The Perils of High-Powered Incentives: Evidence from Colombia's False Positives

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A   Online Appendix

A.1   Context and Case-study Evidence

In Section 2 of the paper we gave a brief sketch of the Colombian context and some of the key pieces of evidence which undergird our approach. Here we present some additional case study evidence which supports our arguments and interpretations of the evidence.

A.2   The Introduction and Removal of High-powered Incentives

After the Soacha scandal mentioned in the text, *Semana* and other media outlets published a number of documents recently declassified by US intelligence, all of which highlighted army incentives as creating the conditions for the emergence of human rights abuses. Some of these dated back to the 1990s.[40] Despite these early concerns, the later increase in false positives in the 2000s was unprecedented. The ensuing national scandal also led to an investigation from a United Nations Special Rapporteur, Phillip Alston, to an internal investigation by the armed forces, and to the ousting of a number of army members, including high-ranking officials.

As noted in Philip Alston's final report on the issue, while the existence of different sorts of incentives is clear, it is to some extent unclear how rewards for killings worked since this was informal in many ways. While critics argue that members of the armed forces received money, holidays, medals, and promotions for killing guerillas, the government has pointed out that rewards (like those established in Directive 29) cannot be paid to public servants like soldiers. Nonetheless, as the case-study evidence below reveals and as was recognized by Alston and judicial investigations, this theoretical principle was not always true in practice.

First, based on his investigations Alston noted that even if not receiving money "members of the military have also been provided various incentives to kill, including vacation time, medals, and promotions" (Alston, 2010, p. 11). Human Rights Watch point out that army members colluded with potential recruiters for false positives to share the monetary rewards. Moreover, other sources of payment in the form of "gastos reservados" (confidential expenses) and commanders' discretionary funds were used as rewards. Referring to these sources, Alston notes that the Government "conceded that there is more discretion for officers in distributing confidential expenses, and that 'there could be problems there'" (Alston, 2010, p. 10). These observations explain his conclusion already reproduced in the main text that "There were incentives: an informal incentive system for soldiers to kill, and a formal one for civilians who provided information leading to the capture or killing of guerillas. The latter system lacked oversight and accountability" (Alston, 2010, p. 2).

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[40]For instance, in a 1994 report, US Ambassador Myles Frechett says that Colombia's Defense Minister Fernando Botero's statements, referring to the growing awareness within the military on the importance of human rights protection and the blocking of promotions to officers suspected of having been involved in abuses, were 'wishful thinking'. Instead, the ambassador claims that a 'body count' mentality is widespread among the Colombian military, *and a necessary condition for promotion*. Another document quotes a Colombian colonel commenting in 1997 that there was a "body count syndrome" in the army, responsible for "fueling human rights abuses by well-meaning soldiers that just try to get their quota to impress superiors". See Evans, Michael, "Los 'falsos positivos' son una práctica vieja en el Ejército", *Semana*, January 7, 2009. Available at `http://www.semana.com/opinion/articulo/los-falsos-positivos-practica-vieja-ejercito/98864-3` (last accessed August 29, 2016).

There is some controversy over whether formal directives like 29 of 2005 were directly responsible for false positives or not. But there is little doubt among experts and members of the Office of the General Attorney consulted that incentives were delivered and played a role. These directives leaked by the press can therefore be taken more as a signal of a general effort by the army to provide direct incentives for killing guerillas than as an exact description of how incentives worked in practice. This policy, as Alston reports, was reflected not just in the formal policies adopted, but in informal and unregulated incentives. The pressure to "show results" and rewards of doing so is cited by experts, even within the military, as one of the causes of false positives. A soldier explained a killing by his unit would be rewarded with 15 days vacation. "When important holidays approached, he stated, soldiers would attempt to 'earn' vacation time" (Alston, 2010, p. 11).

In the end, a full incentives scheme was in place, that included the expectation of money, vacation and promotions for army members and commanders capable of producing more killings of rebels. In line with a long tradition in Colombia of a body-count mentality, these incentives exacerbated the idea that only army commanders "successful" in the fight against insurgency using this metric were likely to rise up in the military ladder.

Perhaps the most clear indication of the importance of incentives in explaining false positives is the governments' reaction to the media uncovering of the Soacha killings. In a special September 2008 report following the scandal, the government discussed the achievements of President Uribe's flagship Democratic Security Policy, but acknowledged concerns around the persistent complaints of false positive cases. Moreover, when discussing its efforts to avoid false positives, it acknowledges that some measures had already been taken to adjust, precisely, the incentive policy. In particular, it mentions Directive 10 of 2007[41] which "reiterates the obligation of authorities to enforce the law and avoid homicides of protected persons" and created a committee to investigate complaints. In November 2007, this directive was complemented with a second one emphasizing that army commanders should ensure deaths in combat were first investigated by the judicial police. Yet a third directive, 300-28 of November 2007, was aimed at prioritizing rewards for demobilizations and rescuing hostages rather than killings. In May 2008, Directive 142 changed the criteria for awarding medals (the *medalla al valor* and *medalla de orden público*). According to the report, starting with this directive demobilizations and capturing members of criminal and illegal armed groups are valued "as much or more" than killings (Government of Colombia, 2008)[42].

The 2005 directive 29 was later modified by directives 02 of 2008 and 01 of 2009. All of these are confidential, and only the first one was widely circulated in the press. Nevertheless, reports based on government information such as Alston's final report indicate that later directives toughened controls and sought to make it harder to use monetary incentives for false positives. In particular, they explicitly excluded the payment of rewards to army members and required that operations have the support of *prior* intelligence and included more controls on supporting documents. Other measures, while not influencing rewards directly, did affect the perceived consequences of committing false positives. Indeed, the government took disciplinary actions, ousting high-ranking officials involved in possible false positives. It also created a specialized unit in the Office of the Attorney General (*Fiscalía*) to investigate the crimes.

A.3 Case studies

We now turn to a more careful description of some of the false positives cases on which there is information. The information comes from two main sources. First, for closed criminal cases on which

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[41]Issued on june 6 of 2007, and made available at `http://web.presidencia.gov.co/especial/ddhh_2009/Directivas_ddhh.pdf`.

[42]We have not had direct access, however, to this secret directive.

we are able to access information on trial hearings and sentences (for open cases this information is confidential). Second, from secondary sources, mainly the press and NGO's investigating specific cases, we also have some information even for cases on which there is no definite sentence yet.

Our emphasis is on the role of incentives when explaining false positives, and in particular how these interacted with two main factors: first, a weak judicial system which made army members believe they could "get away" with the killings of civilians; second, the stronger incentives faced by colonels to commit false positives in search of promotion. We also discuss the incentive of the military to further erode the quality of judicial institutions, to facilitate committing these crimes. We further emphasize that the case study evidence is not consistent with false positives being simply the result of collateral damage, an unfortunate by-product of genuine combat activities.

A.3.1 The Role of Incentives

The case study evidence that we report in this section shows that the incentive package given to military personnel who excelled in the production of quantifiable counterinsurgency results included rewards, permits of absence or vacation time, honors and compliments from superiors, and promotions. In addition to the 'carrots', there were also sticks in the form of high pressure from superior officials to produce 'results' (in the form of killings) and penalties for soldiers who failed to do so. Crucially, the pressure was not merely to work hard in the fight against insurgents, but to deliver measurable results. Sticks thus operated with a similar logic as the carrots in our theoretical model: as high-powered incentives responding to alleged killed rebels. Indeed, several army officials who have been interviewed by the press after the scandal broke out have stated that the psychological torture of having to deliver operational results every day was unbearable.[43]

One example of such pressure for results and punishment of failures can be seen in army official Edgar Iván Flórez Maestre's statement during his hearing before the General Prosecutor. According to Flórez, 14th Brigade's commander Colonel Wilson Cedeño used to tell his troops: "Each company commander is responsible of one combat death per month, and the Second Section is responsible for three deaths per month. At this time war is measured with liters of blood. The commander that cannot show results in terms of deaths every month will face a sanction that will appear in his folder." Flórez also stated that colonel Juan Carlos Barrera Jurado, former commander of the 14th Brigade, once told all battalion commanders under his orders that the battalions that did not have any killings in combat in the next 90 days would have their commanders fired for negligence and operational lack of capacity. According to Flórez, the pressure was so intense that soldiers would start counting the days that they had not faced combat. The excess pressure finally resulted in misbehavior. According to Flórez a fellow soldier once told him how frustrated he was that the only people that were getting permits of leave and honors were the ones that were producing killings, and so that he was planning a "job" for which he had already obtained a gun (to put on the victim's hands to make him appear as a combatant).[44]

Major Juan Carlos Rodríguez Agudelo tells a similar story in an interview with newspaper *El Tiempo*. According to Rodríguez, while back in 1995 an honor medal was given for two combat kills, by 2004 the threshold had gone up to 10 kills. In staff operational meetings, commanders who had produced many killings were praised and those who could not show enough bodies were ridiculed by superiors. Rodríguez argues that wearing one of these honor medals had such high status within the army that the pursuit of glory pushed him to make mistakes and he ended up killing civilians.[45]

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[43] "Cada día se van unos 17 hombres del Ejército", *El Tiempo*, July 2, 2006. Available at: `http://www.eltiempo.com/archivo/documento/MAM-2087862` (last accessed August 14, 2014).

[44] Source: Hearing of Edgar Iván Flórez Maestre before the Unit of Human Rights of the National Direction of Special Investigations of the General Prosecutor Office, Medellín, December 15, 2009.

[45] "Oficial del Ejército admite cómo participó en 'falsos positivos'", *El Tiempo*, June 3, 2012. Available at:

Human Rights Watch (2015) presents a great deal of supportive evidence. For example, they cite retired Lieutenant Colonel Robinson González del Río as giving testimony that General Mario Montoya, the army's top commander between February 2006 and November 2008 "Pressured subordinate commanders to increase body counts, punishing them for failing to do so" (p. 4). Other testimony by army personnel suggested that Montoya "organized competitions between military units over the number of reported combat kills" (p. 27). González del Río told prosecutors that "you were evaluated based ... on combat kills" (p. 27).

In addition to pressure and threats, 'positive' incentives played a major role. This is acknowledged by official Edgar Iván Flórez Maestre, in the same hearing mentioned above, when stating that one of the incentives offered to commanders of all battalions was vacation for the entire month of December for the platoon that could show the highest number of killings in a given year. In addition, the soldier that perpetrated the highest number of killings would be sent to Sinai, or a course out of the country.[46]

In 2007, Sargent Alexander Rodríguez Sánchez reported to the authorities (the offices of the Attorney General and the General Prosecutor, and even the Army Command) that his unit, mobile Brigade 15, was engaging in unlawful assassinations of civilians in the department of Norte de Santander. Sargent Rodríguez reported that fellow soldiers that killed civilians and portrayed them as guerillas killed in combat were granted a five-day vacation period per casualty produced. His testimony accuses the unit commander, Colonel Santiago Herrera Fajardo, of having pressured battalion commanders to generate results. According to Rodríguez this was because the Army commander in chief, General Mario Montoya, was himself putting pressure on Herrera and other brigade commanders.[47] The accusation was investigated by a military committee headed by Montoya. The result was that Rodriguez was fired from the army while Colonel Herrera was promoted because of the operational results of his unit.[48]

This is not the only testimony that relates commander in chief Montoya with putting pressure from above to unit commanders to produce results, in particular killings, as we noted above. In an interview with TV magazine *Noticias RCN,* Colonel Robinson González del Rio states that he once heard General Montoya saying "I want rivers of blood, I want results", and that he made famous a "top 10" ranking of units according to the results produced as measured by killings.[49] This is consistent with the concerns expressed by the US Embassy in Bogotá, in a cable filtered by Wikileaks, according to which General Montoya picked General Oscar Enrique González Peña as his successor as commander in chief of the military forces, praising him as "the best commander in the

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http://www.eltiempo.com/archivo/documento/CMS-11918454 (last accessed August 14, 2014).

[46]Colombia is part of The Multinational Force and Observers (MFO), an international peacekeeping force that operates in the Sinai peninsula overseeing the 1979 peace treaty between Egypt and Israel.

[47]The lack of results of Brigade 15 that generated this pressure may have been a key factor triggering the Soacha killings. A witness in the Soacha case investigations, Sargent Muñoz, declared that after several reprimands from higher level officials, the brigade commander, Colonel Gabriel Rincón Amado agreed to "buy" civilians (from intermediaries who would recruit them for fake jobs) and present them as enemies killed in combat. This is how civilians Jhonnatan Orlando Soto (17) and Julio César Meza (24) disappeared from Soacha after accepting job offers from the recruiter. They were killed two days afterwards. The recruiters were payed 2.2 million pesos (just over US$ 1,000). After that, according to Sargent Muñoz, Colonel Rincón wanted to repeat the operation with more people ("Así se tejió la trampa de los falsos positivos", *El Tiempo*, May 24, 2009. Available at: `http://www.eltiempo.com/archivo/documento/MAM-3456789` (last accessed August 15, 2014)).

[48]Sources: Beriain, David "A su muchacho lo matamos nosotros, señora" *Agencia de Prensa Rural*, May 24. Available at: `http://prensarural.org/spip/spip.php?article1124` (last accessed August 14, 2014); and "Primer militar que denunció 'falsos positivos' en Norte de Santander está preso", *El Tiempo*, May 10, 2009. Available at:`http://www.eltiempo.com/archivo/documento/CMS-5177467` (last accessed August 14, 2014).

[49]"General Montoya responde a denuncias del coronel Del Río", *Semana.com*, June 9, 2014. Available at: `http://www.semana.com/nacion/articulo/general-montoya-responde-denuncias-del-coronel-del-rio/391036-3` (last accessed August 14, 2014).

country" during his tenure in charge of the 4th Brigade, because his unit reported the most killings of all: 857.[50] Finally, in the cited interview with *El Tiempo*, Major Juan Carlos Rodríguez Agudelo said that the instructions from above, all the way to General Montoya, first produced "bottles of blood" and that ended in "tanker trucks" of blood. Indeed, according to Major Rodríguez, soldiers that did not have any deaths in their history were "out of the system", and captures just did not count.[51]

This suggests that while the cited formal documents emphasized both captures of insurgents and their death as acceptable outcomes, the informal incentives privileged killings over captures. In another telling example of his interview with *El Tiempo*, Major Rodríguez says that a common situation was one in which a soldier would call a superior to report, say, two killings and three captures, and the superior would reply by saying that he was now calling the local representative of the Attorney for him to remove all the five corpses, making clear that he expected the soldier to kill the three insurgents who had been captured.

Another incentive used to persuade army members to engage in this practice was the direct payment of rewards. Even if the Directive 29 and other of the cited documents do not mention military personnel as potential recipients of the money that the government had budgeted for intelligence rewards, army units designed mechanisms to allow for funds to be transferred to their soldiers if they were successful at producing results. According to Colonel Luis Fernando Borja, in addition to vacation and honors, soldiers could obtain cash. To this end, units would "create" fake informants that upon receiving the rewards would pass it to the command to distribute it discretionally among soldiers. Colonel Borja confessed he himself managed these funds in his unit.[52] Alfamir Castillo, mother of a false positive victim, Darvey Mosquera, told news web magazine *La Silla Vacía* that she had proof that each of the soldiers of Counter-guerilla battalion Mártires de Puerres, involved in the killing of her son and that of his friend, Alex Hernando Ramírez, received about 3 million pesos in addition to a one-month permit of absence. The two victims were portrayed as insurgents killed in combat. The Human Rights Watch report cites several other instances of this.

A.3.2   Oversight by Local Judicial Institutions

As noted in the text, the weakness of local judicial institutions in Colombia is well known. There is also evidence that the weakness of the judicial system facilitated these crimes. Several cases also reveal the resulting incentive, for army members, to further corrupt the judicial system in order to get away with the murder of civilians.

As a telling example, according to magazine *Semana*, Colonel Publio Hernán Mejía, former commander of "La Popa" battalion and now jailed for his links with paramilitaries and for committing extrajudicial executions of civilians, had little trouble in producing in false positives because the local representative of the Attorney General helped him with the setups necessary to 'legalize'

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[50]The Wikileak cable can be downloaded from: `http://wikileaks.ch/cable/2008/11/08BOGOTA4028.html` (last accessed August 14, 2014).

[51]There are testimonies that involve the then Minister of Defense and current President, Juan Manuel Santos, in exerting pressure to commanders to produce results and threatening punishment to under-performers. However, in sharp contrast with the case of General Montoya, Santos does not appear to be asking for killings, just vaguely for 'results'. In his hearing before the Attorney General, Colonel Luis Fernando Borja Aristizabal, former commander of the Joint Task Force of Sucre, states that when Santos visited the area to preside over a Security Council, he addressed Borja and warned him that he needed to achieve measurable quantitative results, or else he would be fired. Borja, who confessed to having perpetrated 57 false positives and is now facing a 42-year sentence, told the attorney that he felt threatened ("El Coronel que confesó 57 falsos positivos", *KienyKe*, 30 August, 2011. Available at: `http://www.kienyke.com/historias/el-coronel-que-confeso-57-falsos-positivos/` (last accessed August 14, 2014)).

[52]"Soy culpable", *Semana*, July 16, 2011. Available at: `http://www.semana.com/nacion/articulo/soy-culpable/243091-3` (last accessed August 15, 2014.

the victims as insurgents.[53] Similarly, in his testimony, Captain Antonio Rozo Valbuena, former commander of the GAULA special operations unit working in the department of Córdoba, stated that local representatives of the Attorney General Office helped the unit 'legalize' the execution of civilians.[54] More generally, according to the International Federation of Human Rights, in various instances there was evidence of proximity and collaboration between local attorneys and the military unit that operates in the area, with a few cases in which the attorneys even worked inside military garrisons.[55]

There is also indirect evidence of collaboration between local attorneys and the army when it comes to cases of false positives. According to the UN's Office of the High Commissioner for Human Rights, in several instances of illegal executions of civilians, the local office of the attorney refrained from claiming the competence of removing the corpses and initiating a judicial investigation. In these circumstances, cases are referred to the military criminal justice system, largely accused of underplaying the importance of false positives.[56] Human Rights Watch document several cases where functionaries of the military judicial system helped cover up false positives even giving advice to soldiers as to how to make them look more 'realistic' (pp. 77-81).

As a consequence, the UN report conclusion that witnesses were not only afraid of the perpetrators, but also of the local attorneys and prosecutors, since they were believed to cooperate with the perpetrators. This was especially so in the most rural and remote areas. For instance, a human rights activist working in the Casanare region, told *La Silla Vacía* that it was the case that when people approached the authorities to report a disappearance of a family member, the next victims were themselves. Thus "a culture of silence was created".[57]

As already mentioned, after the initial inspection and removal of the corpse by local attorneys, the investigations of alleged false positives are conducted by the judges who have jurisdiction in the area where the crime is perpetrated. However, this practice is sometimes detrimental for the success of investigations. Indeed, in cases in which the victim is abducted or disappears in one place but is executed in another, there is often a dispute of legal responsibility between the judges of the two jurisdictions. Because such disputes take long to resolve (up to a year in some cases), it is not uncommon that in the meantime parts of the evidence get lost and witnesses cannot be found or their memories have conveniently changed. This was frequently the case in the investigation of false positives.[58]

This dual responsibility among judges of different jurisdictions also created incentives for the implicated parties to push for the investigations to end up in one place rather than the other. For instance the defense lawyers of the military members involved in the Soacha scandal formally asked for the cases to be transferred from the regular criminal system to the military criminal justice system. When the petition was denied, the attorneys requested for the cases to be transferred from

[53] "De héroe a villano", *Semana*, January 27, 2007. Available at: http://www.semana.com/nacion/articulo/de-heroe-villano/83183-3 (last accessed August 15, 2014).

[54] "Confesiones siniestras", *Agencia Prensa Rural*, October 10, 2011. Available at: http://prensarural.org/spip/spip.php?article6588 (last accessed August 15, 2014).

[55] "Colombia. La guerra se mide en litros de sangre" - 2012 Report of the International Federation of Human Rights and the Colombia-Europe-USA Coordination. Available at: http://www.fidh.org/IMG/pdf/colombie589e.pdf (last accessed August 15, 2014).

[56] 2005 Report of the High Commissioner for Human Rights on the human rights situation in Colombia, UN Document No E/CN 4/2006/009.

[57] "La batalla cotidiana en Casanare por la verdad de los falsos positivos", *La Silla Vacía*, November 5, 2011. Available at: http://lasillavacia.com/historia-invitado/24106/kristina-johansen/la-batalla-cotidiana-en-casanare-por-la-verdad-de-los-fals (last accessed August 15, 2014).

[58] "Colombia. La guerra se mide en litros de sangre" - 2012 Report of the International Federation of Human Rights and the Colombia-Europe-USA Coordination. Available at: http://www.fidh.org/IMG/pdf/colombie589e.pdf (last accessed August 15, 2014).

Soacha, where the victims were recruited, to Norte de Santander, where the victims were killed.[59] This is quite a telling example, as the false positives in Soacha, which created the major media scandal around the phenomena, were perhaps particularly salient precisely because they occurred near the capital city of Bogotá, where state institutions including the judiciary are presumably stronger. Consistent with such situation, these victims were not actually executed near the recruitment cite as in most cases, but were taken far away before being killed.

Other evidence directly suggests that committing false positives likely led to a deterioration of institutional quality. Human Rights Watch (2015, p. 75) report a revealing transcript obtained by the newsmagazine Semana of a phone conversation in 2012 between the then-head of the army General Leonardo Barrero and Lieutenant Colonel González del Río who at the time was being investigated under arrest for his involvement in false positives. Barrero tells González del Río to "create a mafia" to discredit prosecutors. In order to perpetuate false positives there is also evidence that the army paid criminal organizations to find victims. We noted this in the Soacha case and González del Rio also testified that when he had commanded the Gaula Antioquia unit of the 4th Brigade General González Peña, commanded of the joint Caribbean Command, "suggested he work with organized crime groups to commit false positives" (Human Rights Watch, 2015, p. 68). It is likely that things such as attacks on witnesses and threats also help to undermine local institutions (Human Rights Watch, 2015, p. 74).

A.3.3 Promotion Incentives for Colonels

In our main theoretical and empirical analysis, we posited that the body count incentives that generated the surge in false positives after 2002 were stronger for colonels than for generals. Our empirical strategy builds on the idea that colonels leading brigades are, unlike generals, up for promotion. Therefore, high-powered incentives are more likely to have an effect on their behavior.

Recall for instance the example of Sargent Alexander Rodríguez, who testified to having witnessed the assassination of several civilians by his unit. However, after blaming the unit's colonel for orchestrating the killings, he had his testimony reviewed by a military board headed by General Mario Montoya. The outcome of the investigation was that Sargent Rodríguez was fired from the force, and the involved colonel was promoted.[60] In addition, Alfamir Castillo, mother of false positive victim Darvey Mosquera, told news web magazine *La Silla Vacía* that even if several soldiers were already serving jail time for the killing of her son, the officials that ordered the killing and organized for him to be portrayed as a guerilla were still free. The officials are Brigadier Generals Emiro José Barrios and Jorge Enrique Navarrete, both of whom were colonels at the time of the events.[61,62]

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[59] "Los secretos de los expedientes de falsos positivos", *El Tiempo*, October 18, 2009. Available at: http://www.eltiempo.com/archivo/documento/MAM-3674086 (last accessed September 20, 2014).

[60] Beriain, David "A su muchacho lo matamos nosotros, señora" *Agencia de Prensa Rural*, May 24. Available at: http://prensarural.org/spip/spip.php?article1124 (last accessed August 14, 2014).

[61] "Entiendo a los soldados a pesar de que mataron a mi hijo. Cumplían órdenes", *LaSillaVacia.com*, September 19, 2013. Available at: http://lasillavacia.com/historia/entiendo-los-soldados-pesar-de-que-mataron-mi-hijo-cumplian-ordenes-alfamir-castillo-45670 (last accessed September 20, 2014).

[62] This particular case is peculiar because it became known that the insurgent guerillas killed in combat were civilians because of two key witnesses. One was José Didier Marín, one of the three civilians targeted by the army, who happened to escape before they shot him. The other one was Ernesto Quintana, a soldier of the involved unit (Counter-guerilla Battalion Mártires de Puerres), who recognized his cousin was one of the victims when the perpetrators triumphantly showed the photo album of the alleged combat. When he asked his superiors why his civilian was cousin among the "insurgents" killed, they offered vacations and money for him to remain silent. When he left the battalion to take the promised vacation, he was warned that Major Linares had given orders to kill him. Both witnesses are now part of the government's witness protection program.

There are several accusations of colonels, acting as unit commanders, for orchestrating and perpetrating false positives. All of them share common features, for instance that colonels' main motive was to be promoted. For instance, according to magazine *Semana*, 27 soldiers, an entire platoon, were expelled from the army in 2008 for refusing to fire at two alleged guerilla members, but who were dressed as civilians and not engaging in combat. The platoon had seen two individuals in a guerilla camp site and, as one of them said, "it would have been easy to shoot and kill them, but they were unarmed and dressed as civilians". Moreover, they couldn't approach the camp for fear of land mines. When moving, however, the guerilla members in the area noticed the military presence and engaged in combat. The guerilla members escaped, but the soldiers captured one under-age female guerilla member and confiscated provisions and computers. Upon returning to their battalion with what they considered a positive outcome, the reaction of the platoon commander (a Lieutenant Colonel) is described by one of the soldiers as follows:

> "When my colonel came in he started insulting us and scolding us and told us that we were good for nothing, that we did not understand that the live guerilla insurgent was useless for him, and that what mattered were killings because he was going to be promoted to colonel and he was "measured" that way. He told us he was going to have us all expelled."[63]

A.3.4 The Issue of Collateral Damage

It is important to note that the case study literature also decisively suggests that false positives cannot be interpreted as simple collateral damage which occurs as an unfortunate by product of taking the fight to the guerillas. This is because the evidence is overwhelming that this was a planned criminal operation by the army. Human Rights Watch interviews with military officers confirmed that units had "systems in place for committing false positives" (p. 6) and officers would "meet with their battalion commander on a weekly basis to plan false positives" (p. 6) moreover "the crimes required significant organizing, planning, and logistical coordination by military officers and soldiers" (p. 25).

Evidence against the collateral damage hypothesis also comes from the copious judicial and media evidence. Human Rights Watch (p. 25) quotes a 2012 report from the International Criminal Court that sums up a large body of this evidence by saying that false positives "were directed against particular categories of civilians, who resided in remote areas and were considered to belong to a marginalized sector of the population". Human Rights Watch goes on to note that victims "included farmers, children, unemployed people, homeless people, people … dependent on drugs, people with mental disabilities, community leaders, people with criminal records, petty criminals. Demobilized guerillas and paramilitaries, and in some rare cases, supposed guerilla collaborators or guerillas who had been detained or surrendered" (p. 25). Thus committing false positives was a purposeful activity which was not a natural side effect of engaging in actual combat with guerillas. This feature also suggests that it probably substituted for such actual combat and what we have termed true positives.

A.4 Theoretical Results for the Perfect Substitutes and Perfect Complements Cases

First consider the perfect complements case, where

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[63]"La historia inédita de los falsos positivos", *Semana*, July 6, 2013. Available at: `http://www.semana.com/nacion/articulo/la-historia-inedita-falsos-positivos/349851-3` (last accessed September 20, 2014).

$$\Psi(a_T, a_F) = \frac{1}{2} \min\left\{ c_T a_T^2, c_F a_F^2 \right\}.$$

Then, after setting $\frac{a_T}{a_F} = \sqrt{\frac{c_F}{c_T}}$ to minimize costs and substituting in the objective function, we obtain the following optimal efforts:

$$a_F^* = \pi s \left[\frac{1 + \alpha\chi}{\sqrt{c_F c_T}} + \frac{\alpha}{c_F} \right] \tag{A.1}$$

$$a_T^* = \pi s \left[\frac{1 + \alpha\chi}{c_T} + \frac{\alpha}{\sqrt{c_F c_T}} \right] \tag{A.2}$$

Proposition A.1. (False positives with perfect technological complements)
Suppose that false and true positives are perfect technological complements, with $\Psi(a_T, a_F) = \frac{1}{2} \min\left\{ c_T a_T^2, c_F a_F^2 \right\}$. Then, a marginal increase in incentives s:

1. *Increases true and false positives.*

2. *Leads to a larger increase in true and false positives where reported output is a more important part of compensation (higher π).*

3. *Leads to a larger increase in true and false positives where misrepresentation of false positives is more likely (higher α)*

Proof. All results follow directly from expressions (A.1) and (A.2) together with expressions (6) and (7) in the main text for $E[\exp(q_T^*)]$ and $E[\exp(q_F^*)]$. $\square$

Now consider the perfect substitutes case, where $\delta = \sqrt{c_T c_F}$. Then, we can write the first order conditions for maximization of the agent's payoff in complementary slackness form as follows:

$$\pi s \alpha - \sqrt{c_F} \left(\sqrt{c_F} a_F + \sqrt{c_T} a_T \right) \leq 0, \left[\pi s \alpha - \sqrt{c_F} \left(\sqrt{c_F} a_F + \sqrt{c_T} a_T \right) \right] a_F = 0$$
$$\pi s (1 + \alpha\chi) - \sqrt{c_T} \left(\sqrt{c_F} a_F + \sqrt{c_T} a_T \right) \leq 0, \left[\pi s (1 + \alpha\chi) - \sqrt{c_T} \left(\sqrt{c_F} a_F + \sqrt{c_T} a_T \right) \right] a_T = 0$$
$$a_F \geq 0, a_T \geq 0 \tag{A.3}$$

Therefore, we cannot have both $a_F > 0$ and $a_T > 0$ except in a borderline case. More specifically:

$$(a_T^*, a_F^*) = \begin{cases} (0, \frac{\pi s \alpha}{c_F}) & \text{if } \frac{\alpha}{\sqrt{c_F}} > \frac{1 + \chi\alpha}{\sqrt{c_T}} \\ (\frac{\pi s (1 + \chi\alpha)}{c_T}, 0) & \text{if } \frac{\alpha}{\sqrt{c_F}} < \frac{1 + \chi\alpha}{\sqrt{c_T}} \\ (a_T, a_F) \geq \mathbf{0} : \sqrt{c_F} a_F + \sqrt{c_T} a_T = \pi s B & \text{if } \frac{\alpha}{\sqrt{c_F}} = \frac{1 + \chi\alpha}{\sqrt{c_T}} \equiv B \end{cases} \tag{A.4}$$

This is enough to establish our main results.

Proposition A.2. (False positives with perfect technological substitutes)
Suppose that false and true positives are perfect technological substitutes, with $\delta = \sqrt{c_t c_F}$.
Then, agents specialize in one kind of effort ($a_T^* > 0$ and $a_F^* = 0$ or $a_T^* = 0$ and $a_F^* > 0$) except if $\frac{\alpha}{\sqrt{c_F}} = \frac{1 + \chi\alpha}{\sqrt{c_T}} \equiv B$, when any pair $(a_T, a_F) \geq \mathbf{0}$ such that $\sqrt{c_F} a_F + \sqrt{c_T} a_T = \pi s B$ is optimal.

A marginal increase in incentives s:

1. *(Weakly) increases observed false and true positives,*

$$\frac{\partial \mathbb{E}[\exp(q_F^*)]}{\partial s} \geq 0, \ \frac{\partial \mathbb{E}\exp(q_T^*)]}{\partial s} \geq 0.$$

   Moreover $\frac{\partial \mathbb{E}[\exp(q_T^*)]}{\partial s} = 0 \Leftrightarrow a_T^* = 0$ (the agent specializes in bad effort), and $\frac{\partial \mathbb{E}[\exp(q_F^*)]}{\partial s} = 0 \Leftrightarrow a_F^* = \chi = 0$ (the agent specializes in good effort and false positives are purely intentional).

2. *Leads to a (weakly) larger increase in false and true positives where reported output is a more important part of compensation (higher π),*

$$\frac{\partial^2 \mathbb{E}[\exp(q_F^*)]}{\partial s \partial \pi} \geq 0, \ \frac{\partial^2 \mathbb{E}[\exp(q_T^*)]}{\partial s \partial \pi} \geq 0.$$

   Moreover $\frac{\partial^2 \mathbb{E}[\exp(q_T^*)]}{\partial s \partial \pi} = 0 \Leftrightarrow a_T^* = 0$, and $\frac{\partial^2 \mathbb{E}[\exp(q_F^*)]}{\partial s \partial \pi} = 0 \Leftrightarrow a_F^* = \chi = 0$.

3. *Leads to a (weakly) larger increase in false and true positives where misrepresentation of false positives is more likely (higher α),*

$$\frac{\partial^2 \mathbb{E}[\exp(q_F^*)]}{\partial s \partial \alpha} \geq 0, \ \frac{\partial^2 \mathbb{E}[\exp(q_T^*)]}{\partial s \partial \alpha} \geq 0.$$

   Moreover $\frac{\partial^2 \mathbb{E}[\exp(q_T^*)]}{\partial s \partial \alpha} = 0 \Leftrightarrow a_T^* = 0$, and $\frac{\partial^2 \mathbb{E}[\exp(q_F^*)]}{\partial s \partial \alpha} = 0 \Leftrightarrow a_F^* = \chi = 0$.

Proof. All implications follow directly from (A.4) combined with expressions (6) and (7) in the main text for $E[\exp(q_T)]$ and $E[\exp(q_F)]$. $\square$

Contrasting Proposition A.2 with Proposition 1 in the main text, the only difference is in prediction 3. In particular, we no longer obtain the result emphasized throughout the discussion that true positives may respond *less* in areas where α is larger so long as false positives are largely intentional (small χ). However, this contrast emerges not from a deep fundamental difference in the predictions, but from the fact that the propositions have been established for marginal changes in incentives and surrounding conditions. But in the perfect substitutes case, agents select a corner solution except in a borderline case. Thus, it is more important to focus on the implications that the changes in underlying parameters have on the agent's choice about which effort to choose, good or bad.

The next corollary establishes a result with implications along the lines of prediction 4 in Proposition 1 in the main text. In particular, it shows that, as long as false positives are largely intentional, it is more likely that the agent specializes in bad effort in places with weak institutions. This implies that, when comparing places with stronger and weaker institutions, the impact of incentives on true positives is smaller in places with weaker institutions (namely, no impact) than in those with stronger institutions (where there should be an increase).

Corollary A.3. *(**Weak institutions and specialization in bad effort**)*
Suppose that false and true positives are perfect technological substitutes, with $\delta = \sqrt{c_T c_F}$.

   Then, weaker institutions are more likely to lead to specialization in bad effort ($a_T^* = 0$ and $a_F^* > 0$) if and only if:

$$\chi > \sqrt{\frac{c_T}{c_F}}$$

Proof. The result follows directly from inspecting the effect of an increase in α in either term of the inequality $\frac{\alpha}{\sqrt{c_F}} \lesseqgtr \frac{1+\chi\alpha}{\sqrt{c_T}}$, the key condition in (A.4). $\square$

A.5   Implications for $\mathbb{E}(q)$

Consider focusing on:

$$
\begin{aligned}
\mathbb{E}[q_T^*] &= \mathbb{E}[a_T^* + \varepsilon_T] = a_T^*, & \text{(A.5)} \\
\mathbb{E}[q_F^*] &= \mathbb{E}\left[\chi(a_T^* + \varepsilon_T) + (a_F^* + \varepsilon_F)\right] = \chi a_T^* + a_F^*. & \text{(A.6)}
\end{aligned}
$$

To see that comparative statics are identical as when focusing on $\mathbb{E}[\exp(q_J^*)]$ it suffices to notice that for $J \in \{F, P\}$

$$
\frac{\partial a_J^*}{\partial s} = \frac{a_J^*}{s}, \quad \frac{\partial^2 a_J^*}{\partial s \partial \pi} = \frac{1}{s}\frac{\partial a_J^*}{\partial \pi}, \quad \text{and} \quad \frac{\partial^2 a_J^*}{\partial s \partial \alpha} = \frac{1}{s}\frac{\partial a_J^*}{\partial \alpha}.
$$

Therefore, after deriving, substituting these properties and rearranging, the following equivalences hold for true positives:

$$
\begin{aligned}
\frac{\partial \mathbb{E}[\exp(q_T^*)]}{\partial s} &= \mathbb{E}[\exp(q_T^*)]\frac{\partial a_T^*}{\partial s}, \\
\frac{\partial^2 \mathbb{E}[\exp(q_T^*)]}{\partial s \partial \pi} &= \mathbb{E}[\exp(q_T^*)](1 + a_T^*)\frac{\partial^2 a_T^*}{\partial s \partial \pi}, \\
\frac{\partial^2 \mathbb{E}[\exp(q_T^*)]}{\partial s \partial \alpha} &= \mathbb{E}[\exp(q_T^*)](1 + a_T^*)\frac{\partial^2 a_T^*}{\partial s \partial \alpha}.
\end{aligned}
$$

Similarly, for false positives:

$$
\begin{aligned}
\frac{\partial \mathbb{E}[\exp(q_F^*)]}{\partial s} &= \mathbb{E}[\exp(q_F^*)]\left(\chi\frac{\partial a_T^*}{\partial s} + \frac{\partial a_F^*}{\partial s}\right), \\
\frac{\partial^2 \mathbb{E}[\exp(q_F^*)]}{\partial s \partial \pi} &= \mathbb{E}[\exp(q_F^*)]\left(1 + \chi a_T^* + a_F^*\right)\left(\chi\frac{\partial^2 a_T^*}{\partial s \partial \pi} + \frac{\partial^2 a_F^*}{\partial s \partial \pi}\right), \\
\frac{\partial^2 \mathbb{E}[\exp(q_F^*)]}{\partial s \partial \alpha} &= \mathbb{E}[\exp(q_F^*)]\left(1 + \chi a_T^* + a_F^*\right)\left(\chi\frac{\partial^2 a_T^*}{\partial s \partial \alpha} + \frac{\partial^2 a_F^*}{\partial s \partial \alpha}\right).
\end{aligned}
$$

Since $\mathbb{E}[\exp(q_J^*)]$, $1 + a_T^*$, and $1 + \chi a_T^* + a_F^*$ are strictly positive, this establishes that the sign of the partials and cross partials for $\mathbb{E}[\exp(q_J^*)]$ is determined by the sign of the partials and cross partials for $\mathbb{E}[q_J^*]$ — since in each case, the partials and cross partial of $\mathbb{E}[q_J^*]$ are given by the terms in parentheses, which give the responses of a_T^* and $\chi a_T^* + a_F^*$ to the parameter changes.

A.6   Ratio of Outputs and Bad Effort

As noted in the text, examining the response of the ratio of true to false positives to incentives does not help determine the role of bad relative to good effort. To see this, define this ratio as

$$
r(s) = \frac{\exp\left(q_F\left(s\right)\right)}{\exp\left(q_T\left(s\right)\right)} = \exp\left[\chi(a_T^*(s) + \varepsilon_T) + (a_F^*(s) + \varepsilon_F) - (a_T^*(s) + \varepsilon_T)\right].
$$

Taking the derivative with respect to incentives s and using $\partial a_T^*(s)/\partial s = a_T^*(s)/s$, we find

$$
\frac{\partial r(s)}{\partial s} = \frac{r(s)}{s}\left((\chi - 1)\left(a_T^*\left(s\right)\right) + a_F^*\left(s\right)\right).
$$

Thus, even with agents exerting bad effort, the ratio of false to true positives may increase or decrease depending on the (unknown) relative magnitudes of good effort, bad effort, and the fraction of collateral damage (which moreover has been assumed constant for tractability, but could vary with the degree of effort further complicating the relationship between the importance of both types of effort and the ratio of observed false to true positives).

A.7 Additional Tables and Figures

Table A-1: Variables and sources

Variable	Description	Sources
Dependent variables		
Positives		
False positives	Arbitrary executions of civilians presented as members of illegal armed groups. Measured from 2000 to 2010. We use both the number of instances (events) where the Colombian armed forces are involved producing such killings (*false positives cases*) as well as the number of people killed in the events in each municipality and year (*false positives casualties*).	CINEP's Data Bank on Human Rights and Political Violence.
True positives	Killings of rebels, guerillas or paramilitaries, by the government armed forces. Measured from 2000 to 2010. We use both the number of instances (events) producing such killings (*true positives cases*) as well as the number of people killed in the events in each municipality and year (*true positives casualties*).	CERAC-Universidad del Rosario with information from CINEP.
Judicial Institutions		
Judicial Inefficiency Index	Ratio of complaints against functionaries in the judicial branch to total complaints. Measured from 2000 to 2010.	Inspector General (*Procuraduría*).
Security		
Guerilla, government, or paramilitary attacks	Dummy variable that equals 1 if the corresponding group perpetrated any attack on a given municipality and year, from 2000 to 2010.	CERAC-Universidad del Rosario with information from CINEP.
Explanatory variables		
Initial Judicial Inefficiency	Ratio of complaints against functionaries in the judicial branch to total complaints, from 1995 to 1999 (before the main sample period)	Inspector General (*Procuraduría*).
Colonels	We use three measures at the year and municipality level: a dummy, unweighted share, and weighted share. The *dummy* is simply an indicator variable that equals one if any of the brigades operating in a given municipality are led by colonels. The *unweigthed share* computes the share of brigades with influence in the municipality that are led by colonels. The *weighted share* computes the share weighting by brigade population, defined as the total population in municipalities under each brigade's jurisdiction. We also distinguish between the *mobile* brigade share and *regular* colonel-led brigade share in additional Appendix exercises. The *mobile* brigade share is the ratio of mobile to total brigades in the municipality (with mobile brigades always led by colonels), and te regular colonel share is the ratio of colonel-led regular brigades to total brigades.	Colombian Army Webpage and expired versions through Internet Archive's Way Back Machine (`http://archive.org/web/`), Online news search in *El Tiempo*, DANE for municipal population figures.

-Continues in next page-

Table A-1: Variables and sources
-continued from previous page-

Variable	Description	Sources
	Controls	
	Geographic	
Rainfall	Mean annual rainfall level in each municipality in millimeters	All geographic controls from Municipal Panel, CEDE, Universidad de los Andes
Distance to capital	Linear distance to the state's capital in thousands of kilometers	
Soil quality and soil erosion	Soil types are categorized by the Colombian Geographic Institute on a scale of 1-8 based on suitability for agriculture, and on a scale of 1-6 based on soil erosion. The index is weighted average of soil type by municipality.	
Water availability	Weighted average from sub-municipal indicators of availability.	
Altitude	Altitude above sea level, in meters, of the urban center of each municipality	
Municipality area	Total municipal area in hectares (in logs)	
	Basic socioeconomic, in year 2000	
Population, 2000	Total municipal population (in logs)	Colombian Statistical Agency (DANE)
Math, language, and science test scores, 2000	Municipal average scores per area for high-school graduates in the official standardized test	Colombian Institute for Higher Education (ICFES)
Tax Income per cap, 2000	Municipal total amount collected taxes. Millions of pesos per 100.000 inhabitants (in logs +1)	Colombian National Planning Department (DNP)
Poverty index, 2000	Proportion of people in poverty according to the Index of Unmet (or Unsatisfied) Basic Needs. Basic Needs are defined at the household level using indicators for housing overcrowding, dwelling physical characteristics, access to public services, proportion of economically dependent members, and children school attendance.	Colombian Statistical Agency (DANE)
	Additional	
Navy presence	Indicator variable that equals 1 if a Navy unit operates in the municipality.	Colombian Army Official Website
Guerrilla, government and paramilitary attacks (1991-2000)	Average attacks by group, between 1991 and 2000 and per 100.000 inhabitants	CERAC-Universidad del Rosario
Unemployment rate, 2005	Municipal unemployment rate	Colombian Statistical Agency (DANE), Census 2005
Catholic churches per capita	Number of catholic churches per person in each municipality.	Municipal Panel, CEDE, Universidad de los Andes
Coca cultivated area, 1999	Municipal area cultivated with coca, per 100 hectares	Municipal Panel, CEDE, Universidad de los Andes
Average protests per capita, 1995-1999	Sum of all protests per year and per person. Protests are defined as the set of social actions with more than 10 people who intentionally express demands or push for solutions from the state at its different levels, or from private entities or individuals, to address injustices, inequalities or exclusions.	CINEP, *Base de datos de luchas sociales* (Social struggles database)

Table A-2: Descriptive Statistics: Time-invariant variables

Variable	Mean	Std. Dev.	Min	Max	Obs.
Judicial Inefficiency Index					
Initial judicial inefficiency (1995-1999)	0.077	0.080	0.000	0.538	893
Controls (Interacted with time dummies in regressions)					
Geographic					
Mean annual rainfall	1971.843	1064.394	160.000	9200.000	893
Distance to state capital (thousand kms)	130.527	107.190	0.000	790.000	893
Soil quality index	2.683	1.203	0.000	8.000	893
Soil erosion index	1.978	1.019	0.000	5.000	893
Water availability index (thousand)	3362.203	526.747	1963.644	5625.773	893
Altitude (Km)	1.143	1.178	0.002	25.221	893
Log (Municipal area in km^2)	10.517	1.153	7.313	15.698	893
Basic socioeconomic (in year 2000)					
Log (population)	9.665	1.056	7.144	15.657	893
Math test scores	42.505	1.086	37.083	46.750	893
Language test scores	44.581	1.945	35.750	50.563	893
Science test scores	44.205	1.069	40.886	49.000	893
Log (Tax income per cap)	6.625	2.447	0.000	10.518	893
Poverty index	45.739	21.703	7.220	104.530	893
Additional					
Navy presence	0.029	0.168	0.000	1.000	893
guerilla attacks (1991-1999)	3.559	5.607	0.000	78.954	893
Paramilitar attacks (1991-1999)	0.430	0.951	0.000	8.922	893
Unemployment rate 2005	0.049	0.044	0.000	0.430	893
Catholic churches per capita	11.204	11.260	0.000	106.671	893
Coca cultivated area per 100 hectares 1999	0.078	0.656	0.000	16.072	893
Average protests per capita (1995-1999)	0.679	2.118	0.000	31.571	893

Notes: Judicial inefficiency is the ratio of complaints against judicial functionaries relative to total complaints against all public officials, over the period 1995 to 1999.

Table A-3: Colonel assignment and observable characteristics

Variable	Pre 2002	Incentives Incentives (2003-2008)	Post 2009	Pre 2002	Incentives Incentives (2003-2008)	Post 2009

Dependent variable is (weighted) colonel share

Variable (times time-period dummies indicated in columns)

Variable	Pre 2002	Incentives (2003-2008)	Post 2009	Pre 2002	Incentives (2003-2008)	Post 2009
Initial judicial inefficiency (1995-1999)				0.1027	0.2708	−0.1900
				(0.1691)	(0.1393)	(0.2038)

Geographic

Mean annual rainfall	−0.00	−0.00	0.00	−0.00	−0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Distance to state capital (thousand kms)	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Soil quality index	0.02	−0.01	−0.02	0.02	−0.01	−0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)
Soil erosion index	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Water availability index	−0.00	−0.00	−0.00	−0.00	−0.00	−0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Altitude (m)	−0.00	0.00	0.00	−0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log (Municipal area in km^2)	−0.00	0.00	0.00	−0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

Basic socioeconomic (in year 2000)

Log (population)	−0.94	2.23	8.60	−0.94	2.23	8.60
	(4.40)	(3.03)	(5.69)	(4.40)	(3.03)	(5.69)
Log (population)^2	0.08	−0.35	−1.21	0.08	−0.35	−1.21
	(0.60)	(0.41)	(0.78)	(0.60)	(0.41)	(0.78)
Log (population)^3	−0.00	0.02	0.08	−0.00	0.02	0.08
	(0.04)	(0.02)	(0.05)	(0.04)	(0.02)	(0.05)
Log (population)^4	−0.00	−0.00	−0.00	−0.00	−0.00	−0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Math test scores	0.04	0.04	0.03	0.04	0.04	0.03
	(0.02)	(0.02)	(0.04)	(0.02)	(0.02)	(0.04)
Language test scores	−0.02	−0.03	−0.03	−0.02	−0.03	−0.03
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)
Science test scores	0.01	0.01	0.04	0.01	0.01	0.04
	(0.02)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)
Log (Tax income per cap)	−0.01	−0.01	−0.02	−0.01	−0.01	−0.02
	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)
Poverty index	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

Additional

Navy presence	0.13	−0.07	−0.23	0.13	−0.07	−0.23
	(0.12)	(0.10)	(0.11)	(0.12)	(0.10)	(0.11)
guerilla attacks (1991-1999)	0.00	0.00	−0.00	0.00	0.00	−0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Paramilitar attacks (1991-1999)	0.03	0.00	−0.04	0.03	0.00	−0.04
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Unemployment rate 2005	−0.32	0.63	0.23	−0.32	0.63	0.23
	(0.37)	(0.29)	(0.41)	(0.37)	(0.29)	(0.41)
Catholic churches per capita	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Coca cultivated area per 100 hectares 1999	−0.04	−0.03	−0.08	−0.04	−0.03	−0.08
	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)
Average protests per capita (1995-1999)	−0.01	0.01	0.01	−0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)

Notes: Panel estimation from 2000 to 2010 with municipality and time (year) fixed effects. Columns 1 to 3 is one regression ($R^2 = 0.5016$) and columns 4 to 6 a separate regression ($R^2 = 0.5024$). Each variable in the row is interacted with time-period dummies indicated in the columns. Errors in parentheses control for spatial and first-order time correlation following Conley (1999, 2008). We allow spatial correlation to extend to up to 279 km from each municipality's centroid to ensure that each municipality has at least one neighbor. * is significant at the 10% level, ** is significant at the 5% level, *** is significant at the 1% level.

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Table A-4: False and true positives, colonels and judicial inefficiency, 2000-2010
Municipal-level clustered standard errors

| | Incentives Dummy | | Incentives Linear | | Incentives Dummy | | Incentives Linear | |
| | Cases | Casualties | Cases | Casualties | Cases | Casualties | Cases | Casualties |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable is log (1+false or true positives)								
	False Positives				True Positives			
Judicial Inefficiency								
... x 2002	-0.0059	0.0323	-0.0135	0.0278	0.1173	0.0875	0.1168	0.1280
	(0.0689)	(0.1019)	(0.0633)	(0.0946)	(0.1781)	(0.3137)	(0.1643)	(0.2936)
... x Incentives (2003-2008)	0.1589	0.2153	0.0419	0.0597	-0.0611	-0.1630	-0.0174	-0.0269
	(0.0688)	(0.0879)	(0.0196)	(0.0272)	(0.1111)	(0.1663)	(0.0220)	(0.0335)
Colonel in charge (share)								
... x 2002	-0.0072	-0.0220	-0.0037	-0.0186	-0.0014	-0.0728	0.0006	-0.0701
	(0.0146)	(0.0239)	(0.0146)	(0.0239)	(0.0551)	(0.0821)	(0.0552)	(0.0820)
... x Incentives (2003-2008)	0.0323	0.0459	0.0083	0.0111	0.0428	0.0562	0.0098	0.0128
	(0.0130)	(0.0168)	(0.0028)	(0.0037)	(0.0209)	(0.0290)	(0.0042)	(0.0059)
Controls x time effects	✓	✓	✓	✓	✓	✓	✓	✓
Observations	9823	9823	9823	9823	9823	9823	9823	9823
Municipalities	893	893	893	893	893	893	893	893
R-Squared	0.323	0.299	0.324	0.300	0.454	0.426	0.454	0.426

Notes: Panel estimation from 2000 to 2010 with municipality and time (year) fixed effects. In "... x Incentives (2003-2008)", the variable shown is interacted with: a dummy that equals one (columns 1, 2, 5 and 6) or a linear trend (columns 3, 4, 7 and 8), both for the period from 2003 to 2008. Time dummies are interacted with the following set of time invariant predetermined municipal controls: quartic polynomial for logarithm of the population in 2000, average rainfall level, distance to the closest major city, quality of soil index, erosion index, water availability index, average elevation, municipality area, students' test results in math, science and language, poverty index, log of tax income per capita, presence of navy, paramilitary and guerilla attacks, unemployment rate, catholic churches per capita, 1999 coca cultivated area per 100 hectares and 1995-1999 average protests per capita. Errors in parentheses are clustered at the municipality level.

Table A-5: False positives, colonels and judicial inefficiency, 2000-2010
Omitting 2003 and 2004

	Incentives Dummy		Incentives Linear		Incentives Dummy		Incentives Linear	
	Cases	Casualties	Cases	Casualties	Cases	Casualties	Cases	Casualties
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable is log (1+false positives)								
Judicial Inefficiency								
... x 2002	−0.0060	0.0325	−0.0071	0.0344	−0.0034	0.0330	−0.0051	0.0354
	(0.0535)	(0.0735)	(0.0539)	(0.0741)	(0.0546)	(0.0751)	(0.0552)	(0.0761)
... x Incentives (2005-2008)	0.1880	0.2622	0.0415	0.0596	0.1906	0.2627	0.0420	0.0598
	(0.0465)	(0.0624)	(0.0103)	(0.0142)	(0.0478)	(0.0642)	(0.0107)	(0.0148)
... x 2009					0.0104	0.0022	0.0089	0.0047
					(0.0480)	(0.0565)	(0.0488)	(0.0579)
Colonel in charge (share)								
... x 2002	−0.0088	−0.0229	−0.0055	−0.0196	−0.0087	−0.0219	−0.0041	−0.0176
	(0.0175)	(0.0257)	(0.0173)	(0.0255)	(0.0178)	(0.0261)	(0.0177)	(0.0260)
... x Incentives (2005-2008)	0.0343	0.0482	0.0086	0.0115	0.0344	0.0493	0.0089	0.0119
	(0.0159)	(0.0210)	(0.0033)	(0.0044)	(0.0168)	(0.0223)	(0.0035)	(0.0048)
... x 2009					0.0005	0.0031	0.0046	0.0067
					(0.0131)	(0.0155)	(0.0137)	(0.0165)
Controls x time effects	✓	✓	✓	✓	✓	✓	✓	✓
Observations	8037	8037	8037	8037	8037	8037	8037	8037
Municipalities	893	893	893	893	893	893	893	893
R-Squared	0.098	0.093	0.099	0.094	0.098	0.093	0.099	0.094

Notes: Panel estimation from 2000 to 2010 with municipality and time (year) fixed effects. In "... x Incentives (2005-2008)", the variable shown is interacted with: a dummy that equals one (columns 1, 2, 5 and 6) or a linear trend (columns 3, 4, 7 and 8), both for the period from 2005 to 2008 (years 2003 and 2005 are omitted). Time dummies are interacted with the following set of time invariant predetermined municipal controls: quartic polynomial for logarithm of the population in 2000, average rainfall level, distance to the closest major city, quality of soil index, erosion index, water availability index, average elevation, municipality area, students' test results in math, science and language, poverty index, log of tax income per capita, presence of navy, paramilitary and guerilla attacks, unemployment rate, catholic churches per capita, 1999 coca cultivated area per 100 hectares and 1995-1999 average protests per capita. Errors in parentheses control for spatial and first-order time correlation following Conley (1999, 2008). We allow spatial correlation to extend to up to 279 km from each municipality's centroid to ensure that each municipality has at least one neighbor.

Table A-6: False and true positives, colonels and judicial inefficiency, 2000-2010
Using colonel dummy

	Incentives Dummy		Incentives Linear		Incentives Dummy		Incentives Linear	
	Cases	Casualties	Cases	Casualties	Cases	Casualties	Cases	Casualties
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable is log (1 + false positives)								
	False Positives				True Positives			
Judicial Inefficiency								
... x 2002	−0.0062	0.0327	−0.0126	0.0293	0.1220	0.0937	0.1213	0.1339
	(0.0562)	(0.0732)	(0.0566)	(0.0738)	(0.1363)	(0.2264)	(0.1315)	(0.2159)
... x Incentives (2003-2008)	0.1587	0.2155	0.0426	0.0604	−0.0592	−0.1596	−0.0166	−0.0257
	(0.0392)	(0.0501)	(0.0108)	(0.0149)	(0.0877)	(0.1436)	(0.0192)	(0.0302)
Colonel in charge (dummy)								
... x 2002	−0.0076	−0.0205	−0.0028	−0.0153	0.0316	−0.0414	0.0318	−0.0408
	(0.0156)	(0.0222)	(0.0155)	(0.0219)	(0.0441)	(0.0646)	(0.0438)	(0.0639)
... x Incentives (2003-2008)	0.0459	0.0555	0.0123	0.0147	0.0569	0.0770	0.0128	0.0174
	(0.0148)	(0.0187)	(0.0031)	(0.0040)	(0.0232)	(0.0332)	(0.0047)	(0.0067)
Controls x time effects	✓	✓	✓	✓	✓	✓	✓	✓
Observations	9823	9823	9823	9823	9823	9823	9823	9823
Municipalities	893	893	446.5	446.5	893	893	446.5	446.5
R-Squared	0.097	0.092	0.099	0.094	0.086	0.082	0.086	0.082

Notes: Panel estimation from 2000 to 2010 with municipality and time (year) fixed effects. In "... x Incentives (2003-2008)", the variable shown is interacted with: a dummy that equals one (columns 1, 2, 5 and 6) or a linear trend (columns 3, 4, 7 and 8), both from 2003 to 2008. Time dummies are interacted with the following set of time invariant predetermined municipal controls: quartic polynomial for logarithm of the population in 2000, average rainfall level, distance to the closest major city, quality of soil index, erosion index, water availability index, average elevation, municipality area, students' test results in math, science and language, poverty index, log of tax income per capita, presence of navy, paramilitary and guerilla attacks, unemployment rate, catholic churches per capita, fraction of coca cultivated area, and average protests per capita. Errors in parentheses control for spatial and first-order time correlation following Conley (1999, 2008). We allow spatial correlation to extend to up to 279 km from each municipality's centroid to ensure that each municipality has at least one neighbor.

Table A-7: False positives, colonels and judicial inefficiency, 2000-2010
Unweighted colonel share

	Incentives Dummy		Incentives Linear		Incentives Dummy		Incentives Linear	
	Cases	Casualties	Cases	Casualties	Cases	Casualties	Cases	Casualties
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable is log (1+false positives)								
	False Positives				True Positives			
Judicial Inefficiency								
... x 2002	−0.0060	0.0326	−0.0129	0.0288	0.1206	0.0917	0.1199	0.1322
	(0.053)	(0.074)	(0.0566)	(0.0738)	(0.126)	(0.178)	(0.1321)	(0.2165)
... x Incentives (2003-2008)	0.1592	0.2160	0.0425	0.0603	−0.0591	−0.1597	−0.0167	−0.0257
	(0.0391)	(0.0500)	(0.0108)	(0.0149)	(0.0878)	(0.1437)	(0.0192)	(0.0301)
Colonel in charge (dummy)								
... x 2002	−0.0066	−0.0208	−0.0026	−0.0166	0.0196	−0.0521	0.0208	−0.0502
	(0.0151)	(0.0224)	(0.0149)	(0.0221)	(0.0440)	(0.0655)	(0.0438)	(0.0651)
... x Incentives (2003-2008)	0.0381	0.0492	0.0101	0.0126	0.0494	0.0665	0.0113	0.0153
	(0.0146)	(0.0189)	(0.0031)	(0.0041)	(0.0233)	(0.0331)	(0.0048)	(0.0068)
Controls x time effects	✓	✓	✓	✓	✓	✓	✓	✓
Observations	9823	9823	9823	9823	9823	9823	9823	9823
Municipalities	893	893	446.5	446.5	893	893	446.5	446.5
R-Squared	0.095	0.091	0.097	0.093	0.085	0.082	0.086	0.082

Notes: Panel estimation from 2000 to 2010 with municipality and time (year) fixed effects. In "... x Incentives (2003-2008)", the variable shown is interacted with: a dummy that equals one (columns 1, 2, 5 and 6) or a linear trend (columns 3, 4, 7 and 8), both from 2003 to 2008. Time dummies are interacted with the following set of time invariant predetermined municipal controls: quartic polynomial for logarithm of the population in 2000, average rainfall level, distance to the closest major city, quality of soil index, erosion index, water availability index, average elevation, municipality area, students' test results in math, science and language, poverty index, log of tax income per capita, presence of navy, paramilitary and guerilla attacks, unemployment rate, catholic churches per capita, fraction of coca cultivated area, and average protests per capita. Errors in parentheses control for spatial and first-order time correlation following Conley (1999, 2008). We allow spatial correlation to extend to up to 279 km from each municipality's centroid to ensure that each municipality has at least one neighbor.

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Table A-8: False and true positives, colonels and judicial inefficiency, 2000-2010
Baseline results – No Controls

	Incentives Dummy		Incentives Linear		Incentives Dummy		Incentives Linear	
	Cases	Casualties	Cases	Casualties	Cases	Casualties	Cases	Casualties
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable is log (1+false positives)								
		False Positives				True Positives		
Judicial Inefficiency								
... x 2002	−0.0049	0.0208	−0.0238	0.0036	0.3038	0.4855	0.2729	0.4721
	(0.0595)	(0.0830)	(0.0588)	(0.0816)	(0.1441)	(0.2274)	(0.1418)	(0.2217)
... x Incentives (2003-2008)	0.2324	0.2832	0.0573	0.0727	0.0284	−0.0102	−0.0067	−0.0095
	(0.0438)	(0.0554)	(0.0122)	(0.0160)	(0.0689)	(0.1119)	(0.0152)	(0.0236)
Colonel in charge (share)								
... x 2002	−0.0256	−0.0431	−0.0220	−0.0393	−0.0399	−0.1048	−0.0360	−0.0987
	(0.0154)	(0.0216)	(0.0153)	(0.0213)	(0.0338)	(0.0482)	(0.0332)	(0.0473)
... x Incentives (2003-2008)	0.0175	0.0246	0.0053	0.0069	0.0089	0.0061	0.0036	0.0038
	(0.0143)	(0.0191)	(0.0032)	(0.0044)	(0.0265)	(0.0367)	(0.0053)	(0.0073)
Controls x time effects	✓	✓	✓	✓	✓	✓	✓	✓
Observations	12155	12155	12155	12155	12155	12155	12155	12155
Municipalities	1105	1105	1105	1105	1105	1105	1105	1105
R-Squared	0.004	0.004	0.005	0.005	0.001	0.002	0.001	0.002

Notes: Panel estimation from 2000 to 2010 with municipality and time (year) fixed effects. In "... x Incentives (2003-2008)", the variable shown is interacted with: a dummy that equals one (columns 1, 2, 5 and 6) or a linear trend (columns 3, 4, 7 and 8), both from 2003 to 2008. Errors in parentheses control for spatial and first-order time correlation following Conley (1999, 2008). We allow spatial correlation to extend to up to 279 km from each municipality's centroid to ensure that each municipality has at least one neighbor.

Table A-9: False and true positives, colonels and judicial inefficiency, 2000-2010

Inverse hyperbolic sine transformation

	Incentives Dummy		Incentives Linear		Incentives Dummy		Incentives Linear	
	Cases	Casualties	Cases	Casualties	Cases	Casualties	Cases	Casualties
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable is false positives inverse hyperbolic sine transformation				True Positives			
	False Positives							
Judicial Inefficiency								
... x 2002	−0.0077	0.0450	−0.0178	0.0390	0.1385	0.1201	0.1370	0.1711
	(0.0723)	(0.0943)	(0.0727)	(0.0949)	(0.1745)	(0.2808)	(0.1683)	(0.2671)
... x Incentives (2003-2008)	0.2078	0.2792	0.0548	0.0773	−0.0760	−0.1990	−0.0219	−0.0320
	(0.0501)	(0.0641)	(0.0139)	(0.0191)	(0.1136)	(0.1827)	(0.0248)	(0.0383)
Colonel in charge (dummy)								
... x 2002	−0.0093	−0.0288	−0.0047	−0.0245	−0.0032	−0.0818	−0.0006	−0.0784
	(0.0193)	(0.0289)	(0.0191)	(0.0286)	(0.0599)	(0.0849)	(0.0599)	(0.0847)
... x Incentives (2003-2008)	0.0416	0.0588	0.0107	0.0142	0.0554	0.0704	0.0127	0.0161
	(0.0203)	(0.0267)	(0.0043)	(0.0057)	(0.0308)	(0.0427)	(0.0064)	(0.0089)
Controls x time effects	✓	✓	✓	✓	✓	✓	✓	✓
Observations	9823	9823	9823	9823	9823	9823	9823	9823
Municipalities	893	893	893	893	893	893	893	893
R-Squared	0.0951	0.0913	0.0960	0.0923	0.0850	0.0807	0.0851	0.0807

Notes: Panel estimation from 2000 to 2010 with municipality and time (year) fixed effects. In "... x Incentives (2003-2008)", the variable shown is interacted with: a dummy that equals one (columns 1, 2, 5 and 6) or a linear trend (columns 3, 4, 7 and 8), both from 2003 to 2008. Time dummies are interacted with the following set of time invariant predetermined municipal controls: quartic polynomial for logarithm of the population in 2000, average rainfall level, distance to the closest major city, quality of soil index, erosion index, water availability index, average elevation, municipality area, students' test results in math, science and language, poverty index, log of tax income per capita, presence of navy, paramilitary and guerilla attacks, unemployment rate, catholic churches per capita, fraction of coca cultivated area, and average protests per capita. Errors in parentheses control for spatial and first-order time correlation following Conley (1999, 2008). We allow spatial correlation to extend to up to 279 km from each municipality's centroid to ensure that each municipality has at least one neighbor.

Table A-10: False and true positives, colonels and judicial inefficiency, 2000-2010
Number and Dummy for False and True Positives

	False Positives						True Positives					
	Incentives Dummy			Incentives Linear			Incentives Dummy			Incentives Linear		
	Cases	Casualties	Dummy	Cases	Casualties	Dummy	Cases	Casualties	Dummy	Cases	Casualties	Dummy
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Dependent variable is false or true positives												
Judicial Inefficiency												
... x 2002	-0.0464	0.0300	0.0127	-0.0434	0.0476	0.0009	0.5018	-2.0299	0.1201	0.5303	-1.7413	0.1266
	(0.1249)	(0.2071)	(0.0595)	(0.1261)	(0.2093)	(0.0600)	(0.4542)	(2.1081)	(0.1255)	(0.4498)	(2.0818)	(0.1206)
... x Incentives (2003-2008)	0.2579	0.4924	0.1610	0.0754	0.1499	0.0406	-0.3088	-1.0438	-0.0126	-0.0742	-0.1591	-0.0001
	(0.0822)	(0.1413)	(0.0453)	(0.0233)	(0.0448)	(0.0120)	(0.2046)	(0.6629)	(0.0866)	(0.0429)	(0.1315)	(0.0201)
Colonel in charge (share)												
... x 2002	-0.0095	-0.0590	-0.0089	-0.0030	-0.0497	-0.0052	-0.0762	-1.5115	0.0530	-0.0634	-1.4959	0.0521
	(0.0314)	(0.0682)	(0.0155)	(0.0314)	(0.0686)	(0.0153)	(0.1204)	(0.8257)	(0.0492)	(0.1209)	(0.8284)	(0.0491)
... x Incentives (2003-2008)	0.0555	0.1193	0.0360	0.0144	0.0291	0.0091	0.1073	0.2321	0.0314	0.0277	0.0545	0.0062
	(0.0359)	(0.0652)	(0.0154)	(0.0080)	(0.0145)	(0.0032)	(0.0583)	(0.1298)	(0.0237)	(0.0116)	(0.0274)	(0.0052)
Controls x time effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	9823	9823	9823	9823	9823	9823	9823	9823	9823	9823	9823	9823
Municipalities	893	893	893	893	893	893	893	893	893	893	893	893
R-Squared	0.072	0.071	0.084	0.072	0.072	0.084	0.087	0.048	0.062	0.087	0.048	0.062

Notes: Panel estimation from 2000 to 2010 with municipality and time (year) fixed effects. In " ... x Incentives (2003-2008)", the variable shown is interacted with: a dummy that equals one or a linear trend, both for the period from 2003 to 2008. Time dummies are interacted with the following set of time invariant predetermined municipal controls: logarithm of the population in 2000, average rainfall level, distance to the closest major city, quality of soil index, erosion index, water availability index, average elevation, municipality area, students' test results in math, science and language, log of tax income per capita, presence of navy, paramilitary and guerrilla attacks, unemployment rate, catholic churches per capita, 1999 coca cultivated area per 100 hectares and 1995-1999 average protests per capita. Errors in parentheses control for spatial and first-order time correlation following Conley (1999, 2008). We allow spatial correlation to extend to up to 279 km from each municipality's centroid to ensure that each municipality has at least one neighbor.

Table A-11: False and true positives, colonels and judicial inefficiency, 2000-2010
Not-controlling for quartic population polynomial

| | Incentives Dummy | | Incentives Linear | | Incentives Dummy | | Incentives Linear | |
| | Cases | Casualties | Cases | Casualties | Cases | Casualties | Cases | Casualties |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable is log (1+false positives)								
		False Positives				True Positives		
Judicial Inefficiency								
... x 2002	0.0003	0.0392	−0.0065	0.0355	0.1435	0.1194	0.1503	0.1707
	(0.0617)	(0.0806)	(0.0619)	(0.0808)	(0.1427)	(0.2270)	(0.1381)	(0.2165)
... x Incentives (2003-2008)	0.1574	0.2154	0.0419	0.0601	−0.0876	−0.2014	−0.0214	−0.0325
	(0.0387)	(0.0497)	(0.0108)	(0.0148)	(0.0889)	(0.1442)	(0.0196)	(0.0304)
Colonel in charge (share)								
... x 2002	−0.0153	−0.0324	−0.0115	−0.0285	−0.0099	−0.0818	−0.0081	−0.0794
	(0.0135)	(0.0205)	(0.0135)	(0.0204)	(0.0459)	(0.0695)	(0.0458)	(0.0693)
... x Incentives (2003-2008)	0.0321	0.0458	0.0084	0.0113	0.0474	0.0633	0.0107	0.0141
	(0.0160)	(0.0212)	(0.0034)	(0.0045)	(0.0238)	(0.0336)	(0.0050)	(0.0070)
Controls x time effects	✓	✓	✓	✓	✓	✓	✓	✓
Observations	9823	9823	9823	9823	9823	9823	9823	9823
Municipalities	893	893	893	893	893	893	893	893
R-Squared	0.087	0.082	0.088	0.083	0.078	0.074	0.079	0.074

Notes: Panel estimation from 2000 to 2010 with municipality and time (year) fixed effects. In "... x Incentives (2003-2008)", the variable shown is interacted with: a dummy that equals one (columns 1, 2, 5 and 6) or a linear trend (columns 3, 4, 7 and 8), both from 2003 to 2008. Time dummies are interacted with the following set of time invariant predetermined municipal controls: logarithm of the population in 2000, average rainfall level, distance to the closest major city, quality of soil index, erosion index, water availability index, average elevation, municipality area, students' test results in math, science and language, poverty index, log of tax income per capita, presence of navy, paramilitary and guerilla attacks, unemployment rate, catholic churches per capita, fraction of coca cultivated area, and average protests per capita. Errors in parentheses control for spatial and first-order time correlation following Conley (1999, 2008). We allow spatial correlation to extend to up to 279 km from each municipality's centroid to ensure that each municipality has at least one neighbor.

Table A-12: False and true positives, colonels and judicial inefficiency, 2000-2010
Regular and mobile brigades

	Incentives Dummy		Incentives Linear		Incentives Dummy		Incentives Linear	
	Cases	Casualties	Cases	Casualties	Cases	Casualties	Cases	Casualties
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

Dependent variable is log (1+false or true positives)

	False Positives				True Positives			
Judicial Inefficiency								
... x 2002	−0.0056	0.0325	−0.0151	0.0258	0.1136	0.0832	0.1126	0.1231
	(0.0557)	(0.0730)	(0.0559)	(0.0733)	(0.1372)	(0.2279)	(0.1322)	(0.2171)
... x Incentives (2003-2008)	0.1559	0.2124	0.0401	0.0578	−0.0659	−0.1698	−0.0191	−0.0293
	(0.0385)	(0.0496)	(0.0104)	(0.0146)	(0.0877)	(0.1436)	(0.0192)	(0.0302)
Colonel in charge (regular)								
... x 2002	−0.0074	−0.0221	−0.0046	−0.0195	−0.0035	−0.0747	−0.0018	−0.0725
	(0.0147)	(0.0224)	(0.0146)	(0.0222)	(0.0468)	(0.0673)	(0.0468)	(0.0672)
... x Incentives (2003-2008)	0.0330	0.0465	0.0084	0.0111	0.0424	0.0556	0.0097	0.0127
	(0.0157)	(0.0209)	(0.0033)	(0.0045)	(0.0241)	(0.0337)	(0.0050)	(0.0070)
Colonel in charge (mobile)								
... x 2002	−0.3799	−0.4021	−0.4675	−0.4473	1.2951	0.7356	1.1774	0.5629
	(0.5188)	(0.6270)	(0.4870)	(0.5937)	(1.1979)	(1.3345)	(1.1769)	(1.2978)
... x Incentives (2003-2008)	0.8206	0.7622	0.1884	0.1909	0.7680	1.0870	0.1606	0.2247
	(0.3815)	(0.3942)	(0.0881)	(0.0931)	(0.3716)	(0.4912)	(0.0791)	(0.1049)
Controls x time effects	✓	✓	✓	✓	✓	✓	✓	✓
Observations	9823	9823	9823	9823	9823	9823	9823	9823
Municipalities	893	893	893	893	893	893	893	893
R-Squared	0.098	0.093	0.101	0.095	0.086	0.082	0.086	0.082

Notes: Panel estimation from 2000 to 2010 with municipality and time (year) fixed effects. In "... x Incentives (2003-2008)", the variable shown is interacted with: a dummy that equals one (columns 1, 2, 5 and 6) or a linear trend (columns 3, 4, 7 and 8), both from 2003 to 2008. Time dummies are interacted with the following set of time invariant predetermined municipal controls: quartic polynomial for logarithm of the population in 2000, average rainfall level, distance to the closest major city, quality of soil index, erosion index, water availability index, average elevation, municipality area, students' test results in math, science and language, poverty index, log of tax income per capita, presence of navy, paramilitary and guerilla attacks, unemployment rate, catholic churches per capita, fraction of coca cultivated area, and average protests per capita. Errors in parentheses control for spatial and first-order time correlation following Conley (1999, 2008). We allow spatial correlation to extend to up to 279 km from each municipality's centroid to ensure that each municipality has at least one neighbor.

Table A-13: False and true positives, colonels and judicial inefficiency: neighboring spillovers, 2000-2010

	Incentives Dummy		Incentives Linear		Incentives Dummy		Incentives Linear	
	Cases	Casualties	Cases	Casualties	Cases	Casualties	Cases	Casualties
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		False Positives				True Positives		

Dependent variable is log (1+false or true positives)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Judicial Inefficiency								
... x 2002	−0.0081	0.0239	−0.0157	0.0193	0.1090	0.0606	0.1083	0.1006
	(0.0582)	(0.0815)	(0.0584)	(0.0820)	(0.1392)	(0.2259)	(0.1346)	(0.2153)
... x Incentives (2003-2008)	0.1589	0.2155	0.0419	0.0597	−0.0609	−0.1621	−0.0173	−0.0268
	(0.0389)	(0.0499)	(0.0107)	(0.0149)	(0.0878)	(0.1436)	(0.0192)	(0.0301)
Colonel in charge (share)								
... x 2002	−0.0353	−0.1377	−0.0330	−0.1351	−0.1848	−0.6010	−0.1797	−0.5939
	(0.0869)	(0.1616)	(0.0868)	(0.1614)	(0.0896)	(0.2526)	(0.0898)	(0.2520)
... x Incentives (2003-2008)	0.0381	0.0685	0.0090	0.0156	0.0160	0.0230	0.0053	0.0075
	(0.0262)	(0.0356)	(0.0052)	(0.0073)	(0.0485)	(0.0722)	(0.0103)	(0.0152)
Colonel in charge (average share for neighbors)								
... x 2002	0.0364	0.1499	0.0380	0.1506	0.2381	0.6857	0.2341	0.6794
	(0.1029)	(0.1908)	(0.1030)	(0.1909)	(0.1229)	(0.3234)	(0.1228)	(0.3226)
... x Incentives (2003-2008)	−0.0076	−0.0294	−0.0009	−0.0059	0.0348	0.0430	0.0058	0.0066
	(0.0283)	(0.0380)	(0.0058)	(0.0078)	(0.0579)	(0.0857)	(0.0121)	(0.0174)
Controls x time effects	✓	✓	✓	✓	✓	✓	✓	✓
Observations	9823	9823	9823	9823	9823	9823	9823	9823
Municipalities	893	893	893	893	893	893	893	893
R-Squared	0.094	0.091	0.095	0.092	0.086	0.083	0.086	0.083

Notes: Panel estimation from 2000 to 2010 with municipality and time (year) fixed effects. In ".... x Incentives (2003-2008)", the variable shown is interacted with: a dummy that equals one (columns 1, 2, 5 and 6) or a linear trend (columns 3, 4, 7 and 8), both from 2003 to 2008. Time dummies are interacted with the following set of time invariant predetermined municipal controls: quartic polynomial for logarithm of the population in 2000, average rainfall level, distance to the closest major city, quality of soil index, erosion index, water availability index, average elevation, municipality area, students' test results in math, science and language, poverty index, log of tax income per capita, presence of navy, paramilitary and guerilla attacks, unemployment rate, catholic churches per capita, fraction of coca cultivated area, and average protests per capita. Errors in parentheses control for spatial and first-order time correlation following Conley (1999, 2008). We allow spatial correlation to extend to up to 279 km from each municipality's centroid to ensure that each municipality has at least one neighbor.

Table A-14: False and true positives, colonels and judicial inefficiency, 2000-2010
Judicial complaints per capita

	Incentives Dummy		Incentives Linear		Incentives Dummy		Incentives Linear	
	Cases	Casualties	Cases	Casualties	Cases	Casualties	Cases	Casualties
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	False Positives				True Positives			
Dependent variable is log (1+false or true positives)								
Judicial complains per capita								
... x 2002	−0.0021	0.0017	−0.0009	0.0034	−0.0264	−0.0299	−0.0202	−0.0191
	(0.0069)	(0.0086)	(0.0070)	(0.0088)	(0.0187)	(0.0328)	(0.0187)	(0.0325)
... x Incentives (2003-2008)	0.0039	0.0035	0.0017	0.0018	−0.0160	−0.0218	−0.0017	−0.0010
	(0.0047)	(0.0054)	(0.0014)	(0.0017)	(0.0086)	(0.0142)	(0.0022)	(0.0034)
Colonel in charge (share)								
... x 2002	−0.0066	−0.0215	−0.0031	−0.0182	−0.0052	−0.0765	−0.0030	−0.0741
	(0.0149)	(0.0222)	(0.0148)	(0.0221)	(0.0467)	(0.0677)	(0.0468)	(0.0676)
... x Incentives (2003-2008)	0.0314	0.0448	0.0080	0.0107	0.0431	0.0571	0.0100	0.0130
	(0.0158)	(0.0208)	(0.0033)	(0.0044)	(0.0239)	(0.0334)	(0.0050)	(0.0070)
Controls x time effects	✓	✓	✓	✓	✓	✓	✓	✓
Observations	9823	9823	9823	9823	9823	9823	9823	9823
Municipalities	893	893	893	893	893	893	893	893
R-Squared	0.093	0.090	0.094	0.090	0.085	0.081	0.085	0.082

Notes: Panel estimation from 2000 to 2010 with municipality and time (year) fixed effects. In "... x Incentives (2003-2008)", the variable shown is interacted with: a dummy that equals one (columns 1, 2, 5 and 6) or a linear trend (columns 3, 4, 7 and 8), both for the period from 2003 to 2008. Time dummies are interacted with the following set of time invariant predetermined municipal controls: logarithm of the population in 2000, average rainfall level, distance to the closest major city, quality of soil index, erosion index, water availability index, average elevation, municipality area, students' test results in math, science and language, poverty index, log of tax income per capita, presence of navy, paramilitary and guerrilla attacks, unemployment rate, catholic churches per capita, 1999 coca cultivated area per 100 hectares and 1995-1999 average protests per capita. Errors in parentheses control for spatial and first-order time correlation following Conley (1999, 2008). We allow spatial correlation to extend to up to 279 km from each municipality's centroid to ensure that each municipality has at least one neighbor.

Table A-15: Judicial inefficiency and colonels, 2000-2010
Municipal-level clustered standard errors

	Full sample				Removing outliers			
	Baseline		Post Trends		Baseline		Post Trends	
	Dummy	Linear	Dummy	Linear	Dummy	Linear	Dummy	Linear
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable is judicial inefficiency								
Colonel in charge (share)								
... x 2002	−0.0249	−0.0246	−0.0293	−0.0286	0.0098	0.0095	0.0054	0.0049
	(0.0183)	(0.0183)	(0.0185)	(0.0185)	(0.0087)	(0.0086)	(0.0094)	(0.0092)
... x Incentives (2003-2008)	0.0152	0.0033	0.0104	0.0024	0.0238	0.0046	0.0181	0.0034
	(0.0074)	(0.0015)	(0.0084)	(0.0017)	(0.0075)	(0.0015)	(0.0085)	(0.0017)
... x 2009:2			−0.0134	−0.0128			−0.0123	−0.0134
			(0.0113)	(0.0112)			(0.0112)	(0.0111)
Controls x time effects	✓	✓	✓	✓	✓	✓	✓	✓
Observations	9823	9823	9823	9823	9332	9332	9332	9332
Municipalities	893	893	893	893	893	893	893	893
R-Squared	0.194	0.194	0.194	0.194	0.227	0.227	0.227	0.227

Notes: Panel estimation from 2000 to 2010 with municipality and time (year) fixed effects. In " ... x Incentives (2003-2008)", the variable shown is interacted with: a dummy that equals one (columns 1, 2, 5 and 6) or a linear trend (columns 3, 4, 7 and 8), both for the period from 2003 to 2008. Time dummies are interacted with the following set of time invariant predetermined municipal controls: quartic polynomial for logarithm of the population in 2000, average rainfall level, distance to the closest major city, quality of soil index, erosion index, water availability index, average elevation, municipality area, students' test results in math, science and language, poverty index, log of tax income per capita, presence of navy, paramilitary and guerilla attacks, unemployment rate, catholic churches per capita, 1999 coca cultivated area per 100 hectares and 1995-1999 average protests per capita. Outliers in columns 5 to 8 are defined as those observations below the 2.5th and above the 97.5th percentile in the distribution of estimation residuals from the corresponding baseline regression. Errors in parentheses are clustered at the municipality level. * is significant at the 10% level, ** is significant at the 5% level, *** is significant at the 1% level.

Table A-16: Guerilla, paramilitary, and government attacks and colonels, 2000-2010
Municipal-level clustered standard errors

	Guerilla		Paramilitary		Government	
	Dummy	Linear	Dummy	Linear	Dummy	Linear
	(1)	(2)	(3)	(4)	(5)	(6)

Dependent variable is dummy variable for guerilla attacks

Judicial Inefficiency

	(1)	(2)	(3)	(4)	(5)	(6)
... x 2002	0.1598	0.1573	−0.1105	−0.0823	−0.0052	−0.0235
	(0.2018)	(0.1935)	(0.1267)	(0.1221)	(0.1168)	(0.1168)
... x Incentives (2003-2008)	0.0008	−0.0011	−0.0637	−0.0048	0.0406	0.0025
	(0.1070)	(0.0215)	(0.0741)	(0.0153)	(0.0769)	(0.0147)

Colonel in charge (share)

	(1)	(2)	(3)	(4)	(5)	(6)
... x 2002	0.0463	0.0517	−0.0145	−0.0143	−0.0500	−0.0499
	(0.0646)	(0.0647)	(0.0435)	(0.0437)	(0.0341)	(0.0341)
... x Incentives (2003-2008)	0.0130	0.0050	−0.0004	−0.0000	−0.0391	−0.0082
	(0.0189)	(0.0036)	(0.0127)	(0.0024)	(0.0027)	(0.0027)

	(1)	(2)	(3)	(4)	(5)	(6)
Controls x time effects	✓	✓	✓	✓	✓	✓
Observations	9823	9823	9823	9823	9823	9823
Municipalities	893	893	893	893	893	893
R-Squared	0.519	0.519	0.607	0.607	0.560	0.560

Notes: Panel estimation from 2000 to 2010 with municipality and time (year) fixed effects. In "... x Incentives (2003-2008)", the variable shown is interacted with: a dummy that equals one (columns 1, 2, 5 and 6) or a linear trend (columns 3, 4, 7 and 8), both for the period from 2003 to 2008. Time dummies are interacted with the following set of time invariant predetermined municipal controls: quartic polynomial for logarithm of the population in 2000, average rainfall level, distance to the closest major city, quality of soil index, erosion index, water availability index, average elevation, municipality area, students' test results in math, science and language, poverty index, log of tax income per capita, presence of navy, paramilitary and guerilla attacks, unemployment rate, catholic churches per capita, 1999 coca cultivated area per 100 hectares and 1995-1999 average protests per capita. Errors in parentheses are clustered at the municipality level.

Table A-17: False positives, colonels and judicial inefficiency, 2000-2010
Triple Interaction: Colonels, Judicial Inefficiency, Incentives

|	Incentives Dummy		Incentives Linear		Incentives Dummy		Incentives Linear	
	Cases	Casualties	Cases	Casualties	Cases	Casualties	Cases	Casualties
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable is log (1+false positives)								
Judicial Inefficiency								
... x 2002	0.0184	0.0692	−0.0003	0.0541	0.0146	0.0614	−0.0049	0.0479
	(0.0595)	(0.0779)	(0.0587)	(0.0769)	(0.0599)	(0.0788)	(0.0593)	(0.0778)
... x Incentives (2003-2008)	0.1881	0.2485	0.0495	0.0707	0.1841	0.2403	0.0483	0.0691
	(0.0444)	(0.0605)	(0.0112)	(0.0175)	(0.0452)	(0.0619)	(0.0115)	(0.0181)
... x 2009:1					−0.0208	−0.0423	−0.0331	−0.0443
					(0.0647)	(0.0755)	(0.0661)	(0.0759)
Colonel in charge (share)								
... x 2002	−0.0045	−0.0166	−0.0023	−0.0128	−0.0040	−0.0146	−0.0013	−0.0097
	(0.0161)	(0.0250)	(0.0163)	(0.0252)	(0.0163)	(0.0252)	(0.0169)	(0.0257)
... x Incentives (2003-2008)	0.0423	0.0570	0.0107	0.0147	0.0429	0.0592	0.0109	0.0154
	(0.0169)	(0.0219)	(0.0038)	(0.0050)	(0.0174)	(0.0226)	(0.0040)	(0.0053)
... x 2009					0.0002	0.0033	0.0019	0.0071
					(0.0118)	(0.0149)	(0.0128)	(0.0161)
Judicial Inefficiency x Colonel in charge (share)								
Jud Efficiency x Colonel	0.1257	0.1870	0.0770	0.1516	0.1352	0.2096	0.0716	0.1716
	(0.0572)	(0.0711)	(0.0546)	(0.0706)	(0.0683)	(0.0864)	(0.0730)	(0.0963)
Jud Efficiency x Colonel...								
... x 2002	−0.0013	−0.0417	0.0189	−0.0454	−0.0087	−0.0598	0.0264	−0.0607
	(0.2663)	(0.3827)	(0.2677)	(0.3847)	(0.2682)	(0.3845)	(0.2722)	(0.3901)
... x Incentives (2003-2008)	−0.1399	−0.1562	−0.0324	−0.0498	−0.1482	−0.1763	−0.0305	−0.0532
	(0.1224)	(0.1667)	(0.0302)	(0.0434)	(0.1316)	(0.1772)	(0.0336)	(0.0477)
... x 2009					−0.0058	−0.0189	0.0384	−0.0116
					(0.1066)	(0.1243)	(0.1160)	(0.1383)
Controls x time effects	✓	✓	✓	✓	✓	✓	✓	✓
Observations	9823	9823	9823	9823	9823	9823	9823	9823
Municipalities	893	893	893	893	893	893	893	893
R-Squared	0.095	0.091	0.095	0.092	0.095	0.091	0.095	0.092

Notes: Panel estimation from 2000 to 2010 with municipality and time (half-year) fixed effects. In "... x Incentives (2003-2008)", the variable shown is interacted with: a dummy that equals one (columns 1, 2, 5 and 6) or a linear trend (columns 3, 4, 7 and 8), both for the period from 2003 to 2008. Time dummies are interacted with the following set of time invariant predetermined municipal controls: logarithm of the population in 2000, average rainfall level, distance to the closest major city, quality of soil index, erosion index, water availability index, average elevation, municipality area, students' test results in math, science and language, poverty index, log of tax income per capita, presence of navy, paramilitary and guerrilla attacks, unemployment rate, catholic churches per capita, 1999 coca cultivated area per 100 hectares and 1995-1999 average protests per capita. Errors in parentheses control for spatial and first-order time correlation following Conley (1999, 2008). We allow spatial correlation to extend to up to 279 km from each municipality's centroid to ensure that each municipality has at least one neighbor.

Figure A-1: Event study: False and true positives
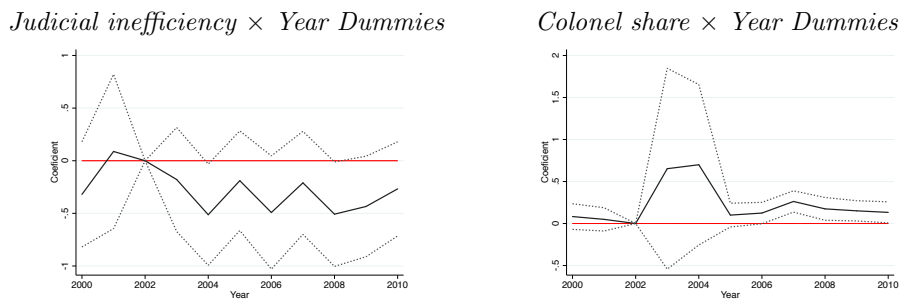## Year Dummies interactions with colonel share and judicial inefficiency

Panel A. False positives – cases

Judicial inefficiency × Year Dummies   *Colonel share × Year Dummies*
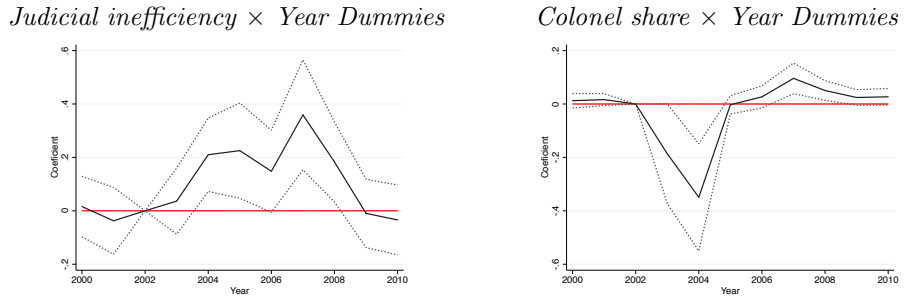
Panel B. False positives – casualties

Judicial inefficiency × Year Dummies   *Colonel share × Year Dummies*
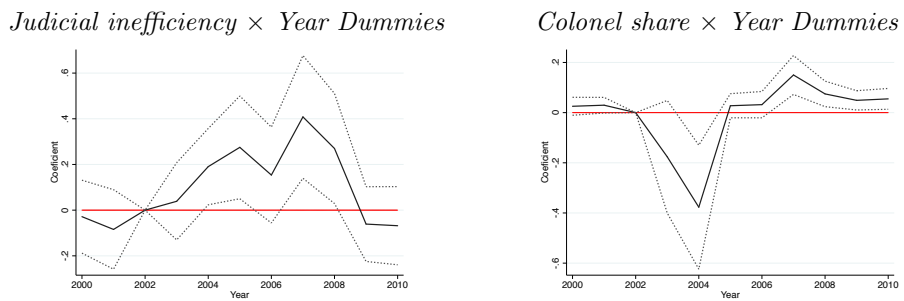
Panel C. True positives – cases

Judicial inefficiency × Year Dummies   *Colonel share × Year Dummies*

Panel D. True positives – casualties

Judicial inefficiency × Year Dummies   *Colonel share × Year Dummies*
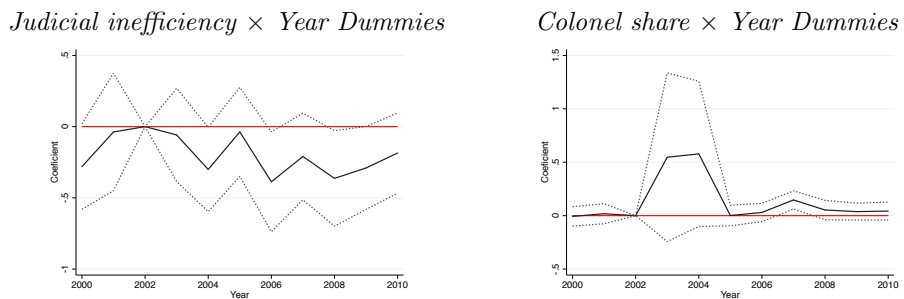
Notes: Each graph shows the coefficients (and 90% confidence intervals) for the interaction between year dummies and judicial inefficiency (left column) or the share of colonels in the municipality (right column) in regressions for the dependent variables marked in each panel.