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Conflict, Ideology and Foreign Aid *

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Abstract

In this paper, we present a rent-seeking model of conflict, which highlights the role of ideology in determining whether the government or the rebels take the initiative. We use the model to interpret the impact of a large-scale Community-Driven Development project on civil conflict in the Philippines. The country is characterized by the presence of two rebel groups, the New People's Army (NPA) and the Moro Islamic Liberation Front (MILF), with two distinct ideologies. We use a unique geo-referenced panel dataset on the occurrence of conflicts in 2003 and 2006 gathered from local newspapers that we match with nationally representative household survey and budget data on all municipalities in the country. Consistent with our model's predictions, using a variety of estimation strategies, we find robust evidence that the project leads to a decline in MILF-related events and to an increase in NPA-related events.

JEL Classification: D72, D74, F35, O22, O53.

Keywords: Civil Conflict, Foreign Aid, Rent Seeking, Community-Driven Development, Philippines.

1 Introduction

Societal changes brought *about* by economic development might be destabilizing and lead to conflict (Bates 2001). Development has the potential to cause tremendous socioeconomic upheavals, among which the most destabilizing may be the challenging of traditional values and institutions, uncontrolled and unplanned urbanization, and the emergence of new elites pressing for broader political representation. Even under improved economic conditions, this might facilitate recruitment activities by radical political movements among rural and urban populations.

Considering the fundamental objectives of development aid, it follows that aid may be associated with conflict *via* its impact on economic development. Esman and Herring (2001) assert that aid policy relying on conditionality with the intention to impose economic reforms has fuelled the rise of ethnic tensions in Sri Lanka, despite the positive impact these reforms have had on economic growth. Anderson (1999) underlines that "aid too often feeds into, reinforces and prolongs conflicts." Some authors go even further by arguing that development aid is directly implicated in exacerbating tensions in some countries, as does Uvin (1998), who exposes the role of development practitioners in the lead-up to the genocide in Rwanda, which had been considered as a "model of development in Africa, with good performances on most of the indicators of development."

Yet, there is some evidence that development aid may, on the contrary, contribute to reduce the probability of civil conflict. According to Azam (2001), aid conditionality may reduce the probability of conflict in Africa, by reinforcing government credibility in its commitment to establishing a redistributive system "within and among groups". Redistributive and transfers policies towards the less well-off are often a successful and efficient way to deter those willing to engage in civil conflict (Azam and Mesnard (2003) and Justino (2007)). Redistributive policies lessen inequalities, create "solidarity links" between population groups (Azam 2001), and increase their potential costs of engaging in violence (Boix 2008).

When aid policy is expressedly implemented in a conflict environment, there is also some evidence that aid reduces conflict. Collier and Hoeffler (2007) highlight the potential fungibility of foreign aid: approximately 40% of development aid transfers seeps into military

expenditures. This increase in military spending could result in an increase in conflict intensity, or in a decrease in conflict duration, if military expenditures deter rebellion. In Sub-Saharan Africa, De Ree and Nillesen (2009) present empirical evidence that suggests that aid tends to decrease conflict duration.

According to Anderson (1999), aid affects conflict through its distributional impacts on intergroup relationships. Such distributional effects are more likely to be harmful in the context of participatory development projects, which provide fresh resources and introduce alternative decision-making procedures which may alter existing local power relationships. Barron, Diprose, and Woolcock (2007) explore the relationship between local conflicts and a participatory development project, the *Kecamatan* Development Program (KDP),[1] in Indonesia, where both large-scale, violent communal conflict and local conflict occur frequently across the country. They show that the KDP may trigger conflict, or lead to conflict escalation through its interaction with pre-existing disputes. Conversely, they find that KDP-related conflicts are less likely to escalate and/or turn violent, due to the program's conflict management procedures.

In this paper, we present a rent-seeking model of conflict, which highlights the role of ideology in determining whether the government or the rebels take the initiative. We then test the model's predictions using a unique geo-referenced panel dataset of conflict occurrence in the Philippines in 2003 and 2006. The Filipino context is well suited to this exercise due to the presence of two well-established rebel groups with contrasting ideological stances, and an important community-driven development, the KALAHI-CIDSS.

Most previous attempts at understanding the links between foreign aid and conflict have relied on cross-country regressions. Given that foreign aid is likely to be an endogenous right-hand side variable in a conflict regression, establishing a credible identification strategy is crucial. Most researchers have relied on time-invariant excluded instrumental variables such as colonial legacy or a common language (between donors and recipients of aid). Of course, this implies that time-invariant unboservables that simultaneously affect foreign aid and conflict occurrence cannot be controlled for, thereby leading to potentially biased estimates.

[1]KDP is the largest participatory development project in Southeast Asia, operating since 1998 and now, under a new name, covering all villages in Indonesia.

While satisfactory identification strategies may be found in the future which allow one to work at the cross-country level, we eschew this method in favor of a within-country approach which focuses on heterogeneity in both foreign aid and conflict occurrence at the municipal-level.

Depending on who initiates the hostilities between the government and the rebels, our model predicts that the project will lead to either an increase or a decrease in conflict. Considering that non-identity rebels are more likely to be the first movers, we expect more NPA-related conflict following the project implementation, whereas MILF-related conflict would be reduced.

Using a variety of estimation strategies, including municipal fixed-effects and regression discontinuity design based on the criteria used for program eligibility, we find that the KALAHI-CIDSS program has a different impact on conflict occurrence according to the rebel group involved: while it leads to a decrease in MILF-related events in the benefitting municipalities, the program tends to increase the occurrence of NPA-related events. Our results are similar when we focus on Mindanao, which is the part of the Philippines that is the most affected by conflict. All of these results are consistent with the predictions of our theoretical model.

The paper is organized as follows. The model is presented in Section 2 and the context is described in Section 3. The data and estimation strategy are presented in Section 4. Results are discussed in Section 5. The final section concludes.

2 Conflict and Foreign Aid: two simple rent-seeking models

2.1 Preliminaries

Pye (1962) distinguished between identity- and non-identity-based civil wars, depending on the rebels' goals, methods of recruitment and characteristics in terms of organizational, decision-making and action. Following Kaufmann (1996), identity (ethnic or religious) conflicts involve communities who are fighting over the power relationship between themselves

and the state, whereas ideological conflicts involve groups within the same community who are fighting over how to govern that community. It follows that the main distinction between the two types of civil conflict is the underlying mobilization strategy: on the one hand, ethnicity and religion, on the other, political, economic and social ideals. An additional difference between identity and non-identity rebels is that the latter recruit their fighters from a community that is clearly distinguishable among the population at large , whereas the former recruit their followers from the same population as does the government. This leads to two fundamentally different conflict strategies.

Identity rebels garner the support and the loyalty of the members of their community, by appealing to their identity, which is likely to be persistent over time. They are able to do so in the name of "defending the cause." Given that they can only recruit from within their own community, the primary concern of identity rebels is to secure physical control over the territory occupied by the brethren. Conflicts involving identity rebels are likely to be military struggles since they cannot afford to lose their strongholds, which constitute their mobilization base.

In the case of identity rebels, the government is likely to be the first mover, *i.e.* to decide to let conflict break out or not. We expect this to be the case for two reasons. The first is that it is more efficient for the government to take the offensive thereby attempting to create battles in which the rebels may lose their settlements. The second is that the cost to the government of resorting to violence is offset by the fact that it has a little chance of garnering the support of the community from which the rebels stem (Kaufmann 1996).

In non-identity wars, gaining popular support is crucial for both parties. What is at stake is not to win battles, but to win people's "hearts and minds". In order to do so, the rebels will seek to increase the population's grievances against the government. Furthermore, the rebels will attempt to exploit the few advantages they enjoy as a relatively small revolutionary movement pitted against a large conventional army. In non-identity conflicts, the government is more concerned with minimizing the short-term costs of using violence against civilians. As such, the government will adopt a defensive position and attempt to maintain the conflict at a manageable level. It is thus more likely that the rebels move first in such conflicts.

In what follows, we consider a simple rent-seeking model of civil war in the tradition

of Grossman (1991, 1992, 1999) and his collaborators (Gershenson and Grossman 2000). The payoff to successful rebellion or government victory in a given geographical area will be denoted by X. We begin by considering the case of identity rebels which takes the form of a sequential move game in which the government moves first, followed by the rebels. We solve the game by backward induction. Then, we will consider the same game but with non-identity rebels, who move first.

2.2 The government moves first

The power of rebel military forces will be denoted by R, whereas the power of government military forces will be denoted by G. *Ceteris paribus*, an increase in rebel military power R increases the likelihood of rebel victory in the case of conflict, and conversely for government military power. We summarize this by writing the probability of rebel victory as:

$$\Phi\left(R-G,\mu\right),$$

where, for illustrative purposes, $\Phi(.)$ is the *cdf* of the normal density with mean μ and variance 1.[2] The corresponding standard normal *pdf* will be denoted by $\phi(.)$.

The key aspect of the model stems from the parameter μ, the mean of the normal density. We assume that treatment by a foreign aid program (which is implemented by the government) decreases the probability of a rebel victory, *ceteris paribus*. By the definition of First-order stochastic dominance (see e.g. Laffont (1990)), an increase in the mean of the distribution *decreases* the value of the *cdf*: $\frac{\partial\Phi(R-G,\mu)}{\partial\mu}<0$.

The expected payoff Y to the rebels is given by:

$$Y=X\Phi\left(R-G,\mu\right)-C(R),$$

where $C(R), C'>0$, represents the cost to the rebels of projecting a level R of military power. In order to allow the relative cost of projecting military power to differ between the government and the rebels (the corresponding parameter for the government will be normalized to 1), we write:

$$C(R)=dR.$$

[2]The model readily generalizes to a specification in terms of a generic *cdf*.

The identity rebels choosing the projection of their military power in an optimal fashion in response to government actions leads to the solution to their optimization problem being given by:

$$R^{*}\left(X,G\right)=\underset{\{R\}}{\arg\max}\;\; X\Phi\left(R-G,\mu\right)-dR, \tag{1}$$

which yields:[3]

$$R^{*}=G+\mu+r\left(X,d\right),\;\text{where}\;\; r\left(X,d\right)=\sqrt{2\log\left[X/d\right]-\log 2\pi}. \tag{2}$$

The preceding expression indicates that optimal identity rebel military power is increasing, one-for-one, in government military power and in treatment by the foreign aid program. Optimal rebel power is also increasing in the size of the exogenously given prize X. The basic problem facing the government is whether to deploy sufficient military force so as to deter the identity rebels altogether or whether to allow conflict to break out. We now proceed to show that, in equilibrium, the government's choice will be determined, among other things, by the treatment status of the area, parameterized by μ.

Note that the rebel group will be deterred from engaging in military operations when:

$$Y^{*}=X\Phi\left(R^{*}-G,\mu\right)-dR^{*}\leqslant 0,$$

where we normalize their reservation level of welfare to zero. It can be shown that the preceding inequality boils down to:

$$G\geqslant\widetilde{G}=\frac{1}{2}d^{-1}X\left[1+erf\left(r\left(X,d\right)/4\right)\right]-\left[\mu+r\left(X,d\right)\right], \tag{3}$$

where $\widetilde{G}$ is therefore the level of government military power that ensures deterrence, and where $erf(z)=\frac{2}{\sqrt{\pi}}\int_{0}^{z}\exp\left\{-t^{2}\right\}dt$ is the "error function."

Now consider the government's optimization program. If there is deterrence, the government receives a certain payoff $\Pi=X-\widetilde{G}$, where we normalize the government marginal

[3]The first order condtion (FOC) associated with (1) is given by $X\phi\left(R^{*}-G,\mu\right)-d=0$. For the FOC to be sufficient as well as necessary, it must be the case that we are on the downward-sloping portion of the *pdf* (i.e. $\phi'\left(R^{*}-G,\mu\right)<0$), so as to ensure that the associated second order condition (SOC) is negative. Solving the preceding FOC yields two roots in R^{*}, only one of which, given in (2), will satisfy the SOC. For the model to make algebraic sense (and to guarantee a non-imaginary solution), we also impose the regularity condition that $2\log\left[X/d\right]-\log 2\pi>0$.

(and average) cost of achieving a given level of military power to one. Substituting for the value of $\widetilde{G}$ from (3) then yields:

$$\Pi^D = \frac{1}{2} d^{-1} X \left[2d - erf\left(r\left(X,d\right)/4\right) - 1\right] + \mu + r\left(X,d\right). \tag{4}$$

In the case of war, the government's optimization problem is given by:

$$\max_{\{G\}} \; X\left[1 - \Phi\left(R^* - G, \mu\right)\right] - G,$$

where R^* is given by (2). This yields the trivial solution $G = 0$, implying that the government's optimal payoff under war is given by:

$$\Pi^W = \frac{1}{2} X \left[1 - erf\left(r\left(X,d\right)/4\right)\right]. \tag{5}$$

Whether conflict breaks out or not then depends upon whether it is in the government's interest to deter the rebels or not, which in turn boils down to a comparison of equations (4) and (5). When $\Delta\Pi = \Pi^W - \Pi^D > 0$ there is war, otherwise, deterrence prevails.

Taking the derivative of the difference with respect to treatment status μ then immediately yields:

$$\frac{\partial \Delta\Pi}{\partial \mu} = \frac{\partial\left(\Pi^W - \Pi^D\right)}{\partial \mu} = -1 < 0.$$

In other words, treating a region with the foreign aid program, in the case of identity rebels, where it is the government that initiates hostilities and the rebels are followers, leads to a decrease in the likelihood of violence breaking out.

2.3 The rebels move first

In the case of non-identity rebels, it is the government that picks G so as to maximize its expected payoff in response to the rebels's initial choice of R:

$$\max_{\{G\}} \; X\left[1 - \Phi\left(R - G, \mu\right)\right] - G.$$

The solution to this problem yields:

$$G^* = R - \mu + g\left(X,d\right), \text{ where } \; g\left(X,d\right) = \sqrt{2\log X - \log 2\pi}.$$

The government will be induced to abandon an area (the equivalent of deterrence for the case where the rebels have the initiative) when:

$$X\left[1-\Phi\left(R-G^{*},\mu\right)\right]-G^{*}\leqslant 0,$$

which yields:

$$R\geqslant\widetilde{R}=\frac{1}{2}X\left[1+erf\left(g\left(X,d\right)/4\right)\right]+\mu-2g\left(X,d\right).$$

If the rebels get control of a given region by deterring government intervention, their payoff is given by:

$$Y^{D}=X-d\widetilde{R}=\frac{1}{2}X\left[2-derf\left(g\left(X,d\right)/4\right)-d\right]+d\left[g\left(X,d\right)-\mu\right].$$

In the case of war, the rebels's expected payoff is given by:

$$\max_{\{R\}}X\Phi\left(R-G^{*},\mu\right)-dR,$$

which yields the trivial solution $R=0$ and therefore:

$$Y^{W}=\frac{1}{2}X\left[1-erf\left(g\left(X,d\right)/4\right)\right].$$

In this case it is then immediate that:

$$\frac{\partial\Delta Y}{\partial\mu}=\frac{\partial\left(Y^{W}-Y^{D}\right)}{\partial\mu}=d>0.$$

In other words, treating a region with the foreign aid program, in the case of non-identity rebels, where they initiate hostilities and the government are followers leads to an *increase* in the likelihood of violence breaking out.

3 The Context

3.1 Conflict in the Philippines : NPA and MILF

Since the early 1970s, the Philippines have faced a civil war on two distinct fronts: a communist insurgency led by the New People's Army (NPA), and a Moro separatist insurgency in the southern island of Mindanao and the Sulu archipelago.

The migration, encouraged by the Government, of Christians to Mindanao generated conflicts over land and natural resources and resentment among the Muslims. Indeed, in some areas, Muslims, who had been the majority group since the 15th century, became the minority. The Moro National Liberation Front (MNLF) was established in the late 1960s to achieve independence. After decades of armed conflict, a peace agreement was signed with the Government in 1996 (Schiavo-Campo and Judd 2005). Autonomy was granted to areas with Muslim majorities. However, the Moro Islamic Liberation Front (MILF), which had broken away from the MNLF in 1981 with the objective of establishing an independent Islamic state in Mindanao, continued fighting.

Since 2000, the MILF has had a strategy of small units under field commanders using ambushes and hit-and-run tactics against military targets in Mindanao and the Sulu archipelago. The MILF also attacks civilians to extort money, but such acts remain isolated and are exclusively oriented against Christian businesses in order not to alienate the Muslim population. To increase popular support, the MILF emphasizes social, economic and political grievances against what they perceive to be a Christian Filipino government. In addition, through their system of camps, they have attempted to prove their capacity to rule by offering administrative, social and security services.

The New People's Army (NPA) is the armed wing of the Communist Party of the Philippines (CPP).[4] The CPP-NPA, which has been operating since the early 1970s, is a revolutionary insurgency that aims to overthrow the government through guerilla warfare and eventually to seize control of the country. Though estimates vary but the CPP-NPA appears to be composed of about 7,000-12,000 armed guerillas spread across most of the provinces (Montesano (2004), Hedman (2006) and Coronel (2007)).

At the time of its creation, the CPP-NPA drew its support from landless peasants and the urban poor. Popular support was seriously damaged in the 1990s, due to purges of suspected government informers and those who disagreed with the leadership. Most moderates have tended to break away from the group and the remaining members of the CPP-NPA are committed to armed struggle and political violence (Montesano 2004).[5] During local

[4]For a detail account of the CPP-NPA see Kessler (1989)

[5]Some of the breakaway factions have signed ceasefire agreements with the Government (Hedman 2006).

elections, they have been known to sell "permits to campaign" and "permits to win" to candidates (Rosales 2004).

Overall, while the two groups started in a similar fashion, they have evolved differently. Remaining MILF members appear to be concerned about grievances regarding the economic situation of Muslims in Mindanao and their exclusion from the political process. In contrast, NPA members appear to be more interested in raising money to finance their activities (Rosales 2004). This highlights the sharp ideological differences between the two rebel groups. In our model's terminology, the MILF could be classified as identity rebels and the NPA as non-identity rebels. In light of the model's predictions, we should expect different impacts of foreign aid on conflict associated with the two groups. On the one had, foreign aid projects should decrease MILF-related violence and, on the other increase NPA-related violence.

3.2 The KALAHI-CIDSS

The KALAHI-CIDSS, a USD 182.4 million foreign aid project cofunded by the World Bank, is implemented by the Department of Social Welfare and Development of the Philippines.[6] The project follows the community-driven development approach whereby, following a facilitated process of social preparation, barangays (villages) compete for block grant for public goods investment.[7] Successful communities are then responsible for the implementation and maintenance of the resulting infrastructure. In each participating municipality, this process is repeated three times. In a given municipality, the amount of money available for each cycle is equal to approximately USD 6,000 times the number of barangays in the municipality (Labonne and Chase 2009). The participatory process has been designed to ensure a high level of community involvement in all stages of the process with the stated objective of making the political process more inclusive. Available evidence points in that direction (Labonne and Chase 2008).

[6] An acronym that stands for Kapitbisig Laban sa Kahirapan (Linking Arms against Poverty) - Comprehensive and Integrated Delivery of Social Services.

[7] The majority of subprojects financed are water systems, construction of school buildings, health centers and rural roads.

The first phase of the project (2002 - 2009) targeted the poorest areas of the country. Specifically, it was implemented in 42 provinces out of a total of 81, among which are the 40 poorest provinces according to data from the National Statistical Office. Furthermore, in each of the 42 provinces, a simple poverty ranking exercise was carried out by researchers at the School of Economics, University of the Philippines (Diliman). To properly account for the multidimensionality of poverty, the researchers used a wide range of indicators which can be classified into three broad categories: (1) quality of human capital, (2) housing and amenities and (3) access to markets. For Phase I and II provinces, the mapping was carried out in 2002, while it was carried out in early 2003 for Phase III and IV municipalities. In both cases, the team used data from the 2000 Census of Population and Housing and the 2000 Family Income and Expenditures Survey. The poorest 25% of municipalities are eligible to participate in the project.

4 Data and Estimation Strategy

4.1 Data

We use five different datasets: a conflict dataset, the 2003 and 2006 Family Income and Expenditure Survey (FIES), the 2003 and 2006 Labour Force Survey (LFS), the 2000-2006 municipal budgets from the Department of the Interior and Local Government (DILG) and KALAHI-CIDSS project data.

The conflict dataset covers episodes involving the two main rebels group in the Philippines between November 1st 2002 and October 31st 2003, and between November 1st 2005 and October 31st 2006. Following Barron and Sharpe (2005) , we constructed it using a Filipino daily newspaper which has twelve local editions, the Sun Star. Barron and Sharpe (2005) advocate the use of local-level newspapers to obtain more accurate measures of conflict levels since national and provincial levels newspapers tend to focus on larger-scale violence and thus ignore a large part of local smaller-scale low-intensity conflicts. It can be argued that those local conflicts have minimal impacts compared to district-level or provincial-level episodes. Yet, cumulatively, the former have been responsible for important human and social costs,

such as internal displacement, but also for the destruction of markets, deterioration in the investment climate and disruptions to social services (Schiavo-Campo and Judd 2005).

Both violent events (battles or one-sided violence episodes) and non-violent events (establishment of rebels bases or headquarters) are taken into account. We derive two dependent variables for two years (2003 and 2006) : a conflict occurrence and a conflict intensity variable. The conflict occurrence variable indicates the number of events within a 100 kilometer radius of the municipality, whereas the conflict intensity variable is the number of conflict-related casualties within the same radius. In addition, we create separate variables for MILF episodes and for NPA episodes. Having collected information on who initiates the conflict episodes, we show in Table 1 that the average share of events initiated by the NPA is much higher than those initiated by the MILF, which is in line with the above mentioned ideological differences between the two rebel groups.

The FIES is a large-scale nationally representative survey carried out every three years by the National Statistics Office (NSO). The 2006 survey is the last one for which data are available. It includes almost 40,000 households in all provinces of the archipelago. Detailed data are collected on household consumption patterns. We use the 2003 and 2006 data.

The LFS is a large-scale nationally representative survey carried out every quarter by the NSO. It includes 51,000 households in all provinces of the archipelago (including all those from the FIES sample). We used data from the October 2003 and October 2006 surveys which were matched with the FIES data. Detailed data are collected on employment status and educational attainment.

We use annual data from the Department of the Interior and Local Government (DILG) on municipal budgets for the period 2000-2006. The income data are divided into local sources (tax and non-tax), government transfers and loans/borrowings. The expenditures data are broken down by type of expenditures (General Public Services, Education, Health, Nutrition & Population Control, Labor and Employment, Housing and Community Development, Social Services, Economic Services, Debt Service, etc.).

Finally, we have the list of municipalities in which the KALAHI-CIDSS operates as well as the date at which the project was implemented. We also have the sum of grants received by barangays in the municipality (annually).

Our data indicate that episodes of conflict are common in the Philippines. The average municipality experienced 17.8 episodes of conflict in a 100km radius in 2003 and 11.3 in 2006, with NPA-related events being more common than MILF-related events. Consistent with received wisdom and with the fact that the MILF operates only in Mindanao, we find that conflict is more prevalent there. The average Mindanao municipality experienced 36.9 episodes of conflict (8.2 NPA and 28.7 MILF) in 2003 and 26.7 episodes in 2006 (17.9 NPA and 8.7 MILF). The overall decline in MILF related events between 2003 and 2006 is consistent with contemporary accounts of the Filipino political situation (Coronel 2007). A similar pattern emerges once we focus on deaths rather than on conflict events. [8] The number of deaths is higher in Mindanao than in the rest of the country and it has decreased between 2003 and 2006.

4.2 Estimation Strategy

We focus our analysis on the total number of events in a 100km radius around each municipality center and on the total number of deaths from these events. In addition to the overall results, we will also present our results for the MILF and the NPA separately. Furthermore, due to the specificities of the conflict in Mindanao, we also estimate our equations on the sub-sample of Mindanao municipalities. Finally, given the manner in which the project was rolled out, we report estimates of its impact based on a regression discontinuity design.

Let Y_{it} be the number of events during year t ($t = 2003, 2006$) in a radius of 100km around municipality i. Given that it is a count variable, standard linear regression techniques are *not* appropriate. The benchmark model for count data is the Poisson model (Cameron and Trivedi 1998), in which the distribution of the response variable Y_{it} conditional on a matrix of covariates, is assumed to be given by:

$$f\left(Y_{it}|\, T_{it}, X_{it}, \ldots\right) = \frac{e^{-\mu_{it}} \mu_{it}^{Y_{it}}}{Y_{it}!}, Y_{it} = 0, 1, 2, \ldots. \tag{6}$$

We assume that the mean parameter μ_{it} is given by:

$$\mu_{it} = E\left[Y_{it}|\, T_{it}, X_{it}, \ldots\right] = \exp\left\{T_{it}\alpha + X_{it}\beta + \delta_t + \epsilon_i + \eta_{it}\right\}, \tag{7}$$

[8] Measurement error on the death variable is likely to be higher than on the conflict event variable.

where T_{it} is a dummy variable which equals one if the KALAHI-CIDSS is implemented in municipality i at time t and zero otherwise, X_{it} is a vector of municipal characteristics that vary across time and municipality, δ_t is an unobserved time-specific shock that affects all municipalities equally, ϵ_i is an unobserved municipality-specific effect and, η_{it} is the usual idiosyncratic disturbance term. Following Mundlak (1978), as discussed in Chapter 15 of Wooldridge (2002), we write $\epsilon_i = \bar{X}_i\gamma + \mu_i$, where $\bar{X}_i = \frac{1}{2}(X_{i,2003} + X_{i,2006})$. We assume that $E(\mu_i|X) = 0$. Intuitively this amounts to specifying μ_i as a municipality-specific random effect. Equation 7 can be rewritten as follows:

$$\mu_{it} = \exp\left\{T_{it}\alpha + X_{it}\beta + \bar{X}_i\gamma + \mu_i + \delta_t + \eta_{it}\right\}, \tag{8}$$

A standard manner of quantifying the impact of dummy variables in a Poisson regression framework is to compute the ratio of the conditional expectations of the response variable under the two values taken by the dummy. This yields a particularly simple expression because of the exponential form taken by the mean function given in equation (7). For example the ratio of the conditional mean of the number of conflict events in project municipalities to its conditional mean in the municipalities without the project can be written as:

$$\frac{E\left[Y\left|T_{it}=1, X_{it}, \bar{X}_i, \mu_i, \delta_t\right.\right]}{E\left[Y\left|T_{it}=0, X_{it}, \bar{X}_i, \mu_i, \delta_t\right.\right]} = \exp\{\alpha\}.$$

We also use two other definitions of T_{it} : (i) the number of years during which the project had been implemented in municipality i at time t and, (ii) the amount of money that municipality i had received from the project at time t.

In line with the literature on the determinants of conflict, and taking advantage of the wealth of data available, the vector X_{it} includes variables capturing expenditures by the local government as well as socio-economic characteristics of the population. The full list of variables and their definitions is available in Table A-1. Note that by including "regular" government expenditures at the municipal-level, we estimate the true impact of foreign aid on violence. Most other analyses of the impact of foreign aid on conflict do not adequately account for recurrent government expenditures thereby leading to potential omitted variables bias. In particular there may be compensation in which foreign aid crowds out government

transfers.

For our estimation strategy to provide robust estimates of the project's impact on violent conflict events, we need to assume that, without the project, the trends in violent conflict events would have been similar in treated and control municipalities. To address such concerns, we also report estimates for the sub-sample of municipalities in the 42 poorest provinces in which the project was implemented where identification is based on a regression discontinuity design. Recall that the project was implemented only in the 25% poorest municipalities within each province. Comparing municipalities on both sides of this threshold, given that it is unlikely that municipalities were able to manipulate the poverty ranking, should yield unbiased estimates of project impact. This is because treated and untreated municipalities around the 25% threshold are likely to be very similar.

An alternative dependent variable is given by the total number of deaths within a 100km radius of the municipality. Given that this variable is continuous and bounded from below by zero, we adopt a Tobit specification with the same Mundlak procedure as with the Poisson specification presented above.

5 Results

We now discuss our results. We start with our estimates from the full sample and then discuss our estimates for the sample of Mindanao municipalities only.

Overall, the project leads to an increase in the number of conflict-related events (a point estimate of .326 which corresponds to a ratio of conditional means of $e^{.326} = 1.385$) but has no impact on the number of deaths due to those events (cf. Table 4). This is rather surprising but once we distinguish between NPA- and MILF-related events a very different pattern emerges (cf. Table 5 and 6). Regardless of the definition of treatment used, the project leads to a *decline* in MILF-related events and to an *increase* in NPA-related events. Specifically, once we look only at MILF events, the point estimate associated with the project dummy of -.429 implies a 35% in the number of MILF events($1-e^{-.429} = 0.349$). Conversely, the corresponding point estimate for NPA events is .341 which implies a 41% increase in the number of conflict events. Given the characteristics of the two rebel groups presented above,

this is consistent with the predictions of the model. There is also some evidence that the project leads to an increase in the number of deaths related to NPA-events but only when treatment is defined as the number of years during which the project had been implemented. We find similar results once we focus on the sample of Mindanao municipalities (cf. Table 7, 8 and 9).

Interestingly, once we look at the role of other explanatory variables, our results indicate that MILF-related events are more likely in municipalities with smaller budgets while the opposite is true for NPA-related events. Similarly an increase in the Gini coefficient is associated with an increase in the number of MILF-related events and with a decrease in the number of NPA-related events. These findings are consistent with the argument that MILF and NPA have two different ideologies: while MILF focuses on areas with grievances against the government (low budgets and high inequality), the NPA targets richer municipalities with a more equal distribution of resources. The general pattern of our results is also consistent with common perceptions in the Philippines concerning the respective strategies of the two rebel groups, thereby lending additional credence to our conflict data.

As a final test of robustness, we restrict our sample to the 42 provinces in which the project was implemented and use a Regression Discontinuity Design (RDD) to estimate its effect. The RDD is based on the criterion determining program eligibility: as described above, in the selected provinces, the probability of treatment changes discontinuously as a function of the municipal poverty rank relative to the rest of the municipalities in the province, since municipalities were ranked according to their poverty levels and only the 25% poorest were eligible to participate in the project. We transform the provincial poverty ranking into a 0-100 index, and subtract 25 from it so that municipalities below the threshold have negative values and those strictly above the threshold, strictly positive values. We then re-estimate our equations while including, as additional regressors, the revised municipal poverty rank and its interaction with the treatment dummy. This allows the slope of the relationship linking the forcing variable (the municipal poverty rank) and the response variable function to differ on either side of the cutoff point (Lee and Lemieux 2009).[9] We first estimate using the full sample of 802 municipalities, and then restrict ourselves to a

[9]Our results are qualitatively similar when we include quadratic and cubic term in the forcing variable.

subsample of municipalities whose revised poverty rank values are within a window of width $h = N^{-\delta}$ with $\delta = 0.3$, around the 25% threshold.[10]

The results presented in Table 10 show that our estimates of the negative impacts of the project on the number of MILF-related events in the 42 treated provinces are smaller than those based on the full sample, though they remain negative and statistically significant. For example, in column (1), where we consider the full sample, the point estimate associated with the treatment dummy T_{it} is equal to -.249, whereas in column (2), with the reduced sample, it is equal to -.389. When focusing on the subset of treated provinces that are located in Mindanao, in columns (3) and (4), we find similar results for the number of MILF-related events, whereas for the number of deaths the point estimates for the Mindanao subset (columns (7) and (8)) are now significant and much larger than those in the initial results. For the impact of the project on the number of NPA-related events, we see in Table 11 that our estimates are also slightly smaller than the those based on the full sample, except when we consider the sub-sample in the neighborhood of the 25% threshold, in columns (2) and (4), where the estimates are larger. As for deaths related to NPA-events, the point estimates of the positive impact of the project are now significant for the full sample of treated provinces, and, for Mindanao, they are larger.

The upshot is that we find that receiving foreign aid through this project leads to a *decrease* in MILF-related events and to an *increase* in NPA-related events. Moreover, these findings obtain in the broadest sample controlling for time-invariant municipality-specific effects, for Mindanao, for the RDD results based on the sub-sample of treated provinces and for the RDD sub-sample restricted to a neighborhood of the within-province 25% poverty rank threshold.

[10]This amounts to considering municipalities with revised poverty rank comprised between -0.109 and 0.109. Estimates based on the subsample restricted to the neighborhood of the threshold are unlikely to be biased because the linear approximation is more likely to be valid. The results, available upon request, are similar when using different values of h.

6 Conclusion

In this paper, we present and test the predictions of a rent-seeking model of conflict occurrence. The model highlights the role of the ideology of the rebel group in determining their response to government intervention. Specifically, given that identity and non-identity rebels have different strategies that lead to the former being a follower and to the latter being a first mover, we predict that an increase in foreign aid will lead to a decrease in identity conflicts, and an increase in non-identity conflicts.

Our results strongly suggest that deployment of the project has lead to a significant decline in MILF-related events and to an increase in NPA-related events. The decrease in MILF-related events might stem from the project having increased the sense of inclusion of the Muslim population in local decision-making. Furthermore, casual empiricism in the field suggests that the Muslim inhabitants of treated municipalities perceive a greater sense of empowerment, concrete improvements in access to government services and thereby to a reduced sense of grievance towards the central government. Conversely, it is likely that the NPA perceives the project as a threat in that it might undermine their popular support necessary. Increase of violence on their part could be interpreted as an attempt to prevent the government from implementing an aid project that might to reduce grievances.

By assessing the impact of an aid project specifically aimed at the poorest areas of the Philippines, and disaggregating rebel activity into two groups with different ideologies, this paper contributes to the literature on the links between aid and conflict. Perhaps our most interesting finding is that aid has opposite effects on violence depending on the rebel's ideological stance. Heretofore, most studies using country-level aid and/or non-disaggregated conflict data have found a positive correlation between aid and conflict incidence.

References

Anderson, M. B. (1999): *Do No Harm: How Aid Can Support Peace - - Or War*. Lynne Reinner Publishers, Boulder, CO.

Azam, J. (2001): "The Redistributive State and Conflicts in Africa," *Journal of Peace Research*, 38, 429–444.

Azam, J., and A. Mesnard (2003): "Civil War and the Social Contract," *Public Choice*, 115, 455–475.

Barron, P., R. Diprose, and M. Woolcock (2007): "Local Conflict and Development Projects in Indonesia: Part of the Problem or Part of a Solution?," *World Bank Policy Research Working Paper 4212*.

Barron, P., and J. Sharpe (2005): "Counting Conflicts: Using Newspapers to Measure Conflict in Indonesia," *World Bank Conflict Prevention and Reconstruction Working Paper No. 25.*

Bates, R. H. (2001): *Prosperity and Violence: The Political Economy of Development*. W. W. Norton & Company, New York, NY.

Boix, C. (2008): "Economic Roots of Civil Wars and Revolutions in the Contemporary World," *World Politics*, 60, 390–437.

Cameron, A. C., and P. K. Trivedi (1998): *Regression Analysis of Count Data*, vol. 30 of *Econometric Society Monographs*. Cambridge University Press, Cambridge, UK.

Collier, P., and A. Hoeffler (2007): "Unintended Consequences: Does Aid Promote Arms Races?," *Oxford Bulletin of Economics and Statistics*, 69, 1–28.

Coronel, S. S. (2007): "The Philippines in 2006: Democracy and Its Discontents," *Asian Survey*, 47(1), 175–182.

De Ree, J., and E. Nillesen (2009): "Aiding Violence or Peace? The Impact of Foreign Aid on the Risk of Civil Conflict in Sub-Saharan Africa," *Journal of Development Economics*, 88, 301–313.

Esman, M., and R. Herring (2001): *Carrots, Sticks and Ethnic Conflicts: Rethinking Development Assistance*. Univ. Michigan Press, Ann Arbor, MI.

Gershenson, D., and H. I. Grossman (2000): "Civil Conflict : Ended or Never Ending?," *Journal of Conflict Resolution*, 44(6), 808–822.

Grossman, H. I. (1991): "A General Equilibrium Model of Insurrections," *American Economic Review*, 81(4), 912–921.

——— (1992): "Foreign Aid and Insurrection," *Defence and Peace Economics*, 3(4), 275–288.

——— (1999): "Kleptocracy and Revolutions," *Oxford Economic Papers*, 51(2), 267–283.

Hedman, E.-L. (2006): "The Philippines in 2005: dynamics of crisis, corruption and security," *Asian Survey*, 46(1), 187–193.

Justino, P. (2007): "Carrot or Stick? Redistributive Transfers versus Policing in Contexts of Civil Unrest," Households in Conflict Network Working Papers 3.

Kaufmann, C. (1996): "Possible and Impossible Solutions to Ethnic Civil Wars," *International Security*, 20(4), 136–175.

Kessler, R. J. (1989): *Rebellion and Repression in the Philippines*. Yale University Press, New Haven, CT.

Labonne, J., and R. Chase (2008): "Do Community-Driven Development Projects Enhance Social Capital? Evidence from the Philippines," World Bank Policy Research Working Paper No. 4678.

——— (2009): "Who's at the Wheel when Communities Drive Development? The case of the KALAHI-CIDSS in the Philippines," *World Development*, 37(1).

Lee, D., and T. Lemieux (2009): "Regression Discontinuity Designs in Economics," NBER Working Paper No. 14723.

Montesano, M. J. (2004): "The Philippines in 2003: Troubles none of them new," *Asian Survey*, 44(1), 93–101.

Mundlak, Y. (1978): "On the pooling of time series and cross section data," *Econometrica*, 46, 69–86.

Pye, L. W. (1962): *The Roots of Insurgency and the Commencement of Rebellions*. Massachusetts Institute of Technology, Center for International Studies.

Rosales, L. A. (2004): "The NPA as the New Mafia," *Newsbreak*, March 1.

Schiavo-Campo, S., and M. Judd (2005): "The Mindanao Conflict in the Philippines: Roots, Costs and Potential Peace Dividend," Discussion paper, World Bank, Social Development Papers - Conflict Prevention and Reconstruction - Paper No. 24.

Uvin, P. (1998): *Aiding Violence: The Development Enterprise in Rwanda*. Kumarian Press, West Hartford, CT:.

Wooldridge, J. (2002): *Econometric Analysis of Cross Section and Panel Data*. The MIT Press.

Table 1: Share of events initiated by each rebel group

VARIABLES	Obs	Mean	Std. Dev.
Full Sample			
NPA Events	3244	.34	.36
MILF Events	3244	.08	.22
2003 Sample			
NPA Events	1622	.22	.29
MILF Events	1622	.12	.26
2006 Sample			
NPA Events	1622	.45	.38
MILF Events	1622	.04	.16

Table 2: Descriptive Statistics: Conflict Events (2003 - 2006)

VARIABLES	Obs	Mean	Std. Dev. 2003	Min.	Max	Mean	Std. Dev. 2006	Min.	Max
Full Sample									
NPA Events (100km)	1622	9.98	9.41	0	38	8.99	11.58	0	64
NPA Events (50km)	1622	2.89	3.88	0	19	2.68	4.29	0	27
MILF Events (100km)	1622	7.86	20.50	0	100	2.32	7.37	0	54
MILF Events (50km)	1622	2.75	8.57	0	59	0.99	5.04	0	48
Mindanao Only									
NPA Events (100km)	430	8.21	6.11	0	25	17.95	17.00	0	64
NPA Events (50km)	430	2.59	2.88	0	17	5.33	6.69	0	27
MILF Events (100km)	430	28.68	31.54	0	100	8.76	12.20	0	54
MILF Events (50km)	430	9.95	14.36	0	59	3.72	9.27	0	48

Table 3: Descriptive Statistics: Conflict Deaths (2003 - 2006)

VARIABLES	Obs	Mean	Std. Dev. 2003	Min.	Max	Mean	Std. Dev. 2006	Min.	Max
Full Sample									
NPA Deaths (100km)	1622	11.81	11.419	0	46	12.10	17.38	0	112
NPA Deaths (50km)	1622	3.62	6.24	0	28	3.68	7.90	0	71
MILF Deaths (100km)	1622	50.68	140.16	0	720	5.62	22.43	0	168
MILF Deaths (50km)	1622	18.25	66.82	0	486	2.80	16.95	0	163
Mindanao Only									
NPA Deaths (50km)	430	4.94	4.51	0	22	24.69	27.73	0	112
NPA Deaths (50km)	430	1.45	2.04	0	10	7.01	12.58	0	71
MILF Deaths (100km)	430	189.16	219.25	0	720	21.21	39.62	0	168
MILF Deaths (50km)	430	68	116.16	0	486	10.57	30.68	0	163

Table 4: Impact of the program on total conflict occurence and intensity

	Conflict Events			Deaths from Conflict Events		
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.326***			-3.438		
	(0.000)			(0.861)		
Years of treatment		0.124***			-2.722	
		(0.000)			(0.701)	
Total project costs			0.020***			-0.224
			(0.000)			(0.826)
Mun. total income	-0.114	-0.140	-0.118	-15.799	-15.153	-15.713
	(0.189)	(0.111)	(0.178)	(0.480)	(0.499)	(0.482)
Share tax revenue	0.994**	1.063**	0.993**	86.944	86.470	86.998
	(0.025)	(0.017)	(0.025)	(0.400)	(0.402)	(0.400)
HH in the 1st reg. decile	0.007***	0.007***	0.007***	-0.256	-0.257	-0.255
	(0.000)	(0.000)	(0.000)	(0.380)	(0.378)	(0.381)
HH in the 10th reg. decile	0.002	0.002	0.002	0.466	0.469	0.467
	(0.271)	(0.311)	(0.269)	(0.439)	(0.437)	(0.439)
Municipal Gini	-0.814***	-0.743***	-0.812***	60.102	58.388	60.142
	(0.000)	(0.000)	(0.000)	(0.222)	(0.238)	(0.221)
Constant	10.456***	10.431***	10.410***	600.784***	600.732***	601.022***
	(0.000)	(0.000)	(0.000)	(0.002)	(0.002)	(0.002)
Observations	1848	1848	1848	1848	1848	1848
Number of mun	1023	1023	1023	1023	1023	1023
LL	-8431	-8428	-8431	-10754	-10754	-10754
Wald	1315	1321	1316	384.0	384.1	384.0

Note: Results from Poisson (column 1-3) and Tobit (column 4-6) regressions. The dependent variable is the number of conflict events in a 100km radius around the municipality (column 1-3) and the number of deaths from those events (column 4-6). p-values in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5: Impact of the program on MILF conflict occurence and intensity

	MILF Events			Deaths from MILF Events		
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	-0.429*			-10.664		
	(0.051)			(0.597)		
Years of treatment		-0.373***			-9.638	
		(0.000)			(0.180)	
Total project costs			-0.027**			-0.578
			(0.036)			(0.575)
Mun. total income	-1.580***	-1.492***	-1.576***	-22.480	-32.194	-22.479
	(0.000)	(0.000)	(0.000)	(0.327)	(0.116)	(0.327)
Share tax revenue	5.303***	4.837***	5.291***	80.091	48.876	79.898
	(0.000)	(0.001)	(0.000)	(0.451)	(0.628)	(0.452)
HH in the 1st reg. decile	-0.013***	-0.016***	-0.014***	-0.442	-0.340	-0.443
	(0.000)	(0.000)	(0.000)	(0.141)	(0.258)	(0.140)
HH in the 10th reg. decile	0.023***	0.025***	0.023***	0.581	0.359	0.581
	(0.000)	(0.000)	(0.000)	(0.349)	(0.552)	(0.349)
Municipal Gini	3.035***	2.682***	3.037***	82.342	103.228**	82.589
	(0.000)	(0.000)	(0.000)	(0.103)	(0.042)	(0.102)
Constant	36.404***	36.843***	36.587***	588.041***	555.048***	588.383***
	(0.000)	(0.000)	(0.000)	(0.002)	(0.003)	(0.002)
Observations	1848	1848	1848	1848	2161	1848
Number of mun	1023	1023	1023	1023	1116	1023
LL	-2758	-2745	-2757	-10758	-12756	-10758
Wald(df)	2312	2320	2312	414.8	473.8	414.7

Note: Results from Poisson (column 1-3) and Tobit (column 4-6) regressions. The dependent variable is the number of MILF events in a 100km radius around the municipality (column 1-3) and the number of deaths from those events (column 4-6). p-values in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 6: Impact of the program on NPA conflict occurrence and intensity

	NPA Events			Deaths from NPA Events		
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.341***			6.000		
	(0.000)			(0.113)		
Years of treatment		0.205***			4.342***	
		(0.000)			(0.002)	
Total project costs			0.022***			0.313
			(0.000)			(0.100)
Mun. total income	0.182*	0.117	0.175	7.096*	6.151	7.135*
	(0.089)	(0.276)	(0.101)	(0.099)	(0.152)	(0.097)
Share tax revenue	0.253	0.352	0.247	3.901	4.730	4.034
	(0.598)	(0.462)	(0.607)	(0.845)	(0.812)	(0.840)
HH in the 1st reg. decile	0.015***	0.015***	0.015***	0.183***	0.185***	0.183***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
HH in the 10th reg. decile	-0.007***	-0.007***	-0.007***	-0.110	-0.115	-0.110
	(0.008)	(0.006)	(0.008)	(0.344)	(0.325)	(0.345)
Municipal Gini	-1.967***	-1.850***	-1.957***	-22.878**	-20.347**	-22.982**
	(0.000)	(0.000)	(0.000)	(0.016)	(0.032)	(0.015)
Constant	6.642**	6.613**	6.631**	13.443	13.664	13.365
	(0.021)	(0.022)	(0.022)	(0.690)	(0.684)	(0.691)
Observations	1848	1848	1848	1848	1848	1848
Number of mun	1023	1023	1023	1023	1023	1023
LL	-7406	-7389	-7404	-7617	-7613	-7617
Wald	780.8	809.9	782.8	210.7	219.8	210.6

Note: Results from Poisson (column 1-3) and Tobit (column 4-6) regressions. The dependent variable is the number of NPA events in a 100km radius around the municipality (column 1-3) and the number of deaths from those events (column 4-6). p-values in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 7: Impact of the program on total conflict occurrence and intensity in Mindanao.

	Conflct Events			Deaths from Conflict Events		
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.355***			37.961		
	(0.000)			(0.513)		
Years of treatment		0.050			14.630	
		(0.108)			(0.429)	
Total project costs			0.020***			1.158
			(0.000)			(0.673)
Mun. total income	0.730***	0.760***	0.731***	-95.498	-101.558	-93.997
	(0.000)	(0.000)	(0.000)	(0.201)	(0.178)	(0.208)
Share tax revenue	2.615***	2.427***	2.593***	751.392	753.784	734.312
	(0.003)	(0.006)	(0.004)	(0.177)	(0.175)	(0.186)
HH in the 1st reg. decile	0.006***	0.006***	0.006***	0.612	0.631	0.619
	(0.000)	(0.000)	(0.000)	(0.453)	(0.439)	(0.448)
HH in the 10th reg. decile	0.005*	0.005*	0.005*	0.197	0.185	0.220
	(0.091)	(0.076)	(0.087)	(0.911)	(0.916)	(0.901)
Municipal Gini	-0.243	-0.170	-0.237	22.490	35.590	19.780
	(0.368)	(0.529)	(0.379)	(0.890)	(0.828)	(0.903)
Constant	-5.215	-5.120	-5.263	-195.656	-191.759	-195.333
	(0.162)	(0.170)	(0.158)	(0.717)	(0.723)	(0.718)
Observations	518	518	518	518	518	518
Number of mun	288	288	288	288	288	288
LL	-3150	-3156	-3151	-3219	-3219	-3219
Wald	677.0	666.5	676.1	280.5	280.8	280.1

Note: Results from Poisson (column 1-3) and Tobit (column 4-6) regressions on the sample of Mindanao municipalities. The dependent variable is the number of conflict events in a 100km radius around the municipality (column 1-3) and the number of deaths from those events (column 4-6). p-values in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 8: Impact of the program on MILF conflict occurrence and intensity in Mindanao.

	MILF Events			Deaths from MILF Events		
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	-0.481**			-19.340		
	(0.029)			(0.706)		
Years of treatment		-0.389***			0.220	
		(0.000)			(0.990)	
Total project costs			-0.030**			-1.552
			(0.019)			(0.540)
Mun. total income	-1.331***	-1.239***	-1.327***	-130.042*	-132.049*	-129.327*
	(0.000)	(0.000)	(0.000)	(0.061)	(0.058)	(0.062)
Share tax revenue	8.198***	7.526***	8.180***	300.401	317.699	295.047
	(0.000)	(0.000)	(0.000)	(0.599)	(0.578)	(0.606)
HH in the 1st reg. decile	-0.014***	-0.017***	-0.014***	0.270	0.263	0.273
	(0.000)	(0.000)	(0.000)	(0.733)	(0.739)	(0.730)
HH in the 10th reg. decile	0.023***	0.025***	0.023***	-0.588	-0.580	-0.594
	(0.000)	(0.000)	(0.000)	(0.718)	(0.722)	(0.716)
Municipal Gini	3.390***	3.032***	3.392***	94.793	95.641	93.900
	(0.000)	(0.000)	(0.000)	(0.562)	(0.561)	(0.566)
Constant	-1.819	-1.359	-1.753	-51.678	-53.246	-51.014
	(0.829)	(0.871)	(0.835)	(0.922)	(0.919)	(0.923)
Observations	518	518	518	611	611	611
Number of mun	288	288	288	319	319	319
LL	-1944	-1931	-1944	-3869	-3869	-3869
Wald	2094	2100	2095	302.1	301.9	302.1

Note: Results from Poisson (column 1-3) and Tobit (column 4-6) regressions on the sample of Mindanao municipalities. The dependent variable is the number of MILF events in a 100km radius around the municipality (column 1-3) and the number of deaths from those events (column 4-6). p-values in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 9: Impact of the program on NPA conflict occurrence and intensity in Mindanao.

	NPA Events			Deaths from NPA Events		
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.432***			18.122**		
	(0.002)			(0.023)		
Years of treatment		0.062			4.807*	
		(0.172)			(0.059)	
Total project costs			0.025***			0.677*
			(0.002)			(0.084)
Mun. total income	1.747***	1.797***	1.748***	64.967***	63.485***	65.491***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Share tax revenue	-0.698	-1.005	-0.727	27.111	22.276	20.676
	(0.578)	(0.424)	(0.562)	(0.722)	(0.771)	(0.786)
HH in the 1st reg. decile	0.008***	0.008***	0.008***	0.186*	0.193*	0.188*
	(0.001)	(0.001)	(0.001)	(0.098)	(0.087)	(0.095)
HH in the 10th reg. decile	-0.009**	-0.008*	-0.009**	-0.133	-0.132	-0.124
	(0.044)	(0.076)	(0.047)	(0.584)	(0.587)	(0.609)
Municipal Gini	-1.297***	-1.298***	-1.289***	-30.068	-26.214	-30.875
	(0.002)	(0.002)	(0.002)	(0.179)	(0.248)	(0.169)
Constant	-3.085	-3.098	-3.142	-222.025***	-219.678***	-221.369***
	(0.512)	(0.509)	(0.504)	(0.006)	(0.007)	(0.006)
Observations	518	518	518	518	518	518
Number of mun	288	288	288	288	288	288
LL	-1768	-1772	-1768	-2214	-2215	-2215
Wald	1208	1203	1207	474.2	470.1	471.0

Note: Results from Poisson (column 1-3) and Tobit (column 4-6) regressions on the sample of Mindanao municipalities. The dependent variable is the number of NPA events in a 100km radius around the municipality (column 1-3) and the number of deaths from those events (column 4-6). p-values in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 10: Robustness checks: RDD on MILF conflict occurrence and intensity

	MILF Events				Deaths from MILF Events			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment	-0.249**	-0.389*	-0.257**	-0.363*	-62.812***	-34.274	-116.716**	-85.744**
	(0.035)	(0.070)	(0.030)	(0.090)	(0.010)	(0.459)	(0.029)	(0.026)
Treatment * poverty index	0.947	6.330*	0.914	6.738**	-416.741**	-191.316	-723.818*	-816.212
	(0.120)	(0.053)	(0.135)	(0.040)	(0.010)	(0.779)	(0.060)	(0.409)
Poverty index	-0.127	2.905	-0.611	6.022	-11.413	61.069	-54.857*	391.834
	(0.854)	(0.719)	(0.241)	(0.321)	(0.441)	(0.667)	(0.097)	(0.223)
Mun. total income	-6.160***	-5.453***	-6.133***	-5.496***	-173.248***	-205.414***	-416.221***	-460.098***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Share tax revenue	9.991***	-14.530*	10.060***	-14.959*	114.142	-297.587	715.181	-916.506
	(0.000)	(0.064)	(0.000)	(0.058)	(0.495)	(0.701)	(0.283)	(0.724)
HH in the 1st reg. decile	0.002	0.005	0.003	0.007	0.144	-0.113	0.279	-0.265
	(0.211)	(0.365)	(0.148)	(0.170)	(0.650)	(0.847)	(0.701)	(0.848)
HH in the 10th reg. decile	-0.010	0.021	-0.011	0.021	0.112	2.954	0.123	5.500
	(0.125)	(0.471)	(0.111)	(0.449)	(0.892)	(0.172)	(0.953)	(0.273)
Municipal Gini	0.569	3.172***	0.605	3.205***	17.932	-196.147*	31.404	-523.346**
	(0.132)	(0.001)	(0.109)	(0.001)	(0.730)	(0.077)	(0.811)	(0.037)
Constant	-14.174***	-56.286***	-5.375	-37.134***	-300.195***	-939.096***	-403.672*	-1,638.489***
	(0.010)	(0.003)	(0.165)	(0.004)	(0.001)	(0.001)	(0.052)	(0.005)
Observations	1093	239	416	89	1093	239	416	89
Number of mun	564	123	211	45	564	123	211	45
LL	-1654	-327.8	-1388	-270.5	-6549	-1436	-2638	-561.3
Wald	1669	348.1	1661	353.5	100.7	38.78	100.4	44.52
Prob.	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000

Note: Results from Poisson (column 1-4) and Tobit (column 5-8) regressions. The sample consists of all municipalities in the treated provinces (Column 1 and 5), only municipalities in the treated provinces that are around the 25% threshold (Column 2 and 6), all municipalities in the treated Mindanao provinces (Column 3 and 7)and, only municipalities in the treated Mindanao provinces that are around the 25% threshold(Column 4 and 8). The dependent variable is the number of MILF events in a 100km radius around the municipality (column 1-4) and the number of deaths from those events (column 5-8). p-values in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 11: Robustness checks: NPA conflict occurrence and intensity

	NPA Events				Deaths from NPA Events			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment	0.281***	0.444***	0.391***	0.600***	9.817**	16.707***	21.589***	51.948***
	(0.002)	(0.001)	(0.001)	(0.000)	(0.028)	(0.004)	(0.010)	(0.000)
Treatment * poverty index	1.655**	2.760	1.562*	0.741	52.713*	88.252**	42.033	419.001**
	(0.017)	(0.151)	(0.088)	(0.752)	(0.079)	(0.036)	(0.485)	(0.012)
Poverty index	-0.122	-3.877**	-0.327	-2.734	-1.252	-27.170	-6.875	-76.754*
	(0.512)	(0.024)	(0.191)	(0.193)	(0.612)	(0.173)	(0.206)	(0.092)
Mun. total income	1.705***	1.610***	2.672***	2.110***	33.879***	30.138***	84.702***	65.735***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)
Share tax revenue	1.013	-1.378	1.012	8.881	-8.227	46.496	36.276	302.677
	(0.163)	(0.542)	(0.483)	(0.122)	(0.790)	(0.727)	(0.728)	(0.372)
HH in the 1st reg. decile	0.001	-0.005**	-0.001	-0.008**	-0.028	-0.113	-0.046	-0.263
	(0.429)	(0.025)	(0.541)	(0.015)	(0.634)	(0.260)	(0.684)	(0.146)
HH in the 10th reg. decile	-0.002	-0.011	-0.005	-0.013	-0.068	-0.196	0.009	-0.244
	(0.459)	(0.150)	(0.254)	(0.192)	(0.651)	(0.598)	(0.978)	(0.709)
Municipal Gini	-0.212	-0.152	-0.003	-1.256**	-0.640	9.278	-6.200	17.818
	(0.290)	(0.714)	(0.990)	(0.019)	(0.947)	(0.624)	(0.763)	(0.592)
Constant	-2.633**	-10.657***	-2.373	-9.148**	-56.579***	-164.576***	-90.761***	-258.243***
	(0.029)	(0.002)	(0.158)	(0.024)	(0.000)	(0.000)	(0.008)	(0.002)
Observations	1093	239	416	89	1093	239	416	89
Number of mun	564	123	211	45	564	123	211	45
LL	-3987	-854.8	-1628	-343.7	-4645	-991.7	-1877	-383.5
Wald	554.5	166.6	758.7	197.1	119.7	55.26	171.3	81.57
Prob.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: Results from Poisson (column 1-4) and Tobit (column 5-8) regressions. The sample consists of all municipalities in the treated provinces (Column 1 and 5), only municipalities in the treated provinces that are around the 25% threshold (Column 2 and 6), all municipalities in the treated Mindanao provinces (Column 3 and 7)and, only municipalities in the treated Mindanao provinces that are around the 25% threshold(Column 4 and 8). The dependent variable is the number of MILF events in a 100km radius around the municipality (column 1-4) and the number of deaths from those events (column 5-8). p-values in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A-1: Definition of Variables

Variables	Description
treatment	Dummy treatment
treatyears	Number of years treated
ltotprojcost	Total projects costs
muntotalincome	Log total income
muntaxrevenue	Share tax revenue in total income
sharereceiptfromecoetpse	Share receipts from enterprises in total income
ltotalnontaxrevenue	Log non tax revenue
lextraordinaryreceiptsaids	Log extraordinary receipts and aid
sharegeneralpublicservices	Share general public services expenditures in total expenditures
sharelaborandemployment	Share labor and employment expenditures in total expenditures
sharehousgcomtydvpt	Share housing and community development expenditures in total expenditures
sharesocialsecusocialserv	Share social services expenditures in total expenditures
shareeconomicservices	Share economic services expenditures in total expenditures
sharedebtservicing	Share debt servicing expenditures in total expenditures
lloansborrowings	Log loans and borrowings
linterlocaltransfers	Log revenue from interlocal transfers
llaborandemployment	Log labor and employment expenditures
lhousgcomtydvpt	Log housing and community development expenditures
lsocialsecusocialserv	Log social services expenditures
leconomicservices	Log economic services expenditures
ldebtservicing	Log debt servicing expenditures
lexcessdeficit	Log excess deficit
hhh_female	Share households whose head is a woman
hhh_married	Share households whose head is married
hhh_elemeduc	Share households whose head has elementary education
hhh_hseduc	Share households whose head has high school education
hhh_heduc	Share households whose head has higher education
hhh_employed	Share households whose head has a job
hhh_gvt	Share households whose head works as a civil servant
hh_extended	Share extended households
hh_owner	Share households owning their house
hh_pcdecile13	Share households whose income is in the 1st 3 per capita national deciles
hh_pcrdecile1	Share households whose income is in the 1st per capita regional decile
hh_pcrdecile10	Share households whose income is in the 10th per capita regional decile
hh_car	Share households owning a car
hh_phone	Share households owning a phone
hh_salaried	Share households whose major source of income is wages
hh_agri	Share agricultural households
depdcy_ratio15	Ratio of the number of household members that are less than 15 on the number of household working members
Gini	Mean Gini coefficient of the municipality, calculated from surveyed households' income
ltoinc	Log surveyed households total income
ltaxes	Log taxes paid by surveyed households