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Assistance as Counterinsurency Tool.
Evidence for Colombia

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Fighting Fire with Aid: Development Assistance as Counterinsurgency Tool. Evidence for Colombia^{*}

Edgar H. Sanchez-Cuevas[†]

Abstract

I study the causal effect of the foreign aid for development assistance —implemented by the U.S. Agency for International Development (USAID)— on the intensity of municipality-level armed conflict in Colombia, for the period 2009-2013. To address potential endogeneity biases, I use a Bartik-like instrument which exploits the spatial persistence of aid from USAID in Colombia. Specifically, I instrument foreign aid with the interaction between the United States GDP and municipality-level intent-to-treat indicators for the Malaria Eradication Campaigns (circa 1957). The results point out that foreign aid reduces the insurgency associated with left-wing guerrillas, especially FARC. However, foreign aid does not affect the violence associated with criminal gangs from right-wing paramilitary origins (BACRIM). I provide both quantitative and anecdotic evidence on two potential mechanisms behind my results: (i) Development programs raise the opportunity cost of fighting and; (ii) foreign aid improves the trust, and the information flows between civilians and the government. Finally, I provide empirical evidence that casts doubt on two alternative channels whose predictions cannot be reconciled with the results: (i) that foreign aid increases the potentially-looted rents by the insurgents and; (ii) that development programs rise targeted assassinations committed by insurgents to sabotage and reestablish bargaining power.

Keywords: Armed Conflict, Aid Effectiveness, Insurgency.

JEL: D74, F35, O54, O19, O12.

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Combatiendo Fuego con Ayuda: Asistencia como Doctrina Contrainsurgente. Evidencia para Colombia^{*}

Édgar H. Sánchez-Cuevas[†]

Resumen

El presente trabajo estudia el efecto causal de los programas para el desarrollo implementados por la Agencia de los Estados Unidos para el Desarrollo Internacional (USAID), sobre el conflicto colombiano a nivel municipal, para el período 2009-2013. Para abordar sesgos potenciales por endogeneidad, se usa la interacción entre el PIB de Estados Unidos y los indicadores de intención a tratar de las *Campañas de Erradicación de Malaria (circa 1957)*, en una metodología de Variables Instrumentales. Los resultados apuntan a que, por un lado, la ayuda externa redujo la violencia de las guerrillas de izquierda, especialmente las FARC, y por el otro, no tuvo efecto sobre la violencia asociada a las Bandas Criminales (BACRIM). En ese orden de ideas, se provee evidencia tanto cuantitativa como anecdótica de dos potenciales mecanismos: (i) la asistencia incrementa el costo de oportunidad de ser un combatiente; y (ii) mejora la confianza y los flujos de información entre la población y las instituciones locales. Finalmente, el trabajo provee evidencia empírica para poner en cuestión dos mecanismos alternativos cuyas predicciones no coinciden con los resultados: (i) la ayuda para el desarrollo puede incrementar las rentas a disputarse; o (ii) aumentar los asesinatos selectivos cometidos por los insurgentes en respuesta a la pérdida de poder negociación.

Palabras Clave: Conflicto Armado, Efectividad de la Ayuda, Insurgencia.

JEL: D74, F35, O54, O19, O12.

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"The guerrilla must move amongst the people as a fish swims in the sea"

On Guerrilla Warfare, Mao Zedong, 1937

1 Introduction

Foreign aid is one of the most relevant policy tools used by developed countries for solving basic needs of the population in developing countries. In 1970, the United Nations General Assembly established that:

Each economically advanced country will progressively increase its official development assistance to the developing countries and will exert its best efforts to reach a minimum net amount of 0.7% of its gross national product at market prices by the middle of the Decade ([United Nations, 1970](#), pp.43).

Nonetheless, as a result of the 9/11 terrorist attacks and the subsequent wars in Afghanistan and Iraq, foreign aid obtained the additional role of de-escalating insurgencies through the implementation of development programs. These programs have aimed to gain the support of civilians, since they are the decisive factor in the result of an asymmetric conflict ([Kalyvas and Balcells, 2010](#); [Berman and Matanock, 2015](#)). The implementation of such interventions has displaced prior counterinsurgency doctrines that treat the insurgencies as conventional symmetric conflicts —where both parties have similar military capacity— toward strategies that highlight the motivation of the conflicting parties for gaining the support of the population, in a scenario of provision of public goods and income-generating activities via foreign aid ([US Army/Marine Corps, 2007](#)).

The main objective of cooperation between the U.S. Government (USG) and the Government of Colombia (GoC) is to "strengthen Colombia's capacity to implement a sustainable and inclusive peace" ([U.S. Agency for International Development \(USAID\), 2014](#), pp.2) through the implementation of different programs. These programs have presented different approaches across time, passing from top-down doctrines —like eradication of illicit crops and military reinforcement— to bottom-up doctrines geared toward the consolidation of the State from a local scenario. The current cooperation strategy between USG and GoC places emphasis on the implementation of development programs in order to: (i) promote the presence of democratic institutions in targeted

areas; (ii) facilitate the reconciliation of ex-combatants, victims, and other citizens; (iii) improve conditions for inclusive rural economic growth; and (iv) strengthen environmental resiliency¹. On the one hand, —while not explicitly tied to the Colombian army— it is implemented as a counterinsurgency tool by both USG and GoC, and —on the other hand— it requires the participation and continuous involvement of the local communities. Hence, USAID assistance lies at the intersection of *Community Driven Development (CDD)* and *Consolidation and Reconstruction (C&R)* programs, and its objective is to reestablish direct links between people and local governments (Zürcher, 2017).

I focus on the implementation of USAID development programs in Colombian municipalities. Figure 1 reveals that USG has been the largest source of cooperation concerning Official Development Aid (ODA), exceeding the aid sent by the agencies of other representative donors. Moreover, —from 2008 to 2013— USG assistance accounted for approximately USD 2.8 billions, and represented roughly between 40% and 70% of the ODA disbursed by all the Development Assistance Committee (DAC) members (Organization for Economic Cooperation and Development (OECD), 2013).

Figure 1: Official Development Aid (ODA) for Colombia: 2008-2013

Source: Organization for Economic Cooperation and Development (OECD) (2013). Author's calculations.

In terms of empirical evidence, even though the effects of development aid on insurgencies have attracted the attention of the macroeconomists for decades, the evidence has been mixed and discouraging in terms of economic policy,² and thus it has triggered a debate about aid effective-

¹Some examples of the projects implemented by the United States Agency for International Development (USAID) can be seen in U.S. Agency for International Development (USAID) (2013a).

²On the one hand, some authors find positive effects in terms of de-escalating of insurgencies (Collier and

ness in a scenario of insurgency. Given this, the literature has explored the micro-foundations, potential channels, and conditions under which development aid might work to impact armed conflict. Therefore, the microeconomic analysis has settled itself as the frontline research (Blattman and Miguel, 2010; Nunn and Qian, 2014; Qian, 2015). Nonetheless, the lack of microdata and the identification problems have hampered such research line to the extent that the micro evidence is limited to Iraq (Berman et al., 2011, 2013), Afghanistan (Beath et al., 2017; Sexton, 2016), Philippines (Croston et al., 2014), India (Khanna and Zimmermann, 2014; Dasgupta et al., 2017), Colombia (Weintraub, 2016), and Vietnam (Dell and Querubín, 2017).

In this paper, I use data on the municipality-level foreign aid for development assistance sent by USAID to provide a microeconomic explanation of the effectiveness of the counterinsurgency doctrines implemented by the USG and the GoC. To proceed, I measure foreign aid as the cumulative amount disbursed every year into the intervened municipalities. Moreover, I use different databases on armed conflict and general characteristics for the construction of a balanced municipality-level panel for the period 2009 to 2013.

I acknowledge that foreign aid is not assigned randomly since the conflict intensity might be one criterium for the municipality-level allocation. These endogeneity problems would bias the OLS estimates in non-obvious ways. To lessen this problem, I use a methodology of instrumental variables with a specification of year and municipality fixed effects, and department and coca linear time trends. I instrument foreign aid with an interaction or Bartik-like instrument³: the interaction of the *United States GDP* and municipality-level intent-to-treat indicators for the *Malaria Eradication Campaigns (circa 1957)*. It captures the fact that a raise in the US economy might be translated into an increase in the amount of foreign aid sent which in turn is more likely to be channeled toward the municipalities which were previously intervened. In that sense, this simple—but not immune—instrumental variable relies on the fact that there is a time persistence in the interventions due to prior knowledge of the characteristics of the municipalities or already constructed

Hoeffler, 1998; de Ree and Nillesen, 2009; Nielsen et al., 2011; Bazzi and Blattman, 2014); on the other hand, other authors find negative effects in terms of escalating of insurgencies (Fearon, 2005; Djankov et al., 2008; Bates, 2015; Nunn and Qian, 2014)

³The Bartik-like are formed by interacting exogenous time series with time-invariant exposure variables. The classic reference is (Bartik, 1991), but it has been widely used in several fields like migration (Altonji and Card, 1991), food aid (Nunn and Qian, 2014), credit supply (Greenstone et al., 2014), and market size and innovations (Acemoglu and Linn (2004).

networks regarding social capital.

In order to address possible violations to the exclusion restriction, I control for the covariates that are more likely to confound the effects: (i) current malaria rates ([Gallup and Sachs, 2001](#)), (ii) percent of houses with electricity in 1964 as a proxy of state capacity and institutions after the Malaria Eradication Campaigns ([Acemoglu et al., 2001](#)), (iii) altitude of the municipality, and (iv) possible complementarities between military aid and development programs, measured by the number of military bases before the period of study (in 2006) ([Dube and Naidu, 2015](#); [Acemoglu et al., 2016](#)). The invariant characteristics are interacted with the United States GDP ([The World Bank, 2015](#)) to allow for time variation.

According to this econometric framework, the IV estimates show that the development programs implemented by USAID in Colombian municipalities have reduced the violence associated with left-wing guerrillas —especially FARC— in terms of homicides per 100,000 inhabitants. In terms of magnitudes, an 1% increase in foreign aid leads to a reduction of 0.0196 homicides per 100,000 inhabitants committed by FARC (equivalent to 1.71% of the mean of the homicides rate by FARC, see Appendix Table [A2](#)), and 0.0238 homicides per 100,000 inhabitants committed by left-wing guerrillas in general (equivalent to 1.82% of the mean of the homicides rate by left-wing guerrillas, see Appendix Table [A2](#)). However, the homicides associated with criminal gangs (BACRIM) were not affected by the development programs.

Robustness checks and falsification tests are performed throughout the paper. I show that the findings hold for specifying the independent variable as the amount disbursed every year in the intervened municipalities, and for a restricted sample regarding only rural and less populous areas. Furthermore, I have straight individual-level measures of wages, and hours worked last week that allow me to test an opportunity cost effect ([Becker, 1968](#); [Grossman, 1991](#); [Hirshleifer, 1995](#); [Dal Bó and Dal Bó, 2011](#)). Even though I have no access to data which enable me to conclude that the results are driven by a hearts and minds-oriented approach ([Mao, 1961](#); [Gurr, 1970](#); [Popkin, 1980](#); [Galula, 2006](#); [US Army/Marine Corps, 2007](#); [Berman et al., 2011, 2013](#)),⁴ there is anecdotal evidence that suggests that such theories are compelling explanations of the reduction in the intensity

⁴I am currently working on testing this potential channel through the use of municipality-level data on social struggles (demonstrations, strikes, etc.). Such data is available in the Database of Social Struggles at the Center of Research and Popular Education ([Centro Nacional de Investigación y Educación Popular \(CINEP\), 2013](#)), respectively; albeit the access is restricted.

of the Colombian armed conflict. On the other hand, I have fine-grained data that allow me to rule out alternative theories whose predictions seem not consistent with the results, like the bargaining models (Fearon, 1995; Powell, 2006; Chassang and Padró i Miquel, 2009; Blattman and Miguel, 2010) or the models that focus on greed or rapacity effect (Hirshleifer, 1989; Grossman, 1999; Bates et al., 2002).

The main contribution of this paper is to join the aforementioned list of papers—which is considerably small given the billions of aid spent on stabilization and counterinsurgency, and the recent efforts for more accurate evaluations (Zürcher, 2017)—in providing scarce micro empirical evidence on aid effectiveness in a scenario of asymmetric conflict. More specifically, this paper provides rare micro evidence for a violence-dampening effect of foreign aid and engages in a more systematic way of understanding the conditions under which aid is effective. For such purpose, I use the interaction of the US GDP and the Malaria Eradication Campaigns (circa 1957) as a valid source of exogenous variation, in an instrumental variables approach. Additionally,—in order to examine the environments under which aid has violent-reducing effects—I evaluate heterogeneous treatment effects by interacting the main explanatory variable with indicator variables on pre-existing: (i) security levels (contested and non-contested municipalities), and (ii) municipality state capacity. Therefore, to my knowledge, this is the first research to address the causal effect of foreign aid on the Colombian armed conflict and the environments under which the violence-dampening effects are more pronounced.

Two papers address similar research questions for Colombia. First, Dube and Naidu (2015) identify the causal effect of aid sent by the US Defense Department during *Plan Colombia*, and find that it escalated the violent actions associated with paramilitaries, and had no impact on guerrilla violence in municipalities with military bases. However, development programs, and military and counternarcotics aid represent two different counterinsurgency strategies, where the latter is more prone to backfire in asymmetric conflict scenarios (Condra et al., 2010; Acemoglu et al., 2016; Dell and Querubín, 2017). Another paper (Weintraub, 2016) explores the causal relationship between the Conditional Cash Transfers (CCT) program *Familias en Acción* on left-wing guerrillas' violence for a restricted sample of municipalities. Weintraub (2016) points out that such programs increased the armed conflict associated with left-wing guerrillas due to insurgent's attempts to sabotage the

cooperation between beneficiaries and the government. However, *Familias en Acción* and USAID assistance are considerably different in terms of size and implementation. In short, CCTs are not intended to reduce armed conflict but to protect the poorest and vulnerable households, by providing small and targeted grants based on conditions like children's school attendance and medical treatment (Crost et al., 2016; Zürcher, 2017). Further, the sample of the paper is restricted to 57 treated and 65 untreated municipalities, by using a matching procedures.

The remainder of this paper is organized as follows: section 2 shows the context that encompasses the research. Section 3 presents the data and the descriptive analysis. Section 4 describes the empirical strategy. Section 5 presents the OLS and IV results alongside several robustness checks. Section 6 highlights two potential mechanisms (opportunity cost and hearts and minds-oriented approaches) and rules out other two (bargaining models and greed or rapacity effect). Section 7 presents heterogeneous effects regarding stable and high-state-capacity environments under which foreign aid might reduce armed conflict. Section 8 concludes.

2 Context

This section presents the historical background which encompasses this paper. I provide a short description of the Colombian armed conflict and the international cooperation between USG and the GoC, highlighting the Malaria Eradication Campaigns in the Americas (circa 1957) which are crucial for my empirical strategy.

2.1 Colombian Armed Conflict

The Colombian armed conflict —since its origins— has been characterized by the participation of three actors: the incumbent government, left-wing guerrillas and right-wing paramilitaries.

On the one hand, left-wing guerrillas emerged as peasant movement into the early sixties in response to the political exclusion, the weak State presence and the unequal land distribution in the rural zones of the center and the east of the country. The Revolutionary Armed Forces of Colombia (FARC by its acronym in Spanish) and the National Liberation Army (ELN) are the

most representative left-wing guerrillas active during the period of study. On their peak, FARC and ELN had an estimate of 16,000-20,000 and 4,000-6,000 combatants, respectively ([Dube and Vargas, 2013](#)).

On the other hand, the paramilitary groups in their current form have their origins into the early seventies when the government enacted the Act.48/1968. It settled the bases for the creation of self-defense forces whose objective was to help the incumbent into the enforcement of the rule of law in certain rural places where the insurgency levels were historically high. Nonetheless, this phenomenon extended in the early eighties as a response of the rural elites and the drug landlords — in many cases colluding with the incumbent— to the extorsions perpetrated by left-wing guerrillas.⁵

In the nineties emerged the United Self-Defense Forces of Colombia (AUC by its acronym in Spanish), the most prominent paramilitary organization in Colombian history. AUC was formed as an independent coalition of several private militias associated with drug landlords, and the former members of rural security cooperatives known as CONVIVIR.⁶ On its peak, AUC reached an estimate of 15,000 fighters ([Dube and Vargas, 2013](#)). From 2003 to 2016 the government carried out the demobilization of some blocs of the AUC. However, such demobilization was an unsuccessful attempt to recover the monopoly of the arms ([Bagley and Rosen, 2015](#)) due to the emergence of criminal gangs (BACRIM by its acronym in Spanish) formed by the remnants of the AUC that did not submit to the disarmament, and —contrary to the former paramilitary group— it has no political agenda ([Human Rights Watch, 2010](#); [McDermott, 2014](#)).

On August, 2012 president Juan Manuel Santos announced to the national and international media the beginning of exploratory peace talks with FARC. Such talks were formally carried out on October 2012 in Oslo, Norway and were further moved to Havana, Cuba ([The Economist, 2012](#)). The government and FARC discussed six points: (i) rural development and land policy — particularly important given the peasant origins of FARC—; (ii) political participation of the insurgents; (iii) illicit crops and drug trafficking; (iv) end of the conflict including the reintegration of ex-combatants into the civilian life; (v) victim's reparations; and (vi) implementation of the final

⁵For more information about the first paramilitary groups see [Velásquez \(2007\)](#); [Hristov \(2009\)](#)

⁶According to the paragraph 42 of the Decree 356/1994, the government authorized the creation of cooperatives of surveillance and rural private security known as CONVIVIR. However, in 1997 they were dismantled due to the increase into the violence associated with the them

agreement. According to this, FARC declared a unilateral ceasefire⁷ between November, 2012 to January 2013. Even though the unilateral ceasefire had several violations, it reduced the insurgent attacks by 87% (Beittel, 2015). Finally, on August 24th, 2016 both parties signed the final agreement and further, on November 29th, they ratified it.

2.2 Malaria Eradication Campaigns

During the fifties, the World Health Organization (WHO) launched several campaigns for eradicating the malaria in the world, given the discovery of DDT⁸ and the success of previous eradication campaigns carried out by the Rockefeller Foundation in the South of the United States and Sardinia (Tognotti, 2009). The interventions entailed technical assistance and humanitarian aid, coordinated and funded by UNICEF and the U.S. Government (see Figure A1) through USAID, and the United States Public Health Service (USPHS) (U.S. Agency for International Development (USAID), 1960; Nájera, 1989).

Most of the Latin American countries—including Colombia— committed to the eradication campaigns. Every country implemented the interventions following the WHO template: drainage activities in the municipality outskirts, spraying of DDT on the roof and the walls of the houses, and technical assistance. The results of these campaigns showed a decrease in malaria cases in Colombia by 80% between 1950 and 1970 (Bleakley, 2010).

However, —even when the Malaria Eradication Campaigns were successful in reducing the malaria eradication in the short-term— they were not able to avoid an epidemiologic setback which was the consequence of three main factors: (i) the resistance of the mosquito to DDT in 1952 (Livadas and Georgopoulos, 1953); (ii) the resistance of the variety *P. Falciparum* to drugs like the chloroquine (CQ) in 1960 (Moore and Lanier, 1961; Espinal et al., 1981); and (iii) the progressive decrease in investments for antimalarial activities (Nájera, 1989; Padilla et al., 2011). Consequently, —as shown in the Figure A2— by the middle of the sixties the cases of malaria returned to the previous levels, and afterward increased by four times the previous levels.

⁷The government declared his intention of not ceasing the operations until the final agreement was signed

⁸Dichloro-diphenyl-thrithloroethane (DDT) is an organic composite characteristic of the pesticides. It was used to control the vector-borne diseases like malaria, yellow fever and typhoid.

Lastly, Figures 3a and 3b show that great part of the municipalities that were target of interventions in 1957 are currently the main recipients of the USAID development programs. This suggests a time persistence into the interventions which relies on a prior knowledge in terms of the characteristics of the municipality or already constructed networks concerning social capital.

2.3 Bilateral Cooperation between USG and GoC

The USG has relied on two specific objectives to strengthen the capacity of the GoC to implement a sustainable and inclusive peace: (i) improve the security along with a reduction in illicit crops; and (ii) promote social and economic development. Such objectives have been carried out by two agencies of the USG through either economic or military aid. On the one hand, the Department of Defense focuses on the first specific objective by supporting the Colombian military and the national police through the provision of equipment and training of units for counternarcotics operations. On the other hand, USAID accomplishes the second specific objective through the implementation of development programs focused on improving the local State capacity, the reconciliation of victims, ex-combatants and civilian people, the rural economic growth, and the environmental resiliency.

According to this, the USG's strategy of cooperation in Colombia —like in Vietnam (Dell and Querubín, 2017), Iraq (Berman et al., 2011, 2013) and Afghanistan (Condra et al., 2010; Beath et al., 2017; Sexton, 2016)— is characterized by the implementation of two counterinsurgency doctrines: (i) top-down or *seek and destroy* approaches where the construction of State is done through military units deployment; and (ii) bottom-up or *hearts and minds*-oriented approaches where the priority is to provide public goods and generate income opportunities to the civilians in order to gain their trust, and therefore to obtain information about the insurgent's position.

Accordingly, the bilateral cooperation between the USG and the GoC presents three periods:

1. Alliance for Progress [1961-1970]
2. The War on Drugs, divided in two periods:
 - Andean Strategy [1989-1993]

- Plan Colombia [1999-2008]

3. The *Colombian Strategic Development Initiative (CSDI)* [2009].

First of all, the Alliance for Progress' objective was to establish conditions for the economic development and the political stability in order to avoid the spreading of the communist doctrines which were against the interests of the USG. According to Figure 2, from 1962 to 1973 the total aid disbursed by the USG was approximately 1.4 billions of dollars (approximately 13.6% of Colombian GDP in 1973). In that sense, 90% of such assistance was implemented by USAID regarding economic and social development programs. The remaining 10% was provided by the Department of Defense and emphasized military and police assistance (Rojas, 2010).

Secondly, the War on Drugs started with the Andean Strategy between 1989 and 1993. This program stressed the struggle against the production and the drug-trafficking, and the strengthening the institutions into the Andean countries: Colombia, Peru, and Bolivia. Given this, such period prioritized top-down doctrines in terms of eradication and units deployment, over bottom-up doctrines which were constrained to military results such as insurgent casualties and coca hectares eradicated. However, such top-down doctrines were escalated by the late nineties with the Plan Colombia where, according to Figure 2, the USG disbursed approximately 8 billions of dollars for military and counternarcotic operations, between 2000 and 2009 (Bagley and Rosen, 2015). At one point of this period, Colombia became the third recipient of the USG's assistance, behind only Israel and Egypt (Crandall, 2002).

Nonetheless, —given the far from encouraging results in terms of economic and human lives costs (Mejía, 2015) and the experiences from Iraq and Afghanistan— both USG and the GoC modified the strategy for addressing the armed conflict and the illicit crops problem. In that sense, both governments agreed on the transition from top-down to bottom-up counterinsurgency doctrines by implementing two complementary programs: Colombia's National Territorial Consolidation Plan (PNCT by its acronym in Spanish) implemented by the GoC, and the Colombia Strategic Development Initiative (CSDI), performed by the USG in 2009. Hence, USAID gained importance with respect to the Department of Defense since —according to Figure 2— the balance between the military and counternarcotics assistance and the development assistance shifted from 99.9/0.1 in 2006 to roughly 50/50 in 2009.

Figure 2: Evolution of Bilateral Cooperation GoC-USG (1957-2013) (Constant Prices)

Source: U.S. Agency for International Development (USAID) (2013b)

3 Data

I construct a balanced panel of 1,122 observations corresponding to the Colombian municipalities between 2009 and 2013. Hence, I will focus on the CSDI period where the USG prioritized the bottom-up doctrines as a counterinsurgency tool. Such panel data is the union of several bases regarding armed conflict, international cooperation, Malaria Eradication Campaigns and municipality characteristics.

First, panel data regarding the Colombian armed conflict consist of two bases: the Conflict Panel of CEDE at *Universidad de los Andes* ([Centro de Estudios sobre Desarrollo Económico \(CEDE\), 2015](#)), and "¡Basta ya!" from the National Center of Historical Memory ([Centro Nacional de Memoria Histórica, 2015](#)). Both databases contain detailed information of violent episodes registered by public sources like the press, international agencies, NGOs, think tanks, etc., for the different municipalities from 1988 to 2013. Furthermore, both classify information into a wide range of violent actions disaggregated by the main insurgent actors: left-wing guerrillas, paramilitary groups, and criminal gangs.

Second, data regarding development aid comes from the USAID's Monitoring and Evaluation clearinghouse ([U.S. Agency for International Development \(USAID\), 2016](#)). It contains project-level data on the flows of aid in dollars, sent to the focalized municipalities for the period

2009-2017. It is worth to emphasize that this information is not classified and therefore it does not include the flows of aid sent each year but the start and the completion date of the project. Like [Berman et al. \(2011\)](#) and [Sexton \(2016\)](#), I am forced to assume a uniform spending distribution of the development assistance. Hence, —for each project— I calculate the average spending by dividing the total amount by the number of days between the start and the end of the project and then calculate the daily flows for each municipality. Lastly, I aggregate such daily streams and obtain a municipality-year level measure of development aid.

Third, historical information regarding the Malaria Eradication Campaigns in Colombia comes from the Colombian Malaria Eradication Service ([Servicio Nacional de Erradicación de Malaria, 1957](#)) and from the prior research of Socrates Herrera, Myriam Arevalo, and Julio Padilla.⁹ Due to the significant changes into the municipality boundaries between 1957 and my period of study, I use ArcGIS for updating the municipality boundaries and the territory delimited as malarial area during the eradication campaigns (see Appendix Figure [A3](#)).¹⁰

Fourth, I construct the municipality-level indicator variable of military contested status by using data on armed conflict events (attacks or clashes) between 2000 and 2008, compiled by [Restrepo et al. \(2004\)](#) and updated by Universidad del Rosario. I codify municipalities above the national average as military contested. Likewise, I construct the municipality-level indicator variable of high state capacity status by using data on public employees and public institutions (police stations, courts, notary offices, Telecom offices, post offices, agricultural bank branches, public hospitals, public health centers, public health posts, public schools, public libraries, fire stations, jails, deed registry offices, and tax collection offices) per 1,000 inhabitants in 1993, from [Acemoglu et al. \(2015\)](#). I construct a standardized index of state capacity by min-max scaling both measures¹¹ and averaging them. I codify municipalities above the median of the index as high-state-capacity municipalities.

⁹Contact. Herrera and Arevalo: Caucesco Scientific Research Center, Cali, Colombia. Padilla: Ministry of Social Protection, Bogota, Colombia.

¹⁰The delimitation of this area was done by following an altimetric criterium. Therefore, areas under 1,600 m.a.s.l. were considered as exposed to malaria according to prior epidemiologic studies regarding the maximum altitude tolerated by the mosquito. For the municipalities located into the departments of Boyacá, Santander and Norte de Santander, the threshold was set at 1,200 m.a.s.l. ([Servicio Nacional de Erradicación de Malaria, 1957](#))

¹¹
$$X_{ij,1993}^{SD} = \frac{X_{ij,1993} - \text{Min}(X_{ij,1993})}{\text{Max}(X_{ij,1993}) - \text{Min}(X_{ij,1993})}$$

Finally, I obtain both variant and invariant municipality characteristics from the General Characteristics Panel of CEDE at *Universidad de los Andes* ([Centro de Estudios sobre Desarrollo Económico \(CEDE\), 2015](#)). This database includes a complete municipality-level data for all the 1,122 municipalities¹² during 1993 to 2013. Additionally, I use other databases to include other controls and to assess potential channels: (i) the budget of each municipality for the period 1993-2013 ([Centro de Estudios sobre Desarrollo Económico \(CEDE\), 2015](#)); (ii) malarial events for the period 2005-2017 ([Sistema de Vigilancia en Salud Pública, 2016](#)); (iii) the number of military bases [Acemoglu et al. \(2016\)](#); (iv) historic data on the share of houses with electricity in 1964, as a proxy of state capacity and institutions after the Malaria Eradication Campaigns ([Departamento Nacional de Estadística \(DANE\), 1964](#)); (v) the information of individual-level wages and hours worked ([Departamento Nacional de Estadística \(DANE\), 2010](#)); and (vi) the number of American residents in each municipality in 2005 ([Departamento Nacional de Estadística \(DANE\), 2005](#)), to test a mechanism underlying the relevance of the instrument. Appendix Table A1 shows the summary and the detailed description of the sources and the construction of variables above.

Appendix Table A2 presents summary statistics of the main variables regarding foreign aid, armed conflict, other dependent variables (channels) and municipality-level controls, both time variant and invariant. According to this, 14% of the municipalities were intervened by USAID at least once between 2009 and 2013, and the average municipality in the sample received USD 74,390.25. Finally, 59.4% of the Colombian territory was potentially intervened by SEM during the Malaria Eradication Campaigns (circa 1957), and SEM carried out almost 2,910 sprayings of DDT in the average municipality.

Table 1 computes means and standard deviations by comparing municipalities which received foreign aid at least once to the ones which were not intervened during the period 2009 to 2013. Stars in the third column denote the significance level of a difference test between non-recipient and recipient municipalities. Thus, municipalities which were intervened by USAID present more intensity of armed conflict regarding homicides, and kidnappings. Moreover, aid recipients present: (i) greater tax revenues (potential loot to be predated), (ii) people working more hours and earning higher wages (opportunity cost of being a fighter); (iii) more population, (iv) higher levels of

¹²It does not take into account *Belén de Bajirá* since it is currently disputed by the departments of Chocó and Antioquia

collective action and prior levels of violence (were more affected by land conflicts from 1918 to 1930 and by *La Violencia* period from 1948 to 1958), (v) less average altitude, (vi) more military bases (in 2006), (vii) a higher state capacity (in 1964) proxied by the share of houses with electricity, (viii) less stability in terms of conflict events, and (ix) lower state capacity in terms of public employees and public institutions.

Figure 3 shows the foreign aid recipients. Time persistence of the municipality-level interventions can be seen by comparing Figures 3a and 3b. Figure 3a shows the intensity of foreign aid received in dollars during the period 2009 to 2013. Figure 3b shows the areas prioritized by SEM in 1957, given by the intensity of sprayings of DDT among the Colombian municipalities. From these figures, it is apparent that municipalities that were prioritized by SEM in 1957 are the main recipients of aid nowadays. Such persistence is particularly strong in the regions of Pacific Coast, Bajo Cauca, Montes de María, Amazon and Orinoquía (mainly Caquetá and Ariari), Catatumbo and the Sierra Nevada.

Figure 4 shows the intensity of the conflict disaggregated by armed actors, during the period 2009 to 2013. Figure 4a shows the average homicides rate per 100,000 inhabitants associated with left-wing guerrillas. Figure 4b shows the average homicides rate per 100,000 inhabitants associated with criminal gangs. By comparing these figures with Figure 3a, it is apparent that USAID focus its interventions in municipalities where armed conflict is more intense. On the one hand, this relationship is particularly strong in the Pacific Coast (especially Tumaco), Antioquia (Bajo Cauca), Catatumbo, Amazon and Orinoquía (Arauca, Caquetá and Ariari), South of Tolima and the Sierra Nevada, for left-wing guerrillas. On the other hand, the relationship between foreign aid and homicides associated with criminal gangs concentrates in Antioquia (Bajo Cauca), Valle del Cauca (Buenaventura and the North) and the Sierra Nevada.

Table 1: Differences in Means

	Non-recipients (1)	Recipients (2)	Difference (1)-(2)
<i>A. Armed Conflict</i>			
Homicides Rate FARC	0.901 (0.103)	1.958 (0.228)	-1.057*** (0.225)
Homicides Rate Guerrillas	1.038 (0.115)	2.179 (0.240)	-1.140*** (0.248)
Homicides Rate BACRIM	0.669 (0.136)	1.158 (0.200)	-0.489* (0.271)
Kidnappings FARC	0.025 (0.003)	0.099 (0.012)	-0.074*** (0.009)
Kidnappings Guerrillas	0.042 (0.005)	0.147 (0.020)	-0.105*** (0.014)
Kidnappings BACRIM	0.006 (0.001)	0.031 (0.006)	-0.024*** (0.004)
Events Targeted Assassinations Guerrillas	0.022 (0.026)	0.093 (0.003)	-0.071*** (0.012)
Victims Rate Targeted Assassinations Guerrillas	0.242 (0.052)	0.572 (0.112)	-0.329*** (0.113)
<i>B. Other Dependent Variables</i>			
Transfer Revenue (Billions COP)	0.584 (0.010)	1.224 (0.148)	-0.640*** (0.084)
Transfer Revenue - National Transfers (Billions COP)	0.525 (0.007)	0.798 (0.045)	-0.273*** (0.028)
Transfer Revenue - Other Transfers (Billions COP)	0.058 (0.006)	0.425 (0.136)	-0.367*** (0.076)
<i>C. Individual Level Variables</i>			
Working hours	43.182 (0.090)	44.779 (0.093)	-1.597*** (0.130)
Gross Wage (Millions COP)	0.658 (0.004)	0.818 (0.004)	-0.160*** (0.006)
Wage with compensations (Millions COP)	0.686 (0.004)	0.847 (0.004)	-0.161*** (0.006)
<i>D. Municipality-level Controls</i>			
Total Population (Thousands Inhabitants)	18.207 (0.457)	116.589 (14.294)	-98.381*** (7.900)
Dummy Land Conflict (1901-1931)	0.031 (0.003)	0.111 (0.009)	-0.080*** (0.007)
Dummy La Violencia (1948-1953)	0.127 (0.005)	0.151 (0.010)	-0.024** (0.011)
Altitude (m.a.s.l.)	1230.460 (13.699)	756.657 (22.914)	473.803*** (27.922)
Malaria Events Rate	3.493 (0.594)	4.107 (0.536)	-0.614 (1.120)
Military Bases	0.053 (0.004)	0.263 (0.016)	0.210*** (0.011)
Houses with Electricity in 1964(%)	0.134 (0.002)	0.180 (0.005)	-0.046*** (0.005)
Dummy Contested Municipalities	0.047 (0.003)	0.260 (0.015)	-0.213*** (0.010)
Dummy High State Capacity	0.561 (0.007)	0.465 (0.017)	0.096*** (0.018)

Notes. Column (1) reports the mean of the variables for municipalities that were intervened at least once (between 2009 and 2013). Column (2) reports the mean of the variables for municipalities that never were intervened. Finally, column (3) reports the difference of (1) and (2). Standard Errors in parentheses. $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

Figure 3: Municipalities intervened by USAID

(a) Average Foreign Aid Received 2009-2013 (USD)

(b) Intensity of Interventions by SEM, 1957

Sources: [U.S. Agency for International Development \(USAID\) \(2016\)](#) and [Servicio Nacional de Erradicación de Malaria \(1957\)](#). Author's Calculations.

Figure 4: Armed Conflict in Colombia 2009-2013

(a) Average Homicides Committed by Guerrillas 2009-2013

(b) Average Homicides Committed by BACRIM 2009-2013

Centro de Estudios sobre Desarrollo Económico (CEDE) (2015). Author's Calculations.

Source:

4 Empirical Strategy

To explore the causal effect of the USAID programs on the municipality-level armed conflict I use the OLS specification with municipality and time fixed effects, and linear time trends in Colombian departments, and coca municipalities, of Equation (1):

$$Conflict_{ijt} = \delta_i + \delta_t + \psi_{jt} + Coca_{ijt} + Log(Aid_{ijt}) * \beta + X_{ijt} * \gamma + X_{ij} * \phi + \varepsilon_{ijt} \quad (1)$$

where $Conflict_{ijt}$ is the homicides rate per 100,000 inhabitants associated with the main insurgent groups: left-wing guerrillas and criminal gangs, by municipality i in time t . Aid_{ijt} is the cumulative amount of aid in dollars received for municipality i in time t . This linear-log specification generates $\hat{\beta}$ estimates that are interpreted as follows: 1% change in foreign aid changes the homicides rates by $\hat{\beta}/100$ homicides per 100,000 inhabitants. X_{ijt} is a vector of municipality-level time-varying controls and X_{ij} is a vector of municipality-level time-invariant controls, which are interacted with US GDP ($LogUSGDP_t$) to allow for time variation in such characteristics.¹³ ψ_{jt} are department-specific linear time trends which account for potential omitted variables, since aid might be concentrated in certain departments, and armed conflict might be trending upward in such locations based on other factors such as changes in growth rates or geographic shifts in the presence of armed groups. Likewise, $Coca_{ijt}$ are linear time trends in coca and non-coca municipalities (in 2007). I include them to address potential omitted variables bias given that coca crops presence might be correlated with foreign aid allocation, and both coca planting and government eradication efforts caused armed conflict to trend upward in coca municipalities (Dube and Vargas, 2013; Mejía, 2015). δ_i and δ_t are municipality and time fixed effects, respectively. These fixed effects capture time-invariant characteristics (δ_i) and year-specific conditions (δ_t) that might be correlated with the Colombian armed conflict. Finally, ε_{ijt} is a disturbance term clustered at municipality level which allows for autocorrelations of unobservables within municipalities.

Nonetheless, Equation (1) is potentially biased due to simultaneity or joint determination problems due to non-random assignment of the development programs among municipalities by USAID. Thus, the allocation of the foreign aid depends, as the summary statistics show, on the municipality-level characteristics concerning of armed conflict. Mainly, the international assistance

¹³The controls vary depending on the specification, albeit all regressions include Log Population for accounting for scale effects.

may be channeled toward municipalities with higher levels of violence. It would bias the estimates in the Equation (1) upwards since it induces a positive correlation between conflict levels and the allocation of foreign aid¹⁴. However, —since it was necessary to assume a time-uniform disbursement of the foreign aid— the estimates of Equation (1) might also present an attenuation bias.

To tackle the endogeneity of Aid_{ijt} I use an instrumental variables approach. The instrument is the interaction of the US GDP ($USGDP_t$) —the source of time variation—, and the potential interventions carried out during the Malaria Eradication Campaigns by SEM in 1957 ($Malaria_{ij}$) —the source of cross-sectional variation—. $Malaria_{ij}$ is constructed based on the data of DDT sprayings provided by SEM (1957) and accounts for the intensity of the interventions in all municipalities. Given that the sprayings data is only available at department level, I weight the total amount of sprayings in the department j by the share of the area of the municipality i if and only if the municipality was focalized by SEM in 1957 (if and only if the municipality i meets the altimetric criterium), otherwise the instrument takes a value of zero. Formally:

$$Malaria_{ij} = \begin{cases} Sprayings_j * \left(\frac{Area_i}{\sum_{i \in m \subseteq j} Area_i} \right) & \text{if } i \in m \subseteq j \\ 0 & \text{elsewhere} \end{cases}$$

where $i \in m \subseteq j$ is a municipality within the department J that was potentially intervened by SEM in 1957.

The relevance of the instrument is based on two ideas. First, the US GDP is relevant because foreign aid is defined as a share of the donor's GDP, and —almost by construction— changes in the US GDP are not correlated with the allocation of foreign aid within the recipient country (de Ree and Nillesen, 2009). Second, —due to USAID's role into the implementation of the Malaria Eradication Campaigns— a municipality which was potentially intervened (during 1957 to 1962) has a higher probability of receiving development aid from USAID (from 2009 to 2013). This condition relies on the fact that there is a time persistence into the interventions given a prior knowledge regarding the characteristics of the municipality or already constructed social capital networks. The most straightforward mechanism for testing such time persistence is estimating the first-stage relationship between the instrument and foreign aid (from 2009 to 2013). However, a preliminary

¹⁴Conversely, the development programs may be focused on municipalities with lower levels of armed conflict. In such case, it would bias the estimates downwards.

and indirect way of doing it is by checking the correlation between the potential interventions during the Malaria Eradication Campaigns and the number of American residents (in 2005) as a proxy of networking.¹⁵ Appendix Table A3 shows that —excluding the capitals and the metropolitan areas defined as municipalities within 40Km, 35Km, 30Km, 25Km and 20Km, and conditional on controls— there were more American residents per 100,000 inhabitants (in 2005) in the municipalities prioritized by SEM during the Malaria Eradication Campaigns (from 1957 to 1962).¹⁶ In detail, the correlation is higher and more significant for the Americans who settled down before 2001.

The exclusion restriction in an Bartik-like instrument is that —conditional on controls— the source of cross-sectional variation " $Malaria_{ij}$ " is uncorrelated with the error term in (1) (Goldsmith-Pinkham et al., 2018). Conditioning on potential confounders is vital given that —even though $Malaria_{ij}$ is exogenous from an economic perspective— it is not necessarily exogenous from an econometric perspective. Thus, I will take into account two covariates that are potentially correlated with the instrument and might have an impact on armed conflict; these are: (i) malaria cases per 100,000 inhabitants from 2009 to 2013, to account for a direct effect on human capital as health (Gallup and Sachs, 2001); and (ii) the share of houses with electricity in 1964 as a proxy of state capacity and institutions after the Malaria Eradication Campaigns (interacted with $LogUSGDP_t$), since such campaigns might have brought institutional development to the potentially intervened municipalities through the arrival of brigades, hospitals and public goods in general (Acemoglu et al., 2001).

Moreover, I control for other potential confounders such as: (i) the altitude of the municipality, since the selection criterium of the intent-to-treat indicators for the Malaria Eradication Campaigns was based on an altimetric criterium (Servicio Nacional de Erradicación de Malaria, 1957); and (ii) the number of military bases before the period of study (in 2006) (Acemoglu et al., 2016) for addressing complementarities between USAID development programs and the military aid sent by the Department of Defense¹⁷. Both potential confounders are interacted with $LogUSGDP_t$.

¹⁵Following Woodruff and Zenteno (2007), immigration networks increase the level of investment and profitability by lowering capital costs and loosening capital restrictions.

¹⁶I included dummies of region, Log Population, distance to Bogotá, Gini Index, Multidimensional Poverty Index, military bases and the share of houses with electricity in 1964 (Centro de Estudios sobre Desarrollo Económico (CEDE), 2015).

¹⁷The military aid is only sent to municipalities with military bases (Dube and Naidu, 2015)

Therefore, I use an IV specification with municipality and time fixed effects given by the Equations (2) and (3):

$$Conflict_{ijt} = \delta_i + \delta_t + \psi_{jt} + Coca_{ijt} + Log(\hat{Aid}_{ijt}) * \beta + X_{ijt} * \gamma + X_{ij} * \phi + \varepsilon_{ijt} \quad (2)$$

$$Log(\hat{Aid}_{ijt}) = \delta_i + \delta_t + \psi_{jt} + Coca_{ijt} + Z_{it} * \eta + X_{ijt} * \theta + X_{ij} * \lambda + v_{ijt} \quad (3)$$

$$Z_{it} = Log(USGDP_t) * Malaria_{ij}$$

In summary, the β coefficient in (2) identifies a potential causal effect of foreign aid on the municipality-level incidence of armed conflict, among the municipalities that received development assistance (from 2009 to 2013).

5 Results

5.1 OLS Estimates

I begin the analysis by reporting the OLS estimates of Equation (1). I present different specifications in the Table 2. The specification in Panel A includes municipality and time fixed effects and the Log of the Population as controls. Moreover, the error term is clustered at the municipality level to allow for autocorrelation within municipalities. The estimates are close to zero and statistically insignificant.

Nonetheless, the confounding effect of covariates that affect both conflict and foreign aid make these estimates unreliable. The specification in Panel B includes the full set of controls described in Section III. Even though the inclusion of such set of covariates increases the magnitude of the estimates (in absolute value) —which suggests a negative bias by omitted variables— the effects are still close to zero and statistically insignificant.

Table 2: Cumulative Aid and Armed Conflict, OLS

	(1) Homicides Rate FARC	(2) Homicides Rate Guerrillas	(3) Homicides Rate BACRIM
Foreign Aid (Cumulative)	0.00295 (0.0706)	-0.00751 (0.0713)	-0.0626 (0.0519)
Observations	5610	5610	5610
Standardized Coefficients	0.00181	-0.00417	-0.0319
Municipality FE	Y	Y	Y
Year FE	Y	Y	Y
Department Linear Trend	Y	Y	Y
Coca Linear Trend	Y	Y	Y
Expanded Set of Controls	N	N	N
	(4) Homicides Rate FARC	(5) Homicides Rate Guerrillas	(6) Homicides Rate BACRIM
Foreign Aid (Cumulative)	0.00138 (0.0733)	-0.00824 (0.0739)	-0.0870 (0.0605)
Observations	5610	5610	5610
Standardized Coefficients	0.000845	-0.00458	-0.0443
Municipality FE	Y	Y	Y
Year FE	Y	Y	Y
Department Linear Trend	Y	Y	Y
Coca Linear Trend	Y	Y	Y
Expanded Set of Controls	Y	Y	Y

Notes. All regressions include time and municipality fixed effects, department and coca linear time trends, and Log Population. The full set of controls is specified in the Panel (D) of the Descriptive Statistics. Invariant controls interact with log US GPD. Robust standard errors clustered at the municipality level in parentheses.

*p<0.1 **p<0.05 ***p<0.01

5.2 IV Estimates

The OLS results might be biased due to non-random assignment of the development programs among Colombian municipalities. In this subsection, I present IV estimates that address and correct for this bias.

Appendix Table A4 explores the relevance of the instrument by showing the first-stage estimates of the Equation (3). Column 1 reports a high correlation —unconditional on controls— between the instrument and the cumulative aid. A first-stage F-statistic (27.44) higher than 10 suggests a powerful instrument. In Column 2, I include the full set of controls. The implied first-stage F-statistic for this specification is 13.33 pointing that —conditional on controls above— the instrument is a strong predictor of the municipality-level foreign aid. Thus, it is unlikely that a weak instrument biases the IV estimates of the Equation (2).

Appendix Table A5 reports the reduced-form effects of the instrument on the armed conflict. Panel A shows that—unconditional on the full set of covariates— the instrument decreases the

homicides rate associated with FARC (column 1) and left-wing guerrillas (column 2) (both estimates are statistically significant at 1%), but does not affect the homicides associated with criminal gangs (column 3). Panel B shows the same results when conditioning on the full set of controls.

Table 3 reports the IV estimates of Equation (2). These estimates are larger than the OLS estimates¹⁸. Panel A shows that —unconditional on the full set of covariates— a 1% increase in cumulative aid reduces the homicides rate associated with FARC by 0.0128 homicides per 100,000 inhabitants (1.12% of the homicides rate associated with FARC during the period of study. See Appendix Table A2). Likewise, a 1% increase in cumulative aid reduces the average homicides rate associated with left-wing guerrillas by 0.015 homicides per 100,000 inhabitants (1.15% of the homicides rate associated with left-wing guerrillas during the period of study. See Appendix Table A2). Both effects are statistically significant at 5%. Nonetheless, the homicides rate committed by BACRIM seem not to be affected by USAID foreign aid since the coefficient is statistically insignificant at conventional levels.

Panel B reports the IV estimates conditional on the full set of controls. It is worth noting that the inclusion of the full set of controls increases the magnitude of both FARC and left-wing homicides rates estimates by approximately 60%. Thus, a 1% increase in cumulative aid in a given municipality and year reduces the average homicides rate associated with FARC and left-wing guerrillas by 0.0196 (1.71% of the homicides rate associated with FARC during the period of study. See Appendix Table A2) and 0.0238 (1.82% of the homicides rate associated with FARC during the period of study. See Appendix Table A2) homicides per 100,000 inhabitants, respectively. Likewise, the estimates associated with homicides committed by BACRIM are statistically insignificant at standard levels.

Comparing Panel B of both Table 2 and Table 3, the IV estimates are much larger (in absolute value) than the OLS estimates. The explanation for this downwards bias in the OLS estimates is the predominance of the attenuation bias underlying measurement error in the foreign aid measure, over the positive bias underlying the simultaneity between foreign aid and armed conflict (according to the descriptive statistics, foreign aid is channeled toward municipalities with higher levels of

¹⁸Hausman tests are available upon request for all IV regressions. On the one hand, I reject the null hypothesis of consistent OLS estimators for the homicides rate committed by FARC and left-wing guerrillas. On the other hand, I cannot reject the null hypothesis for the homicides rate committed by BACRIM.

Table 3: Cumulative Aid and Armed Conflict- IV

	(1) Homicides Rate FARC	(2) Homicides Rate Guerrillas	(3) Homicides Rate BACRIM
Foreign Aid (Cumulative)	-1.227** (0.562)	-1.496** (0.681)	1.165 (0.779)
Observations	5610	5610	5610
Standardized Coefficients	-0.750	-0.832	0.593
F-Statistic	27.44	27.44	27.44
Municipality FE	Y	Y	Y
Year FE	Y	Y	Y
Department Linear Trend	Y	Y	Y
Coca Linear Trend	Y	Y	Y
Expanded Set of Controls	N	N	N
	(4) Homicides Rate FARC	(5) Homicides Rate Guerrillas	(6) Homicides Rate BACRIM
Foreign Aid (Cumulative)	-1.959** (0.986)	-2.376** (1.185)	1.426 (1.046)
Observations	5610	5610	5610
Standardized Coefficients	-1.198	-1.321	0.727
F-Statistic	13.33	13.33	13.33
Municipality FE	Y	Y	Y
Year FE	Y	Y	Y
Department Linear Trend	Y	Y	Y
Coca Linear Trend	Y	Y	Y
Expanded Set of Controls	Y	Y	Y

Notes. For all regressions, the instrument is the interaction of the Log US GDP and the SEM potential interventions. Furthermore, every regression includes time and municipality fixed effects, department and coca linear time trends, and Log Population. The full set of controls is specified in the Panel (D) of the Descriptive Statistics. Invariant controls interact with log US GDP. Robust standard errors clustered at the municipality level in parentheses. *p<0.1 **p<0.05 ***p<0.01

violence). An alternative explanation is that, since foreign aid (from 2009-2013) is likely to be targeted to municipalities with better institutions, and given that the proxy of State capacity after the Malaria Eradication Campaigns —the percentage of houses with electricity in 1964— is coarse, the OLS estimates would be biased toward zero.

In terms of interpretation it is worth wondering how large are these effects. Consider the estimates associated with FARC ($\hat{\beta} = -1.959$) and the left-wing guerrillas ($\hat{\beta} = -2.376$), and the standard deviations of the (log of) cumulative aid ($S_x = 4.362$) and both the homicides rate of FARC ($S_{y1} = 7.135$) and left-wing guerrillas ($S_{y2} = 7.845$). This leads to standardized coefficients of -1.2 and -1.3 for homicides rate associated with FARC and left-wing guerrillas, respectively. Therefore, a one standard deviation increase in the (log of) cumulative aid results in a reduction of the homicides rate associated with FARC and left-wing guerrillas in approximately 1.2 and 1.3 standard deviations. Alternatively, it is worth taking into account that between 2009 and 2013 the cumulative aid rose by 3 log points. Therefore, this increase in foreign aid translates into 5.877 and 7.128

fewer homicides associated with FARC and left-wing guerrillas —respectively— over this 5 year period. This reduction corresponds —on average— to 1.175 and 1.426 fewer homicides per 100,000 inhabitants per year, associated with FARC and left-wing guerrillas, respectively.

5.3 Robustness Checks

In this section, I perform several robustness checks for providing additional evidence of the validity of the identification strategy.

To start with, I redefine the main independent variable as the (absolute frequency) amount disbursed by USAID to municipality i in year t instead of the cumulative measure. Appendix Table A6 shows that for this redefined measure, the instrument is still a strong predictor of the development aid sent by USAID since —both unconditional (Panel A) and conditional on the full set of controls (Panel B)— the first-stage F-statistic is higher than 10. Reassuringly, the estimates are robust to this specification regarding economic and statistical significance.

To perform a pre-trends test, Appendix Table A7 provides a simple falsification test. Given that my main independent variable is a cumulative measure, it does not make too much sense to perform a pre-trend analysis. Thus, I use the "non-cumulative" measure of foreign aid received for such purpose. According to this, I estimate specifications in which past levels of development aid (from $t-1$ to $t-5$) replace my explanatory variable. Results report that estimates are statistically insignificant and close to zero, except by two estimates for BACRIM homicides rate.

Appendix Table A8 provides a second falsification test where I replace the homicides rate by the number of natural deaths and its rate per 100,000 inhabitants. I perform this falsification test to address the concern of capturing some particularity of the vital statistics since the compliers received development aid (between 2009 and 2013) due to the potential interventions during the Malaria Eradication Campaigns (in 1957). Reassuringly, the estimates are not statistically significant. Therefore the decrease in homicides rate associated with the insurgency is not a result of peculiarities of the vital statistics.

Finally, Appendix Tables A9-A11 present the main regressions for the three insurgent groups but restricting the sample to municipalities with less than 300000, 250000, 200000, 150000 and

100000 inhabitants, since both the insurgent activities (Dube and Vargas, 2013) and the development aid (U.S. Agency for International Development (USAID), 2014) concentrate in the rural and less populous areas. The first-stage F-statistics show that —unconditional on the full set of controls— the instruments remain a strong predictor of the development aid. When conditioning on the full set of controls, the more restrictive the sample, the less powerful the instrument. Even when restricting the sample to rural and less populous areas, the estimates are robust in terms of economic and statistical significance. Moreover, the effects are higher than the estimates of the main regression for homicides rate associated with FARC and left-wing guerrillas, respectively.

6 Potential Mechanisms

In this section, I explore two possible mechanisms through which the development programs might work to reduce the conflict intensity associated with the main insurgent groups. First, I study how the development programs might increase the opportunity cost of civilians of enrolling into insurgent activities; second, I examine the relationship between the development programs and the trust and the flows of information between civilians and local institutions. I review both quantitative and anecdotic evidence and build on previous work for exploring the plausibility of both potential channels.

Additionally, I cast doubt on two potential channels prioritized by the literature whose predictions are opposite to my results. First, I examine how foreign assistance might increase the rents that can be looted by the insurgents by regressing foreign aid on municipality revenues associated with transferences, both national and others. Second, I explore the relationship between foreign aid and selective homicides as a measure of the response of insurgents to the loss of bargaining power (sabotage).

6.1 Opportunity Cost

In this subsection, I investigate how positive shocks to civilian's income —generated by the development programs— might reduce the armed conflict by increasing the opportunity cost of rebellion for potential recruits (Becker, 1968; Grossman, 1991; Hirshleifer, 1995; Dal Bó and Dal Bó,

2011). In that sense, the opportunity cost effect focuses on the costs of participating in an illicit activity like the insurgency. Therefore, this theory claims that for reducing the conflict intensity it is necessary to improve local labor markets opportunities through the implementation of development programs.

An essential feature of the Colombian conflict is that the insurgents —both guerrillas and paramilitaries’ offsprings (criminal gangs)— recruit civilians by paying or promising regular wages and other kinds of compensations (Gutiérrez, 2006). Anecdotic evidence of this feature can be found in several interviews to ex-combatants carried out by Human Rights Watch (2003). These interviews reveal that left-wing guerrillas recruit people in rural areas by promising (in the case of FARC) or paying irregular wages (in the case of ELN). Moreover, the interviews reveal that all the combatants receive subsistence goods like food and clothing. Hence, in periods of economic decline, the pecuniary benefits offered by the insurgents motivates the rural workers to become fighters. In the words of a FARC ex-combatant captured and put on trial in the Criminal Circuit 002 in Santa Rosa de Viterbo - File 1770 July 2nd, 2002:

"My wage—says a member captured by the army— before enrolling into FARC was \$8,000 pesos per day. The guerrilla promised me between \$300 and \$400,000 pesos per month... Indeed, that was the reason why I joined." (Gutiérrez, 2006, pp.11)

Following Dube and Vargas (2013), I empirically explore this opportunity cost channel by estimating:

$$q_{mijt} = \delta_i + \delta_t + \psi_j t + Coca_{ijt} + Log(\hat{Aid}_{ijt}) * \beta + Log(Population_{ijt}) * \psi + X_{mijt} * \pi + \omega_{mijt} \quad (4)$$

where q_{mijt} is either the working hours or the wage (both in logs) of individual m in municipality i , in department j , and year t ; X_{mijt} is a vector of individual-level covariates including education, age and its square, and dummy variables for gender and marital status; and ω_{mijt} is an error term clustered at municipality level. I also control for population (in logs) to account for the scale effect. This log-log specification generates $\hat{\beta}$ estimates that are interpreted as follows: 1% change in foreign aid changes the outcome q_{mijt} by $\hat{\beta} * 100\%$.

Table 4 estimates equation (4). Columns (1) and (2) present the effects of foreign aid on work hours for 2010, 2011 and 2013, the subset of years for which data on work hours is available.

Column (1) shows that a 1% rise in the cumulative aid increases the hours worked by 2%. Column (2) shows that —when restricting the sample to wage and salaried workers— the effect is still positive, although marginally significant (p-value = 0.112). Lastly, columns (3) and (4) show that foreign aid increases not only the work hours but also the wages: a 1% rise in cumulative aid boosts both measures of wages —gross wages, and wages with compensations—, by 6% and 6.2%, respectively.

Table 4: Opportunity Cost Effect, IV

VARIABLES	(1) Log Working Hours	(2) Log Working Hours (Remunerated)	(3) Log Wages	(4) Log Wages Compensations
Log Cumulative Aid	0.0197*** (0.00729)	0.0099 (0.00621)	0.0601** (0.0242)	0.0615*** (0.0220)
Observations	79,573	35,585	48,211	48,211
Standardized Coefficients	0.217	0.146	0.227	0.262
F-Statistic	364.05	149.27	168.79	168.79
Municipality FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Department Linear Trend	Y	Y	Y	Y
Coca Linear Trend	Y	Y	Y	Y
Set of Controls	Y	Y	Y	Y

Notes. For all regressions, the instrument is the interaction of the Log US GDP and the SEM potential interventions. All columns include time and municipality fixed effects, Log Population, and individual-level controls including education, age and its square, and indicator variables for gender and marital status. Robust standard errors clustered at the municipality level in parentheses. *p<0.1 **p<0.05 ***p<0.01

Thus, this evidence suggests that foreign aid is accompanied by a boost in working hours and wages —the opportunity cost of joining insurgent groups— of civilians. These findings line up with the idea that income-generating activities are likely to put downward pressure on armed conflict due to a scarcity of insurgent workforce.

6.2 Hearts and Minds

Alternatively, development programs might increase the population support of local governments through the provision of public goods and income-generating activities. Thus, the *hearts and minds* oriented approach claims that foreign aid can make people more likely to share information about illegal armed groups with government forces (Mao, 1961; Gurr, 1970; Popkin, 1980; Galula, 2006; US Army/Marine Corps, 2007; Berman et al., 2011).

A central feature of the Colombian conflict is that the support and the attitudes toward the

insurgents and counterinsurgents vary across regions. In regions where the insurgents have a better capacity of providing public goods and income-generating activities —like illicit crops— the trust and the support for the government are low (Ramírez, 2001; Grossman and Mejía, 2008). On the other hand, outside these regions, the relationship between population and the government is closer (León, 2005). Nonetheless, there is also evidence, that in some insurgent-controlled areas —despite the historical links between the people and left-wing guerrillas— people shifted their loyalty toward the government due to the State presence and involvement in such historically marginalized rural areas. In the words of León (2005):

"At the beginning not a single peasant talked [to the military], it was like if they were an occupation army. As the days passed and the military continued its patrols in the area —they went with the peasants to harvest their crops, or they got involved in community activities— people started to trust. In some occasions, they even left the soldiers bunches of plantains and panela hidden in the bush because they knew that the heavy rains would hinder the entry of food. Soldiers started to receive pieces of papers with names and information where guerrillas were hiding supplies and weapons" (León, 2005, pp.254)

Matanock and García-Sánchez (2018) supports this qualitative evidence by providing empirical evidence that the attitudes toward the insurgents and counterinsurgents vary across Colombian regions. Furthermore, they assess this hypothesis through an indirect methodology (list experiments) (Blair and Imai, 2012) to avoid and measure a social desirability bias of direct measures. Their results show that the support toward the military and the central and local government are lower in insurgent-controlled municipalities. Furthermore, they reveal the existence of a social desirability bias in direct measures of trust like the ones carried out by the LAPOP (Latin American Public Opinion Project (LAPOP), 2016). The individuals —when asked directly— report high confidence into the government given that it is the socially "correct" answer.

6.3 Rapacity

Throughout this subsection, I explore an alternative potential mechanism prioritized by the literature whose predictions contrast the findings of this paper. Positive income shocks might exacerbate conflict by promoting rapacity over contestable resources (Hirshleifer, 1989; Grossman, 1999; Bates et al., 2002). Thus, the *rapacity effect* builds on the fact that the insurgents have not only an ideologic motivation but also an economic one.

To explore the *rapacity effect*, I use the local government budgets —specifically the "transfers revenue" line-item— and the kidnappings data. First, although private contractors and NGOs mostly implement the development programs, a small share of projects —especially among the ones carried out to strengthen the state capacity— is implemented by local governments ([U.S. Agency for International Development \(USAID\), 2016](#)) and codified in the municipality-level fiscal data under the line-item of "transfers revenue." Thus, I use this item as a measure of the rents that can be looted. Second, I do not view the kidnappings as a conflict variable but as the most used tool by insurgents for seizing resources.

Table 5: Rapacity Effect, IV

	(1) Transfer Revenues	(2) National Transfer Revenues	(3) Other Transfer Revenues
Foreign Aid (Cumulative)	-0.144 (0.222)	-0.225 (0.229)	0.461 (0.301)
Observations	4960	4960	4960
Standardized Coefficients	-0.343	-0.504	0.978
F-Statistic	12.18	12.18	12.18
Municipality FE	Y	Y	Y
Year FE	Y	Y	Y
Department Linear Trend	Y	Y	Y
Coca Linear Trend	Y	Y	Y
Expanded Set of Controls	Y	Y	Y
	(4) Kidnappings FARC	(5) Kidnappings Guerrillas	(6) Kidnappings BACRIM
Foreign Aid (Cumulative)	0.0179 (0.0216)	0.0151 (0.0248)	-0.00707 (0.0110)
Observations	5610	5610	5610
Standardized Coefficients	0.261	0.160	-0.226
F-Statistic	13.33	13.33	13.33
Municipality FE	Y	Y	Y
Year FE	Y	Y	Y
Department Linear Trend	Y	Y	Y
Coca Linear Trend	Y	Y	Y
Expanded Set of Controls	Y	Y	Y

Notes. For all regressions, the instrument is the interaction of the Log US GDP and the SEM potential interventions. Furthermore, every regression includes time and municipality fixed effects, department and coca linear time trends, and Log Population. The full set of controls is specified in the Panel (D) of the Descriptive Statistics. Invariant controls interact with log US GPD. Robust standard errors clustered at the municipality level in parentheses. *p<0.1 **p<0.05 ***p<0.01

Table 5 reports the *rapacity effect*. In Panel A the homicides rate are replaced by the municipal-level transfers revenue and its components: national transfers and other transfers (in logs). The columns (1)-(3) show that estimates are close to zero and statistically insignificant. Thus, the results posit that the foreign aid does not affect the rents to be predated. On the other hand, in Panel B the conflict outcomes are replaced by the number of kidnapping incidents disaggregated by the main

armed actors. Results show that estimates are close to zero and statistically insignificant.

Overall, it seems that results cannot be reconciled with a *rapacity effect* since foreign aid sent by USAID does not affect the rents to be looted. Moreover, the development programs have no impact on the extortion activities carried out by FARC, left-wing guerrillas, and especially the criminal gangs (BACRIM) which have no political agenda and only have an economic motivation.

6.4 Bargaining

In this subsection, I explore another alternative channel whose predictions diverges from the results of this paper. According to the bargaining models literature, —in a scenario where both government and insurgents are trying to cut deals— the implementation of state consolidation programs might leads to abrupt shifts in the distribution of power in favor of the counterinsurgents by increasing their popular support. These shifts can generate commitment problems since the government will have incentives to breach any prior agreement with the insurgents given that — once consolidated— it is in a better bargaining position. Therefore, insurgents will try to sabotage aid programs by using targeted assassinations toward civilians ([Fearon, 1995](#); [Powell, 2006](#); [Chassang and Padró i Miquel, 2009](#); [Croston et al., 2014](#)).

To investigate this *bargaining model* approach, I analyze whether foreign aid affects the targeted assassinations committed by left-wing guerrillas¹⁹. In columns (1) and (2) of Table 6, I replace the main explanatory variable by the number of events reported as targeted killings, and the victims of targeted assassinations per 100,000 inhabitants for 2009-2012 — the subset of years for which data on targeted assassinations is available—, respectively. All columns display statistically insignificant effects on both the number of events reported as targeted killings and the targeted assassinations rate per 100,000 inhabitants. These findings suggest that it is unlikely that the main results are accompanied by increases in targeted assassinations.

In summary, the results in this section suggest that development programs are accompanied by either a potential increase in the opportunity cost of fighting ([Dube and Vargas, 2013](#)) or improvements in the attitudes and trust toward the local institutions ([Condra et al., 2010](#); [Berman](#)

¹⁹Unfortunately I cannot test this mechanism for targeted assassinations carried out by FARC and BACRIM due to data restrictions.

Table 6: Bargaining Models (Sabotage), IV

	(1) Targ. Assassin.(Events)	(2) Targ. Assassin.(Events)	(3) Targ. Assassin.(Victims' Rate)	(4) Targ. Assassin.(Victims' Rate)
Foreign Aid (Cumulative)	-0.0181 (0.0289)	-0.0495 (0.0653)	-1.260 (1.078)	-2.286 (2.370)
Observations	4488	4488	4488	4488
Standardized Coefficients	-0.227	-0.619	-1.532	-2.779
F-Statistic	16.65	10.49	16.65	10.49
Municipality FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Department Linear Trend	Y	Y	Y	Y
Coca Linear Trend	Y	Y	Y	Y
Expanded Set of Controls	N	Y	N	Y

Notes. For all regressions, the instrument is the interaction of the Log US GDP, and SEM potential interventions. Furthermore, every regression includes time and municipality fixed effects, department and coca linear time trends, and Log Population. The full set of controls is specified in the Panel (D) of the Descriptive Statistics. Invariant controls interact with log US GDP. Robust standard errors clustered at the municipality level in parentheses. *p<0.1 **p<0.05 ***p<0.01

et al., 2011; Beath et al., 2017; Matanock and García-Sánchez, 2018). Furthermore, while it is hard to completely rule out alternative channels like the *rapacity effect* (Dube and Vargas, 2013) or the *bargaining models* approach (Crost et al., 2014), these are not easily reconciled with the results.

7 Refinements

In this section, I go one step further by analyzing the conditions under which foreign aid might have the aforementioned conflict-dampening effect. In particular, I examine whether foreign aid might affect differentially contested and stable areas, and how the results variate by the pre-existing state capacity of Colombian municipalities. In other words, I test whether development aid and security/state capacity are complements.

Table 7 displays IV regressions for foreign aid and its interaction with the indicator variable of contested municipalities (from 2000 to 2008). For addressing potential endogeneity, I instrument with both the Malaria Instrument and its interaction with the disputed status of the municipalities. Municipality fixed effects absorb the level or direct effects of state capacity. The results—either conditional or unconditional on controls—stress the existence of complementarities between development aid and security, due to the positive sign and statistical significance in the estimated interaction terms for FARC and left-wing guerrillas in general. Moreover, the linear combination of the estimates of foreign aid and the interaction is statistically significant (p-values are 0.063 and 0.059 for FARC and left-wing guerrillas, respectively). This effect cannot be generalized for the

Table 7: Foreign Aid, Armed Conflict and Insecure Environments, IV

	(1)	(2)	(3)
	Homicides Rate FARC	Homicides Rate Guerrillas	Homicides Rate BACRIM
Foreign Aid (Cumulative)	-1.813** (0.917)	-2.199** (1.109)	1.593 (1.198)
Foreign Aid X Contested	1.070* (0.579)	1.284* (0.692)	-0.782 (0.791)
Observations	5610	5610	5610
Std. Coeff. Foreign Aid	-1.109	-1.223	0.812
Std. Coeff. Foreign Aid × Contested	0.376	0.410	-0.229
F-Stat. Foreign Aid	33.25	33.25	33.25
F-Stat. Foreign Aid × Contested	49.47	49.47	49.47
Municipality FE	Y	Y	Y
Year FE	Y	Y	Y
Department Linear Trend	Y	Y	Y
Coca Linear Trend	Y	Y	Y
Expanded Set of Controls	N	N	N
	(1)	(2)	(3)
	Homicides Rate FARC	Homicides Rate Guerrillas	Homicides Rate BACRIM
Foreign Aid (Cumulative)	-2.479* (1.337)	-3.005* (1.609)	1.768 (1.388)
Foreign Aid X Contested	1.286* (0.744)	1.556* (0.891)	-0.845 (0.845)
Observations	5610	5610	5610
Std. Coefficients Foreign Aid	-1.516	-1.671	0.901
Std. Coefficients Foreign Aid X Contested	0.451	0.497	-0.247
F-Stat. Foreign Aid	16.88	16.88	16.88
F-Stat. Foreign Aid X Contested	25.35	25.35	25.35
Municipality FE	Y	Y	Y
Year FE	Y	Y	Y
Department Linear Trend	Y	Y	Y
Coca Linear Trend	Y	Y	Y
Expanded Set of Controls	Y	Y	Y

Notes. For all regressions, the instruments are the Malaria Instrument, and its interaction with the dummy of military contested municipality. Furthermore, every regression includes time and municipality fixed effects, department and coca linear time trends, and Log Population. The full set of controls is specified in the Panel (D) of the Descriptive Statistics. Invariant controls interact with Log US GPD. Robust standard errors clustered at the municipality level in parentheses. * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

criminal gangs for which neither the single estimates nor the linear combination is statistically significant. Therefore, I interpret the conditional-on-controls results as follows: for non-contested municipalities, a one standard deviation increase in foreign aid reduces the homicides rate of FARC and left-wing guerrillas by 0.45 and 0.5 standard deviations, more than in military contested areas, respectively.

However, —as pointed out by [Zürcher \(2017\)](#)— gauging secure environments at a subnational scale with either prior troop presence ([Sexton, 2016](#)), or violent events based on news reports ([Berman et al., 2011, 2013](#)), might be misleading since they not necessarily proxy that control has been taken away from insurgents. Thus, —following [Dasgupta et al. \(2017\)](#)— I highlight the role played

Table 8: Foreign Aid, Armed Conflict and High State Capacity, IV

	(1)	(2)	(3)
	Homicides Rate FARC	Homicides Rate Guerrillas	Homicides Rate BACRIM
Foreign Aid (Cumulative)	-1.019** (0.484)	-1.279** (0.596)	1.280 (0.803)
Foreign Aid X State Capacity	-0.468* (0.260)	-0.489* (0.290)	-0.261 (0.242)
Observations	5610	5610	5610
Std. Coeff. Foreign Aid	-0.623	-0.711	0.652
Std. Coeff. Foreign Aid × State Capacity	-0.199	-0.189	-0.0922
F-Stat. Foreign Aid	21.06	21.06	21.06
F-Stat. Foreign Aid × State Capacity	36.42	36.42	36.42
Municipality FE	Y	Y	Y
Year FE	Y	Y	Y
Department Linear Trend	Y	Y	Y
Coca Linear Trend	Y	Y	Y
Expanded Set of Controls	N	N	N
	(1)	(2)	(3)
	Homicides Rate FARC	Homicides Rate Guerrillas	Homicides Rate BACRIM
Foreign Aid (Cumulative)	-1.702* (0.870)	-2.100** (1.057)	1.508 (1.038)
Foreign Aid X State Capacity	-0.630* (0.358)	-0.676* (0.411)	-0.201 (0.276)
Observations	5610	5610	5610
Std. Coefficients Foreign Aid	-1.041	-1.168	0.768
Std. Coefficients Foreign Aid X State Capacity	-0.267	-0.261	-0.0709
F-Stat. Foreign Aid	12.07	12.07	12.07
F-Stat. Foreign Aid X State Capacity	18.29	18.29	18.29
Municipality FE	Y	Y	Y
Year FE	Y	Y	Y
Department Linear Trend	Y	Y	Y
Coca Linear Trend	Y	Y	Y
Expanded Set of Controls	Y	Y	Y

Notes. For all regressions, the instruments are the Malaria Instrument, and its interaction with the high-state-capacity dummy. Furthermore, every regression includes time and municipality fixed effects, department and coca linear time trends, and Log Population. The full set of controls is specified in the Panel (D) of the Descriptive Statistics. Robust standard errors clustered at the municipality level in parentheses. *p<0.1 **p<0.05 ***p<0.01

by government control in shaping these conflict-reducing effects by evaluating the complementarity between development aid and pre-existing state capacity understood as the "infrastructural power of the state" (Mann, 1986, 1993; Acemoglu et al., 2015).

Table 8 presents IV-Malaria regressions for foreign aid, and its interaction with the municipality-level indicator variable of high state capacity (in 1995). For addressing potential endogeneity, I instrument with both the Malaria Instrument and its interaction with the high-state-capacity status. The level or direct effects of state capacity are absorbed by municipality fixed effects. The results—either conditional or unconditional on controls— suggest the existence of complementarities between development aid and state capacity, due to the negative sign and statistical significance in the estimated interaction terms for FARC and left-wing guerrillas in general. Further, the linear

combination of the estimates of foreign aid its interaction is statistically significant (p-values are 0.037 and 0.039 for FARC and left-wing guerrillas, respectively). Likewise, I cannot generalize this effects for the criminal gangs. I interpret the conditional-on-controls results as follows: for high-state-capacity municipalities, a one standard deviation increase in foreign aid reduces the homicides rate of FARC and left-wing guerrillas by 0.27 and 0.26 standard deviations, more than in low-state-capacity municipalities, respectively.

Overall, the findings suggest the existence of a violence-dampening effect of the USAID development assistance in Colombian municipalities. Although this negative effect on armed conflict is unconditional on security and municipality-level state capacity, the heterogeneous effects reveal that such estimates are higher in stable and high-state-capacity municipalities. These results are consistent with the prior evidence which suggest that the implementation of development assistance programs requires a relatively stable security situation, and the presence of capable state administration ([Berman et al., 2011, 2013](#); [Sexton, 2016](#); [Dasgupta et al., 2017](#); [Beath et al., 2017](#)). Therefore, development aid might be a successful tool for both objectives: bringing back unstable municipalities from conflict and protecting relatively stable and high-state-capacity municipalities from the rise of violent activities.

8 Conclusions

I construct a balanced panel dataset on the development programs implemented across the 1,122 Colombian municipalities to identify the causal effect of the development aid sent by USAID on the homicides rate associated with the main insurgent groups (during the period 2009-2013). Following an instrumental variables methodology to address the potential endogeneity in the allocation of the foreign aid across municipalities, I demonstrate that a rise in foreign aid for development assistance reduces the armed conflict associated with FARC and left-wing guerrillas in general (FARC and ELN). Even though this violence-dampening effect is unqualified, the heterogeneous treatment effects show that such results are larger in stable and high-state-capacity municipalities. Nonetheless, the effect is not generalizable for the armed conflict associated with criminal gangs (BACRIM).

I provide evidence of two potential mechanisms underlying these results by examining quantitative, and anecdotic evidence from primary sources. First, the results are consistent with the *opportunity cost effect* since a rise in foreign aid for development assistance increases the wages and the hours worked by the wage and salaried workers in Colombian municipalities. Furthermore, — according to several qualitative research ([Human Rights Watch, 2003](#); [Gutiérrez, 2006](#))— the armed groups pay or promise regular wages and other basic goods like food and clothing to their fighters. Indeed, the motivation for joining insurgent groups rises during economic downturns. Therefore, the provision of income-generating activities reduces violence by increasing wages and by reducing labor supplied to insurgent groups. Second, the results might also be reconciled with a *hearts and minds* oriented approach given that —following prior ethnographic ([Ramírez, 2001](#); [León, 2005](#)) and empirical ([Matanock and García-Sánchez, 2018](#)) approaches— attitudes toward the insurgents and counterinsurgents vary across Colombian regions. In regions where the insurgents have a better capacity to provide public goods and income-generating activities —like illicit crops— the trust and the support for the government are low. Thus, development programs oriented to the provision of public goods and income-generating activities —in places historically ruled by insurgents— can make people more likely to share information about the armed groups with government forces.

Furthermore, I cast doubt on alternative mechanisms whose predictions are difficult to reconcile with the findings of this paper. First, the results contrast *rapacity effect* ([Dube and Vargas, 2013](#)) since USAID development programs do not affect either the municipality-level transfer revenues —the rents to be looted— or the kidnappings —mechanisms for seizing resources— carried out by FARC, left-wing guerrillas in general (FARC and ELN), and especially the criminal gangs (BACRIM), whose motivation is purely economic. Second, it is hard to reconcile the results with a *bargaining model* approach ([Crost et al., 2014](#)) given that foreign assistance does not increase the targeted assassinations, whereby the insurgents intend to avoid commitment problems underlying abrupt shifts in the distribution of power. On the one hand, foreign aid does not affect the number of events reported as targeted assassinations, and on the other hand, it reduces the rate of victims of targeted killings committed by left-wing guerrillas.

Even though this paper provides microeconomic evidence to the literature on aid effectiveness and insurgency, it is important to highlight its limitations. First, the IV estimates have to be inter-

preted with a certain degree of caution due to recent discussions regarding Bartik-like instruments: both in the econometric sense of stating the identification assumptions, and in the practical sense of showing what variation drives the estimates (Goldsmith-Pinkham et al., 2018). To lessen such concerns, —while the exclusion restriction is not directly testable— I provide evidence that, conditional on controls, the exogeneity of the instrument relies not only on the US GDP but also on the intent-to-treat indicator of Malaria Eradication Campaigns. Second, I cannot completely rule out a potential bias underlying the existence of complementarities between the USAID programs and the ones implemented by other agencies, due to data restrictions. Nonetheless, it is worth recalling that the international cooperation between the GoC and other agencies represents a low percentage of the total aid received by Colombia (see Figure 1) (Organization for Economic Cooperation and Development (OECD), 2013).

Finally, these findings point to a central policy implication. The shift in the cooperation strategy between the USG and the GoC —from top-down to bottom-up approaches— was critical to the reduction of the armed conflict in Colombia. Indeed, top-down counterinsurgency strategies —implemented during the *War on Drugs* period— backfired by increasing the violence in Colombia (Dube and Naidu, 2015). Furthermore, the results suggest that —even though the effects are more substantial in relatively secure and high-state-capacity regions— development aid might be a successful tool for both: bringing back unstable municipalities from conflict and protecting relatively stable and high-state-capacity municipalities from violence. Thus, fighting fire with aid seems to be more effective than fighting fire with fire.

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10 Appendix

10.1 Appendix of Figures

Figure A1: Statement of Policy of the US Congress regarding Malaria Eradication Campaigns

Source: [U.S. Agency for International Development \(USAID\) \(1960\)](#).

Figure A2: Evolution of Malaria Cases according to Malaria Control/Eradication (1937-2008)

Source: [Padilla et al. \(2011\)](#).

Figure A3: Potentially Intervened Areas by SEM, 1957

Source: [Servicio Nacional de Erradicación de Malaria \(1957\)](#)

10.2 Appendix of Tables

Table A1: Data Appendix

Variable	Definition	Source
<i>A. Dependent Variables</i>		
Homicides Rate	The number of homicides committed by the main insurgent groups in Colombia: FARC, left-wing guerrillas (FARC and ELN) and the criminal gangs (BACRIM), per 100,000 inhabitants. Period: 2009 to 2013.	<i>Municipal Panel, CEDE - Universidad de los Andes</i>
Kidnappings	The number of kidnappings committed by the main insurgent groups in Colombia: FARC, left-wing guerrillas (FARC and ELN) and the criminal gangs (BACRIM). Period: 2009 to 2013.	<i>Municipal Panel, CEDE - Universidad de los Andes</i>
Targeted Assassinations	The number of intentional homicides of 3 or fewer people in a state of defenselessness, under the same circumstances. I use both the number of instances (events) as well as the number of people killed in such events, per 100,000 inhabitants. Period: 2009 to 2012.	<i>¡Basta Ya! - Centro de Memoria Histórica</i>
Transfer Revenues	Municipal Transfer Revenues. I use them both the whole line-item as well as its components: National Transfer Revenues and Other Transfer Revenues (in logs). Period: 2009 to 2013.	<i>Municipal Panel, CEDE - Universidad de los Andes</i>
American Residents in Colombia	The number of the U.S. citizens residing in Colombia in 2005 per 100,000 inhabitants. I use either the residents who settled down in the long-term (before 1996), or the residents who settled down in the short and middle-term (between 1996 and 2005), or both. Time Period: 2005.	<i>National Census of 2005, DANE.</i>
Working hours	Hours worked last week. I winsor the top and bottom 1%, and conduct the analysis using individuals who are of the official working age in Colombia, i.e., those between the ages of 14 and 60. Time Period: 2010, 2011 and 2013.	<i>Quality of Life Survey, DANE</i>
Wages	Wage received last month (in logs). I use either the gross salary or the net wage which includes other compensations like food, housing, transportation or other pecuniary benefits (clothes, household appliances, etc.). I winsor the top and bottom 1%, and conduct the analysis using individuals who are of the official working age in Colombia, i.e., those between the ages of 14 and 60. Period: 2010 to 2013.	<i>Quality of Life Survey, DANE</i>
Natural Deaths Rate	Total natural deaths per 100,000 inhabitants. Period: 2009 to 2013.	<i>Vital Statistics, DANE</i>
<i>B. Independent Variables</i>		
Foreign Aid	The Total amount of aid disbursed by USAID to the intervened municipalities (in logs). I use either the cumulative amount disbursed during the period or the (absolute frequency) amount disbursed each year (in logs). Period: 2009 to 2013.	<i>MONITOR, USAID</i>
Malaria Instrument	Interaction of the U.S. GDP (in logs) and the sprayings of DDT (in logs) in potentially intervened municipalities during the Malaria Eradication Campaigns (circa 1957). Period: 2009 to 2013.	<i>U.S. GDP from World-Bank and Sprayings from SEM(1957)</i>
Contested Municipality	Dummy variable that takes the value of 1 if the armed conflict events (attacks or clashes) in the municipality are above the national average between 2000 and 2008. Period: 2009 to 2013.	<i>Conflict Database, compiled by Restrepo, Vargas & Spagat (2004) and updated by Universidad del Rosario.</i>
State Capacity	Dummy variable that takes the value of 1 if the public employees per 100,000 inhabitants are above the median in 1995. Period: 2009 to 2013.	<i>Acemoglu et al. (2015) - National Census of 1993 (DANE)</i>
<i>C. Controls</i>		
Population	The total municipal population (in logs). Period: 2009 to 2013.	<i>Municipal Panel, CEDE - Universidad de los Andes</i>
Land Conflicts	Dummy variable that takes the value of 1 if the municipality was affected by the land conflicts from 1901 to 1931, and 0 otherwise.	<i>Municipal Panel, CEDE - Universidad de los Andes</i>
La Violencia	Dummy variable that takes the value of 1 if the municipality was affected by La Violencia period from 1948 to 1953, and 0 otherwise.	<i>Municipal Panel, CEDE - Universidad de los Andes</i>
Altitude	Altitude of the municipality in meters above sea level (in logs).	<i>Municipal Panel, CEDE - Universidad de los Andes.</i>
Malaria Events Rate	The number of malaria cases per 100,000 inhabitants. Period: 2009 to 2013.	<i>SIVIGILA, National Institute of Health.</i>
Military Bases	The number of military bases (army, air force and navy) in the Colombian municipalities. Period: 2007.	<i>Acemoglu et al. (2016) - Colombian Army Official Website</i>
Percentage of Houses with Electricity in 1964	Share of houses with access to electricity in 1964. Proxy of State capacity and institutional development after Malaria Eradication Campaigns in Colombia (circa 1957).	<i>SEM (1957)</i>

Table A2: Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max	Observations
<i>A. Main Explanatory Variables</i>					
Foreign Cumulative Aid (Thousands USD)	130.352	670.110	0	11,488.81	5,610
Foreing Aid (Thousands USD)	74.390	406.124	0	8,434.003	5,610
DDT Sprayings (Thousands)	2.909	7.817	0	137.466	5,610
Dummy Foreign Aid	0.145	0.352	0	1	5,610
Dummy Potential Interv. Malaria	0.594	0.491	0	1	5,610
Dummy Contested	0.08	0.272	0	1	5,610
Dummy High State Capacity	0.546	0.498	0	1	5,610
<i>B. Armed Conflict (Dependent Variables)</i>					
Homicides Rate FARC	1.146	7.135	0	205.498	5,610
Homicides Rate Guerrillas	1.303	7.845	0	205.498	5,610
Homicides Rate BACRIM	0.782	8.562	0	342.264	5,610
Kidnappings FARC	0.042	0.298	0	7	5,610
Kidnappings Guerrillas	0.066	0.449	0	12	5,610
Kidnappings BACRIM	0.012	0.136	0	4	5,610
Events Targeted Assassinations Guerrillas	0.038	0.308	0	12	4,488
Victims Rate Targeted Assassinations Guerrillas	0.052	0.415	0	16	4,488
<i>C. Other Dependent Variables</i>					
Transfer Revenue (Billions COP)	0.734	2.511	0	105.525	4,962
Transfer Revenue - National Transfers (Billions COP)	0.991	5.002	0	100.929	4,962
Transfer Revenue - Others (Billions COP)	0.589	0.833	0	27.706	4,962
Total American Residents (Rate)	105.156	215.138	0	2,813.4	1,118
American Residents settled down before 1996, Rate	39.200	81.595	0	881.67	1,118
American Residents settled down 1996-2000, Rate	31.819	77.89	0	1,347.99	1,118
American Residents settled down 1996-2005, Rate	65.955	143.095	0	2,186.32	1,118
American Residents settled down 2001-2005, Rate	34.136	75.539	0	1,225.92	1,118
<i>D. Municipality-level Characteristics (Controls)</i>					
Total Population (Thousand Inhabitants)	41.040	253.221	0.271	7,674.366	5,610
Dummy Land Conflicts (1901-1931)	0.049	0.217	0	1	5,610
Dummy La Violencia (1948-1953)	0.132	0.339	0	1	5,610
Dummy Military Contested (2000-2008)	0.08	0.272	0	1	5,610
Dummy High State Capacity (1993)	0.546	0.498	0	1	5,610
Altitude (m.a.s.l.)	1120.497	905.19	2	3087	5,610
Malaria Events Rate	3.635	35.394	0	1,838.99	5,610
Military Bases (2006)	0.102	0.364	0	3	5,610
Houses with Electricity in 1964 (%)	0.105	0.152	0	0.9902	5,610
<i>E. Other Controls</i>					
Dummy Andean Region	0.561	0.497	0	1	1,122
Dummy Pacific Region	0.159	0.366	0	1	1,122
Dummy Caribbean Region	0.176	0.381	0	1	1,122
Dummy Orinoquia Region	0.053	0.223	0	1	1,122
Dummy Amazon Region	0.053	0.223	0	1	1,122
Distance to Bogota (Kms)	307.725	184.93	0	902.349	1,122
Multidimensional Poverty Index (MPI)	69.456	16.382	14.272	100	1,113
Gini Index	0.454	0.034	0.394	0.568	1,043
<i>F. Individual-level Characteristics</i>					
Working hours	43.953	19.090	4	98	86,253
Gross Wages (Millions COP)	0.742	0.693	0	4.170	53,067
Wages with Compensations (Millions COP)	0.771	0.697	0	4.200	53,067
<i>G. Time Variable</i>					
US GDP (Billions USD - Constant 2010)	15,535.865	433.072	14,896.171	16,129.125	5,610

Notes. For Panels (A) to (E), the observations are 1,122 municipalities for different periods. For Panel (F), the observations are working-age individuals (aged 14-60) from 2010 to 2013.

Table A3: SEM Potential Interventions in 1957 and American Citizens settled down in Colombia, OLS

<i>Panel A. Total American Residents per 100,000 inhabitants</i>					
	(1) Threshold: 40Km	(2) Threshold: 35Km	(3) Threshold: 30Km	(4) Threshold: 25Km	(5) Threshold: 20Km
Dummy Intervention SEM (1957)	20.00 (13.23)	27.79** (13.57)	25.98** (12.83)	24.50* (12.54)	18.41 (12.87)
Observations	840	885	935	976	1012
Expanded Set of Controls	Y	Y	Y	Y	Y
<i>Panel B. American Residents settled down before 1996, per 100,000 inhabitants</i>					
	(1) Threshold: 40Km	(2) Threshold: 35Km	(3) Threshold: 30Km	(4) Threshold: 25Km	(5) Threshold: 20Km
Dummy Intervention SEM (1957)	6.284 (4.603)	10.02** (4.932)	9.299** (4.734)	8.311* (4.650)	6.210 (4.758)
Observations	840	885	935	976	1012
Expanded Set of Controls	Y	Y	Y	Y	Y
<i>Panel C. American Residents settled down from 1996 to 2000, per 100,000 inhabitants</i>					
	(1) Threshold: 40Km	(2) Threshold: 35Km	(3) Threshold: 30Km	(4) Threshold: 25Km	(5) Threshold: 20Km
Dummy Intervention SEM (1957)	8.802* (4.548)	10.30** (4.536)	10.15** (4.299)	9.884** (4.193)	7.871* (4.319)
Observations	840	885	935	976	1012
Expanded Set of Controls	Y	Y	Y	Y	Y
<i>Panel D. American Residents settled down from 1996 to 2005, per 100,000 inhabitants</i>					
	(1) Threshold: 40Km	(2) Threshold: 35Km	(3) Threshold: 30Km	(4) Threshold: 25Km	(5) Threshold: 20Km
Dummy Intervention SEM (1957)	13.72 (9.587)	17.77* (9.561)	16.68* (8.991)	16.19* (8.764)	12.20 (8.927)
Observations	840	885	935	976	1012
Expanded Set of Controls	Y	Y	Y	Y	Y
<i>Panel E. American Residents settled down from 2001 to 2005, per 100,000 inhabitants</i>					
	(1) Threshold: 40Km	(2) Threshold: 35Km	(3) Threshold: 30Km	(4) Threshold: 25Km	(5) Threshold: 20Km
Dummy Intervention SEM (1957)	4.917 (5.430)	7.466 (5.429)	6.531 (5.117)	6.304 (4.991)	4.328 (5.021)
Observations	840	885	935	976	1012
Expanded Set of Controls	Y	Y	Y	Y	Y

Notes. All regressions include Log Population, the percent of Houses with Electricity in 1964 as a proxy for State Capacity before Malaria Eradication Campaigns (circa 1957), and the full set of alternative controls (in 2005) specified in Panel (E). Department capitals and metropolitan areas —defined as municipalities within 40Km, 35Km, 30Km, 25Km and 20Km— are excluded from the sample. Robust standard errors in parentheses. *p<0.1 **p<0.05 ***p<0.01

Table A4: First Stage: Cumulative Aid and Armed Conflict- IV

	(1) Log Foreign Aid (Cumulative)	(2) Log Foreign Aid (Cumulative)
Log US GDP X Malaria	2.056*** (0.513)	1.424*** (0.493)
Observations	5610	5610
F-Statistic	27.44	13.33
Municipality FE	Y	Y
Year FE	Y	Y
Department Linear Trend	Y	Y
Coca Linear Trend	Y	Y
Expanded Set of Controls	N	Y

Notes. All regressions include time and municipality fixed effects, department and coca linear time trends, and Log Population. The full set of controls is specified in the Panel (D) of the Descriptive Statistics. Invariant controls interact with log US GPD. Robust standard errors clustered at the municipality level in parentheses. *p<0.1 **p<0.05 ***p<0.01

Table A5: Reduced Form: Cumulative Aid and Armed Conflict- IV

	(1) Homicides Rate FARC	(2) Homicides Rate Guerrillas	(3) Homicides Rate BACRIM
Log US GDP X Malaria	-2.522*** (0.928)	-3.076*** (1.130)	2.394 (1.483)
Observations	5610	5610	5610
Municipality FE	Y	Y	Y
Year FE	Y	Y	Y
Department Linear Trend	Y	Y	Y
Coca Linear Trend	Y	Y	Y
Expanded Set of Controls	N	N	N

	(1) Homicides Rate FARC	(2) Homicides Rate Guerrillas	(3) Homicides Rate BACRIM
Log US GDP X Malaria	-2.790*** (0.954)	-3.384*** (1.148)	2.031 (1.297)
Observations	5610	5610	5610
Municipality FE	Y	Y	Y
Year FE	Y	Y	Y
Department Linear Trend	Y	Y	Y
Coca Linear Trend	Y	Y	Y
Expanded Set of Controls	Y	Y	Y

Notes. All regressions include time and municipality fixed effects, department and coca time linear trends, and Log Population. The full set of controls is specified in the Panel (D) of the Descriptive Statistics. Invariant controls interact with log US GPD. Robust standard errors clustered at the municipality level in parentheses. *p<0.1 **p<0.05 ***p<0.01

Table A6: Robustness Check: Aid and Armed Conflict- IV

	(1)	(2)	(3)
	Homicides Rate FARC	Homicides Rate Guerrillas	Homicides Rate BACRIM
Foreign Aid	-1.330** (0.615)	-1.622** (0.744)	1.263 (0.843)
Observations	5610	5610	5610
Standardized Coefficients	-0.772	-0.856	0.611
F-Statistic	22.78	22.78	22.78
Municipality FE	Y	Y	Y
Year FE	Y	Y	Y
Department Linear Trend	Y	Y	Y
Coca Linear Trend	Y	Y	Y
Expanded Set of Controls	N	N	N
	(4)	(5)	(6)
	Homicides Rate FARC	Homicides Rate Guerrillas	Homicides Rate BACRIM
Foreign Aid	-2.091** (1.048)	-2.536** (1.255)	1.522 (1.108)
Observations	5610	5610	5610
Standardized Coefficients	-1.213	-0.856	0.736
F-Statistic	10.43	10.43	10.43
Municipality FE	Y	Y	Y
Year FE	Y	Y	Y
Department Linear Trend	Y	Y	Y
Coca Linear Trend	Y	Y	Y
Expanded Set of Controls	Y	Y	Y

Notes. For all regressions, the instrument is the interaction of the Log US GDP and the SEM potential interventions. Furthermore, every regression includes time and municipality fixed effects, and Log Population. The full set of controls is specified in the Panel (D) of the Descriptive Statistics. Invariant controls interact with Log US GDP. Robust standard errors clustered at the municipality level in parentheses. *p<0.1 **p<0.05 ***p<0.01

Table A7: Falsification Test: Past Aid and Armed Conflict- IV

<i>Panel A. Lag: 1</i>			
	(1) Homicides Rate FARC (t-1)	(2) Homicides Rate Guerrillas (t-1)	(3) Homicides Rate BACRIM (t-1)
Foreign Aid	-0.712 (0.630)	-0.521 (0.624)	2.516 (1.588)
Observations	5610	5610	5610
F-Statistic	10.43	10.43	10.43
<i>Panel B. Lag: 2</i>			
	(1) Homicides Rate FARC (t-2)	(2) Homicides Rate Guerrillas (t-2)	(3) Homicides Rate BACRIM (t-2)
Foreign Aid	0.764 (0.785)	0.500 (0.797)	0.747* (0.383)
Observations	5607	5607	5607
F-Statistic	10.41	10.41	10.41
<i>Panel C. Lag: 3</i>			
	(1) Homicides Rate FARC (t-3)	(2) Homicides Rate Guerrillas (t-3)	(3) Homicides Rate BACRIM (t-3)
Foreign Aid	0.672 (1.053)	0.507 (1.052)	0.914** (0.372)
Observations	5603	5603	5603
F-Statistic	10.40	10.40	10.40
<i>Panel D. Lag: 4</i>			
	(1) Homicides Rate FARC (t-4)	(2) Homicides Rate Guerrillas (t-4)	(3) Homicides Rate BACRIM (t-4)
Foreign Aid	-0.749 (0.783)	-0.839 (0.848)	1.271** (0.557)
Observations	5599	5599	4481
F-Statistic	10.86	10.86	7.859
<i>Panel E. Lag: 5</i>			
	(1) Homicides Rate FARC (t-5)	(2) Homicides Rate Guerrillas (t-5)	(3) Homicides Rate BACRIM (t-5)
Foreign Aid	-0.264 (1.473)	0.170 (1.519)	0.242 (0.349)
Observations	5592	5592	3356
F-Statistic	10.84	10.84	4.169

Notes. For all regressions, the instrument is the interaction of the Log US GDP and the SEM potential interventions. Furthermore, every regression includes time and municipality fixed effects, department and coca linear time trends, and Log Population. The full set of controls is specified in the Panel (D) of the Descriptive Statistics. Invariant controls interact with Log USD GDP. Robust standard errors clustered at the municipality level in parentheses. *p<0.1 **p<0.05 ***p<0.01

Table A8: Falsification Test: Cumulative Aid and Natural Deaths Rate- IV

	(1) Natural Deaths	(2) Natural Deaths	(3) Natural Deaths Rate	(4) Natural Deaths Rate
Foreign Aid (Cumulative)	4.258 (3.574)	1.225 (4.637)	0.00434 (5.964)	-2.676 (8.803)
Observations	5610	5610	5610	5610
Standardized Coefficients	0.0146	0.00421	0.000109	-0.0671
F-Statistic	25.40	13.33	25.40	13.33
Municipality FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Department Linear Trend	Y	Y	Y	Y
Coca Linear Trend	Y	Y	Y	Y
Expanded Set of Controls	N	Y	N	Y

Notes. For all regressions, the instrument is the interaction of the Log US GDP and the SEM potential interventions. Furthermore, every regression includes time and municipality fixed effects, department and coca linear time trends, and Log Population. The full set of controls is specified in the Panel (D) of the Descriptive Statistics. Invariant controls interact with Log USD GDP. Robust standard errors clustered at the municipality level in parentheses. *p<0.1 **p<0.05 ***p<0.01

Table A9: Robustness Check: Cumulative Aid and Homicides Rate by FARC- IV (Restricted Sample)

	(1) Threshold: 300000	(2) Threshold: 250000	(3) Threshold: 200000	(4) Threshold: 150000	(5) Threshold: 100000
Foreign Aid (Cumulative)	-1.338** (0.622)	-1.314** (0.603)	-1.300** (0.591)	-1.446** (0.671)	-1.658** (0.799)
Observations	5509	5480	5469	5425	5307
Standardized Coefficients	-0.789	-0.771	-0.758	-0.834	-0.936
F-Statistic	25.30	25.40	25.28	23.23	21.93
Municipality FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
Department Linear Trend	Y	Y	Y	Y	Y
Coca Linear Trend	Y	Y	Y	Y	Y
Expanded Set of Controls	N	N	N	N	N
	(6) Threshold: 300000	(7) Threshold: 250000	(8) Threshold: 200000	(9) Threshold: 150000	(10) Threshold: 100000
Foreign Aid (Cumulative)	-2.052* (1.050)	-2.004** (1.004)	-1.961** (0.967)	-2.100** (1.068)	-2.259* (1.176)
Observations	5509	5480	5469	5425	5307
Standardized Coefficients	-1.210	-1.176	-1.143	-1.212	-1.275
F-Statistic	10.22	9.838	9.688	8.755	7.874
Municipality FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
Department Linear Trend	Y	Y	Y	Y	Y
Coca Linear Trend	Y	Y	Y	Y	Y
Expanded Set of Controls	Y	Y	Y	Y	Y

Notes. For all regressions, the instrument is the interaction of the Log US GDP and the SEM potential interventions. Furthermore, every regression includes time and municipality fixed effects, department and coca linear time trends, and Log Population. The full set of controls is specified in the Panel (D) of the Descriptive Statistics. Invariant controls interact with Log USD GDP. Robust standard errors clustered at the municipality level in parentheses. *p<0.1 **p<0.05 ***p<0.01

Table A10: Robustness Check: Cumulative Aid and Homicides Rate by left-wing guerrillas
- IV (Restricted Sample)

	(1) Threshold: 300000	(2) Threshold: 250000	(3) Threshold: 200000	(4) Threshold: 150000	(5) Threshold: 100000
Foreign Aid (Cumulative)	-1.633** (0.753)	-1.602** (0.730)	-1.583** (0.714)	-1.754** (0.810)	-2.007** (0.963)
Observations	5509	5480	5469	5425	5307
Standardized Coefficients	-0.876	-0.855	-0.839	-0.920	-1.030
F-Statistic	25.30	25.40	25.28	23.23	21.93
Municipality FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
Department Linear Trend	Y	Y	Y	Y	Y
Coca Linear Trend	Y	Y	Y	Y	Y
Expanded Set of Controls	N	N	N	N	N
	(6) Threshold: 300000	(7) Threshold: 250000	(8) Threshold: 200000	(9) Threshold: 150000	(10) Threshold: 100000
Foreign Aid (Cumulative)	-2.492** (1.261)	-2.429** (1.204)	-2.375** (1.160)	-2.539** (1.280)	-2.720* (1.405)
Observations	5509	5480	5469	5425	5307
Standardized Coefficients	-0.876	-0.871	-0.866	-0.857	-0.838
F-Statistic	10.22	9.838	9.688	8.755	7.874
Municipality FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
Department Linear Trend	Y	Y	Y	Y	Y
Coca Linear Trend	Y	Y	Y	Y	Y
Expanded Set of Controls	Y	Y	Y	Y	Y

Notes. For all regressions, the instrument is the interaction of the Log US GDP and the SEM potential interventions. Furthermore, every regression includes time and municipality fixed effects, department and coca linear time trends, and Log Population. The full set of controls is specified in the Panel (D) of the Descriptive Statistics. Invariant controls interact with Log USD GDP. Robust standard errors clustered at the municipality level in parentheses. *p<0.1 **p<0.05 ***p<0.01

Table A11: Robustness Check: Cumulative Aid and Homicides Rate by criminal gangs (BACRIM) - IV (Restricted Sample)

	(1) Threshold: 300000	(2) Threshold: 250000	(3) Threshold: 200000	(4) Threshold: 150000	(5) Threshold: 100000
Foreign Aid (Cumulative)	1.234 (0.845)	1.194 (0.815)	1.141 (0.790)	1.286 (0.893)	1.553 (1.036)
Observations	5509	5480	5469	5425	5307
Standardized Coefficients	0.606	0.584	0.555	0.619	0.731
F-Statistic	25.30	25.40	25.28	23.23	21.93
Municipality FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
Department Linear Trend	Y	Y	Y	Y	Y
Coca Linear Trend	Y	Y	Y	Y	Y
Expanded Set of Controls	N	N	N	N	N
	(6) Threshold: 300000	(7) Threshold: 250000	(8) Threshold: 200000	(9) Threshold: 150000	(10) Threshold: 100000
Foreign Aid (Cumulative)	1.433 (1.086)	1.364 (1.032)	1.298 (0.990)	1.412 (1.083)	1.473 (1.135)
Observations	5509	5480	5469	5425	5307
Standardized Coefficients	0.704	0.667	0.631	0.679	0.693
F-Statistic	10.22	9.838	9.688	8.755	7.874
Municipality FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
Department Linear Trend	Y	Y	Y	Y	Y
Coca Linear Trend	Y	Y	Y	Y	Y
Expanded Set of Controls	Y	Y	Y	Y	Y

Notes. For all regressions, the instrument is the interaction of the Log US GDP and the SEM potential interventions. Furthermore, every regression includes time and municipality fixed effects, department and coca linear time trends, and Log Population. The full set of controls is specified in the Panel (D) of the Descriptive Statistics. Invariant controls interact with Log USD GDP. Robust standard errors clustered at the municipality level in parentheses. *p<0.1 **p<0.05 ***p<0.01