Bases, Bullets and Ballots: the Effect of U.S. Military Aid on Political Conflict in Colombia *

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Abstract

This paper examines the effect of U.S. military aid on political violence and democracy in Colombia. We take advantage of the fact that U.S. military aid is channeled to Colombian army brigades operating out of military bases, and compare how changes in aid affect outcomes in municipalities with and without bases. Using detailed data on violence perpetuated by illegal armed groups, we find that U.S. military aid leads to differential increases in attacks by paramilitaries (who are allied with the military), but has no significant effect on attacks by the guerillas. We also find that the aid shock results in more paramilitary political assassinations during election years, but has no significant effect on guerilla assassinations. Moreover, when aid rises, voter turnout falls more in base municipalities during regional elections and these effects are larger in politically contested municipalities. To address potential endogeneity in the timing of aid, we use an instrument based on U.S. military aid to the rest of the world (excluding Latin America). Our results are also robust across a wide variety of alternative control groups. The findings suggest that foreign military aid may strengthen the capacity of armed non-state actors, undermining domestic political institutions.

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1 Introduction

Military aid from the United States and other advanced nations exceeds all other forms of foreign aid, including development assistance.[1] The effect of this foreign military assistance on countries amidst civil war is of immediate importance to both academics and policymakers. Yet, the impact of military aid on political outcomes has been relatively under-studied.

This paper employs micro-level data to estimate the *de facto* and *de jure* political impacts of U.S. military aid on Colombia. Specifically, we assess how military assistance has affected political violence and democracy, as measured by participation in elections, over 1988-2005. The Colombian civil war represents a decades old conflict between left-wing guerillas, the state, and right-wing paramilitary groups, who are allied with the government military. It serves as the ideal laboratory for studying this question since both of the armed non-state actors, guerillas and paramilitaries, seek dominance via warfare and electoral manipulation. To analyze the role of U.S. military aid on conflict dynamics, our empirical strategy takes advantage of the fact that U.S. military aid is allocated to brigades of the Colombian armed forces, which operate out of military bases located in particular municipalities. This generates within-country spatial variation in the allocation of foreign military assistance, allowing us to estimate whether annual changes in U.S. military aid affect political outcomes differentially in municipalities that have military bases, relative to those that do not.

Our results on conflict display a distinct, asymmetric pattern: when U.S. military aid increases, paramilitary attacks increase more in municipalities with bases. However, there is no significant effect on guerilla attacks. Moreover, there is a disproportionate increase in paramilitary assassination of politicians in base regions during election years, but no equivalent increase in political assassinations by the guerillas. In terms of electoral participation, when military aid rises, voter turnout falls more in the base municipalities, and these effects are larger in municipalities that are politically contested, either militarily or electorally. The estimates imply substantial effects: a 1% increase in US military assistance increases paramilitary attacks by 1.5% more in base municipalities, and lowers turnout for mayoral elections by .2% and .12% more in militarily and electorally contested regions, respectively. These results are consistent with the idea that the influx of foreign military aid enhances the capacity of paramilitary groups, both to carry out political attacks, and to intimidate voters, which reduces political participation.

[1]For example, in 2007, the United States spent 3.9 billion dollars on development aid but spent 4.6 billion dollars on military aid to other countries (State Department, 2007).

To address potential endogeneity in the timing of U.S. military aid we use an instrumental variables strategy which exploits general increases in U.S. military spending around the world (excluding Latin America). The rise in global U.S. military aid reflects the broad geopolitical outlook of the American government shaped by major world events such as 9/11, and can thus be considered exogenous to the Colombian conflict. The results are robust to the use of this IV strategy, and to a variety of control groups for treatment municipalities.

Our results suggest that foreign aid may strengthen armed, non-state actors in an environment where there are ties between the government military and these other armed groups. The idea that external funding may sustain conflict by financing armed non-state actors has relevance to several other major recipients of US military aid, including Iraq, where armed militias maintain deep links to the military, which has been equipped and trained by the US. Indeed, non-democracy and sustained civil wars have been held as a major consequence of Superpower backing of armed groups in the Cold War era (Westad 2006, Easterly et al. 2008).

Our paper is situated within the broader literature on the economic determinants of insurgency. A number of cross-country studies have found a negative relationship between GDP and the probability a nation experiences civil war, including Collier and Hoeffler, 1998 and 2004; Fearon and Laitin, 2003; Miguel et al., 2004; and Fearon, 2005.[2] Several within country analyses also examine the relationship between income and violence, including Angrist and Kugler, 2008; Deininger, 2003; Barron et al., 2004; Do and Iyer, 2007; and Hidalgo et al, (forthcoming). This literature suggests that the effect of income on conflict is highly heterogeneous, depending on the source and type of income. For example, Dube and Vargas (2008) find that agricultural export prices reduce violence by raising workers' wages and the opportunity costs of joining armed groups while natural resource prices increase violence by increasing rents available for capture.

Another strand of the economic determinants literature has focused on insurgency and state capacity, particularly the provision of public goods. Fearon and Laitin (2003) suggest that the cross-country negative correlation between income and conflict is driven by lower state capacity, in particular the state's ability to inhibit rebellion. Berman and Laitin (forthcoming) show that when the state fails to provide public goods, radical religious groups providing these social services are able to carry out more lethal forms of terrorist attacks. Berman et al. (2009) also find that spending on local public goods can reduce insurgency, using data from reconstruction spending in Iraq.

Foreign aid may potentially affect both income and state capacity, and thus civil conflict, but the direction of the effect may be positive or negative. Theoretical papers focusing on the relationship between aid and conflict have posited both signs. For example, Grossman (1992)

[2] A comprehensive review is beyond the scope of this paper, but Sambanis (2002) provides a survey of this literature.

suggests that aid increases conflict by expanding the rents available for capture. However, Collier and Hoeffler (2002) suggest that aid may reduce civil conflict either by increasing the state's capacity to repress conflict, or by encouraging economic growth and diversification of income sources, which subsequently reduces conflict.

Likewise, empirical assessments of the relationship between aid and conflict have also found different results. Collier and Hoeffler (2007) show that aid increases military expenditures and exacerbates regional arms races between neighboring countries. However, de Ree and Nillesen (2009) find that increases in foreign aid decrease the likelihood of civil wars, using donor country GDP as an instrument for foreign aid to countries in Sub-Saharan Africa.

Our paper is also related to the literature on how foreign aid affects domestic political institutions. Svensson (2000) finds that aid increases corruption in countries with powerful social groups. Knack (2004) finds a positive impact of foreign aid on democracy. However, Djankov et al. (2008) reports a negative impact of aid on democracy and institutional quality, using initial income and strategic interest variables as instruments for aid.

Most previous studies in these literatures have not distinguished between military aid and other types of foreign aid, and there has been little empirical analysis of how military aid affects either violence or other political outcomes. Yet focusing on military aid facilitates testing whether the repressive capacity channel reduces conflict in a way that analyzing aggregate foreign aid does not. One exception is Finkel et al.(2009), which finds that there is no significant effect of military aid on democracy in a panel of countries. However, the study does not focus on analyzing military aid, which is used as a control variable, and it is difficult to interpret this outcome in a causal manner since no explicit identification strategy is used for the aid variable.

Our paper is the first empirical assessment of how foreign military aid affects both civil war and democracy in a within-country context. The use of detailed within-country data enables us to exploit geographic variation across Colombian municipalities in terms of access to U.S. military aid, as well as variation over time in the amount of U.S. assistance. This enables cleaner identification of the political consequences of aid. The remainder of the paper is organized as follows: Section 2 provides background; Section 3 describes the empirical strategy; Section 4 details the data; Section 5 presents results; and Section 6 concludes.

2 Background

In this section we provide background on the Colombian conflict, U.S. military assistance to Colombia and the relationship between the government military and paramilitary groups.

2.1 The Colombian Civil War

The Colombian conflict started in the 1960s with the launch of a communist insurgency. Officially, it is a three-sided conflict among the communist guerillas, the government and right-wing paramilitary groups. However, as we document below, the paramilitary are allied with the government in countering the guerilla. The current-day insurgency is led by the Armed Revolutionary Forces of Colombia (FARC by its Spanish acronym), whose strength is roughly 16,000-20,000 combatants, and the National Liberation Army (ELN), which is estimated to have 4,000-6,000 fighters. Both groups fight with the stated aim of overthrowing the government, but also claim to represent the rural poor by supporting aims such as land redistribution.

Although paramilitarism also dates back to the 1960s, paramilitary groups in their current form emerged during the 1980s, as private armies for drug cartels and large landowners who were targeted for extortion by the guerillas. In 1997, the disparate paramilitary groups formed an umbrella organization called the United Self-Defense Forces of Colombia (AUC), which had roughly 30,000 fighters at its peak strength.

Although the paramilitaries and guerillas pursue kidnapping, extortion, and predation on natural resource rents, both groups rely largely on the cocaine drug trade for financing purposes. Thus the drug trade is inextricably linked to the dynamics of internal conflict.

2.2 U.S. Aid to Colombia

Owing to its position as the world's largest producer of cocaine, Colombia has become a major recipient of U.S. military assistance over the past decade. Currently, it is the third largest recipient, after Israel and Egypt, respectively. Colombia started receiving more aid geared toward drug-eradication when the "War on Drugs" was initiated during the late 1980s. The 1990 "Andean Initiative" was provided to Colombia as a $200 million aid package intended to combat drugs, but comprised largely of resources to train and equip the Colombian military (Isaacson, 2005). Official aid fell sharply in 1994, when President Ernesto Samper, who had a very hostile relationship with the U.S., was elected to office in Colombia. However, with the advent of the new Pastrana administration in Colombia in 1998, the United States started developing "Plan Colombia", a $1.2 billion aid package launched in 2000. This aid package was again aimed at training and equipping the Colombian military for counter-narcotics operations, rather than pursuing counter-insurgency. However, given the guerillas involvement in the drug trade, the line between these two objectives has remained blurry, and it is impossible to distinguish the counter-narcotics and counter-insurgency components of U.S. aid. For this reason, we define military aid to Colombia as the sum of these two line-items, and analyze this aggregate category throughout the paper.

One important characteristic of US military aid is that it is disbursed to particular military

brigades, each of which is attached to and operates out of a particular government military base. This disbursement method serves as the basis of our identification strategy, since regions with military bases receive more aid. Given the well-documented history of Colombian military human rights abuses, some jointly executed with paramilitary units, U.S. lawmakers have attempted to restrict disbursement to military units that have been recorded as committing human rights violations. In 1997 the United States Congress passed the "Leahy Amendment", which required Colombian military brigades to be vetted for human rights abuses before becoming eligible for US assistance. However, the Colombian armed forces have evaded this clause through three mechanisms: first, by reshuffling individuals accused of human rights violations across brigades; second, by forming new brigades, which were subsequently vetted and "approved" by the U.S. State Department; and third, by not cooperating in handing over information about human rights violations to the U.S. government.[3] Moreover, the Plan Colombia package was specifically exempted from having to abide by the human rights clauses of the Leahy provision.[4]

2.3 Links Between the Colombian Army and Paramilitaries

In this section, we document the links between the Colombian military and paramilitary groups. Historically, there have been three periods when the Colombian state officially sanctioned the creation of civilian networks that came to function as paramilitaries. However, in more recent years, paramilitarism has been made illegal, and collusion between the military and paramilitary groups has taken a tacit form.

The earliest form of paramilitarism emerged in the 1960s as a result of attempts by the Colombian military to enlist civilian support through "Plan Lazo," which authorized the creation of civil patrols armed by the Defense Ministry (Hristov, 2000).[5] The 1980s saw the rise of a new type of paramilitary group, the private armies of drug lords and the rural elite who opposed the guerillas. These groups did not receive state support, but did receive assistance from military and police officers through unofficial channels. For example, in 1983, the Colombian attorney-general noted that a sizeable number of the crimes committed by the paramilitaries were committed by "active police and military officers (*ibid*)." In 1991, there was a second state-sanctioned effort: the Colombian Intelligence agency engineered a reorganization which

[3]National Security Archives Declassified document archive:
http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB69/col58.pdf
last accessed: 4/29/09

[4]Washington Post, Aug. 23 2000, "Clinton Clears Aid Package For Colombia; Human Rights Waiver Allows $1.3 Billion to Fight Drugs"

[5]This was a joint initiative between U.S. and Colombian counter-insurgency effots. Decree 2298 authorized the executive branch to create civil patrols and directed the Defense Ministry to arm and supply these patrols (Hristov, 2000, pg. 62).

mandated the creation of informal civilian networks that would relay information to the military. Many of these networks were subsequently found to have worked with paramilitary groups.[6] [7] Finally, the CONVIVIR effort of 1994 created rural security cooperatives that were armed with equipment from the Colombian military (Hristov, 2009, p. 69). However, the rapid growth in violence associated with CONVIVIR networks led to a sharp reversal of policy in 1997, when these groups were reigned in by the Judiciary, and effectively declared illegal. Nonetheless, some of the CONVIVIR continued operating as illegal paramilitary groups during the 1990s, and the marriage of these networks with the private armies of the 1980s led to the paramilitary groups of the late-90s, united under the banner of the AUC.

Although official state government support was withdrawn after 1997, and the judiciary began prosecuting politicians and military officials for ties to these groups, collusion between the AUC and military continued throughout the 1990s and 2000s. This is reflected in the recent indictment of several high-level military officials. In 2006, General Mario Montoya, the commander (and highest ranking officer) of the Colombian army, was charged with supplying weapons to paramilitaries while stationed in a military base in Medellin. Six other high ranking members of the intelligence and armed forces were also indicted by the Colombian supreme court on suspicion of collusion with paramilitaries in 2008. This includes the former director and deputy director of the Administrative Security Department (a key security agency), as well as former army commanders and active colonels.[8]

Human rights organizations have documented the specific channels through which the Colombian army provides military and logistical support to the paramilitaries, which includes: intelligence sharing; supply of weapons and transport equipment; training, support for paramilitary operations; and the conduct of joint operations.[9]

For example, Human Rights Watch reports that military intelligence has provided paramilitaries with lists of suspected insurgents or guerrilla sympathizers, who are then threatened or killed by paramilitaries.[10] Interviews with ex-military intelligence officials suggest that the sale of military arms to paramilitaries was common.[11] Ex-paramilitaries have also described using

[6] Human Rights Watch (HRW) "Colombia's Killer Networks: The Military-Paramilitary Partnership and the U.S", 1996.

[7] An an example, the Barrancabermeja Network was created by the Navy in response to Order 200-05/9. This network later worked with MAS, a paramilitary group accused of perpetuating atrocities during the early 1990s. Human Rights Watch reports that "In partnership with MAS, the navy intelligence network set up in Barrancabermeja adopted as its goal not only the elimination of anyone perceived as supporting the guerrillas, but also members of the political opposition, journalists, trade unionists, and human rights workers, particularly if they investigated or criticized their terror tactics (HRW, 1996)."

[8] The list of accused is available at http://www.colombiasupport.net/news/2007/05/hundreds-of-public-servants-implicated.htm, last accessed: 10/24/09.

[9] Human Rights Watch, "The Ties That Bind: Colombia and Military-Paramilitary Links", 2000

[10] HRW, 1996.

[11] HRW, 2000.

military helicopters, and being flown in to military bases.[12]

Support for paramilitary operations has taken both indirect and direct forms. For example, the army general in Mapiripán, in Meta department, ordered his troops to stay out of the area and not intervene during a paramilitary massacre. In other cases, the military has provided road blockades while the paramilitaries conduct massacres. There are also many examples of joint operations between the military and paramilitaries. For example, the Captain of the 17th Brigade was charged with masterminding the San José de Apartadó massacre in 2005.[13] As another example:

> In sworn testimony to Attorney General investigators taken on April 30, 1998, Francisco Enrique Villalba Hernández, a former paramilitary who took part in the El Aro massacre, confirmed the testimony by survivors taken by Human Rights Watch that the operation had been carefully planned and carried out by a joint paramilitary-Army force.[14]

The provision of support is in part facilitated by overlaps in networks of the military and paramilitary groups. For instance, Human Rights Watch details the military's involvement with a paramilitary group called the "Calima Front:"

> Third Brigade active duty and reserve officers formed the Calima Front, with the assistance of Carlos Castaño [then head of the AUC]. Active duty officers provided intelligence and logistical support. Former military officers were among those called in to assume positions of command.[15]

These links have raised concern among American policymakers that some part of U.S. aid may end up providing operational or material support to paramilitaries, through factors such as weapons supply. In 2000, a declassified cable from Secretary of State Albright to Ambassador Kammen indicated: "We note with concern persistent reports that the 24th Brigade, and the 31st Counterguerrilla Battalion in particular, has been cooperating with illegal paramilitary groups that have been increasingly active in Putumayo."[16] A U.S. Military Advisory Group inquiry in 1995 revealed that military brigades associated with joint human rights violations with paramilitaries had received military assistance, including 'vehicles, M6 and M60E3 machine

[12] La Semana, Nov. 18, 2008. "Former paramilitary leader Salvatore Mancuso said that AUC received help from the police and the military in massacre."

[13] El Spectator, Aug. 1 2008. "Verdades de la masacre de San José de Apartadó."

[14] HRW, 2000.

[15] HRW, 2000.

[16] National Security Archive:
http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB69/col70.pd
last accessed: 10/24/09

guns, pistols, grenade launchers, 7.62mm and 9mm ammunition, and claymore mines'."[17] More recently, even direct examples of weapons supply have emerged. For example, in 2005, the Colombian government arrested two U.S. army officers near Melgar, Tolima, the site of one of the largest bases in Colombia, under charges of arming paramilitary groups with ammunition supplied by the U.S. government.[18]

The bases through which brigades operate often play a key role since proximity to the base can facilitate the military's provision of material and operational support to paramilitary groups. Since U.S. military aid is allocated to brigades operating from the bases, they represent the physical points of diffusion for US miliary assistance.

3 Empirical Strategy

Our empirical strategy uses the fact that U.S. military aid is allocated to brigades which are headquartered in military bases located in particular municipalities. This creates spatial variation in the allocation of U.S. military aid across municipalities. Importantly, these are long-standing military bases that precede the period of the analysis. This precludes the possibility that they have been constructed as an endogenous response to political or conflict dynamics for the period of our analysis. Our empirical strategy assesses how changes in US military aid affect violence and electoral outcomes in regions with military bases, relative to municipalities without bases. We estimate:

$$y_{jt} = \alpha_j + \beta_t + (USmil_t \times Base_j)\lambda + \mathbf{X}_{jt}\phi + \omega_{jt} \quad (1)$$

where α_j are municipality fixed effects and β_t are year fixed effects. y_{jt} are either elections-related variables including voter turnout, or conflict related variables including the number of paramilitary attacks, government attacks, or guerilla attacks in municipality j and year t. $\mathbf{X}_{jt}$ is a vector of control variables which varies across specifications but always includes the natural log of population, which controls for the scale effect since our conflict-related dependent variables are the number of attacks. $Base_j$ is a dummy variable which equals one if the municipality has a military base. $USmil_t$ is the natural log of US military aid to Colombia. The coefficient λ captures the extent to which changes in military assistance induces a differential change in violence in municipalities that have bases, relative to non-base municipalities. Equation (1) is estimated using OLS.

One concern with this empirical strategy is potential endogeneity in the timing of US funding. If US military assistance responds to differential growth in violence across Colombian mu-

[17] HRW, 1996.

[18] New York Times, May 5, 2005, "Ammo Seized in Colombia; 2 G.I. Suspects Are Arrested"

nicipalities, then this could confound estimates of equation (1). This reverse causality would generate an upward bias if US military aid increases more in response to violence growth in municipalities with military bases. For instance, attacks in base regions may be viewed as a strong threat to stability, and therefore galvanize more US funding relative to attacks in other regions. On the other hand, reverse causality may generate a downward bias if US assistance increases more in response to violence growth in non-base regions. As an example, since reducing narcotics production is a stated US objective, military aid may respond to violence increases in the largest coca producing municipalities, which are non-base municipalities.

To address this potential endogeneity, we use an instrumental variables strategy which uses changes in US funding in countries outside of Latin America as an instrument for changes in US funding to Colombia. Since Colombia is one of the largest recipients of US anti-narcotics assistance, it is possible that the allocation of this line-item to Colombia determines the allocation of anti-narcotics assistance to other countries. To avoid this concern, we instrument the sum of anti-narcotics and military aid to Colombia solely with military aid to other nations. US funding to the rest of the world is determined by the broad geopolitical outlook of the American government, reflecting factors such as the party of the president or other major world events, and can thus be considered exogenous to conflict dynamics in Colombia. For example, Figure 1 shows that there was a sharp increase in US military assistance to countries outside of Latin America after 2001. This reflects both the start of the Bush administration, and the events of 9/11, which created an impetus to provide greater funding as a part of the "war on terror." This figure also shows that US assistance to Colombia is positively correlated with military aid to non-Latin American nations. Indeed, a simple regression of these two time series confirm that there is a significant positive relationship. We present this estimate in Appendix Table I, which also shows that this relationship is robust to the inclusion of a linear time trend. Since our treatment is the interaction of US military aid with the military base indicator, our instrument is aid to non-Latin nations interacted with the base indicator. The first stage is given by:

$$USmil_t \times Base_j = \alpha_j + \beta_t + (USmilnonlac_t \times Base_j)\gamma + \mathbf{X}_{jt}\rho + \upsilon_{jt} \tag{2}$$

where $USmilnonlac_t$ is the log of US military aid to non-Latin American countries. The second stage is given by:

$$y_{jt} = \alpha_j + \beta_t + (\widehat{USmil_t \times Base_j})\delta + \mathbf{X}_{jt}\eta + \omega_{jt} \tag{3}$$

Besides estimating the effect of the aid-base shock on measures of political violence, we also assess whether there are differential effects during election periods. To analyze this we estimate:

$$y_{jt} = \alpha_j + \beta_t + (USmil_t \times Base_j \times Ele_t)\theta + (USmil_t \times Base_j)\lambda + (Ele_t \times Base_j)\vartheta + \mathbf{X}_{jt}\phi + \omega_{jt} \quad (4)$$

where Ele_t is a dummy which equals one during the years in which elections were held in Colombia, which includes the years 1988, 1990, 1991, 1994, 1997, 1998, 2000, 2002 and 2003. The coefficient θ captures the differential effect of US military spending in base regions during election years relative to non-election years. The coefficient ϑ captures the differential effect of election periods on violence in base regions relative to non-base regions. All other two-way sub-interactions are absorbed by the municipality or year fixed effects.

4 Data

4.1 Data Sources

Our data on civil war violence comes from the *Conflict Analysis Resource Center* (CERAC). This dataset is event-based, and includes over 21,000 war-related episodes in over 950 municipalities from 1988 to 2005. It is collected on the basis of 25 major newspapers, and supplemented by oral reports from Catholic priests who track human rights violations. Since the clergy operates in every municipality of Colombia, this expands the scope of coverage of our data to remote regions that may otherwise lack media coverage. The priests are regarded as neutral actors in the conflict, and often used as negotiators between the two sides. This minimizes potential over-reporting of violent events perpetuated by one side over another. The data is also cross-checked against other official sources, including a dataset by the National Police and reports by Human Rights Watch and Amnesty International. The procedure used to collect the data is described more extensively in Restrepo et al. (2004).

The CERAC data records the number of attacks that are undertaken by each major actor in the conflict, including the government, the paramilitaries, the guerillas, which are the main dependent variables of our analysis. The data is able to distinguish between unilateral *attacks,* which are one-sided events carried out by a particular group, versus two-sided events involving an exchange of fire among two or more groups. We use the data on clashes to develop measures of whether a municipality is contested militarily during particular years of our sample period.

We also employ a number of conflict-related variables from a dataset by the Center for Study of Economic Development (CEDE), which was collected from the Observatory of Human Rights of the Vice-Presidency of Colombia. This data is based on reports from the Colombian security agency, the *Administrative Department of Security.* This annual level dataset gives us a measure of the number of political assassinations undertaken by paramilitaries and guerillas

in each municipality, including assassinations of elected officials and those running for office. It also includes a number of other measures of paramilitary and guerilla activity, including variables such as population displacement and pirating undertaken by armed groups. Finally, the CEDE data also provides detailed measures of the number of government military actions undertaken in each municipality, including rescue of kidnaps, deactivation of explosives, and seizure of arms and captives, as well as anti-narcotics operations and the dismantling of narcotics laboratories. These variables enable us to discern whether the inflow of US military assistance induces greater government actions in narcotics related areas, versus other counter-insurgency areas. We define our core sample based on the number of municipalities which include both the CERAC and CEDE conflict data, which gives us a sample of 936 municipalities.

In addition, we look at electoral outcomes using data from the *National Registry*, the official Colombian government electoral agency. We look at local elections, including elections for mayor and town councils, (where candidates run at the municipal level), as well as for governor and the state assembly (where candidates run at the department, or state level). Municipal level data on voter turnout that is comparable across years is only available for 2000 and 2003, which is the sample for our elections results. However, we also use the aggregate vote shares for mayoral candidates in the 1997 election to classify municipalities as electorally contested in this year.

We construct an indicator of whether a municipality has a military base from two sources. First, we begin with the base locations reported in global security.org, which gives us a list of 37 municipalities with military bases. We cross-check each of these bases against information from the Colombian army, navy and airforce websites to determine which bases were newly built over our sample period. [19] We find three new bases, and exclude them from the sample, since it is possible that these bases were built as an endogenous response to conflict dynamics.[20] This leaves us with 34 municipalities with military bases, of which 32 appear in the sample for which the conflict data is available. Map 1 shows the location of these bases.

We obtain data on a number of municipal level characteristics from CEDE, including time varying measures such as population, and time invariant characteristics such as the average height of the municipality. In addition, we obtain data on coca cultivation from two sources. *Dirección Nacional de Estupefacientes* (DNE) has a measure of land used for coca cultivation in each municipality in 1994. An equivalent measure for 1999 to 2004 comes from the *United Nations Office of Drug Control* (UNODC), which collects this data based on satellite imagery.

Finally, we use the USAID Greenbook for data on US aid. Since much of US assistance to Colombia, including the provision of training and equipment, falls under the category of

[19] The army website (last accessed 4/10/09): http://www.ejercito.mil.co/?idcategoria=69
The navy website (last accessed 4/10/09): http://www.armada.mil.co/
The air forces website (last accessed 4/10/09): http://www.fac.mil.co/?idcategoria=39l

[20] These are the bases at Carepa, Tres Esquinas, and Larandia.

anti-narcotics assistance, we look at the combined categories of military and anti-narcotics assistance. For our instrumental variables strategy, we also use Greenbook data on military assistance in other countries outside of Latin America. In addition, we use data on development assistance to Colombia, which includes assistance provided by USAID and the Economics and Support Fund (ESF) of the State Department.

4.2 Descriptive Statistics

Table I shows the descriptive statistics of key variables, in municipalities with and without military bases. The means indicate that paramilitary, guerilla and government attacks tend to be higher, on average, in base municipalities relative to non-base municipalities. Our identification strategy estimates whether there are differential increases in base regions when US military aid increases. In contrast, the paramilitary and guerilla political assassination variables are lower in the base municipalities relative to the non-base municipalities. The empirical estimates seek to identify whether there are differential increases in these outcomes in base regions during election periods, relative to non-election periods. It is worth noting that the mean paramilitary assassinations is higher than mean guerilla assassinations in both types of regions, which is consistent with the anecdotal evidence that paramilitary groups use this type of targeted political violence with greater frequency.

In terms of municipal level characteristics, the standard deviation of height, which measures ruggedness of the terrain, shows that non-base municipalities are more rugged. We consider this factor in the analysis since ruggedness has been shown to be correlated with internal conflict. The indicator for whether coca was produced shows that roughly a quarter of the non-base regions and one-third of the base locales were recorded as producing coca at some point over the sample period, and the hectares of land used for cultivating coca in 2000 was even higher on average, in base regions. In addition, a higher fraction of base municipalities also either produce oil or have oil pipelines. Given these differences, we interact all of these municipal characteristics with year effects and employ them as time varying controls for robustness in the analysis below.

5 Results

5.1 US Military Aid and Violence in Base Municipalities

We begin with a simple graph which captures the essence of our empirical strategy. We interact our base indicator with year dummy variables, and regress paramilitary attacks on these interaction terms, controlling for municipality and year fixed effects and the log of population.

In Figure 2, we graph the coefficients on the year-base interactions along with US military and narcotics aid to Colombia. The figure shows that the coefficients and aid time series move in tandem during most years. In particular, differential attacks increase in 2000 when Plan Colombia was launched, fall in 2001 when military aid was scaled down and rise again in 2002 when aid started increasing.

Next, we present regression results which estimate the effect of US assistance on various measures of political violence. Table II presents OLS estimates of equation (1). The standard errors have been clustered at the municipality level in the specifications in this table, and in all other remaining tables. Columns (1)-(3) show that the military assistance interaction has a positive and significant effect on government and paramilitary attacks, and an insignificant effect on guerilla attacks. These results indicate that an increase in US military assistance increases government and paramilitary attacks differentially in regions with bases, relative to non-base regions. The coefficients imply that the effects are of economic importance. The coefficient of .148 in column (1) suggests that a 1% increase in U.S. aid increases paramilitary attacks by approximately .0015 more in base municipalities, or by 1.5% more above the mean paramilitary attacks of .103 over this sample period. Similarly, the coefficient of .125 in column (2) implies that a 1% in aid is predicted to increase government attacks by approximately 1% more in base municipalities relative to non-base areas. According to our data, over 1988-2005, U.S. aid to Colombia increased by an average of 92% per year. Thus, our estimates imply an associated differential increase of 138% in paramilitary attacks and 92% in government military attacks.

In contrast, the coefficient on the aid shock is insignificant (and negative) for guerilla attacks. This non-effect is one of our key findings. This asymmetric effect between paramilitary and guerilla attacks presents evidence against the idea that aid is targeted to regions that generally have high levels of civil war violence. Moreover, it suggests that US military aid has a differential effect in terms of strengthening paramilitary capacity rather than guerilla capacity, which is consistent with the idea that aid channeled through the Colombian military reaches paramilitary groups specifically.

If base municipalities also receive other forms of aid, then it is possible that conflict arises from an increase in resources flowing to the region, rather than an increase in military aid *per se*. For example, if other types of aid get allocated to local governments, armed groups may fight to gain control over these resources, rather than financing from US military assistance. To test this alternative channel we undertake a falsification exercise in columns (4)-(6). We analyze whether changes in US development assistance affect violence differentially in municipalities with bases. The coefficients on the interaction of the base indicator with development assistance is statistically indistinguishable from zero for all three outcome variables, which helps rule out this alternative account. These estimates suggest that the increase in these other forms of aid

do not drive the differential increase in conflict in these regions.

Changes in other types of aid or local government policy may also confound the estimates if they are correlated with violence and US military aid targeted toward places with military bases. For example, the influx of US assistance into a department (or state) with bases may induce the governor to reduce local policing efforts, and this policy change could increase violence by encouraging the presence of armed actors.[21] In columns (1)-(3) of Table III, we control for this type of change by including a department by year fixed effect, which compares only municipalities within the same department, within the same year. This sweeps out all variation at the department year level which may be correlated with both violence and military aid, such as security-related policies or other types of aid targeted to departments. Although the coefficient on the aid interaction becomes insignificant for the government attacks variable, it remains significant for the paramilitary attack outcome, suggesting a robust effect of US military aid allocation on paramilitary violence in base municipalities.

It is also possible that there are differential trends in regions with military bases relative to those without military bases. If these trends are correlated with changes in US military spending, this could also bias the estimates presented in Table II. In Columns (4)-(6) of Table III, we present estimates which include a linear time trend interacted with the base indicator, which controls for differential trends in base and non-base municipalities. Figure 2 indicates that both US military assistance and differential paramilitary attacks in base areas increased in the post 2001 era. Thus we also control for a post-2001 indicator variable interacted with the base variable, which allows the level effect of US assistance on violence in base and non-base regions to vary for the period before and after 2001. Our results are robust to the inclusion of these controls.

In columns (7)-(9), we control for a host of other municipal characteristics which may be associated with the presence of a military base. Because bases tend to located in larger more urbanized municipalities, we include a dummy variable for whether the municipality was in a major urban areas in 1988, as indicated by a population over 10,000 in that year. We also include the standard deviation of height since this measure of ruggedness differs across base and non-base regions. In addition, 32 of the base municipalities were also recorded as producing coca at some point over the sample period. Therefore, we control for the average hectares of land used to cultivate coca in 2000, the year Plan Colombia was launched. Finally, we consider regions producing and transporting oil, Colombia's largest export, since previous work has shown that price shocks to this sector increased violence differentially in the oil region (Dube and Vargas, 2008). We employ an indicator which equals 1 if the municipality produced oil in 1997, or if it has pipelines used to transport oil. We take each of these characteristics

[21] Colombian municipalities are analogous to US counties, and departments are analogous to US states. There are 1,150 municipalities grouped into 32 departments.

and interact them with year dummies, which controls for any changes in violence induced by these characteristics, which may also be correlated with US military aid. The results remain unchanged with the inclusion of these control interactions.

Next, we addresses potential endogeneity in the timing of US military assistance. For example, US assistance may increase in response to differential violence in base regions. Given the asymmetry of our main finding (of a significant effect on paramilitary attacks but not on guerilla attacks), a plausible account of the reverse causality would have to account for why changes in US military funding respond to differential increases in paramilitary and government attacks, but not guerilla attacks. This seems counterintuitive since the desire to achieve stability should lead US military aid to respond to violence by the guerillas, who oppose the state. Nonetheless, to investigate the extent to which potential endogeneity affects the magnitude of the estimates, we present results using our instrumental variables strategy in Table IV. Columns (1)-(3) show estimates of equation (3)**,** which instruments the interaction of the base indicator and US assistance to Colombia with the interaction of the base indicator with US assistance to other nations outside of Latin America. Columns (4)-(6) also show the reduced form estimates. Both indicate that the results are robust to this IV strategy. In fact, comparing these coefficients to those in columns (1)-(3) of Table II demonstrates that the IV estimates are larger than the OLS estimates. The IV coefficients suggest that a 1% increase in aid translates into 3% more paramilitary attacks and 2.5% more government attacks in base municipalities, compared to non-base municipalities. This finding is consistent with the idea that OLS downward biases the estimates since US funding responds to differential increases in violence in non-base municipalities, such as regions cultivating substantial amounts of coca.

Since we are working with a relatively small number of treatments regions (32 out of 936 municipalities), this raises concerns that the results may potentially be biased by an outlying treatment observation. To test the sensitivity of our estimates to individual municipalities, we re-estimate equation (1) 32 times, leaving out one of our base municipalities each time. This gives us 32 coefficients, the mean of which is .147. (The minimum is .111 and the maximum is.166). Figure 3 gives the density of the T-scores of each of these regressions, which shows that the lowest T-score is 2.1, and that the coefficient is significant at the 95% level, regardless of which individual base municipality is excluded.[22]

Our empirical strategy compares changes in violence in municipalities with and without bases as US funding changes, and therefore presumes that the regions without bases serve as good controls for regions with bases. However, if regions with and without military bases differ from one another in terms of characteristics that determine conflict responsiveness, this spatial

[22]Our results are also robust to using the Conley-Taber estimator, which adjusts the standard errors for a small number of treatment groups in difference-in-differences type estimation, such as the one employed in our analysis. However, we do not report these results as the Conley-Taber estimator does not adjust for arbitrary heteroskedastcity.

heterogeneity may confound our estimates.

In Table V, we attempt to improve the set of control municipalities by partitioning the sample in different ways. We present these results for just paramilitary and government attacks, since the aid interaction remains insignificant in all specifications where guerilla attacks is the dependent variable. In columns (1)-(2), we restrict the sample to municipalities which had a paramilitary presence in the beginning of the sample period, defined as whether the municipality experienced any type of paramilitary activity in each of the first three years between 1988 and 1990. Activity is not just limited to paramilitary attacks, but additionally includes events such as population displacement, kidnaps, blocked transport routes, and pirating or theft undertaken by paramilitary groups. We choose the three year window because activity in any one year may reflect a transitory or idiosyncratic incursion, but sustained activity over a three year period is a better indicator of persistent or more endemic paramilitary presence.

This restriction creates a subset of 224 municipalities (out of 936 in the baseline sample), and includes 22 of the 32 treatment regions with military bases. The coefficients on the aid interaction remain positive and significant for both paramilitary and guerilla attacks, and insignificant for guerilla attacks, even when we restrict attention to this more comparable subset. In columns (3)-(4), we look at the regions without paramilitary presence in early years. The insignificant coefficient on paramilitary attacks may reflect the fact that regions without a paramilitary presence in the beginning of the sample period continue to have low paramilitary presence throughout the sample period.[23] Alternatively, it may also reflect low power in treatment (as only 10 base municipalities are included in the sub-sample without a paramilitary presence).

Next, we partition the sample based on municipalities that do and do not border the municipalities with bases. If military bases have been constructed in strategic regions that are particularly responsive to violence, this raises the concern that overall increases in conflict correlated with US military spending may have resulted in greater violence in these flashpoints for reasons unrelated to the aid *per se*. From this angle, bordering municipalities may make for better controls in the sense that they are more likely to share the strategic municipal characteristics. As shown in columns (5)-(6), when restricted to the 210 neighboring municipalities, the coefficients on the aid interaction remain unchanged for both the paramilitary and government attack outcome variables. (For example, the estimated coefficient was .148 for the paramilitary attacks outcome in the baseline specification in Table II, and the equivalent coefficient is .133 in column (6) of Table V).

On the other hand, restricting attention to border regions also makes it more likely that increases in paramilitary activity in the base municipality arises from substitution away from

[23]For example, the mean paramilitary attacks is substantially lower in later years, for the 712 municipalities without paramilitary presence in the beginning of the sample period.

non-base municipalities, since its less costly to relocate armed activity away from nearby regions. To explore this idea, in columns (7)-(8), we remove the neighboring regions from the control set. Again, the coefficients on the aid interaction effectively remain unchanged: for the paramilitary attacks outcome, the coefficient is .145. This suggests that the effect is not driven by substitution or a substantial lowering of paramilitary violence in the control regions. In addition, suggestive time series evidence indicates that at the annual level, as US military aid increases, paramilitary attacks also increase. We show this simple regression in column (4) of Appendix Table I, and the significant coefficient confirms that there are net annual increases in attacks in years when funding increases. This suggests that even if the positive coefficient on the treatment interaction arises in part from substitution, the entire effect is not based on a simple re-allocation of paramilitary attacks from control to treatment regions.[24]

Finally, we partition the sample into regions with and without coca production in columns (9)-(12). Given its stated anti-narcotics objective, US military spending may have a differential effect on conflict in coca regions relative to non-coca regions. If military bases are located in regions cultivating coca, then it would be difficult to distinguish the effect of aid on violence that arises from the presence of a base, relative to the presence of drug crops. Indeed, 11 of the 32 bases are located in municipalities that have been recorded as producing coca. However, when we partition the sample, we find that the coefficient on the aid interaction remains highly significant for paramilitary and government attacks in the set of 684 municipalities that were recorded as never having produced coca over the sample period. This shows that the effect of US military aid on paramilitary violence does not arise solely though a coca-related channel. In contrast, the aid interaction becomes marginally insignificant for paramilitary attacks in the set of 252 municipalities that were recorded as having produced coca during at least one year of the sample. In addition, the coefficient for the aid interaction on government attacks becomes insignificant and falls sharply in magnitude in the coca sample relative to the non-coca sample. Since aid continues to exert an effect on paramilitary attacks but not government attacks in the coca region, one interpretation is that the military outsources more of its counter-insurgency efforts to paramilitaries in the drug crop regions, where the rule of law may be weaker, or where state capacity may be lower.

The long-standing stated aim of US military assistance to Colombia has been promoting counter-narcotics efforts and lowering drug crop production. However, after 2001, the U.S. government authorized the use of military assistance toward counter-insurgency ends in this country. To investigate what types of activity U.S. aid influences, in Table VI, we analyze the

[24]In columns (5)-(6) of Appendix Table I, we also present the simple regression of paramilitary attacks on the log of military aid separately for base and non-base regions, controlling only for municipality fixed effects and log population. The coefficients show that there is a signficant relationship in both the base and non-base regions, but the effect is much larger in base regions. The difference in these coefficients is given by λ, the coefficient on the treatment interaction in equation (1).

effect of the aid shock on different types of operations undertaken by the Colombian military, as well as overall levels of municipal coca cultivation. Because we look at the coca outcome, we restrict the sample to the set of municipal year observations for which the coca variable is available, but the results do not change if we analyze the military operations for the full sample. In columns (1)-(3), we look at counter-insurgency operations, including the number of armed group captives taken by the Colombian military, the number of weapons seized (which includes recaptured arms and deactivated explosives), and the number of kidnap victims rescued and freed from the illegal armed groups. The coefficient on our treatment variable is significant and positive for all of these variables, indicating that an increase in US aid differentially increases the number of counter-insurgency operations undertaken in military base municipalities. The effects imply that a 1% increase in U.S. aid increases captives taken by .9%, increases arms seizures by 1% and increases freed and rescued kidnaps by .7% more in base regions.

In columns (4)-(5), we analyze municipal coca cultivation and the number of counter-narcotics operations undertaken by the Colombian military. For the coca outcome, the coefficient on the aid interaction is close to zero and statistically insignificant, which suggests that aid does not have a significant effect on drug crop production in the base regions. Moreover, this coefficient is negative and significant for the anti-narcotics operations, and substantial in magnitude: a 1% increase in aid implies that anti-narcotics operations fall by 2% more in base municipalities. In other words, when US military aid increases, there is a decrease in counter-narcotics operations in base regions relative to non-base areas. One interpretation of this effect is that it reflects a shift from counter-narcotics to counter-insurgency in the use of U.S. military aid. Since most coca may not be cultivated in municipalities with military bases, in columns (6), we re-analyze the anti-narcotics operations for the set of municipalities that have been known to produce coca at some point, which includes 11 military base municipalities. The results remain unchanged with this sample restriction.

5.2 US Aid Allocation, Assassinations and Electoral Participation

In this section, we analyze whether the allocation of US military aid through Colombian military bases has differential effects on paramilitary and guerilla violence during election periods. We analyze the type of political violence that is most closely linked to elections, which is the assassination of politicians undertaken by paramilitary and guerilla groups. This variable includes the killing of elected officials as well as candidates running for office.

Table VII presents estimates of equation (4). Columns (1)-(2) show the results for the paramilitary political assassinations, while columns (3)-(4) show the results for the guerilla political assassinations, using OLS and IV estimators. The first row presents estimates of θ, the key interaction of interest. The positive, significant coefficient in the first two columns

indicate that when US military aid increases, assassinations undertaken by paramilitary groups increase differentially in base municipalities during election periods relative to non-election periods. In contrast, the third and fourth columns show that there is no significant increase in the number of guerilla assassinations in either specification.

For paramilitary assassinations, the estimate of ϑ, the two-way interaction of the election year and base indicators (in the second row) is also positive and significant. This indicates that during election periods, base municipalities have higher levels of paramilitary assassinations, regardless of the level of US military aid. However, the positive sign on the estimates of θ tells us that this effect is larger in years when aid is higher. The significant negative estimate of λ, the two-way interaction of aid with base (in the third row) indicates that aid leads to a lower number of paramilitary assassinations in base regions during non-election years. Since the assassinations variable includes killing of candidates and elected officials, one interpretation of this result is that the provision of more US aid provides a security effect in terms of preventing the homicide of officials who have already been elected, since it is elected officials (versus candidates) who are killed during non-election periods. For the guerilla assassinations outcome, almost all the coefficients on the two-way interactions are also insignificant, providing further evidence that aid does not induce differential effects on guerilla violence in the municipalities with bases, independent of election year.

Given these effects on paramilitary assassinations during election periods, next, we analyze whether aid allocation through military bases also affects participation in local elections, since intimidating voters is a third dimension of paramilitary capacity. To assess whether changes in US military assistance affect voter turnout differentially in municipalities with military bases, we estimate equation (1) with log of total votes cast in the election as the outcome variable.

Table VIII presents the estimates on the aid interaction for the four local elections: gubernatorial elections and state elections, which take place at the department level, and mayoral elections and town council elections, which take place at the municipal level. Voter turnout data for local elections that is comparable across years is only available for the post-2000 period. This restricts our analysis to the years 2000 and 2003. Columns (1)-(4) show that the coefficients on the aid interaction is negative and significant, which suggests that an increase in US military aid differentially lowers turnout in base regions, for all four elections. These coefficients are elasticities and imply that a 1% increase in aid reduces turnout by .09% for the governors and state assembly elections, and by .05% and .08% for the mayor and town council elections.

If reduced turnout reflects intimidation of voters by armed groups, we should see larger effects in contested regions, where the return to reducing turnout will be larger. To examine this, we focus on two dimensions of political contestation, analyzing municipalities which were militarily contested prior to the elections, and municipalities which were electorally contested

in terms of experiencing a close election during the previous regional election. If the objective of the armed groups is to increase the probability that their preferred candidate takes office, then this should lead to larger effects in the electorally contested regions, where the marginal expected return from intimidating voters who support the opposition is larger. There are two reasons why the effect may also be larger in militarily contested regions. First, a municipality may be militarily contested because there are large potential gains from control over this area. (For example, it might be located in a strategic corridor or be endowed with resources that can help finance armed activity). In this case, the armed group has larger expected gains to the armed group from having the allied candidate in office. Alternatively, a municipality may be militarily contested if underlying preferences are polarized – i.e., it is a municipality where both the guerillas and the paramilitaries receive support from some fraction of the local population. In this case, military contestation should be strong correlated with electoral contestation, and the higher marginal expected return from reducing turnout could motivate targeting of these regions.

Our measure of military contestation is based on clashes that took place over 1995 to 1997. In particular, a municipality is classified as militarily contested if it experienced clashes between the guerillas and the government or the guerillas and the paramilitary during each of these three years. We choose the 1995-1997 period since our election sample begins in 2000, and the previous election took place in 1997. We avoid using a later interval since these clashes may be undertaken in anticipation of the elections in 2000.[25] Using this definition yields 65 militarily contested municipalities. Table IX shows the effect of the aid shock on turnout in militarily contested and uncontested regions. Columns (1)-(4) show that the aid interaction has a substantial negative effect on voter turnout in all 4 types of elections held in contested regions, and that these coefficients are much larger than the average effect for the full sample. For example, a 1% increase in foreign aid is predicted to reduce turnout for gubernatorial elections by .3% and for mayoral elections by .2%. Columns (5)-(8) show that in the uncontested regions, the treatment has no significant effect on gubernatorial and mayoral election turnout. There is a significant reduction in turnout for the state assembly and town council elections, but the magnitude of the coefficients are about half relative to those in the contested sample.

In Table X, we partition the sample along lines of electoral contestation, based on whether an election was close in the previous (1997) regional election. A close election is defined as one where the vote difference between the top two candidates was lower than 5 percent. For our sample, it is meaningful to think of close elections only for the mayoral race. Multiple candidates are elected to both the state assembly and town council elections, and a close gubernatorial

[25] However, our results are insensitive to the choice of time period, and we get similar effects if we define contestation over 1997-1999.

election is defined at the department level, while we analyze turnout at the municipal level. Using the 5 percent cutoff gives us 155 municipalities with close mayoral elections. Columns (1)-(3) show the results for the effect on turnout in these municipalities. Column (1) includes all 155 electorally contested municipalities; column (2) subdivides further and looks at just the 11 municipalities that were both electorally and militarily contested; and column (3) looks at the 288 electorally contested municipalities that were not militarily contested. The coefficient is negative and significant in all three specifications, and all three coefficients are larger relative to those from the full sample (in Table VIII), which suggests that the aid shock reduces turnout more in contested regions. However, the coefficient is largest for the municipalities that are contested along both dimensions (in the second column). It is also worth noting that out of 56 militarily municipalities, and 155 electorally contested municipalities, only 11 appear in both groups. Indeed, the raw correlation coefficient between these two measures of contestation is actually negative. This provides suggestive evidence that municipalities are militarily contested for reasons beyond the underlying preferences of the population, and that military contestation is based on factors that differ from electoral contestation.

Columns (4)-(6) show the equivalent specifications for the non-contested municipalities. The coefficient on the aid interaction is insignificant in all three specifications, which suggests that there is differential targeting of regions that are electorally contested. Its worth noting that the coefficient is close to zero (-.002) in column (6), which is the sub-sample of municipalities that are neither electorally nor militarily contested. In contrast, the coefficient is much larger (.1), albeit insignificant, in column (5), which is restricted to the set of militarily contested municipalities which were not electorally contested. This pattern suggests that both electoral and military contestation matter, but electoral contestation in particular plays a key role in determining the extent to which a rise in U.S. military aid is associated with lower electoral participation in base municipalities.

6 Conclusion

Although advanced countries transfer substantial resources to developing countries in the form of military assistance, little empirical work has evaluated the impact of military aid. This paper has estimated the effect of U.S. military assistance on conflict and elections in Colombia, a country torn by civil war over the past four decades. We exploit the channeling of U.S. aid to army brigades, which are headquartered at bases in particular municipalities, to obtain within-country spatial variation in the allocation of military assistance. Using highly disaggregated conflict data over 1988-2005, we find that increases in U.S. military aid increased attacks by paramilitary groups differentially in municipalities containing military bases. In contrast,

we find no significant effect on guerilla attacks. We interpret this finding as consistent with the well-documented alliance between the Colombian military and paramilitaries against the guerillas. These results are robust to specifications, sub-samples, and an instrumental variables strategy based on worldwide (non-Latin American) increases in U.S. military aid. The coefficient estimates imply that the average annual increase of 92% in U.S. military aid to Colombia is associated with 138% more paramilitary attacks per year in base regions, relative to non-base regions over this period.

Turning to the implications for Colombian politics, we first document that there are differential increases in paramilitary political assassinations during election periods when U.S. military aid is high in base regions. As before, we find no increase in guerilla political assassinations. In addition, we find that electoral turnout falls more in base municipalities when U.S. military assistance rises, which we interpret as a consequence of increased paramilitary capacity to intimidate voters and reduce electoral participation. Consistent with this interpretation, we find that the fall in turnout is larger in base municipalities that were previously contested either militarily or electorally, which are regions where armed actors benefit most from having an allied elected official, or where the return from intimidating voters is greatest for achieving political control.

Though we focus on Colombia, our results speak to broad questions in political development and international aid. Military aid is sometimes proposed as a cure for the weak state, enhancing the repressive capacity of the government and enabling it to secure a 'monopoly on the legitimate use of violence.' Yet, our results suggest that, in environments such as Colombia, where there is collusion between the military and illegal armed groups, international military assistance can actually strengthen these armed non-state actors, who may rival the government over the use of violence. In addition, our paper documents a channel by which foreign military aid can undermine formal democratic institutions, by equipping organizations that use violence to manipulate elections.

The analysis in this paper holds a clear policy implication: it suggests that advanced nations should consider the informal links between the armed forces and illegal armed groups prior to deploying military aid to other conflict-torn societies, such as Iraq, Mexico, or Indonesia. In these nations, similar collusion between the military and informal armed militias have led to the use of foreign military resources by illegitimate armed groups, and sometimes been accompanied by severe human rights abuses. Massacres in East Timor preceding the 1999 referendum on independence from Indonesia were led by militias tightly connected to the Indonesian military, which has been a large recipient of U.S. military assistance. In contemporary Iraq, informal Shiite militias conduct joint operations with the U.S. backed Iraqi army against suspected insurgents, despite accusations of torture and other human rights violations. The United States is currently contemplating a large increase in military aid to Mexico to assist in combating the

well-armed private armies of drug cartels. However, a 2000 Global Exchange report notes that "the Mexican army has been infiltrated by narcotics traffickers at the highest ranks, and is increasingly dependent on U.S. weapons, training, and ideology."[26] Taking account of the relationship between the state's armed forces and non-state armed groups could be an important pre-requisite for the effective deployment of military aid.

[26]Global Exchange Report. 2000. "Always Near, Always Far: The Armed Forces in Mexico." p. 46.

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Table 1: Summary Statistics

	Non-Base Municipalities			Base Municipalities		
			Panel Level			
	Obs.	Mean	Std. Dev	Obs.	Mean	Std. Dev
Paramilitary attacks	16272	0.093	0.464	576	0.380	1.187
Government attacks	16272	0.106	0.524	576	0.368	1.083
Guerilla attacks	16272	0.536	1.533	576	2.163	4.292
Paramilitary political assassinations	16272	0.151	0.777	576	1.401	3.908
Guerilla political assassinations	16272	0.026	0.199	576	0.056	0.264
Log votes Gubernatorial elections	1801	8.456	0.980	60	10.583	1.461
Log votes State Assembly elections	1803	8.471	0.983	62	10.551	1.429
Log votes Mayor's elections	1542	8.556	0.908	61	10.742	1.552
Log votes Town Council elections	1791	8.500	0.926	64	10.671	1.552
Coca, 1000's hectares cultivated	7212	0.116	0.758	255	0.116	0.534
Log population	16148	9.614	0.939	575	11.802	1.582
Captives	16272	1.442	5.070	576	28.514	57.560
Weapons Seized	16272	0.357	1.656	576	2.064	4.718
Freed Kidnaps	16272	0.455	1.248	576	3.431	5.807
Anti-narcotics Operations	16272	0.143	0.747	576	1.830	4.015
			Municipal Level			
Standard Deviation of height	903	364.948	260.479	32	319.362	339.043
Mean height	903	1320.408	952.889	32	925.442	930.323
Ever produced coca indicator	904	0.267	0.442	32	0.344	0.483
Coca in 2000, 1000's hectares cultivated	904	0.169	1.105	32	0.199	0.948
Oil production or pipeline indicator	904	0.247	0.431	32	0.375	0.492
Electorally contested, mayoral election 1997	817	0.196	0.397	32	0.313	0.471
Militarily contested	904	0.069	0.253	32	0.094	0.296
			Annual Level			
Log Real US military and narcotics aid to Colombia			18	-2.198	1.187	
Log Real US development aid to Colombia			18	0.009	0.028	
Log Real US military aid to non-Latin American nations			18	1.540	0.185	

Table II
US Military Aid and Violence: OLS Estimates

	(1) Paramilitary attacks	(2) Government attacks	(3) Guerilla attacks	(4) Paramilitary attacks	(5) Government attacks	(6) Guerilla attacks
Log US Military Aid X Base	0.148**	0.125**	-0.082			
	[0.061]	[0.060]	[0.111]			
Log US Development Aid X Base				0.915	-0.384	2.513
				[1.815]	[0.943]	[4.146]
Observations	16723	16723	16723	16723	16723	16723
Number of municipalities	936	936	936	936	936	936

Notes. Variables not shown include municipality and year fixed effects and log of population. Robust standard errors clustered at the municipality level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table III
US Military Aid and Violence: OLS Estimates with Controls

	(1) Paramilitary attacks	(2) Government attacks	(3) Guerilla attacks	(4) Paramilitary attacks	(5) Government attacks	(6) Guerilla attacks	(7) Paramilitary attacks	(8) Government attacks	(9) Guerilla attacks
Log US Military Aid X Base	0.134**	0.079	-0.098	0.090**	0.059	0.132	0.146**	0.130**	-0.069
	[0.063]	[0.057]	[0.108]	[0.046]	[0.045]	[0.122]	[0.060]	[0.059]	[0.112]
Department X Year FE	Y	Y	Y	N	N	N	N	N	N
Year X Base	N	N	N	Y	Y	Y	N	N	N
Post-2001 X Base	N	N	N	Y	Y	Y	N	N	N
Time-Varying Controls	N	N	N	N	N	N	Y	Y	Y
Observations	16723	16723	16723	16723	16723	16723	16705	16705	16705
Number of municipalities	936	936	936	936	936	936	935	935	935

Notes. Variables not shown include municipality and year fixed effects and log of population. Robust standard errors clustered at the municipality level are shown in parentheses. Columns 1-3 include department X year fixed effects. Columns 4-6 include a separate trend as well as a differential post-2001 level for base municipalities. Columns 7-9 include time-varying effects of 1988 urbanization, coca production, oil, and the standard deviation of height. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table IV
US Military Aid and Violence: Instrumental Variables Estimates

	Instrumental Variables Estimates			Reduced Form Estimates		
	(1) Paramilitary attacks	(2) Government attacks	(3) Guerilla attacks	(4) Paramilitary attacks	(5) Government attacks	(6) Guerilla attacks
Log US Military Aid X Base	0.315**	0.292***	-0.276			
	[0.123]	[0.104]	[0.252]			
Log US All Non Latin American Military Aid X Base				1.112**	1.028***	-0.973
				[0.435]	[0.366]	[0.888]
Observations	16723	16723	16723	16723	16723	16723
Number of municipalities	936	936	936	936	936	936

Notes. Variables not shown include municipality and year fixed effects and log of population. In columns 1-3 Log US Military Aid X Base is instrumented by Log US All Non Latin American Military Aid X Base. Columns 4-6 show the reduced form OLS regressions of Log US All Non Latin American Military Aid X Base on outcome variables. Robust standard errors clustered at the municipality level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table V
US Military Aid and Violence: OLS Estimates Accounting For Spatial Heterogeneity

	Para Presence 88-90		No Para Presence 88-90		Neighbors Only		Excluding Neighbors		Non-Coca Areas		Coca Areas	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Paramilitary attacks	Government attacks	Paramilitary attacks	Government attacks	Paramilitary attacks	Government attacks	Paramilitary attacks	Government attacks	Paramilitary attacks	Government attacks	Paramilitary attacks	Government attacks
Log US Military Aid X Base	0.178**	0.185**	-0.026	-0.064	0.154**	0.133**	0.145**	0.121**	0.171***	0.180**	0.097	0.009
	[0.080]	[0.071]	[0.056]	[0.087]	[0.062]	[0.061]	[0.061]	[0.060]	[0.063]	[0.071]	[0.131]	[0.107]
Observations	4031	4031	12692	12692	3744	3744	13554	13554	12239	12239	4484	4484
Number of municipalities	224	224	712	712	210	210	758	758	684	684	252	252

Notes. Variables not shown include municipality and year fixed effects and log of population. Robust standard errors clustered at the municipality level are shown in parentheses. Para Presence 88-90 indicates the set of municipalities that experience paramilitary attacks in every year between 1988-1990 inclusive. Neighbors refers to municipalities that border the municipality with the base. Coca areas are the municipalities that were recorded as having ever grown coca during the sample period. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table VI
US Military Aid and Colombian Military Operations: OLS Estimates

	(1) Captives Taken	(2) Weapons Seized	(3) Freed Kidnaps	(4) Coca	(5) Antinarcotics Operations	(6) Antinarcotics Operations
Log US Military Aid X Base	2.197**	0.482**	0.414***	0.002	-0.450***	-0.681**
	[0.940]	[0.238]	[0.151]	[0.016]	[0.142]	[0.277]
Sample:	Coca Years	Coca Years	Coca Years	Coca Years	Coca Years	Coca Years and Coca regions
Observations	7458	7458	7458	7458	7458	2006
Number of municipalities	936	936	936	936	936	252

Notes. Variables not shown include municipality and year fixed effects and log of population. Coca years sample refers to years in which there is data on coca production:1994, 2000-2005. Coca region refers to municipalities that were recorded as having grown coca at any point in the sample period. Robust standard errors clustered at the municipality level are shown in parentheses. Variables discussed in the text. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table VII
US Military Aid and Political Assassinations

Dependent Variable:	(1)	(2)	(3)	(4)
	Paramilitary Political Assassinations		Guerrilla Political Assassinations	
Log US Military Aid X Base X Election Year	0.307*	0.268***	0.028	0.053
	[0.165]	[0.094]	[0.023]	[0.033]
Election Year X Base	0.795***	0.663***	0.039	0.089
	[0.295]	[0.253]	[0.039]	[0.072]
Log US Military Aid X Base	-0.750***	-0.449***	-0.033**	-0.016
	[0.287]	[0.154]	[0.016]	[0.012]
Estimator	OLS	IV	OLS	IV
Sample	All	All	All	All
Observations	16723	16723	16723	16723
Number of municipality	936	936	936	936

Notes. Variables not shown include municipality and year fixed effects and log of population. Robust standard errors clustered at the municipality level are shown in parentheses. Dependent variables are Political Assassinations carried out by the Paramilitaries and the Guerrillas. The coca sample is all municipalities which were ever recorded as growing coca in the sample period.The Non-Coca sample is the set of municipalities which never were recorded as growing coca in the sample period. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table VIII
US Military Aid and Voter Turnout: OLS Estimates

	(1) Governor	(2) State Assembly	(3) Mayor	(4) Town Council
Log US Military Aid X Base	-0.090*	-0.090**	-0.046*	-0.076***
	[0.053]	[0.036]	[0.025]	[0.028]
Observations	1860	1864	1602	1854
Number of municipalities	933	935	823	934

Notes. Notes. Dependent variable is log of votes cast in each election. Variables not shown include municipality and year fixed effects and log of population. Column headers refer to type of election. Sample years are 2000 and 2003, when regional elections are held. Robust standard errors clustered at the municipality level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table IX
US Military Aid and Voter Turnout In Militarily Contested Areas: OLS Estimates

Sample:	**Militarily Contested**				**Non-Militarily Contested**			
	(1) Governor	(2) State Assembly	(3) Mayor	(4) Town Council	(5) Governor	(6) State Assembly	(7) Mayor	(8) Town Council
Log US Military Aid X Base	-0.336***	-0.194*	-0.195**	-0.164*	-0.067	-0.08**	-0.029	-0.066**
	[0.114]	[0.102]	[0.092]	[0.097]	[0.056]	[0.038]	[0.026]	[0.030]
Observations	128	128	112	130	1726	1730	1446	1710
Number of municipalities	64	64	56	65	863	865	723	855

Notes. Dependent variable is log of votes cast in each election.Variables not shown include municipality and year fixed effects and log of population. Column headers refer to the type of election. Sample years are 2000 and 2003, when regional elections are held. A municipality is militarily contested if it experienced either government-guerrilla clashes or paramilitary-guerilla clashes each year of 1995 to 1997; Robust standard errors clustered at the municipality level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table X
US Military Aid and Voter Turnout in Electorally Contested Areas: OLS Estimates

Dependent Variable: Log Votes for Mayoral Election

Sample:	**Electorally Contested**			**Non-Electorally Contested**		
Subsample:	All	Military Contested	Non Military Contested	All	Military Contested	Non Military Contested
	(1)	(2)	(3)	(4)	(5)	(6)
Log US Military Aid X Base	-0.128***	-0.444***	-0.087***	-0.012	-0.1	-0.002
	[0.040	[0.100]	[0.036]	[0.029]	[0.097]	[0.031]
Observations	310	22	288	1210	88	1122
Number of municipalities	155	11	144	605	44	561

Notes. Variables not shown include municipality and year fixed effects and log of population. Column headers refer to type of election. Sample years are 2000 and 2003, when regional elections happen. A municipality is militarily contested if it experienced either government-guerilla clashes or paramilitary-guerilla clashes every year between 1995 and 1997 inclusive; it is electorally contested if the vote difference between the top two mayoral candidates was less than 5% during the previous elections in 1997. Robust standard errors clustered at the municipality level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Appendix Table I

	Time-Series First Stages			Time-Series Estimates	Simple Differences Estimates	
	(1)	(2)	(3)	(4)	(5)	(6)
	Log US Military Aid to Colombia			Paramilitary attacks		
Log US All Non Latin American Military Aid	3.570**	2.052*	2.455			
	[1.336]	[1.106]	[1.727]			
Log US Military Aid to Colombia				0.982*	0.041***	0.196***
				[0.479]	[0.004]	[0.061]
Year		0.135***	14.913			
		[0.038]	[47.560]			
Year squared			-0.004			
			[0.012]			
Observations	18	18	18	18	16272	576
Number of municipalities					904	32

Notes. Columns 5 and 6 include population and municipality and year FE and show robust standard errors clustered at the municipality level in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Figure 1
U.S. Military Aid to Colombia vs. All Non-Latin American Countries

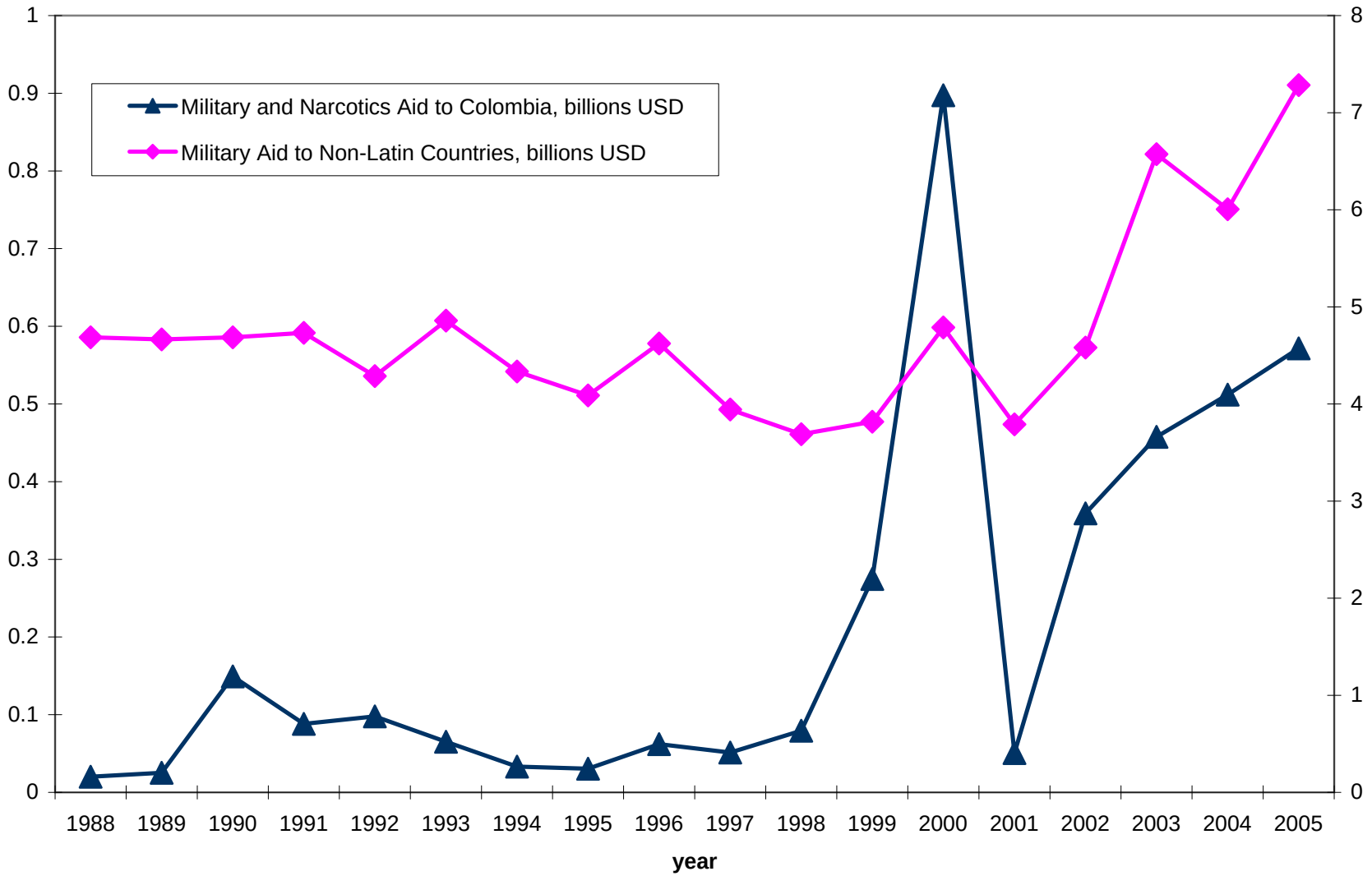


Figure 2
U.S. Military Aid and Differential Paramilitary Attacks in Base Municipalities

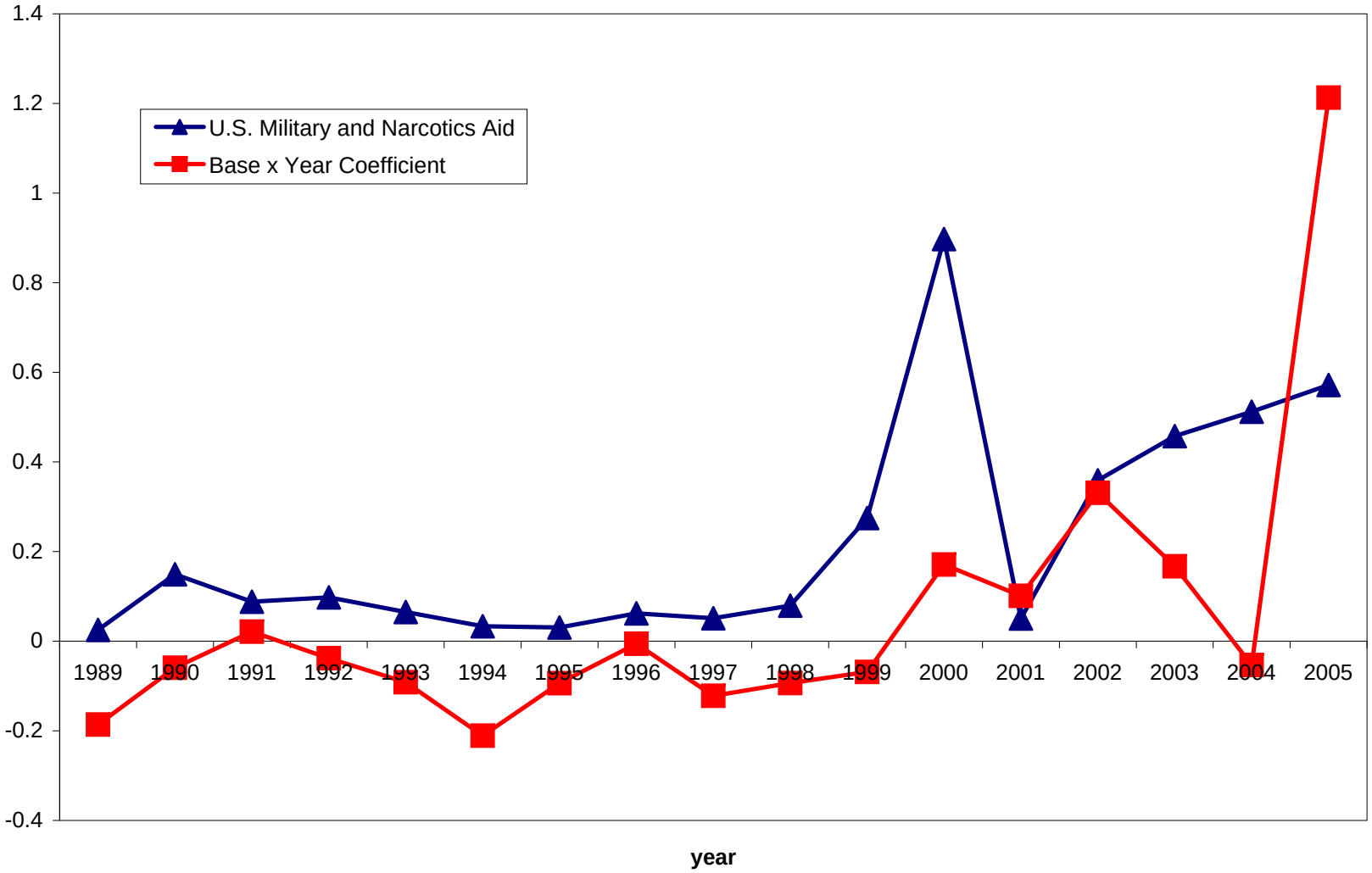
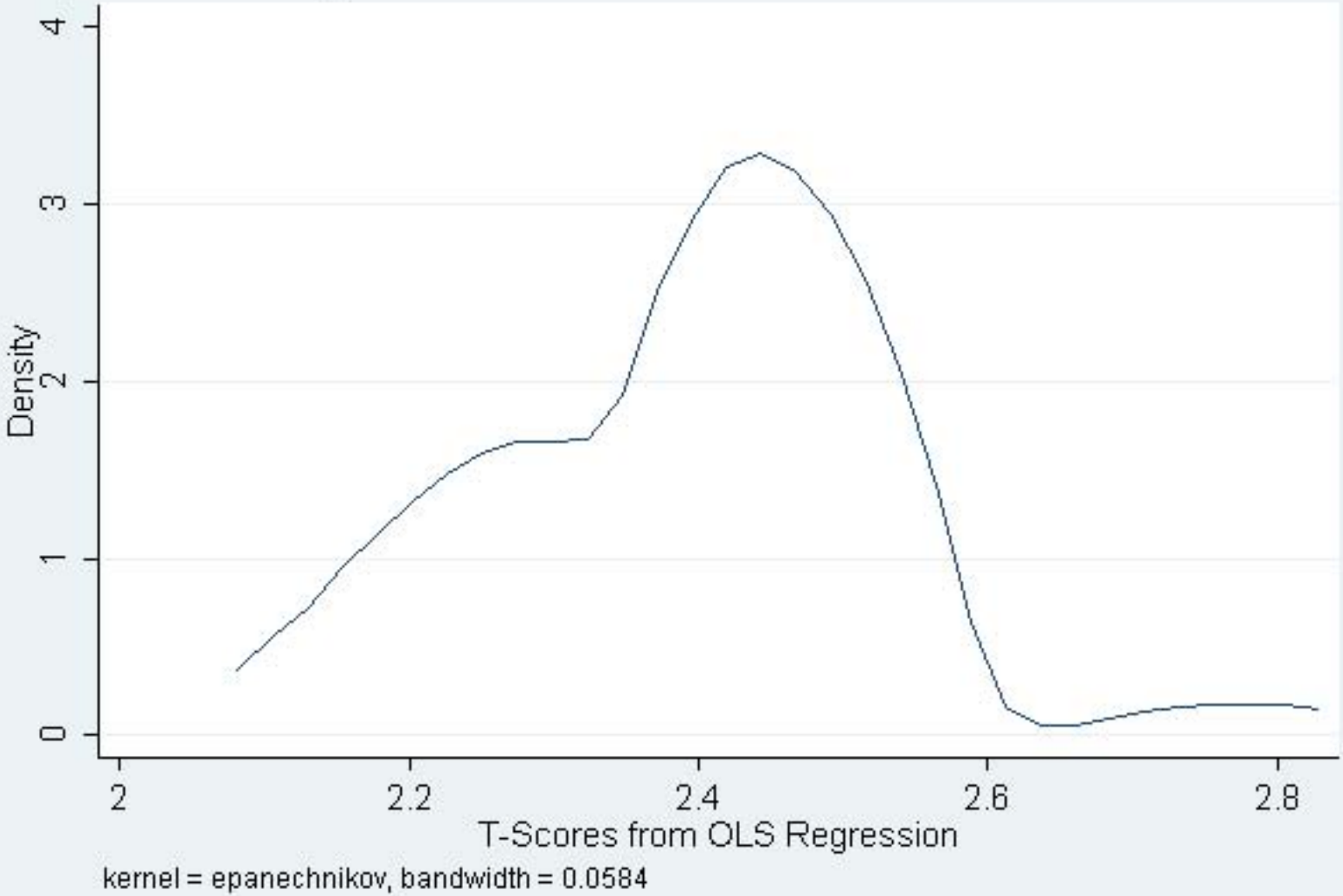


Figure 3: Density of T-Scores From Leave-One-Out OLS Estimates



Map 1: Municipalities with Military Bases