this capital is likely to be specific not only to rebellion, but to the rebel group itself. Hence, the threshold at which the established rebel group chooses to fight is likely to be much lower than that at which a new group will form. There may be a substantial range of policies within which the established rebel group is viable but opts for peace, and no new rebellion is viable.

However, the strategy of political concessions faces a further difficulty, namely time consistency. Because rebel-specific capital gradually erodes during peace, at some point the cost of rebellion may rise to the point at which, even if the government reneges on the settlement, rebellion is no longer viable. The erosion of rebel-specific capital thus creates a limited period of enforceability. Unless the government is able to lock itself into the settlement, the rebel group will rationally return to violence before the end of this period. An implication for international policy is that there is not only a need for international guarantee of the terms of a settlement, but that the need for such a guarantee actually *increases* with the duration of the post-conflict peace. This is quite contrary to prevailing practice in which an international presence is seen as a short term strategy. Current practice reflects the social analysis that has been the basis for strategy: time is assumed to heal inter-group conflict by reducing hatred and building trust.

Reducing finance

Now consider the second strategy, reducing the finance available for rebel organizations. From case study evidence there are three major sources of rebel finance: extortion of natural resources, remittances from diasporas, and subventions from foreign governments. All of these are within the power of the international community to curtail. Indeed, it may be far easier for the international community to curtail them than for the threatened government.

The extortion of natural resources takes two chief forms. For some commodities, such as diamonds, timber and drugs, the rebel organization itself commandeers part of the supply and disposes of it on international markets. In this case there is considerable scope for international control of access to the market. For example, the recent Fowler Report of the United Nations detailed how West African rebel groups gained access to the international diamonds market and this triggered new certification procedures.⁹ The problem is little different in principle from the more general problem of counterfeit goods. The objective is to create a sufficiently deep price discount for rebel-supplied goods that the rebel organization is starved of finance. For other resources, such as oil, the rebel organization may find it easier to prey upon the international company engaged in extraction, for example, kidnapping its employees and ransoming them.¹⁰ Here the international response should be to limit the ability of companies to pay ransoms. Currently, incentives for companies to protect their employees as opposed to ransoming them are often perverse. A common practice is for security to be a charge upon the local operation, while ransoms are treated as a charge to headquarters.¹¹ In effect, ransom payments should be forbidden or subject to heavy taxation.

⁹ The publications by Global Witness, a non-governmental organisation, were central in raising public awareness. <http://oneworld.org/globalwitness/>

¹⁰ The practice has now spread to the kidnap of tourists, ransomed to their national governments.

¹¹ We are indebted to Mary Anderson for this point.

The supply of finance from diasporas is substantial, well-documented, and relatively easy to regulate. Much diaspora finance comes not from individual voluntary contributions, but from organized, and often coercive collection among the diaspora communities in OECD societies. OECD governments have been lax about curtailing these activities because the benefits of curtailment accrue externally, whereas organized diasporas often have some local political power and so can inflict costs that accrue locally.¹²

The supply of finance from hostile governments is easier to control now that the Cold War is over. During the Cold War, since both super-powers were funding rebellions against client governments of the other super-power, international action to curtail the practice was impossible. Now, however, and especially in the wake of September 11th, it is possible to envisage the United Nations committing to a policy that no government should fund rebellions against a government that it recognizes. With such a rule in place, evidence of transgressions can in principle trigger penalties.

Of these three strategies, the econometric evidence suggests that the regulation of access to primary commodity markets is the most important for conflict prevention, while the regulation of diasporas is important for the maintenance of post-conflict peace.

Increasing costs

Now consider the third strategy, raising the cost of rebellion. Potentially, this can be done both by raising the opportunity cost of recruitment, by raising the threshold of military power at which the rebellion is viable, and by accelerating the depreciation of rebel-specific capital post-conflict.

The econometric evidence suggests that raising the level and growth rate of income both reduce the risk of conflict. This can be interpreted as working by raising the opportunity cost of rebellion, although it can also be interpreted in other ways. Regardless of its interpretation, if growth reduces risk then international economic interventions offer

¹² Well-documented examples are the Tamil community in Canada and the Irish community in Boston.

considerable scope for conflict prevention. Two international strategies which would raise developing country growth rates are augmented aid and reduced trade barriers. There is now reasonable evidence that in many poor countries aid is effective in raising growth rates (Burnside and Dollar, 2001; Collier and Dollar, 2001). Currently, global aid is only around \$50bn per year, its lowest level relative to OECD income for decades. More than offsetting this transfer, OECD trade restrictions against developing countries are estimated currently to be costing developing countries around \$100bn per year (World Bank, 2001). Enhanced aid and reduced trade restrictions could between them raise growth rates in low-income countries. Growth directly lowers the risk of conflict, and cumulatively reduces it further by raising income. Finally, both aid and trade liberalization help low-income countries to diversify away from dependence upon primary commodity exports. Thus, as well as raising the cost of rebellion, aid and trade liberalization can reduce the revenue that finances it.

In principle, a higher level of government military spending might also deter rebellion raising the entry-cost. This effect is difficult to analyze empirically because of the evident endogeneity of military expenditure with respect to conflict risk: unless this is controlled for, military expenditure will appear to cause the event it anticipates. However, even with reasonable efforts to instrument for military expenditure, no deterrence effect can be found.

The depreciation of rebel-specific capital post-conflict can be achieved by various strategies. Rebels can be induced to exchange their guns for finance or in-kind benefits such as agricultural equipment. The battle skills can be made less valuable by differentially raising the income earning opportunities of former combatants. Rebel organizational capital can be reduced by co-opting the rebel leadership into attractive positions. As noted above, the strategy of accelerating the depreciation of rebel-specific capital has the detrimental effect of making the settlement less enforceable by the rebel group, and so it needs to be complemented by external enforcement of the settlement.

The absorptive capacity for aid and trade opportunities is greater pre-conflict than either during conflict or in early post-conflict. By contrast, the evidence that military expenditure does not deter conflict is essentially a result concerning conflict prevention. There is too little data to assess its impact post-conflict. Its effect during conflict has not extensively researched within a quantitative framework, although there is some evidence that foreign interventions that support the government do succeed in shortening civil war (Regan, 2002). The strategy of accelerating the depreciation of rebel-specific capital is evidently only appropriate post-conflict. Hence, there is some basis for presuming that aid and trade are differentially effective relative to the other strategies in conflict prevention, and become relatively less effective once a conflict has started.

References

Abdullah, I. and P. Muana. 1998. 'The Revolutionary United Front of Sierra Leone', in C. Clapham (ed.): *African Guerillas*, 172-193, James Currey: Oxford.

Azam, J.-P. 1995. 'How to Pay for the Peace? A Theoretical Framework with References to African Countries', *Public Choice*, 83 (1-2), 173-184, April 1995

Azam, J.-P. 2002. 'Looting and Conflict between Ethno-Regional Groups : Lessons for State Formation in Africa', *Journal of Conflict Resolution*, forthcoming.

Azam, J.-P. and A. Hoeffler. 2002. 'Violence against Civilians in Civil War: Looting or Terror?', *Journal of Peace Research*, forthcoming.

Bigombe, B., Collier, P. and N. Sambanis. 2000. 'Policies for Building Post-Conflict Peace'. *Journal of African Economies* 9: 323-248.

Burnside, C. and D. Dollar. 2001. Aid, Policies and Growth. *American Economic Review*.

Cairns, E. 1997. A Safer Future. Oxford: Oxfam Publications.

Collier, P. 2000. 'Rebellion as a Quasi-Criminal Activity'. *Journal of Conflict Resolution* 44: 839-853.

Collier, P. 1999. 'On the Economic Consequences of Civil War'. *Oxford Economic Papers* 51:168-183.

Collier, P. and D. Dollar. 2001. Can the World Cut Poverty in Half? How Policy Reform and Effective Aid Can Meet International Development Goals. World Bank Policy Research Working Paper 2403. Washington D.C.

Collier, P. and A. Hoeffler. 1998. 'On the Economic Causes of Civil War.' *Oxford Economic Papers*, 50:563-73.

---.2002. 'Greed and Grievance in Civil War', Centre for Economic Policy Research Working Paper (forthcoming).

---. 2001. 'Regional Military Spillovers', World Bank. mimeo.

Fearon, J. D. 2001. 'Why Do Some Civil Wars Last So Much Longer Than Others?' Stanford University. mimeo.

Gleditsch, K. S. and M. D. Ward. 2000. War and Peace in Space and Time: The role of Democratization. *International Studies Quarterly* 44: 1-29.

- Grossman, H.I. 1991. 'A General Equilibrium Model of Insurrections', *American Economic Review*, 81, 912-21.
- . 1999. 'Kleptocracy and Revolutions' *Oxford Economic Papers* 51:267-283.
- Hegre, H., T. Ellingsen, S. Gates, and N.-P. Gleditsch. 2001. 'Toward a Democratic Civil Peace? Democracy, Political Change, and Civil War, 1816-1992'. *American Political Science Review* 95:33-48.
- Kaplan, R. D. 2000. *The Coming Anarchy*, Random House, New York.
- Klare, M.T. 2001. *Natural Resource Wars: The New Landscape of Global Conflict*, Metropolitan Books, New York.
- McGuire, M. and M. Olson. 1996. 'The Economics of Autocracy and Majority Rule: The Invisible Hand and the Use of Force' *Journal-of-Economic-Literature* 34: 72-96.
- Murdoch, J. C., and T. Sandler. 2001. *Economic Growth, Civil Wars, and Spatial Spillovers*. University of Southern California. mimeo.
- Regan, P. M. 2002. 'Third Party Interventions and the Duration of Intrastate Disputes' . *Journal of Conflict Resolution*, forthcoming.
- Reno, W. 1999. *Warlord Politics and African States*, Boulder: Lynne Rienner.
- Saul, John S. (ed.) 1985. *A Difficult Road: The Transition to Socialism in Mozambique*, Monthly Review Press: New York.
- Sen, A. 1973. *On economic inequality*. Oxford: Clarendon Press.
- Singer, D. J., and M. Small. 1994. *Correlates of War Project: International and Civil War Data, 1816-1992*. Inter-University Consortium for Political and Social Research, Ann Arbor, Michigan.(data file).
- Small, M., and J. D. Singer. 1982. *Resort to Arms: International and Civil War, 1816-1980*. Beverly Hills: Sage.
- Small Arms Survey. 2001. Oxford University Press.
- The Stockholm International Peace Research Institute. Various Years. Yearbook of World Armaments and Disarmaments. Oxford: Oxford University Press. For recent press releases see <http://www.sipri.se>
- Walter, B. F. 2001. *Explaining the Recurrence of Civil War*. University of California, San Diego, mimeo.

World Bank. 2001. *Global Economic Prospects and the Developing Countries: Making Trade Work for the World's Poor 2002*. Washington D.C.

Young, J. 1998. "The Tigray People's Liberation Front", in C. Clapham (ed.): *African Guerillas*, 36-52, James Currey: Oxford.

To order the Small Arms Survey 2001, contact
Oxford University Press

<http://www.smallarmssurvey.org/Yearbook.html>

<http://www.oneworld.org/globalwitness/index.html>