

Pacifying Aid: the Effects of Foreign Aid on Civil War Duration

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First Draft
2 September 2010

Abstract

Does foreign aid prolong or shorten civil war? The literature remains inconclusive about this issue. In this paper, we argue that aid should not be considered as a unitary phenomenon: bilateral aid and multilateral aid are very different types of development assistance and therefore should have divergent effects on conflict. Our theory predicts that aid has a pacifying effect only if it concerns multilateral assistance and only if it allocated to the very poorest countries. We test our predictions employing first order Markov transition models. The evidence broadly supports our argument, suggesting that multilateral aid shortens civil wars, conditional on the level of per capita income.

Introduction

The record of international development assistance has been a major issue of contention among politicians, academics and the media in recent years. Even though the majority of the academic debate focuses on the economic effects of foreign aid, recent years have witnessed an increase in scholarly attention for the relationship between aid and domestic conflict. Most of these studies discuss the effects of aid on civil war onset (Grossman 1992; Arcan and Chauvet 2001; Collier and Hoeffler 2002; Sollenberg 2009). Yet, the relationship between aid and the duration of conflict has received much less attention¹. This is rather surprising as many countries continue to receive significant sums of development assistance during conflict years, which should have important implications for governments, rebels and citizens alike.

This paper addresses this issue, namely the effects of foreign aid on the duration of civil conflict. We argue that under certain conditions, foreign aid exerts a pacifying effect on countries at war. Specifically, we contend that multilateral development assistance reduces the duration of civil war in the world's poorest countries, whereas multilateral aid to economically more advanced countries does not affect conflict duration. Multilateral aid is mostly allocated through development projects which provide a public good or service in countries where the government is not able to do this. In very poor countries, governments are often unable to provide basic facilities for sanitation, water supply, food and health services. This is especially the case during conflict, when supply lines are severed and/or funds rerouted to the military. Aid projects in these countries address basic needs and thereby effectively substitute for the government by providing essential public services. In this way, development assistance improves the economic situation for citizens during civil war, reducing incentives to

¹ The only study on foreign aid and conflict duration that we are aware of is by De Ree and Nillesen (2009).

rebel against the government. Yet, it is unlikely that this is the case in more developed countries. Here, aid projects are more focused on ‘higher level’ needs such as improvement of infrastructure, so aid agencies do not substitute for the government in addressing basic needs. This makes it less likely that foreign aid reduces incentives to continue fighting in these countries. The effect of aid on conflict duration thus depends on the type of aid and the economic development of the recipient country.

Our study aims to contribute to the literature in the following ways. First, it addresses the debate on the determinants of civil war duration in which several studies have found that international interventions prolong domestic conflict (Regan 2002). We argue that foreign aid is an example of an intervention which can shorten conflict. Secondly, we add to the discussion on the effects of foreign aid, which have been somewhat confined to economic factors. Third, by distinguishing between bilateral and multilateral aid, we demonstrate that these two types of aid flows can have considerably different effects. Finally, we take the current stream of literature further by analyzing the effect of aid on duration, adding to the existing discussion on aid and civil war onset.

We test our hypotheses by analyzing a cross-section time-series dataset, based on the conflict dataset collected by PRIO/Uppsala. Specifying first order Markov transition models, we find consistent and robust support for our theory. Foreign aid shortens civil conflicts in the poorest countries, but most of this effect comes from multilateral aid. Neither multilateral nor bilateral aid helps to reduce conflict in economically advanced developing countries.

This paper is organized as follows. We first review the literature on civil war duration, eventually showing how foreign aid fits into the debate on fighting incentives and mobilization. We subsequently test the predictions from our theoretical argument

using a first-order Markov chain transition model, followed by a discussion of the results.

Civil War Duration in the Literature

We can broadly define the explanations on civil war duration in two (often overlapping) theoretical categories: 1) conflict duration as function of initial motives to fight, 2) conflict duration as function of conflict dynamics.

Civil war duration as function of motives to fight

The duration of the civil war can be a function of the contested issues that started the uprising. Therefore, the intractability of the original motives of the civil war onset and the capacity to accommodate the reasons to fight should be directly related to the duration of the conflict. These motives can be called “prior political grievances” (Balch-Lindsay and Enterline 2000:622) or “enduring internal rivalries” (DeRouen and Bercovitch 2008). It has been pointed out that some issue can be less reconcilable than others (Walter 2009). For instance fighting for political power can be accommodated by reaching a power-sharing agreement². On the other hand, fighting for autonomy and claiming the independence of a territory (separatist conflicts) can be much more difficult to accommodate (Balch-Lindsay and Enterline 2000; Toft 2002; Walter 2003). Alternatively, if the friction hinges on ethnic cleavages or cultural identities (Gurr 2000:66) the tension draws such bold division that it can be more difficult to address it with a bargaining process (Fearon 2004).

Prior grievances can lead to longer civil wars since, as argued by Gurr (1993) and Harff (1986, 1987), preexisting internal cleavages are likely to intensify conflict

² Though, it has been suggested that rebels moved by ideological goals (“revolutionaries”) tend to not accommodate different political solutions (Steadman 1991).

between parties and make it more difficult to reach an agreement between belligerents, thereby prolonging a conflict. Balch-Lindsay and Enterline (2000) hypothesize a positive relationship between prior political grievances and conflict duration. However, their empirical test, which employs as a proxy for prior grievances a conflict history of the country, finds the opposite relationship, even though it is not statistically significant.

Another motive that can trigger violent mobilization and affect the duration of conflict as well is the political repression of a regime. Collier et al. (2004) argue that political repression can explain conflict duration, where more repression leads to longer conflict. However, they do not find support in their statistical models, which show an opposite (but insignificant) relationship. In order to test this hypothesis they use the Polity scale, using democracy as a proxy of “political openness”.

In turn, the role of institutions and their degree of “political openness” have been broadly used to study the duration of civil war. In fact, “democracies enable aggrieved groups to work for redress through institutional means. The argument might further imply that if a democracy does witness a civil war, it should be easier to resolve” (Fearon 2004:288). Democratic institutions might facilitate bargaining and credible commitments to an agreement. On the other hand, a selection effect might work in the opposite direction. It might be that if “a democracy falls prey to a civil war, it probably faces an obdurate rebel group which militates against the finding of a bivariate relation between a quick settlement and democracy” (Fearon 2004:288). However, Fearon’s results, even though they are positively related to conflict duration, are also not statistically significant. Buhaug, Gates, Lujala (2008) find that democratic countries tend to experience longer domestic conflict. They suggest that “general reluctance among democratic regimes to apply massive military force to quell peripheral separatist insurgencies” (2008: 563) could be the explanation of this finding mentioning cases

such as Israel, India and United Kingdom. On the same lines are the results of Cunningham, Gleditsch and Salehyan (2009). They find that “regardless how they measure democracy, democracies experience longer conflicts” (2009: 586). First they notice there are a large number of long-lasting civil wars in democracies (Colombia, Israel, India and Northern Ireland) and then they provide a possible explanation of this finding: in democracies the use of military measures against insurgent can be more constrained than in authoritarian countries by the important of public opinion. Therefore, the most consistent empirical findings on political institutions and duration of civil war suggest that countries which are democratic and experience civil wars, on average, face longer conflicts than less democratic countries.

Another cause of collective political mobilization could be based on social-economic reasons. Collier, Hoeffler, and Soderbom (2004) suggest that “the more unequal is a society, the larger are the gains from moving to the top of the ranking” (2004:255). They find that countries characterized by income inequality, using as proxy a Gini index, experience longer conflicts. However, at a theoretical level this variable has a blurring effect (noticed also by Collier and colleagues), in fact both their explanation and proxy tell us something about the motives and opportunity costs, a concept which is more related to conflict dynamics of mobilization and ongoing struggle.

Civil War Duration as a Function of Conflict Dynamics

Some scholars have argued that most conflicts are the result of miscalculation or misperception (Jervis 1976; Hirshleifer 2001). Therefore, some important elements explaining the duration of the conflict emerge during the conflict. Moreover, the first element that parties will evaluate efficiently only during conflict are the costs of

fighting (Powell 2004). It could be argued that the more costly a war is, the shorter it should be. In fact, the expected utility of the parties decreases with the cost of maintaining the conflict (Mason, Fett, and Weingarten 1999; Balch-Lindsay and Enterline 2000). Balch-Lindsay and Enterline (2000) find that battle deaths per capita increase the hazard rate of ending a civil war. As a consequence, the cost of fighting should shorten the length of the fight. Brandt et al. (2008) find that the average duration of a conflict is positively related (although not in a statistically significant way) with conflict-related deaths. However, using competition risk models, they are able to disentangle the different effects on different civil war outcomes. They highlight that actually high costs usually lead to a shorter period of those conflicts that lead to a treaty; but to longer conflicts when they lead to a victory for the government. These opposing results blur the pooled results. Cunningham (2006) find that battle deaths tend to prolong a conflict instead of shortening it. Fearon (2004) does not find any effect of conflict deaths on duration of civil war. On this aspect of the domestic conflict, fighting cost, the empirical results are discouraging and inconsistent. Moreover, it should be noticed that the data available on death toll at this point (Lacina and Gleditsch 2005) are usually an overall assessment of the deaths of a conflict. In most of the previous cases the authors have divided the total casualties by the number of the war years (some of them standardizing with population size or taking natural logarithms). This implies a constant intensity of the conflict and therefore a constant cost of fighting, which clearly is a very strong and problematic assumption.

Collier, Hoeffler and Soderbom (2004:255) stress that the cost of conflict to society influences the length of a conflict. If this cost is very high it should be possible to find a mutually beneficial settlement, and therefore given the overall cost of fighting to society the conflict should be shorter. This society cost has been operationalized as

initial per capita income, assuming that wealthier societies have more to lose than poorer ones during a conflict. In fact, Collier et al (2004) find empirical evidence to support this claim, while others find that the effect has the same direction, but not in a statistically significant way (Brandt et al. 2008; Fearon 2004; Cunningham 2006).

Yet, not only cost but final payoffs (or: what the winners get) have been pointed out as crucial elements to explain the duration of conflict (Fearon 2004, Mason & Fett 1996). If the rebellion is understood as an investment during the period of fighting, the rebels incur net cost and they will weight them (Grossman 1995; Collier&Hoeffler 1998), therefore “the longer the expected duration of war, the higher are the costs and the more heavily discounted are the benefits. A key prediction is that the higher the payoff from the victory, the longer will be the warranted rebellion (Collier et al. 2004). The post-conflict payoff can be operationalized by the income of pre-conflict primary commodity exports or – with a more altruistic version- the duration of a conflict is positively related to the severity of pre-conflict political repression or level of democracy in the country. The relative final payoff of the conflict is larger in unequal society where moving to top of the revenue ranking through rebellion deeply better of the actors, therefore it has been argued inequality is positively related to the duration of conflict. (Collier et al. 2004:255). In this way, rebellions are understood as business (Collier 2000) or at least as being constrained by financial opportunities (Collier & Hoeffler 1998). In line with this logic, primary commodity exports have been found as a possible element for this mechanism and therefore the trend of the world market price of primary commodity exports can finance rebel activities (when prices are high) or constrain their activities (when they are low) and therefore in last case shorten the conflict.

Foreign Aid and Civil War

Foreign aid has been discussed in this debate mostly as a determinant of civil war onset. Even though it has been argued that foreign aid can stabilize countries or at most has no effect on conflict (Collier and Hoeffler 2002), the literature has not reached an agreement (Arcan and Chauvet 2001; Sollenberg 2009) on this matter. Collier and Hoeffler (2002) argue that aid can decrease the likelihood of civil war in three ways. First, aid increases the government's budget and, which strengthens state capacity and the provision of public goods. Second, foreign aid can stimulate economic growth, increasing overall wealth and reducing incentives to rebel against the government. Third, aid can stimulate the economy by encouraging the diversification of the economy, diminishing a dependence on primary commodity and reducing inequality. However, the literature does not at all unanimously find that foreign aid increases economic growth. Furthermore, the analyses of Collier and Hoeffler (2002) do not back up completely their hypothesis that foreign aid decreases the risk of conflict, as their results are not statistically significant. Moreover, it has been suggested that foreign aid can increase government military capacity, because aid has shown to be fungible (Collier and Hoeffler 2007, Feyzioglu, Swaroop, and Zhu 1998).

On the other hand, Grossman (1992) has formally demonstrated that foreign aid can increase the likelihood of civil war when rebel groups want to assume power to exploit foreign aid transfers. Therefore, aid enhances the risk of conflict by triggering rent-seeking behavior of political actors. In this way, aid has been compared with the natural resources curse (Ross 2004) as it makes the business of rebelling more profitable. Foreign aid thereby increases the payoffs to rebels of initiating a civil war by increasing the value of capturing the state (Grossman 1991; Grossman 1992).

Recent research on foreign aid and conflict onset finds a direct connection between changes in aid and conflict. Negative aid shocks increases the likelihood of onset; in fact, shortfalls thus should both motivate and embolden rebels to take up arms (Nielsen et al. 2010). Ruggeri and Schudel (2010) find that foreign aid in corrupt countries decreases the risk of civil war outbreak. They suggest that foreign aid can be use to deter antagonistic elites to organize rebellion and, actually, countries where corruption is high should be more able to use foreign aid for this goal.

To our knowledge, the only study analyzing the role of foreign aid in the duration of civil conflict is by De Ree and Nillesen (2009). They find that aid reduces civil war duration; they suggest that an explanation is government's ability to increase military spending and thus strike down rebellion. However, we have to link the explanation and findings on foreign aid and onset of civil wars with theories and findings on duration of civil wars.

In sum, the literature suggests that the following mechanism by which foreign aid decreases the duration of the conflict. In the first instance, aid increases (at least local) income by transferring capital. If the main reason of the fight is economic inequality, foreign aid can substitute government expenditure and thereby decrease the initial motives to fight. Taking into account the fact that fighting is costly (and the outcome of rational deliberation), foreign aid should decrease the incentive to fight. In fact, as stressed in the literature (Fearon and Laitin 2004), the wealth of the citizens can be related to the cost-opportunity of fighting. If it is possible to increase the benefits of not fighting through an injection of aid, rational actors will opt for ceasing to fight.

However, two factors need to be taken into consideration here. First, evidence suggests that aid is fungible and could therefore be absorbed by government officials. This would not only reduce the economic effects of aid for citizens, but also cause anger

among them, fuelling unrest. Yet, we should consider the fact that aid is not a unitary phenomenon. The actors, and consequently the incentives behind bilateral aid are quite dissimilar from those behind multilateral aid. Bilateral aid generally follows the political interests of donor countries to a large degree (McKinlay and Little 1977; Maizels and Nissanke 1984; Alesina and Dollar 2000), while multilateral aid often echoes the results of bargaining between partner states and therefore is more prone to be focused on recipient needs (Neumayer 2003). Another main difference between these two main types of aid is that whereas bilateral aid consists for a large part of general budget support to the recipient government, multilateral aid is generally allocated through specific development projects. This gives the recipient government much less discretion over the use of aid, sometimes bypassing central governments altogether. This is an important distinction, because multilateral assistance thereby affects the local economy and citizens in a much more direct way than bilateral aid. In other words, multilateral development projects should be effective at providing public services and boosting the local economy in the parts of developing countries in which they are active, thereby reducing citizen unrest and incentives to fight.

The second, related factor that influences the effects of aid on conflict duration is the economic development of the recipient country. We provide two reasons for this argument. First, we would expect that the marginal effect of foreign aid on the incentive to fight is more substantial where the average wealth is low. This means that the elasticity, and the substitution effects on GDP per capita, is higher in poorer countries, and therefore more efficient in these countries. Second, we expect that multilateral foreign aid projects in wealthier countries will target different goals and are less engaged in projects that tackle poverty and other basic needs. This should cause

development projects in comparatively advanced developing countries to be less effective at addressing civil unrest.

In all, this argumentation renders the following hypotheses:

H1. Aggregate foreign aid only reduces the duration of civil conflict through its multilateral channels.

H2. Multilateral aid is effective at shortening civil conflict only in the very poorest developing countries at war.

H3. Bilateral aid is not effective at shortening conflict irrespective of the economic development of the recipient state at war.

Research Design

This method compute the probabilities that a unit under observation starting from a status moves to another, it follows a matrix representation (Gleditsch and Ward, 2008):

$$\begin{bmatrix} P_{00} & P_{01} \\ P_{10} & P_{11} \end{bmatrix}$$

It summarizes what a first order Markov model computes: the first row corresponds to the cases coming from a non-present phenomenon, in our case peace, and this unit can end up to two outcomes: peace or conflict. This scenario describes the risk of conflict onset. The second row explains the cases coming for a present phenomenon, conflict, and facing two possible scenarios: continuing the conflict or reaching the peace.

Therefore, it computes the likelihood of staying in a conflict status, put it differently the probability of continuing conflict. Beck et al. (2002) have express Markov transition models as a system of two probit equations:

$$\Pr(CW = 1 | CW_{t-1} = 0) = \text{Pr obit}(x_t\beta)$$

$$\Pr(CW = 1 | CW_{t-1} = 1) = \text{Pr obit}(x_t\alpha)$$

Notable this is model start form the idea of Beck, Katz and Tucker (1998) where modeling binary time-series cross-section (BTSCS) with temporal dependency was close to employ a duration model (see Cunningham 2006 for a sue of BTSCS and duration of civil war). Hence, Markov transition models allow one to model both the ‘emergence’ and ‘onset’ of an event as well as the ‘survival’ or ‘duration’ of the event itself in the same model. It allows including covariates that specifically affect event onset, that specifically affect event duration, and that effect both onset and duration. Therefore, the analysis is conditioned on whether the dependent variable was a 0 or a 1 in the previous period. This method can allow comparing the effects of same covariates on different out phenomena: onset and duration of civil war.

Dependent Variable

The baseline model employs data from Gleditsch’s study on transnational dimensions of civil war (2007). Therefore for data on civil war, we rely on information from the Uppsala/PRIO armed conflict data project (Gleditsch et al. 2002; Harbom & Wallensteen, 2005). The lower casualties threshold in these data (i.e. more than 25 deaths in a year) helps to address the previously noted problems with a high threshold. For the onset model the main conflict measure takes a value of 1 if an intrastate or

internationalized civil war breaks out in state i at time t , and excludes subsequent years of conflict. However, as explained above in the description of Markov transition model, for the duration model we keep only observation for countries that were experiencing conflict at $t-1$ and we employ as dependent variable a measure that takes a value of 1 if an intrastate or internationalized civil war breaks out in state i at time t .

Independent Variables

The main explanatory variable in this study is international development assistance. Traditionally, this data is collected on a yearly basis by the Development Cooperation Directorate (DCD-DAC) of the OECD. Recently however, this data has been made available freely by the World Bank, which has combined this data with its own. The variables that we use include data on bilateral aid flows, multilateral aid flows and aggregate aid flows. All data are in constant 2000 US Dollars and consist of aid commitments rather than disbursements. This may seem illogical, but in practice almost all aid agencies record their commitments, while data on disbursements is less well documented and suffers from reliability problems. All aid data is in constant 2000 US Dollars. We employ the natural logarithm of these variables, lagged by one year.

Our theory predicts a conditional effect of aid on conflict, the intervening variable being economic development. We employ data on GDP per capita (natural logarithm) from Gleditsch (2002), which to our knowledge is the most complete source of data on this variable.

Control Variables

We include a number of control variables in our analysis. We start our estimations by replicating Gleditsch (2007); as a consequence, we have used the same data as his paper.

These variables include data on conflict in adjacent territories, the existence of democracy in neighbouring countries, the existence of rebels with bases across international borders, the size of regional trade, the size of the population (log), and ethnic dispersion. We have also included data on conflict intensity and incompatibility of rebel group purposes (PRIO/Uppsala CSW dataset), since Buhaug et al. (2008) found that some covariates had different effects depending on conflict type and intensity. The data on democracy we have drawn from the Polity IV dataset (Jagers & Gurr 1995). Finally, we include a dummy variable for the existence of oil production (UN Commodity Trade Statistics Database).

Findings

We start our analysis by presenting a few baseline models to check if there is a statistical relationship between foreign aid and conflict in general (which we do not expect) and between different types of aid and conflict, specifically if made conditional on economic development (which we do expect).

Comparing Onset and Duration

Table 1 shows four baseline models on both onset and transition of civil conflict. The first model is an approximate replication of Gleditsch (2007), which we consider as our baseline model. Our findings are quite similar to his. Model 2 includes (aggregate) foreign aid, but its effects are not statically different from zero. Models 3 and 4 are Markov Chain transition models, which effectively estimate the coefficients of the explanatory variables on the probability that a conflict takes place, given the fact that a conflict took place in the previous year. We added two variables to these specifications, both of which are common in the conflict duration literature. First, we observe that

(similar to the case of onset) aggregate foreign aid has no significant impact on conflict duration. However, the two sets of models do show considerable differences with regards to other variables. Perhaps of most interest to us, per capita income appears to make the outbreak of conflict less likely, but not its duration.

-Table 1 Here-

We find thus no results to speak of regarding the relationship between aid and conflict. Yet, we have argued above that aid is not a uniform flow of capital: bilateral aid and multilateral aid are different from one another both with respect to the actors that are source of these funds as well as the way in which they are allocated to recipient countries. As a consequence, we disaggregate these two types of aid and estimate their effect on conflict duration. The results of these specifications are displayed in Table 2. In short, there appears to be no significant relationship between the two aid types and conflict duration. Again, conflict intensity and population size clearly exert a positive effect on conflict duration, while regional trade seems to shorten conflict. These results are in line with the findings of most studies in the literature.

- Table 2 here -

Conditional Effects of Foreign Aid on Conflict Duration

Our theory makes predictions about the effects of different types of foreign aid on conflict duration, conditional on the level of economic development. In Table 3 we report the results from the models in which we have interacted (multiplied) aggregate foreign aid, bilateral aid and multilateral aid per capita with the level of GDP per capita.

As these specifications are nonlinear one cannot simply interpret the interaction term as in standard linear models (Brambor, Clark and Golder 2006). We have therefore graphed the marginal effects of the aid variables over the distribution of the intervening variable GDP per capita. Please consider Figures 1, 2 and 3 for the graphs of respectively aggregate ODA, bilateral aid and multilateral aid.

-Table 3 here-

We first consider Model 7 which displays the effect of aggregate ODA, conditional on per capita income. Note that both constitutive variables have negative and significant coefficients once the interaction term is included in the specification. Statistically these can be interpreted as the effects of each variable on conflict duration given that the other variable is equal to zero. Substantively then, this means that aid decreases the duration of conflict if per capita income would be zero, while per capita shortens conflict if no aid is given. Even though having a GDP per capita of zero is practically impossible, the first half of this interpretation does appear to be in line with our prediction that aid works better to stop conflicts in poor countries. However, our theory makes no predictions on the effects of per capita income itself.

- Figure 1 here -

The coefficient of the interaction term is positive and significant, suggesting that the effect of aid on conflict duration is increasing in the level of per capita income. Put differently, aid becomes less effective in stopping conflict as a country is wealthier. This result supports our theory, but as we mention above one cannot simply interpret

this coefficient and draw conclusions. We have graphed the interaction effect using Fred Boehmke's 'grinter' ado file in Stata. Please consider Figure 1, which shows the predicted marginal effect, its confidence intervals and the Kernel distribution of the intervening variable. We can see that the effect of aid on conflict duration is negative and significant when per capita income is below approximately 7.5. This corresponds to about USD 1,800 per capita, which is roughly the income of Djibouti and Angola, or India in the mid-1990s. Most Sub-Saharan African countries fall within this category. Above this threshold the effect is longer significantly different from zero. Another remarkable observation is that above a yearly per capita income of USD 8,000 (Russia post-2000, South Africa post-1995) the marginal effect of aid per capita on the likelihood of civil war continuation become positive and significant. In other words, allocating aid to wealthier developing countries makes conflict longer. Having said this, countries that fall within this category rarely receive significant amounts of aid – making it more likely that it concerns a matter of extrapolation.

- Figure 2 here -

Now we turn to the disaggregated types of development assistance. Model 8 addresses bilateral aid. Neither the constitutive variables nor the interaction term has a coefficient that is statistically significant. The graph in Figure 2 confirms this result: even though the direction of the line is similar to the one in Figure 1, the confidence intervals are much larger, making it impossible to draw valid inferences on the relationship. Multilateral aid, however, has a clear relationship which is similar to that of aggregated aid. This suggests that the coefficient of aggregated aid in fact shows the effect of multilateral aid on conflict continuation given different levels of income. Figure 3

corresponds to model 9 to the extent that the predicted interaction effect line is even steeper than in Figure 1.

- Figure 3 here -

The results of the three interactive models all indicate that multilateral aid has a pacifying effect on conflict countries when these countries are poor. The effect gets washed away when countries are less poor. Bilateral aid does not have an effect on conflict, at least not to any degree of significance. These results correspond largely to our predictions. We have argued that multilateral aid should have a pacifying effect on poor countries at war because of the type of service that it provides to citizens whose often desperate situation could otherwise drive them to join a rebellion. Bilateral aid is predominantly allocated in a way that is more focused on the government and thereby sees fewer funds trickle down to ordinary citizens. In this way, multilateral aid reduces incentives to fight in a way that bilateral aid is less able to do.

The other results are mostly in line with the literature. Conflict intensity increases the duration of a conflict, as bloody wars are less easy to resolve. Conflicts in populated countries take longer as political preferences are more likely to diverge here, while it is more costly for governments to project their power over a large population. Finally, rebel groups are less easy to isolate in a large country.

Robustness

We have some missing data for our main explanatory variables, namely we can use only 84% of all observations (934 out of 1,110 cases) of the baseline model. At this stage in order to verify whether these missing cases affect our results we have employed two

strategies. First, we have replaced the missing cases as zeros; we assume that if the World Bank does not report any aid, this means that no aid was allocated in that particular country year. Models with aid per capita with imputed zero hold the same results. Second, instead of assuming that the missing cases are zero, we have computed a moving average in order to capture the trend of foreign aid. Again, the results remained stable.

Foreign aid policy has changed during the past. This was due to the geopolitical structure of the international system and the development of international organizations. In different decades there have been different amounts of foreign aid allocated to countries. Since these different patterns could influence our results, we have run models also with decade dummies, but our results hold.

It is broadly recognize that when dealing with binary time-series cross-section (BTSCS) is correct to model the temporal dependence (Beck, Katz, Tucker 1998). Even though, Beck et al. (2001) employing first order Markov transition model do not explicitly suggest to control fro temporal dependency , we challenge our results with a further robustness check. In fact, in our main tables we deal with possible temporal dependence employing a country clusters, therefore modeling temporal dependence as a “nuisance”. However, we have used also the conflict years and its cubic splines in order to check our results; our findings remain robust.

Discussion

Does foreign aid have a pacifying effect on countries? Well, it depends. We have demonstrated that aid itself is too wide a category to make one-directional predictions with. Instead, we have argued that multilateral aid should shorten civil conflict in developing countries, conditional on their economic development: in very poor

countries, multilateral development projects can affect the cost-opportunity to fight. We have suggested that in these countries foreign aid can have an important substitution effect on the individual actors' wealth and therefore reduce incentives to be part of the violent struggle. However, in relatively wealthier countries aid is less likely to perform this particular role, thereby reducing the ability of aid projects to contribute to peace. In the case of bilateral aid, we expected that even in the poorest countries there would be little effect on conflict duration as a large part of this aid is allocated directly to governments.

The empirical evidence largely supports our arguments. On the whole, our results show that aid only affects conflict duration in the poorest developing countries. Developing countries which are economically more advanced do not see predicted duration of conflict when they receive foreign aid. Yet, taking a closer look into various types of aid teaches us that bilateral aid does not have a salient effect on conflict duration even in the poorest country. In fact, the results are driven by the pacifying effect of multilateral aid.

This paper invites further research in a number of ways. First, one could analyze the data on foreign aid at a more disaggregated level using the data collected by AidData/Project-Level Aid Project. This would enable us to assess the effects of actual projects addressing basic human needs and compare these with other types of projects. A second further route of research could be to include NGO projects. Data on NGO projects is still very scarce and the available datasets span only a small sample of countries and years (Koch et al. 2009; Büthe 2010). Third, it would be interesting and important to take into consideration the power relations of central governments and rebels in each conflict-ridden country. The data that would be necessary to investigate this issue has already been collected by Cunningham, Gleditsch and Saleyan (2009).

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Table 1. Baseline Regression Models

	Model 1 Onset	Model 2 Onset	Model 3 MC Transition	Model 4 MC Transition
Adjacent Conflict	0.010 (0.120)	-0.100 (0.128)	0.036 (0.181)	0.201 (0.186)
Conflict Intensity			0.586*** (0.166)	0.631*** (0.175)
Incompatibility			0.012 (0.209)	0.018 (0.209)
Regional Democracy	-0.023** (0.010)	-0.031*** (0.011)	-0.002 (0.024)	-0.011 (0.024)
Transborder Groups	0.050*** (0.016)	0.047** (0.020)	-0.045 (0.042)	-0.022 (0.043)
Regional Trade	-1.078** (0.502)	-1.084 (0.740)	-6.646*** (2.377)	-5.635* (3.073)
Democracy	0.008 (0.007)	0.007 (0.007)	0.018 (0.015)	0.019 (0.015)
GDP per capita	-0.189*** (0.056)	-0.134* (0.069)	0.173 (0.149)	0.191 (0.159)
Population	0.069** (0.028)	0.104*** (0.037)	0.246*** (0.089)	0.235** (0.094)
Ethnic Dispersion	0.007** (0.003)	0.005 (0.003)	0.003 (0.007)	0.006 (0.007)
Oil	0.102 (0.121)	-0.026 (0.130)	-0.181 (0.266)	-0.344 (0.279)
ODA pc		-0.023 (0.043)		-0.029 (0.071)
Intercept	-1.728*** (0.632)	-2.258* (1.219)	-4.232** (2.157)	-4.154 (2.703)
Observations	4,780	3,430	805	748
Clusters	171	141	84	78
Pseudo R2	0.069	0.056	0.115	0.114

Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors (clustered by country) in parentheses.

Table 2. Baseline Regressions, by Aid Type

	Model 5 MC Transition	Model 6 MC Transition
Bilateral Aid pc	0.013 (0.056)	
Multilateral Aid pc		-0.008 (0.065)
Adjacent Conflict	0.184 (0.183)	0.190 (0.186)
Conflict Intensity	0.631*** (0.176)	0.639*** (0.175)
Incompatibility	0.060 (0.212)	0.044 (0.213)
Regional Democracy	-0.013 (0.025)	-0.014 (0.023)
Transborder Groups	-0.018 (0.043)	-0.021 (0.043)
Regional Trade	-5.988* (3.116)	-5.930* (3.093)
Democracy	0.020 (0.015)	0.019 (0.015)
GDP pc	0.194 (0.157)	0.202 (0.159)
Population	0.264*** (0.090)	0.247** (0.098)
Ethnic Dispersion	0.006 (0.007)	0.006 (0.007)
Oil	-0.349 (0.283)	-0.333 (0.278)
Intercept	-5.081** (2.435)	-4.674* (2.764)
Observations	740	745
Clusters	78	78
Pseudo R2	0.116	0.116

Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors (clustered by country) in parentheses

Table 3. Interaction Models, by Aid Type

	Model 7 MC Transition	Model 8 MC Transition	Model 9 MC Transition
ODA pc * GDP pc	0.227*** (0.084)		
ODA pc	-1.873*** (0.685)		
Bil. ODA pc * GDP pc		0.100 (0.061)	
Bilateral ODA pc		-0.786 (0.504)	
Mul. ODA pc * GDP pc			0.271*** (0.085)
Multilateral ODA pc			-2.212*** (0.692)
Adjacent Conflict	0.170 (0.170)	0.160 (0.175)	0.170 (0.168)
Conflict Intensity	0.582*** (0.166)	0.597*** (0.171)	0.588*** (0.167)
Incompatibility	0.118 (0.203)	0.112 (0.205)	0.144 (0.205)
Regional Democracy	-0.014 (0.023)	-0.015 (0.025)	-0.018 (0.023)
Transborder Groups	-0.015 (0.039)	-0.017 (0.041)	-0.007 (0.038)
Regional Trade	-4.744 (2.975)	-5.634* (3.020)	-4.936 (3.032)
Democracy	0.012 (0.015)	0.016 (0.015)	0.013 (0.015)
GDP pc	-2.131** (0.857)	-0.711 (0.556)	-2.419*** (0.812)
Population	0.215** (0.096)	0.253*** (0.091)	0.236** (0.098)
Ethnic Dispersion	0.005 (0.007)	0.006 (0.007)	0.005 (0.007)
Oil	-0.229 (0.273)	-0.269 (0.278)	-0.234 (0.272)
Intercept	14.915** (7.260)	2.258 (5.102)	16.737** (6.852)
Observations	748	740	745
Clusters	78	78	78
Pseudo R2	0.136	0.124	0.144

Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors (clustered by country) in parentheses

Figure 1: ODA and GDP per capita

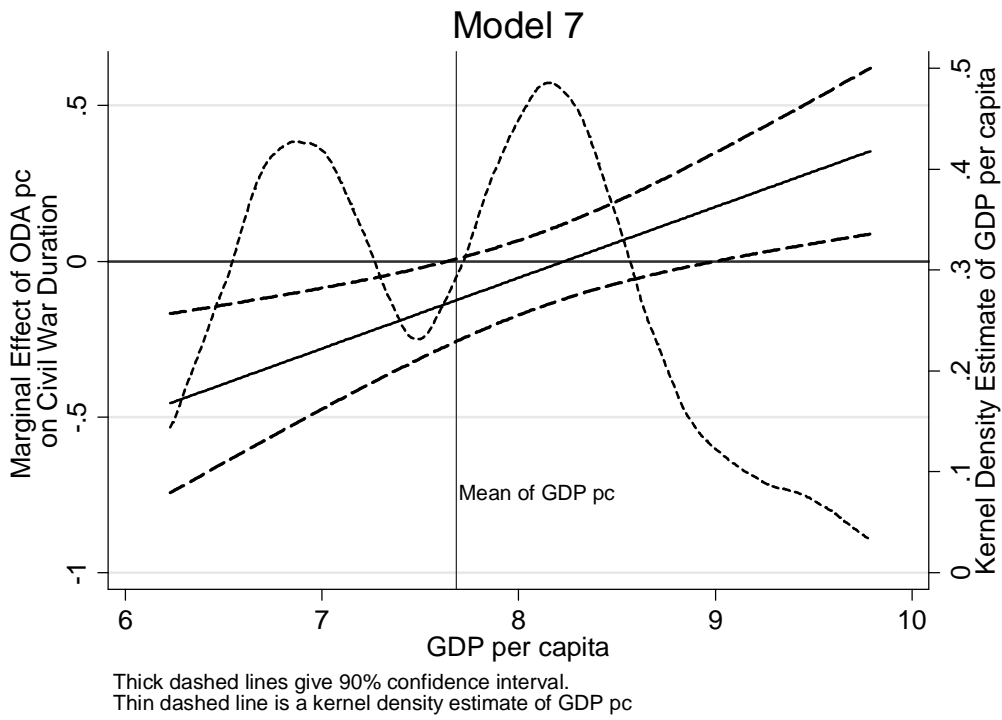


Figure 2: Bilateral ODA and GDP per capita

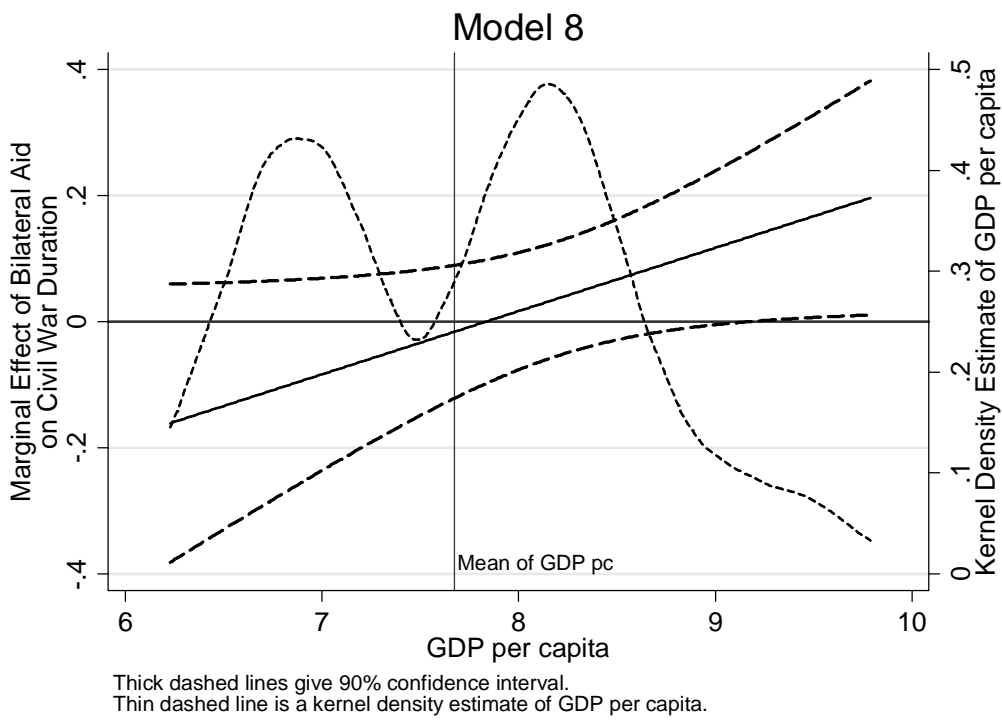
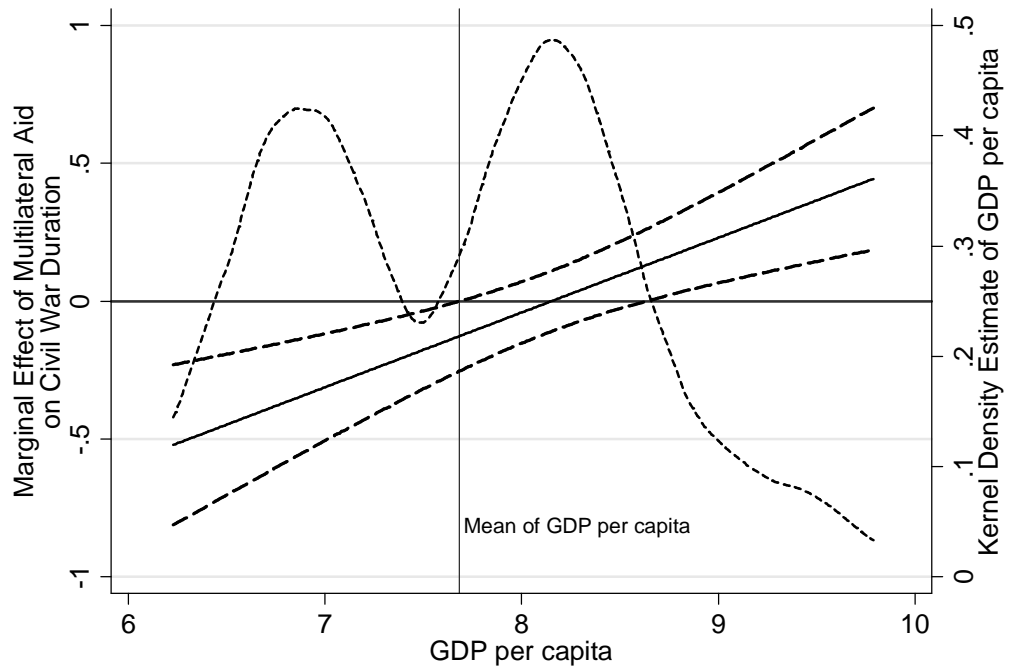


Figure 3: Multilateral ODA and GDP per capita



Thick dashed lines give 90% confidence interval.
Thin dashed line is a kernel density estimate of GDP per capita.