



Aid, Policy and Peace Reducing the Risks of Civil Conflict

February 2003

Number 9



This note, summarizing recent research by Collier and Hoeffler, presents a theoretical and empirical analysis of the effects of economic policy and aid on the risks of conflict. It finds that aid and policy do not have direct effects on conflict risk. However, both directly affect growth and dependence on primary commodity exports, and these in turn affect conflict risk. Simulating the effect of a package of policy reform and increased aid on the average aid recipient country, it finds that if sustained for five years the risk of conflict is reduced by nearly 30%.

Background

The paper on which this note is based analyses the effects of economic policy and foreign aid on the risk of conflict—it is the first systematic empirical work on the question. Its foundations are the Collier-Dollar (CD) model of how policy and aid affect economic performance,¹ and the Collier-Hoeffler model (CH) of the determinants of civil war. CD quantify economic performance in aid-recipient countries as a function of aid and policy. They find that faster growth is associated with better policy, while the effect of aid depends on the level of policy. Aid and policy are thus complementary—aid amplifies the effects of policy, and policy amplifies the effects of aid. CH build an econometric model of rebellion using data for 1965-99. The average aid-recipient country had a risk of 11.7% that a conflict would erupt during a five-year period. This serves as a useful benchmark to consider the effect of interventions that aim to reduce the risk of conflict.

CH find that both economic performance and economic structure have powerful effects on the risk of conflict, so that potentially both aid and policy can be expected to affect risk. Consistent with concentration of civil conflict in low-income countries, they find that the higher the level of per capita income, the lower the risk of conflict. A second significant risk factor is the growth rate of per capita income: the slower is growth, the higher the risk of conflict. Third, increased dependence on primary commodity exports strongly raises the risk of conflict, unless dependence exceeds the rather high level of 35% of GDP, beyond which the risk begins to diminish. These economic effects on conflict are found while controlling for various geographic, social and historical characteristics.

Economic policy and international aid potentially alter the risk of conflict both directly and by changing the economic variables. We assume that the other risk factors for which we control, ethnic and religious

composition of society, and aspects of its geography and history, do not change with economic policy and aid. Knowledge of them can inform governments and donors as to the level of risk which countries face, but does not alter the effects of aid and policy on conflict risk. This assumption simply represents a limitation of the present analysis.

Aid and Policy in Theories of Conflict

The effects of aid and policy on the risk of conflict are *a priori* ambiguous. While the models are sometimes complex, the basic issues are straightforward. The prospect of capturing control of aid may increase the incentive to rebel, but if aid strengthens the government and the economy, it may make rebellion more difficult. Better policy also strengthens the economy, but it may also change the distribution of income, leading to resistance. The relative importance of these opposing effects can only be determined empirically.

Consider, first, the effects of aid. The Grossman model explicitly considers the effect of aid on conflict risk and predicts that it will make conflict more likely.² The purpose of rebellion is capture of the state for financial advantage so the larger the aid the more lucrative is the prize. On the surface, this result appears similar to the theoretical and empirical link between natural resources and conflict risk. However, there are reasons to be skeptical of aid as an incentive to rebellion. Unlike natural resources, aid is difficult for a rebel organization to capture *during* a conflict, when aid is usually reduced and in any case accrues either to the government budget or is spent on projects. The case study literature suggests that the only type of aid that rebels are able to get their hands on during conflict is food aid, since they can threaten distribution channels. Hence, the incentive effect of aid for the rebels must rely mainly on the prospect of controlling aid after victory. However, only around 20% of rebellions end in rebel victory, and the typical duration of conflict is

¹ Collier, P. and D. Dollar (2002). "Aid Allocation and Poverty Reduction." *European Economic Review*, 1580.

² Grossman, H.I. (1992). "Foreign Aid and Insurrection." *Defence Economics* 3(4).

around seven years. Thus, the prospective gains from aid must be heavily discounted by risk and time. In contrast, natural resource revenues can be captured during conflict, so they do not have to be discounted.

While the Grossman model focuses on revenues to be captured by rebellion, CH introduces costs of rebellion and a financial viability condition, which captures three theoretical factors that are found empirically to be associated with a higher conflict risk: low income, slow growth, and high dependence on primary commodity exports. Although the model does not consider aid, it can readily be introduced into the viability condition. The model stresses viability because it is agnostic as to rebel objectives. Rebels may be revenue maximizers, or they may have non-economic goals for which military confrontation is seen as a necessary means. Rebellion is in this case conducted by a not-for-profit organization. The model assumes that greed and grievance motivations are sufficiently abundant globally that where a rebellion is viable it will occur.

The second route by which aid potentially affects the risk of conflict is through its effect on growth, and hence cumulatively upon the level of income. While there is an empirical dispute as to whether aid raises growth conditional upon, or irrespective of policy, as aid raises growth it will further tighten the viability constraint on rebellion.

The third route by which aid can affect the risk of conflict is through changing the structure of income. As per capita income grows, economies tend to diversify and become less dependent on primary commodities. Since this dependence is a risk factor in the model, diversification reduces the risk of conflict. This effect is potentially reinforced by a Dutch disease effect. Aid, being an increase in the supply of tradable goods, reduces their relative price. Hence, aid should reduce the share of primary commodity exports in economic activity which, again, reduces the risk of conflict.

We now turn from aid to policy. In contrast to the effects of aid on conflict risk, there are no formal models that analyze the effects of policies. This paper uses the World Bank's measure of policy, which rates client countries on 20 aspects of policy, institutions and governance. Although these ratings have the potential to be able to differentiate among policies, in practice they are sufficiently highly correlated that policy 'improvement' may best be interpreted as a change in policies across a wide range.

Radical critiques of 'structural adjustment' policies commonly portray them as sacrificing equity for growth and efficiency. If this were the case, then 'better' policy as measured by the World Bank (both cross-section and inter-temporally), might potentially be associated with a higher risk of conflict. Even if 'better' policy is not associated with greater inequality, a *change* in policy will inevitably redistribute income, and this

redistribution may be resisted. Generally, bad policies are not there by mistake, they are there because they favor some powerful group which in some cases may violently resist policy reform, thus increasing the risk of conflict. Hence, both the level of policy and the change in policy may potentially have adverse effects on conflict risk. However, policy improvement is also associated with better governance. Liberalization tends to reduce rents and increase transparency, presumably associated with reduced grievance against the political elite.

Policy will also affect the growth and structure of the economy. An 'improvement' in policy as defined by the World Bank normally aims to raise the growth rate. The consequences of policy improvement for conflict risk then follow from the discussion above. Faster growth reduces the risk of conflict through three routes: a direct effect, an effect via the cumulative increase in income level, and an effect via the effect of the level of income on the composition of economic activity. In addition to its effect on the growth rate, a policy improvement may have some direct effect on the composition of economic activity, although the direction of change is *a priori* uncertain. Development is usually associated with declining dependence on primary commodity exports, and we can presume the process is accelerated by better policies. Since primary commodities typically earn higher rents than manufacturing and services, their production is likely to be less sensitive to poor policy. Hence, policy improvements might reduce primary commodity dependence. However, some critiques of poor economic policy in developing countries have focused on over-taxation of primary commodity exports. Improvement of these policies would *raise* the share of primary commodity exports in economic activity. Thus, the sign of the effect cannot be determined *a priori*.

Quantifying the Effects of Aid and Policy

In the subsequent analysis we consider variations in aid and policy relative to a baseline case. The baseline is a hypothetical country with characteristics set at the mean of all the aid-recipients in the CH sample. Prior to any change in aid or policy the hypothetical country faces a risk of conflict of 11.7%. From this baseline we investigate the effects of changes in aid and policy.

The Effects of Policy Improvement. In order to quantify the effects of policy on conflict risk, we need to be able to measure policy over a long period on a comparable basis for many countries. Since 1977 the World Bank has measured economic policy, country-by-country, on a six-point ordinal scale. We use this index, the Country Policy and Institutional Assessment (CPIA), which is the most comprehensive attempt to measure economic policy. Although subjective, the scoring is based on a set of specified criteria, and the ratings of country staff are carefully reviewed, regionally and centrally, against pre-established benchmarks to try to ensure common and consistent

evaluation criteria. Despite the limitations inherent in a subjective index, the CPIA has the advantage of including many policies which would simply be omitted if we confined our analysis to policies that can be objectively quantified. Another major advantage is that since the CPIA is constructed by Bank country economists, because it reflects their judgment it is also proxies their advice. If, for example, we were to find that policy improvement increased the risk of conflict, this would be an indication that Bank advice was exacerbating the risk of conflict.

In our first simulations we consider the effect of an improvement in the CPIA score by one point, sustained for five years, on the risk of conflict. Such a policy improvement is roughly equivalent to the difference in policy between the average ratings for sub-Saharan Africa and that for China as of 1995.

We first investigate whether, in addition to any indirect effect of policy improvement on conflict risk via the variables in the model, there is also a direct effect. A change in policy is likely to alter the pattern of grievances in society. 'Bad' or deteriorating policies could obviously intensify grievance, but even good or improving policies might heighten some grievances by limiting the opportunity for rent extraction. Recall that the model does not incorporate such effects and so predicts that changes in grievances have no effect on the risk of conflict. To investigate this potential we add the CPIA to the CH specification of conflict risk, thus controlling for both growth and the other risk factors. Because the CPIA is only available since 1977 and only for countries that borrow from the World Bank, there is a severe reduction in sample size. Whereas CH base their results on 750 episodes, the inclusion of the CPIA reduces the sample to 285-298.

We add to our baseline model of conflict risk a measure of the change in policy during the five years prior to the episode being considered. The variable is insignificant, suggesting that other than via its effect on economic growth and structure, policy improvement does not affect conflict risk. Because the CPIA is only available from 1977, the introduction of a lagged change in policy drastically reduces the sample to the period 1985-99, so that many other variables lose significance. Although policy change is not significant, this is only weak evidence that it does not have a direct effect. However, the coefficient sign is negative, indicating that if anything, policy improvement directly *reduces* conflict risk. When we replace the change in policy with its average level during the five years prior to the episode we again find that the coefficient is insignificant and negative.

To summarize, none of these results suggest that either good policies or policy improvement, as defined by the World Bank, directly increase the risk of conflict. We find no significant direct effect, but to the extent that we find effects at all, they are that good, and

improving policies tend to reduce risk directly. In the subsequent analysis we ignore any such favorable effect. Since policy change has economic effects which reduce risk, it is more important for us to establish that there is no evidence for an *offsetting* direct effect than that there is any reinforcing direct effect. Since neither the level of the CPIA, nor its change, increase the risk of conflict, there is indeed no evidence for an offsetting effect: policy improvement does not appear directly to increase the risk of conflict. By ignoring any reinforcing effect whereby policy improvement might directly *reduce* the risk, we create a lower-bound estimate of the effect of policy improvement on risk reduction in which any effect of policy works through the other variables in the CH regression.

The most evident indirect route by which policy will affect the risk of conflict in the model is via its effect on the growth rate. CH find that controlling for other variables economic growth significantly reduces the underlying risk of conflict. CD investigate the relationship between economic policy as measured by the World Bank and growth. They find that policies significantly affect growth, partly direct and partly conditional upon aid receipts. The effect of policy improvement on the growth rate thus depends upon the level of aid. Here, as noted, we simulate the effect of aid and initial policy on the mean aid-recipient. A one point improvement in the CPIA raises the growth rate for such a country by 1.25 percentage points. Within the model, not only does growth have a direct effect on the risk of conflict, it also has a secondary effect by raising income levels. Sustained over a five year period, the better policy permanently raises income by around 7%, thus reducing conflict risk because higher income makes a society safer.

Both directly, and through the higher income level generated by the five years of sustained growth, policy reform can also affect conflict risk by changing economic structures. In the model the *structure* of income affects the risk of conflict. Recall that *a priori*, it is ambiguous how an 'improvement' in the CPIA might directly affect primary commodity dependence. The effect of policy on dependence is difficult to establish empirically because causality also runs in the other direction—there is a weak long-term tendency for policy to be worse in societies that depend on primary commodities. To control for this we investigate the effect of policy and income in a panel of countries. We find that both the income level and policy have significant and reasonably substantial effects. A 1% increase in the level of income, controlling for policy and aid, reduces primary commodity dependence by 0.7%. The direct effect of a one point improvement in policy on economic structure, controlling for the level of income and aid, is smaller, around 0.1%. Between the income and direct effects, a one point improvement in policy sustained for five years would therefore reduce primary commodity dependence by around 0.8%.

In summary, economic policy improvement is effective in reducing risk via its effect on economic structure and its effects on growth. In turn, growth has both a direct effect on risk reduction and indirect effects via the level of income and the structure of the economy. After five years, the higher income is about half as important as the direct effect of faster growth. Since the effect of primary commodity dependence upon the risk of conflict is substantial, the effect of policy improvement on risk via this route is quite large. The combined effect of a one unit improvement in the CPIA score on the risk of conflict for the mean aid-recipient would reduce the risk of conflict from 11.7% to 9.1%, or by around one fifth.

The Effects of Aid. We now turn from the role of government in conflict prevention to the role of donors. We consider the effect of an increase in aid of one dollar per capita, sustained for five years. We do not investigate changes in the composition of aid. Potentially, an increase in aid may induce policy improvement and so reduce the risk of conflict through the routes considered above. However, since we have already investigated the effect of policy improvement explicitly, we now take policy as given. Moreover, evidence suggests that the effect of aid on policy is on average modest. Dollar and Svensson investigate 220 aid programs and fail to find a statistically significant effect of aid volumes on policy.³ We again consider the effects for a country with the characteristics of the mean aid-recipient.

We first consider whether aid might have a direct effect on conflict risk, controlling for the variables in the CH model. Recall that *a priori* the sign of the effect varies depending on the model. We test for the direct effect of aid by including aid/GDP in the CH model. Since the opposing effects may be differentially strong at different levels of aid, we include a variant in which both aid and its square are explanatory variables. Clearly, there is a potential endogeneity problem: donors are likely to reduce non-military aid in conflict situations. If this is not allowed for, then aid will appear to reduce the risk of conflict when in fact causation is in the other direction. We allow for this by lagging aid flows. The aid/GDP coefficient is insignificant and negative. As with policy, this suggests that there is no direct effect of aid on conflict risk, but that should there be such an effect it is more likely to be benign. Recall that in the Grossman model aid raises the risk of conflict by being a lure for capture, whereas in CH it reduces conflict risk by raising government deterrence expenditures. Either both of these postulates are wrong, or they are both right but offset each other. Were one right and the other wrong we should have found a significant net effect.

Now consider the effect of aid on conflict risk via growth. A corollary of the CD findings is that, conditional upon policy, aid raises growth. For the mean aid recipient, an additional one dollar per capita would raise the growth rate by around 0.25%. Recall that this directly reduces conflict risk and additionally has two indirect effects. Sustained over five years growth would raise the level of income by around 1.25% and this would in turn reduce risk. Further, as discussed above, the higher income level would reduce primary commodity dependence by around 1%, also reducing conflict risk. In addition to its effect on growth, aid is postulated to alter the structure of the economy, as a result of 'Dutch disease'. We investigate the relationship between primary commodity dependence and aid and find that there is indeed a significant Dutch disease effect: aid reduces primary commodity exports as a share of GDP.

The overall effect of the increase in aid is to reduce the risk of conflict from the baseline case of 11.7% to 11.5%. Because aid and policy are complements, the increased aid now has a greater effect on risk reduction. Despite the fact that with policy improvement the risk is already reduced to 9.1%, the aid achieves a larger absolute reduction in risk (and, *a fortiori*, a larger proportionate reduction) to 8.4%. Hence, this combination of policy improvement and aid reduce conflict risk by around 28% over five years.

In sum, previous analytic studies of the effect of aid on the risk of civil conflict concluded that it would increase the risk by making the capture of the state more attractive. Our research finds that, controlling for the effect on growth, aid has no significant direct effect on conflict risk. This in no way absolves donors, including the World Bank, from the need to scrutinize their aid programs carefully to assess whether particular components might exacerbate conflict. But it does suggest that we should be wary of generalizations from such horror stories that imply that aid is normally part of the problem—its effects on growth imply that it is normally part of the solution..

CPR Unit

This Note was prepared by Ian Bannon of the Conflict Prevention and Reconstruction (CPR) Unit based on the research of Paul Collier and Anke Hoeffler presented in their paper *Aid, Policy and Peace*, forthcoming in *Defence and Peace Economics*. This note series is intended to disseminate good practice and key findings on conflict prevention and reconstruction. The series is edited by the CPR Unit in the Social Development Department of the Environmentally and Socially Sustainable Development Network of the World Bank. The views expressed in these notes are those of the authors and do not necessarily reflect the views of the World Bank Group, its Executive Directors, or the countries they represent. CPR Dissemination Notes are distributed widely to Bank staff and are also available on the CPR website (<http://www.worldbank.org/conflict>).

³ Dollar, D. and Svensson, J. (2001) "What Explains the Success or Failure of Structural Adjustment Programs?". *Economic Journal*, 110(475).