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Bribes and bullets

The logic of violent corruption in criminal war

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Bribes and Bullets: The Logic of Violent Corruption in Criminal War

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Abstract

Why have recent militarized state interventions against drug cartels had wildly divergent results—a tenfold increase in cartel-state violence in Mexico, versus a two-thirds decrease in Brazil? Why do cartels fight states at all, if not to topple or secede from them? One important factor—peripheral to civil war but central to criminal conflict—is corruption. Conventional wisdom treats corruption and confrontation as strategic substitutes; this ignores the complementary role violent threats play *during* bribe negotiation. A formal model reveals that increases in state repression (“crackdowns”) put upward pressure on bribes; cartels offset this pressure with additional coercive violence whenever (a) corruption is sufficiently rampant, and (b) repression is insufficiently *conditional*—so that cartels incur little additional sanction for using violence. Variation in conditionality of repression helps explain observed outcomes: switching to conditional repression pushed Brazilian cartels into nonviolent strategies, while Mexico’s war “without distinctions” decreased conditionality, encouraging anti-state violence.

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Over the last quarter-century, while civil war grew rarer (Blattman and Miguel 2010; Kalyvas and Balcells 2010), organized criminal violence has emerged as an increasingly dire threat to security, development, and democratic stability. One novel and extreme form is *cartel-state conflict*, in which drug cartels¹ battle not only one another but systematically confront the state itself. Though rare with respect to the drug trade writ large, cartel-state conflict has ravaged Latin America's three largest countries, producing casualties on par with many civil wars. Yet states' efforts to neutralize cartels, often styled on anti-insurgent strategies, have had unforeseen and sometimes tragic results.

Weeks after his 2006 inauguration, President Felipe Calderón, hoping to curtail rising cartel violence, launched what would become Mexico's largest non-humanitarian military deployment in modern times. Not even his harshest critics anticipated that by the end of his term, cartels would become an order of magnitude *more* violent, producing some 70,000 homicides overall. While most killings were between traffickers, cartel-state homicides also rose ten-fold over this period, and cartel attacks on army troops—virtually unheard of prior to 2006—became everyday occurrences. In Rio de Janeiro, Brazil, decades of militarized crackdowns on traffickers drove a similar escalation, peaking in 2007 with 1,330 civilians killed by police in armed confrontations alone. In 2008, however, a new strategy, “Pacification”, led to an unexpected turnaround: massive deployments of state forces captured key *favela* (slum) territories from traffickers while barely firing a shot, and cartel-state violence fell by 68 percent to its lowest level in a decade. Figure 1 captures both the toll of cartel-state conflict violence and—given leaders' genuine surprise at the results of their policy interventions—a critical knowledge gap. Why are some militarized anti-cartel interventions met with sharp increases in anti-state violence, while others virtually eliminate it?²

Although cartel-state conflict often coincides with, and is sometimes numerically overshadow-

¹The term ‘cartel’ raises hackles, since drug trafficking organizations (DTOs) rarely collude on price. I sin doubly by applying it to Brazilian DTOs, which, unlike Mexico's and Colombia's, are not popularly referred to as cartels. I use ‘cartel’ as shorthand for “DTOs of sufficient capacity to sustain confrontation with the state”; Rio's DTOs clearly fit this definition.

² Rio de Janeiro's conflict is metropolitan while Mexico's and Colombia's are national; are these cases comparable? Four factors suggest so. First, Rio's conflict is comparably lethal and destructive. Second, the sustained cartel-state violence observed in Rio is highly anomalous within Brazil, but similar to Colombia and Mexico. Third, Rio's *sui generis* DTOs—resilient, prison-based criminal networks—are comparable in organizational and military capacity to Mexican and Colombian cartels. Finally, in Brazil, policing policy is determined primarily by state governors, not presidents or mayors; this makes Rio de Janeiro State more comparable than Brazil as a whole.

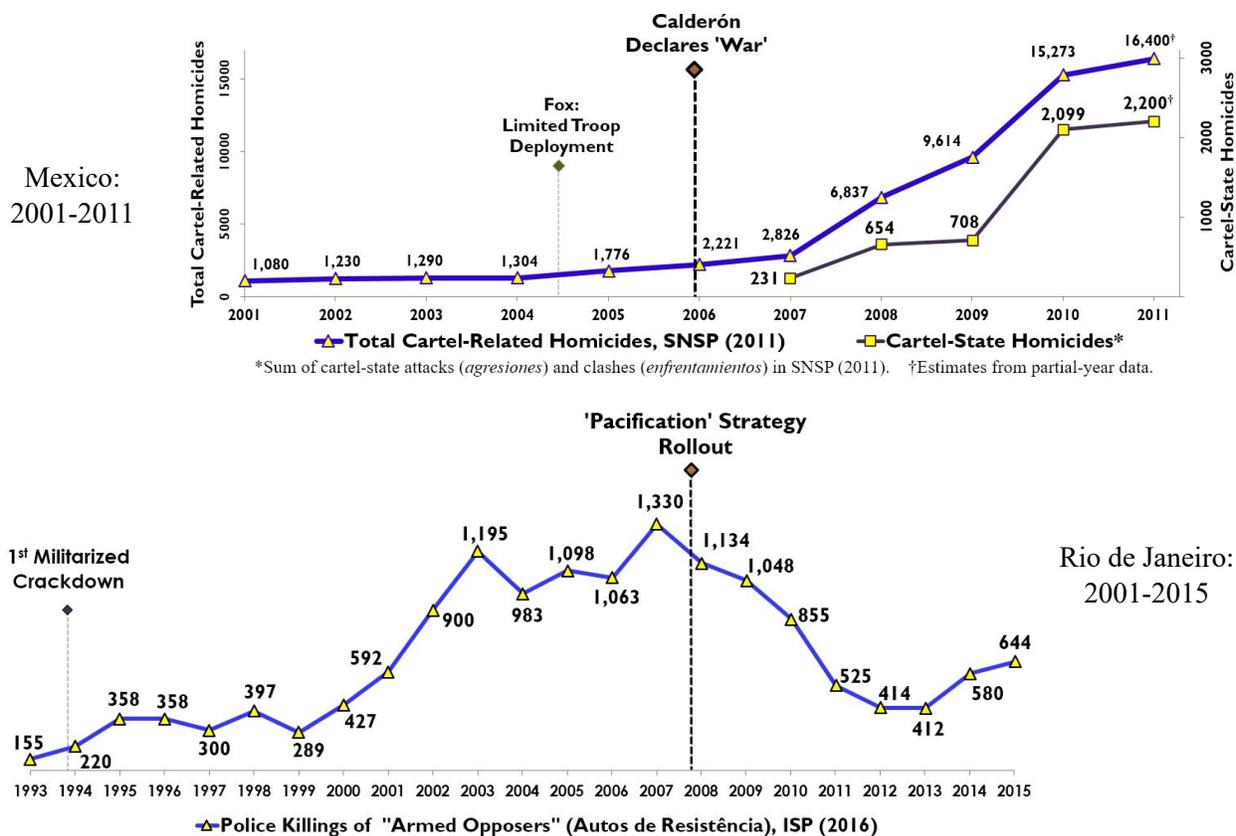


Figure 1. Cartel-State Conflict and Militarized Crackdowns in Mexico and Brazil.

owed by inter-cartel ‘turf war’, it is nonetheless causally distinct and substantively important in its own right. This point is easily lost when studying Mexico in isolation, where some 88 percent of drug-related homicides are *among* traffickers, and many analyses focus (understandably) on causes of inter-cartel violence (e.g. Calderon et al. 2015; Dell 2015). In comparative perspective, cartel-state conflict proves causally distinct: it broke out in Colombia and Brazil before turf war began; even in Mexico, trafficker-state violence is not correlated spatio-temporally with turf-war violence, as I show below. While turf war and cartel-state conflict can surely exacerbate one another, they can also occur independently, and policies that curb one may not curb the other. Substantively, a naive arithmetical accounting understates the disproportionate impact of anti-state violence on social and political life: the cessation of cartel-state conflict in Mexico would surely be more beneficial than a numerically equivalent reduction in inter-cartel homicides.

Thus even complete theories of inter-cartel turf war and insurgency would leave us with an

important puzzle: why do cartels fight states if not to topple or secede from them? The answer “to keep the state off their back” is insufficient: all organized crime groups desire less state repression, but precisely for this reason they—including many drug cartels—usually adopt “hiding” strategies, avoiding anti-state violence that could attract attention and reprisals. What benefits do cartels get from adopting brazen, confrontational strategies toward the state, and why do “crackdowns”—expansions in state repression—sometimes *increase* those benefits relative to costs, exacerbating cartel-state conflict? Conversely, how are crackdowns sometimes able to rapidly *curtail* cartel-state violence? A compelling theory of cartel-state conflict must address both questions.

I propose a two-part answer. First, when crackdowns reduce anti-state violence, it is not through decisive, brute-force victory—by destroying or physically neutralizing cartels—but rather through deterrence, making anti-state violence disadvantageous for cartels. Unlike traditional insurgency, which frequently ends with one side’s total destruction or surrender, eliminating individual cartels merely opens up market share for competitors. True, for a time, Colombia’s 1993 destruction of Pablo Escobar’s hegemonic Medellín cartel, and the subsequent rise of smaller, less violent cartels, led some to infer that fragmentation could pacify the drug trade (e.g. [Bonner 2010](#)). But in Mexico, a nominally successfully “decapitation” strategy fragmented traditional cartels, only to engender a plethora of smaller but equally violent successors. This suggests that violence-reduction depends less on brute-force destruction than effective deterrence.

I argue that state repression creates disincentives for (particular forms of) cartel violence to the extent that it is *conditional*, that is, to the extent that cartels incur more repression if they resort to (particular forms of) violence than if they do not. As with conditional cash transfers, conditional repression creates incentives, in theory, by tying state actions to the behavior of “recipients”. In practice, conditional approaches have proven politically and logistically challenging to implement and sustain, leading to considerable variation in the *conditionality of repression* within and across cases. No master variable can explain all the complex dynamics of drug war, particularly Mexico’s multilateral conflict. Nonetheless, when states have successfully practiced conditional repression—such that cartels can expect to face additional repression if they opt for anti-state violence and earn

a reprieve if they eschew it—cartel-state conflict has abated or remained rare.

Conditionality of repression tells us what cartels stand to lose from anti-state violence, but what do they stand to gain? This article focuses on one potential benefit: leverage in the negotiation of bribes with police and other state enforcers. This logic of *violent corruption*, as I call it, is exemplified by Colombian drug lord Pablo Escobar’s infamous offer to officials, “*Plata o plomo?*” (“The bribe or the bullet?”). This is certainly not the only logic of cartel-state violence: cartels sometimes use terror tactics to pressure political leaders for changes to de jure policies like extradition, or simply to eliminate stubbornly incorruptible individuals. I focus on violent corruption here because it appears to be the empirically dominant form of anti-state violence in Brazil and Mexico (Lessing 2015). Moreover, the mechanism by which state crackdowns can make violent forms of corruption *more* advantageous is not obvious, making a formal analysis useful.

The practice of violent corruption sets militarized drug cartels apart from both typical organized crime groups (who bribe but rarely fight state agents) and armed insurgencies (who fight but rarely bribe state agents). In conflict theory, corruption (in the sense of bribery for non-enforcement or dereliction of duty) is mostly absent.³ This is understandable: in many wars, the risk of soldiers being bribed into inaction by the enemy is small, and scholars can reasonably treat states—even in civil war settings—as unitary actors. In the world of anti-narcotics, however, corruption of law enforcement is a first-order concern. Analysts ignore principal-agent problems *within* the state at their peril. Mafia studies, conversely, focus overwhelmingly on the provision of protection and / or extortion; they may touch on the role of corruption and state capture more broadly, but have little to say about anti-state violence (e.g. Gambetta 1993; Schelling 1967; Varese 2013).

Scholars of drug wars do recognize a relationship between corruption and violence (e.g. Andreas 1998; Bailey and Taylor 2009; Reuter 2009; Snyder and Durán Martínez 2009), but often treat the two as strategic substitutes, arguing that cartels pay bribes precisely to avoid confrontation. This overlooks a critical complementarity: threats of violence make bribe-taking relatively more attractive. True, each official’s choice between *plata* and *plomo* is dichotomous. Yet even if they

³Linkages between *political* corruption—embezzlement, patronage, etc.—and civil war are explored “obliquely” in numerous conflict studies (see Ross 2004, 351), and explicitly by Le Billon (2003) and Fjelde (2009).

always choose bribes over bullets and no blood is spilled, the threat of violence “off the equilibrium path” still induces them, presumably, to accept an offer they would otherwise reject (Dal Bó et al. 2006); indeed, this is the essence of coercion (Acemoglu and Wolitzky 2011; Chwe 1990).

In the larger case studies of Brazil and Mexico this paper draws on, bribery was routinized but punctuated with sporadic violence, suggesting a cartel strategy of trading off occasional costly confrontation for cheaper average bribes. As one manager of a Rio cartel explained to me: “There’s no way to pay [the police] everything they demand, because if we did we’d end up just working for them. [...] If there’s no money to pay them with, well then it’ll be with bullets.”⁴ These ‘fight-and-bribe’ strategies contrast with more pacific approaches to corruption: traffickers in other Brazilian cities avoid confrontation even when bribe negotiations break down (Lessing 2008). Similarly, Escobar’s rivals, the Cali cartel, rejected his violent ways, saying, “We don’t kill judges, we buy them” (Lee 1994, 205). These groups do not even *threaten* violence should bribery fail; rather, they minimize the impact of enforcement through ‘hiding’ techniques like flight, anonymity, and keeping a low, respectable profile. Such ‘hide-and-bribe’ strategies avoid the costs associated with anti-state violence, while foregoing the bribe-reducing leverage it yields.

This tradeoff is sensitive to state policy, as the formal model of bribe negotiation presented in the third section reveals. ‘Crackdowns’—expansions in anti-cartel repression—inadvertently increase law enforcers’ leverage in extracting bribes. If corruption is widespread, cartels’ optimal response may be to counter that upward pressure on bribe prices with increased enforcer-targeted violence. At the same time, repression that is conditional on cartels’ use of violence, so that violent cartels face more repression, naturally pushes cartels toward hiding strategies. Overall, increases in the *degree of repression* alone can make fighting more advantageous for cartels, while raising the *conditionality of repression*—so that more repression falls on violent cartels—always reduces violence. The model thus answers the two questions above, identifying an under-appreciated policy dimension—conditionality of repression—as a potentially crucial explanatory variable. It also illuminates the tradeoffs and political challenges policymakers face: no approach can simultaneously

⁴Interview, Rio de Janeiro, March 29, 2010. All interviews and translations are the author’s.

minimize corruption, cartel profits, and violence. Moreover, while higher conditionality always pushes cartels to eschew violence, it also leaves cartels better off and, often, police worse off.

The penultimate section takes these findings to the empirical cases. Rio de Janeiro’s Pacification strategy sharply increased conditionality, leading cartels to shift from fight-and-bribe strategies toward less violent approaches. In Mexico, conditionality was high under single-party rule; democratization brought political and institutional fragmentation, making conditionality less practicable—consistent with recent findings that political competition drives violence in Mexico (Dube et al. 2013; Durán-Martínez 2012; Osorio 2012). Calderón’s determination to pursue all cartels maximally and ‘without distinction’ further reduced conditionality, plausibly driving sharp increases in cartel-state violence after 2006. While it is hard to determine how much of this violence was purely defensive (minimizing losses due to enforcement) as opposed to coercive (pressuring enforcers to accept cheaper bribe agreements), the fact that anti-state violence is only very weakly correlated with drug seizures offers support to the violent corruption hypothesis.

Throughout, I treat cartel-state conflict in a partial-equilibrium setting, abstracting from inter-cartel dynamics. This surely ignores important, if poorly understood, causal interactions. Raging turf war may favor cartel-state conflict, through accumulation of firepower⁵ and other channels; conversely, cartel-state conflict almost certainly exacerbates turf war: once cartels “punch the ref”, as it were, incentives to contain inter-cartel violence that normally operate (Durán-Martínez 2012; Schelling 1967) become moot. These interconnections demand further study. Nonetheless, cartel-state conflict and turf war have occurred in the absence of one another; a reasonable first step, therefore, is to identify mechanisms driving cartel-state conflict independently of inter-cartel dynamics. I also abstract from the normatively important question of cartel violence towards civilians. The hope is that focusing on cartel-state interactions yields insights that can eventually be incorporated into a more complete theory.

⁵I explore this channel formally in Appendix C of the Supporting Information.

2 Conceptual Framework

Although cartel-state conflict is sometimes conflated with inter-cartel turf war, they occur independently and obey distinct logics. When cartels fight other cartels, they stand to win decisive battles for territory, just as insurgents do when battling states. Similarly, while cartel-state conflict is frequently treated as a sub-type of insurgency (e.g. Bunker 2011; Grillo 2011; Sullivan and Elkus 2008), cartels do not fight states with an insurgent's aim of decisively appropriating power or territory, whether through military victory or negotiated settlement (Fearon and Laitin 2007). Both insurgency and inter-cartel turf war 'fit' canonical theories of conflict: actors in weakly institutionalized settings resort to violent appropriation of mutually prized resources when stable bargained solutions cannot be reached (Fearon 1995; Powell 2002; Wagner 1994; Walter 2009).

Such explanations cannot be directly applied to cartel-state conflict. First, negotiation between leaders and cartels is generally a political non-starter. Second, the decisive, distributive quality of fighting in insurgency and turf war is absent in cartel-state conflict. Cartels do not even *aim* to conquer formal state power⁶, which, if achieved, would likely only bring international opprobrium (e.g. Shaw 2015). Conversely, states *qua* states can neither capture illegal drug profits nor realistically hope to decisively eliminate organized crime through fighting (Skaperdas 2001). Logics of cartel-state conflict, therefore, must explain how sustained violence is advantageous when it is largely coercive, with little or no chance of decisively dispossessing or eliminating opponents.

This paper delineates one such logic: *violent corruption*, the use of credible threats against law-enforcers during the negotiation of bribes with them. A different but related logic is the defensive use of violence to minimize the loss from state enforcement when it occurs; while this "brute-force" form of violence (Schelling 1966) may seem distinct from coercive, "*plata o plomo*" threats, the formal model below shows how the two can operate simultaneously in bribe negotiation, and characterizes a non-corrupt "violent enforcement" scenario where violence is purely defensive.

A truly distinct logic is what I call *violent lobbying*: the use of violence—often terrorist—to

⁶As Kalyvas notes, the goal of competitive state-building renders insurgency "fundamentally distinct from phenomena such as banditry, mafias, or social movements" (2006, 248).

pressure political leaders for changes in formal, de jure policy. The archetypal example was Colombia's 'narco-terror' period (1984-1993): Pablo Escobar waged an eventually successful campaign of public bombings, assassinations, and elite kidnappings, aimed at prohibiting extradition. Escobar's narco-terrorist lobbying was designed to coerce political elites, and is frequently treated as the defining dynamic of Colombia's drug war (Reuter 2009, 277).

In comparative perspective, however, violent corruption appears more widespread.. Terror tactics and overt demands for de jure policy change have been quite rare relative to enforcer-targeted violence in Brazil and Mexico;⁷ even in Colombia, Escobar employed *plata o plomo* threats for years before launching his overt war on the state (Bowden 2001). This is largely explained by the logics themselves: since the benefits of lobbying are universal—hence subject to free-rider problems—while those of corruption are particularistic (Olson 1965; Scott 1969), inter-cartel turf war undermines lobbying but encourages corruption. Conversely, inter-cartel peace in the early 1980s helped Escobar establish cost-sharing institutions that facilitated collective cartel action (Chepesiuk 2003, 64), including violent lobbying.

The predominance of violent corruption across cases has implications for explanatory accounts. As the formal model demonstrates, conditionality of repression is absolutely critical in shaping traffickers' choice between violent and pacific forms of corruption. In the case of violent lobbying, conditionality is less important, since it is part of a larger de jure policy which traffickers believe they can alter through terror campaigns. The more salient concern is how *susceptible* de jure policy is to violent lobbying pressure. Cartels might tolerate highly conditional repression in response to narco-terror if they believe such a response will not be sustained for long.

Another potentially important driver of anti-state violence is cartels' desire to signal strength or resolve; high-profile attacks by new or newly ascendent cartels are likely candidates, particularly if violence dies down after. If such attacks aim to signal strength to state agents, with the ultimate goal of making credible *plata o plomo* threats, they fall within the concept of violent corruption (though

⁷Drawing on novel violent-event data, I find that bombings, arson, and other terror tactics generated roughly a third as many media reports as enforcer-targeted violence in Mexico and Brazil; in Colombia the two categories were evenly split; see Lessing (2015) for details and discussion.

they cannot be captured by the complete-information modeling approach taken here). If, however, such violence aims to signal cartel strength purely to other cartels, or to their own members (Reuter 2009), then it represents a distinct logic of violence driven by turf war (Lessing 2015).

3 A Model of Violent Corruption

Repressive crackdowns on drug cartels are often advanced as the only alternative to corrupt pacts (e.g. Bonner 2010). This ignores a crucial point: “The greater the effectiveness of deterrence activities, the more they create incentives [for criminals] to invest in corruption” (Fiorentini and Peltzman 1997, 27). This is particularly so when enforcers (police, soldiers, etc.) are corruptible, and can directly negotiate bribes with traffickers, making them “the licensed collector of [illicit] rents” (Reuter 2009, 277; Schelling 1967). Stricter enforcement—higher interdiction rates, say—may be policymakers’ preferred outcome, but it is also, perversely, the threat corrupt enforcers use to extract larger bribes from traffickers.

This principal-agent problem ultimately drives violent corruption: when policymakers expand anti-cartel repression, it inevitably increases enforcers’ leverage over cartels in bribe negotiations. Such leverage can be significant: the kingpin of Rio’s largest favela reported regularly paying half of his revenue in bribes, leaving little or no profit (Werneck 2011). An arrested kingpin in Veracruz, Mexico, testified to paying \$2.5 million per month in bribes, around 75% of total revenues (Reforma 2013). To counter enforcers’ leverage, cartels may threaten to “fight back”: if enforcers face resistance or retaliation should bribe negotiations fail, they should settle for smaller bribes. Crackdowns—i.e. increases in state repression—might then increase cartels’ “investment” not only along the monetary margin (i.e. higher bribes) but in the amount of violence used to counter enforcers’ leverage.

Dal Bó et al.’s *‘Plata o Plomo?’* (2006) partially formalizes this logic: threatening to punish bribe-takers for refusing a bribe lowers the equilibrium bribe price, and increases overall corruption. However, despite invoking Escobar as motivation, their model involves apparently licit groups not targeted for destruction by the state—violence runs only one way. Moreover, bribe agreements are

always reached, so there is no violence in equilibrium.⁸ Conversely, Snyder and Durán Martínez (2009) argue that breakdown in bribe negotiations drive violence, but provide little analysis of why, when bribery fails and police enforce, cartels “fight” rather than “hide”.

To analyze this question, I first build a baseline model where police enforce unless cartels pay a bribe demand, and cartels can either pay or hide (imposing no pain on police). I compare this to a simple “fighting” model where, if the cartel does not pay and police enforce, the cartel responds with violence. One key finding is that if cartel violence is sufficiently painful for enforcers, a key comparative static “flips”: state crackdowns *increase* the probability of fighting. Finally, I introduce a full specification that allows cartels a three-way choice between paying bribe demands, hiding, and fighting. This resembles Bailey and Taylor’s (2009) three-way typology of cartel strategies; whereas they, however, treat the state as a unitary actor, I distinguish policymakers from enforcers, illuminating the principal-agent problem underlying (violent) corruption.

The model distinguishes two potential ways that “fighting” could benefit cartels: defensively, by reducing cartels’ loss to enforcement (compared to hiding), or coercively, by imposing pain on enforcers. One takeaway is that even pure defensive violence—inflicting no pain on enforcers—reduces enforcers’ leverage to extract bribes. Violence, however, may also have a punitive, “*plomo*” effect: if enforcers face painful “lead” (i.e. bullets) when enforcing, they should settle for smaller bribes, even if their own ability to impose losses on cartels remains unchanged. As Schelling (1966) notes, violence can serve a “brute-force” defensive function, a “power-to-hurt” coercive function, or both simultaneously.

One reason to think cartel violence has a defensive effect is that, empirically, fighting produces relatively few state casualties: in Rio from 2007-2008, police killed about 40 civilians for each officer killed (ISP-RJ 2016); from December 2012 through January 2013, the Mexican army lost 9 soldiers while killing 161 suspected traffickers (Notimex 2013). As one army commander conjectured, “Disciplined soldiers... are going to win in these shoot-outs with... young kids who don’t even know how to shoot. But then maybe the troops are being held up, while the bad guys are

⁸Konrad and Skaperdas (1997) derive inefficient equilibrium violence, but coercion is similarly unidirectional.

moving drugs” (International Crisis Group 2013, 14). Evidence of the “*plomo*” effect is the use of retaliatory violence: murdering enforcers after arrests have been made or sentences handed down seems unlikely to affect the loss from enforcement. Even where violence is employed during enforcement, such as armed clashes in Rio’s favelas, it seems implausible that the risk of physical confrontation does not weigh on enforcers’ decisions to strike bribe agreements. The model parameterizes the relative weight of these effects, and shows that the dynamics of cartel-state conflict are distinct for the “*plomo*” effect.

The model provides a conceptual map of the different equilibrium “scenarios” that can prevail between cartels and police. Its partial-corner solutions, if inelegant from a modeling perspective, constitute “ideal types” that usefully bracket the set of possible scenarios: pure enforcement (bribes never paid) or pure corruption (bribes always paid), in both violent and “peaceful” forms. (They are “partial” because state crackdowns still affect the size of busts and bribes, but not their relative probability, which is either zero or one.) “Peaceful enforcement”, for example, is a best-case scenario: police are too honest to be bribed (for any amount criminals are willing to pay), and criminals respond to inevitable enforcement with only non-violent evasion. Yet the necessary conditions for this ideal scenario, the model reveals, are unlikely to hold in drug-war settings. Less savory corner solutions illuminate extreme outcomes sometimes seen in real-world cases. In some Mexican towns, for example, a “coerced peace” may obtain, with outgunned local police so cowed by cartels’ violent threats that they *never* enforce the law.

In between these logical extremes, two distinct interior solutions emerge, in which bribe agreements and enforcement both occur with some probability, and crackdowns affect both the size of bribes and the probability they will be paid. The difference is in how cartels respond to enforcement when no bribe agreement is reached and police enforce: in “Hide-and-Bribe” equilibria, the cartel hides in response to enforcement; crackdowns raise the demand for corruption, producing larger bribes which are paid more frequently. In “Fight-and-Bribe” equilibria, however, the cartel counters upward pressure on bribes by threatening, if no bribe agreement is reached, to use violence to punish enforcers and reduce its losses to enforcement. If enforcers fear cartel punishment more

than official sanction for bribe-taking, which is likely in contexts of rampant corruption, crackdowns *increase* the probability of fighting. Turning to the relationship among scenarios, I show how crackdowns can shift cartels' equilibrium strategy from hiding to fighting approaches. Conversely, an increase in *conditionality*, such that repression falls more heavily on cartels that fight, pushes cartels toward hiding strategies.

Three assumptions warrant emphasis. First, I analyze exogenous changes in the degree and conditionality of repression, but remain agnostic as to what policy is optimal for policymakers or society at large. This approach illuminates the tradeoffs leaders face—no policy simultaneously minimizes drug interdiction, cartel-state violence, and bribery—while avoiding heroic assumptions about their preferences over these outcomes and the political costs of changing policies. As Rodrik (2013) argues, pat political-economy assumptions about leaders' interests can produce spurious or vacuous analyses, particularly if leaders do not fully understand the relevant mechanisms. I do consider the welfare effects of policy on traffickers and police, but eschew a naive social-welfare approach (that simply sums all players' utility) for a *political* analysis: policies that raise the welfare of traffickers are likely to be unpopular.

Secondly, I follow the war-as-bargaining-breakdown literature in assuming that conflict is costly, and hence must be driven by some combination of information asymmetries and commitment problems (Fearon 1995). Here, though, there are two separate inefficiencies to be explained. The poorly-paid cop and the wealthy cartel he is about to bust probably have options they both prefer to enforcement, which destroys some of the “pie” (i.e. drug profits) through interdiction. That they nonetheless sometimes fail to agree on a bribe constitutes the first inefficiency, driven here by a “standard” information asymmetry: as in Dal Bó and Powell (2009), the size of the pie is private information and cannot be credibly communicated; to avoid being exploited, the offer-taker rejects the worst offers. This is one—but certainly not the only—plausibly relevant mechanism; others remain to be explored in future work, especially uncertainty over multiple police “types” of differing corruptibility (though I do consider changes in force corruptibility as a comparative static). The justification for using a standard mechanism is the presence of a second inefficiency to be explored.

When bribe negotiations fail, why do cartels sometimes ‘pay’ back police with costly bullets, as the trafficker quoted above put it, instead of hiding? Fighting instead of hiding constitutes the second inefficiency, because ex-post punishment inflicted on police makes fight-and-bribe outcomes Pareto inferior to hide-and-bribe ones.⁹ In this model, they can nonetheless occur in equilibrium because enforcers cannot commit to *not* exploiting an unarmed cartel.

Finally, this is a static approach; the goal is a relatively tractable analysis of the core logic of violent corruption. Understanding the one-shot interaction is an important step toward a dynamic model that can address reputation-building, learning, and related issues. Indeed, the ongoing, non-decisive nature of cartel-state conflict suggests folk-theorem results, with ability to punish in the stage-game determining what outcomes are sustainable in dynamic equilibrium.

3.1 Baseline ‘Hiding’ Model

To develop intuition, I first present a simple, baseline model of non-violent corruption, where cartels’ only options are to pay a bribe or “hide”. I then alter the model to illustrate a “fighting” option, first as pure defensive violence, then adding a punitive “*plomo*” effect. Comparing these three versions yields a key insight: when fighting has a sufficiently large punitive effect, crack-downs increase rather than decrease the equilibrium probability of fighting. Finally, I develop a richer specification, formalizing conditionality of repression and other costs of violence to capture cartels’ choice between hiding and fighting strategies.

Setup All versions of the game have two strategic players, a cartel D (he) and a state enforcer P (she), plus non-strategic state leaders S who exogenously set repressive policy parameters. First, D earns drug profits of y , where y is distributed uniformly over $[\underline{y}, \bar{y}]$. D observes the realized value of y but P knows only how y is distributed. P then demands a bribe b in exchange for non-enforcement; D either pays or rejects the demand, and payoffs are realized. I adopt this order of play because, substantively, it is how bribery often plays out in my cases, and technically, it prevents either player from retaining all the bargaining power without introducing additional information asymmetries.

⁹See note 23.

If D rejects, P enforces, causing D to lose a fraction of his profits to interdiction.¹⁰ This fraction depends on what D does in response to enforcement. In this first iteration, D is constrained to “hiding”, an evasive response that eschews violence and seeks to minimize D ’s losses through flight, anonymity, stashing of merchandise, and so on. Define the interdiction rate (i.e. D ’s loss) under hiding as a function $b(s) \in (0, 1)$, so that D receives $y(1 - b)$. s is the *degree of repression* directed at D , determined publicly and exogenously by policymakers (S) prior to play.¹¹ Greater repression leads to a higher interdiction rate: $b'(s) > 0$. “Hiding” imposes no pain on P , so she simply earns her wage, w .

If D pays the bribe, P does not enforce; D retains $y - b$ and P receives her wage (w) plus the bribe (b) minus an expected sanction (λ) for bribe-taking and non-enforcement. λ is a critical parameter, and a very reduced-form one, combining all the negative consequences to P of accepting a bribe. This includes any psychological or moral “costs”, so that a more honest cop would have a higher λ , as well as any expected official punishment, should she get caught.¹² In practice, both components of λ probably depend overwhelmingly on how many *other* enforcers are taking bribes. Of course, lawmakers could simply increase the maximum punishment for bribe-taking, but if the chances of actually being punished are very low, this will have little effect. Theoretical (e.g. [Tirole 1996](#)) and empirical (e.g. [Fisman and Miguel 2007](#)) work finds that corruption is a tipping-point phenomenon, either rampant (generating a low λ that feeds further corruption) or rare (generating a high λ , keeping cops honest). How to tip a corrupt, low- λ police force to a clean, high- λ one is a research agenda unto itself; in practice, cultures of corruption are persistent, making λ stably low or high in the short run *for any given force deployed*.

This provides some leverage for addressing the common practice of deploying low-corruption

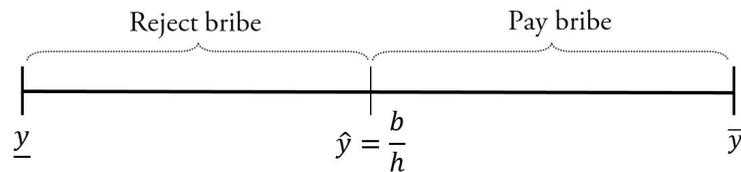
¹⁰For simplicity, I abstract from enforcement outcomes that give D negative utility. Individual traffickers face imprisonment and death, not only interdiction; for the cartel *qua* firm, though, such outcomes are important only as they affect the bottom line. In any case, allowing P to impose negative utility does not fundamentally change the analysis, but can lead to bribes larger than D ’s total profits, raising the question of credit constraints and muddling the exposition.

¹¹I formalize *conditionality of repression* in the richer specification below.

¹²I model λ as lump-sum, independent of the size of the bribe; modeling λ as a loss function, so that larger bribes produce larger expected sanctions, does not substantively change the results, but makes exposition more cumbersome. See appendix for this alternative specification. Future work could test more complex specifications for λ , including a potential discontinuity at $b = 0$, if, say, authorities make a distinction between shirking and active bribe-taking.

forces, including the army or specialized forces like Rio’s BOPE¹³. The model shows how such interactions differ from those with a more corrupt force; a more complicated model would be needed to formally investigate the dynamic, general equilibrium effects when multiple police forces overlap. This is an important avenue for further research, particularly given that in the U.S., at least, overlapping federal and local jurisdictions were critical in reducing endemic police corruption in U.S. cities (Reuter 1995, 94-5). Empirically, though, the Latin American cases point to a more depressing possibility: contact with the drug trade can lead to the corruption of previously clean forces. I initially assume that crackdowns (increases in s) are independent of anti-corruption measures (increases in λ), then show how relaxing this assumption strengthens the main result.

Analysis In the last round, D will pay whenever $y - b \geq y(1 - b)$ and will hide otherwise; this defines a cutpoint $\hat{y} = \frac{b}{b(s)}$:



P can thus calculate an optimal bribe demand:

$$\hat{b}^*_H = \arg \max_b \left[\left(1 - \frac{\frac{b}{h} - \underline{y}}{\bar{y} - \underline{y}} \right) (w + b - \lambda) + \frac{\frac{b}{h} - \underline{y}}{\bar{y} - \underline{y}} (w) \right] = \frac{b\bar{y} + \lambda}{2} \quad (1)$$

If “everyone has their price”, then P ’s price is \hat{b}^*_H . However, if P is very honest or very afraid of getting caught for bribe-taking, so that λ is very high, her price may be more than D is ever willing to pay.¹⁴ This “no bribe” corner solution occurs whenever:

$$\lambda \geq b(s)\bar{y} \quad (\text{“Peaceful Enforcement” condition})$$

The right hand side represents the maximum loss P can impose on D through enforcement, and so the largest bribe D would ever pay. If this is less than P ’s expected sanction for bribe-taking

¹³*Batalhão de Operações Policiais Especiais*, Special Police Operations Battalion, an elite unit trained in urban warfare and anti-insurgent techniques.

¹⁴A truly incorruptible police officer would have $\hat{b}^*_H = \infty$.

(λ), there is no bargaining range, bribes are never paid and P always enforces. This “Peaceful Enforcement” scenario is how law enforcement is supposed to work: police punish infractors without either party seriously seeking a bribe agreement. Even honest cops may have their price, but since it is more than infractors would ever pay, it remains purely hypothetical.¹⁵ Moreover, under peaceful enforcement, the only effect of a crackdown (i.e. an increase in s) is to increase D ’s loss to interdiction.¹⁶ This too is, presumably, how crackdowns are supposed to work.

This “Peaceful Enforcement” condition illuminates the challenges of fighting drug wars. The highest interdiction rate (h) the state can sustain without inducing police corruption is $\frac{\lambda}{\bar{y}}$. In drug-trafficking contexts, criminal rents can be immense (implying a large \bar{y}), and corruption may be widespread (low λ); if policymakers give enforcers even moderate capacity (s) to interdict, this condition may not hold, and there will be at least some bribery in equilibrium. Moreover, it reveals the assumption that police cannot impose costs beyond interdiction (like imprisoning or killing traffickers) to be conservative: if P could “hurt” D by more than $h(s)y$, D would be willing to pay even larger bribes, and λ would have to be higher to avoid corruption.

If corruption is rampant enough, the opposite scenario can prevail: police demand a bribe that cartels are always willing to pay, and there is no enforcement in equilibrium. Under this scenario, which formalizes Snyder and Durán Martínez’s (2009) notion of “State-Sponsored Protection”,¹⁷ crackdowns simply give P more bargaining power (at D ’s expense), raising the size of the minimum bribe. If the state sees repression primarily as a means of illicit rent extraction, this would be a desirable outcome.

In between, a “Hide-and-Bribe” interior solution prevails, in which D pays the bribe when realized profits are high enough and hides otherwise. In this scenario, crackdowns increase the equilibrium bribe demand (i.e. $\frac{\partial \widehat{b}_H^*}{\partial s} > 0$), since the larger the loss that P can inflict on D through enforcement, the more D is willing to pay to avoid it. This captures a key component of the violent

¹⁵This is captured formally as a continuum of “babbling” equilibria in which P can demand any bribe above D ’s maximum, $h(s)y$, knowing that D will never pay.

¹⁶By assumption here, P earns the same wage no matter how much she interdicts.

¹⁷Though they do not explicitly define such rackets as situations where enforcement *never* occurs, the scenario certainly fits one of their examples, Mexico under the PRI, as I argue below.

corruption story:

H_1 : An increase in the degree of state repression gives (potentially) corrupt police additional bargaining leverage over traffickers.

Another key outcome variable is the equilibrium ex ante probability of the bribe demand being paid (\Pr_B), or its complement, the probability that P enforces and D exercises his outside option (here constrained to hiding): $\Pr_H = 1 - \Pr_B$. Unsurprisingly, increases in λ from anti-corruption efforts raise \Pr_H , because they make bribe-taking less lucrative for P (and in the extreme, produce the “Peaceful enforcement” corner solution, where $\Pr_H = 1$). Increased repression, on the other hand, makes enforcement less likely:

$$\frac{\partial \Pr_H}{\partial s} = \frac{-\lambda \frac{\partial b}{\partial s}}{2b(s)^2(\bar{y} - \underline{y})} < 0 \quad (2)$$

though busts, if they occur, are larger. So, in Hide-and-Bribe equilibria, crackdowns produce larger but less frequent busts, and larger but more frequent bribes, making P better and D worse off.

3.2 A Basic Fighting Model

Now suppose that if D rejects P ’s bribe demand, P still enforces, but D now “fights”, using his stock of arms, a . For now, assume a is exogenous, and that fighting does not trigger increased state repression due to conditionality; I relax these assumptions in the full specification below. As discussed, fighting could have a purely defensive effect, reducing D ’s loss to enforcement; a coercive, “*plomo*” effect that hurts P when she enforces; or both. Here, I consider each in turn; the full specification parameterizes their relative weight.

First consider purely defensive violence, where fighting reduces D ’s loss to enforcement compared to hiding, but inflicts no pain on P . Formalize this by replacing $b(s)$ with $f(a, s) \in (0, 1)$, and assume that $f < b$ for all s . Substituting into Equation 1 it is clear that, for interior solutions, defensive fighting lowers the equilibrium bribe price compared with hiding; it also decreases the probability of bribery occurring: $\Pr_F < \Pr_H$. Equation 2, though, still holds: crackdowns will lead to more frequent bribes and less frequent enforcement.

Now consider the pure “*plomo*” case, where fighting does not reduce D ’s loss to enforcement

($f = b$) but does inflict pain on P to the tune of $-\pi(a)$. Again, I treat a (and hence π) as exogenous and costless for now. Focusing first on interior solutions, P 's maximization problem becomes:

$$\widehat{b}_F^* = \arg \max_b \left[\left(1 - \frac{\frac{b}{f} - \underline{y}}{\bar{y} - \underline{y}} \right) (w + b - \lambda) + \frac{\frac{b}{f} - \underline{y}}{\bar{y} - \underline{y}} (w - \pi) \right] = \frac{f\bar{y} + \lambda - \pi}{2} \quad (3)$$

Because we have assumed (for now) that $f = b$, the initial hiding case can be recovered by setting $\pi = 0$; from there it is obvious that any “*plomo*” effect ($\pi > 0$) reduces \widehat{b}_F^* . Indeed, this reduction in the equilibrium bribe price is the whole point of “*plata o plomo?*” threats: if excessive bribe demands will be “paid” with lead bullets, P will demand less silver.

As we just saw, pure defensive violence also lowers the equilibrium bribe demand, but the mechanism is different, yielding different comparative statics. Defensive violence physically reduces P 's leverage over D , so P gets less out of any potential bribe agreement, leading to less frequent bribes. The coercive, “*plomo*” effect gives P incentives to avoid enforcement, so she “shaves” her demand to ensure bribes occur with greater frequency. Indeed, the probability of enforcement, which now implies “fighting”, is clearly decreasing in π :

$$\Pr_F = \frac{\lambda - \pi}{2f(a, s)(\bar{y} - \underline{y})} + \frac{\frac{\bar{y}}{2} - \underline{y}}{\bar{y} - \underline{y}} \quad (4)$$

Equation 4 reveals that P 's expected sanction for bribe-taking (λ) and the punishment she faces if she enforces (π) have opposite pulls on the equilibrium likelihood of fighting: higher λ reduces P 's profits from bribe-taking, making fighting relatively more attractive, while higher π makes it less so. When $\lambda > \pi$, the net effect is fight-inducing, when $\pi > \lambda$, bribe-inducing. Either way, though, this net effect is inversely proportional to the interdiction rate that D faces ($f(a, s)$); since f is increasing in the level of repression (s), crackdowns weaken this net effect. That is, if $\lambda > \pi$, the net fight-inducing effect grows smaller as s increases, and \Pr_F is decreasing in s . Conversely, if $\pi > \lambda$, the net bribe-inducing effect grows smaller as s increases, and \Pr_F is increasing in s . This can be seen algebraically by differentiating Equation 4: $\frac{\partial \Pr_F}{\partial s} = \frac{(\pi - \lambda)}{2f(a, s)^2(\bar{y} - \underline{y})} \frac{\partial f}{\partial s}$.

Whereas $\frac{\partial \Pr_H}{\partial s}$ is always negative, the sign of $\frac{\partial \Pr_F}{\partial s}$ is indeterminate—and has the same sign as $\pi - \lambda$. With purely defensive fighting, where $\pi = 0$, crackdowns produce more frequent bribes, as

with hiding. But if the “*plomo*” effect is strong enough, so that $\pi > \lambda$, then $\frac{\partial \text{Pr}_F}{\partial s}$ becomes positive, and crackdowns will lead to more frequent fighting. The condition $\pi > \lambda$ means, roughly, that police have more to fear from cartel violence than from internal-affairs investigations or their own guilty consciences. This implies that cartel violence is at least partially coercive, and suggests a setting where corruption is common, widely accepted, or otherwise unlikely to go punished.

H₂: *Crackdowns in a context of rampant corruption can exacerbate cartel-state violence.*

This is a central result, and is robust to the specification below, which endogenizes a .

Note that the assumptions that λ and π do not vary with s are conservative; relaxing these *strengthens* the result. For example, increases in s could have a defensive, “body-armor” effect for P , such that $\frac{\partial \pi}{\partial s} < 0$. Similarly, increases in s might include anti-corruption measures that raise λ , so that $\frac{\partial \lambda}{\partial s} > 0$. In that case, $\frac{\partial \text{Pr}_F}{\partial s}$ is positive whenever $\pi > \lambda + \frac{f(a,s)}{\frac{\partial f}{\partial s}} \left(\frac{\partial \pi}{\partial s} - \frac{\partial \lambda}{\partial s} \right)$. Since f and $\frac{\partial f}{\partial s}$ are positive, this condition is more easily met than $\pi > \lambda$. Substantively, if increases in repressive capacity (s) make fighting safer for P and bribe-taking more risky, then crackdowns are even more likely to produce more fighting.

We can now characterize the full set of corner solutions. The minimum (and maximum) bribe demands below (above) which D always (never) pays are similar across the two models. P never has reason to demand more than the respective sure-to-be-rejected “high-ball” bribe (\bar{b}_H or \bar{b}_F) or less than the sure-to-be-accepted “low-ball” bribe (\underline{b}_H or \underline{b}_F):

Lemma 1. *For $O \in \{H, F\}$, if $\widehat{b}_O^* > \bar{b}_O$, P weakly prefers playing \bar{b}_O to any other b , strictly so for any $b < \bar{b}_O$. If $\widehat{b}_O^* < \underline{b}_O$, P strictly prefers \underline{b}_O to any other b .*

For convenience, I rule out “babbling” equilibria in which P plays $b > \bar{b}_O$, as they are functionally identical to $b = \bar{b}_O$. Thus, P ’s best-response functions $b_{O \in \{H, F\}}^*$ are given by $\max[\min[\widehat{b}_O^*, \bar{b}_O], \underline{b}_O]$, and we can express corner-solution conditions in terms of λ :

These conditions have natural interpretations. The left-hand sides represent P ’s reservation value for bribe-taking, i.e. the smallest bribe she would accept. Under hiding, this is equal to the expected sanction λ . Under fighting, the “*plomo*” effect (π) strictly reduces this reservation value, as in Acemoglu and Wolitzky’s (2011, 560) definition of coercion. For the no-bribe conditions,

b_H^*	Condition	Outcome	Pr_H
$\bar{b}_H = h(s)\bar{y}$	$\lambda > h(s)\bar{y}$	No bribes: <i>Peaceful Enforcement</i>	1
$\widehat{b}_H = \frac{\lambda + h(s)\bar{y}}{2}$	<i>otherwise</i>	Interior solution: <i>Hide-and-Bribe</i>	$\in (0, 1)$
$\underline{b}_H = h(s)\underline{y}$	$\lambda < h(s)(2\underline{y} - \bar{y})$	All bribes: <i>State-Sponsored Protection</i>	0

b_F^*	Condition	Outcome	Pr_F
$\bar{b}_F = f(a, s)\bar{y}$	$\lambda - \pi > f(a, s)\bar{y}$	No bribes: <i>Violent Enforcement</i>	1
$\widehat{b}_F = \frac{\lambda + f(a, s)\bar{y} - \pi}{2}$	<i>otherwise</i>	Interior solution: <i>Fight-and-Bribe</i>	$\in (0, 1)$
$\underline{b}_F = f(a, s)\underline{y}$	$\lambda - \pi < f(a, s)(2\underline{y} - \bar{y})$	All bribes: <i>Coerced Peace</i>	0

Table 1. Conditions And Outcomes For Corner and Interior Solutions Under Hiding and Fighting

the right-hand sides represent the largest loss P can impose, i.e. D 's reservation value. Unless this exceeds P 's reservation value, there is no bargaining range, and we get pure enforcement. Under fighting strategies, this implies “violent enforcement”; police always enforce, and cartels fight back for purely defensive reasons, since bribes are never paid.

All-bribe scenarios occur when P prefers the low-ball bribe for sure to a larger bribe with some chance of enforcement. Under hiding, where P faces no retaliation for enforcement, this can only occur if the minimum value of y is large relative to its range ($\underline{y} > \bar{y} - \underline{y}$),¹⁸ substantively uncertainty about drug profits must be small relative to the size of the market. In addition, P must have sufficient interdiction capacity (h) so that the low-ball bribe exceeds her reservation value, λ . This suggests that state-sponsored protection rackets are more likely when drug profits are stable and widely known, and enforcers face little sanction for bribe-taking. Under fighting, an all-bribe outcome is always possible if the “*plomo*” effect (π) is strong enough. This produces *coerced peace*: threats are made but never acted on, and police are effectively bullied into demanding a small, low-ball bribe. \underline{b}_F may well be less than λ , leaving P in the red, precisely because the coercive force of π has lowered her outside option.

¹⁸To see this cleanly, set $\lambda = 0$, $s = 1$, and $y \sim U[0, 100]$. P clearly prefers 50 half the time than 0 all the time. But for $y \sim U[200, 300]$, P prefers 200 for sure to $.5 * 250 = 125$.

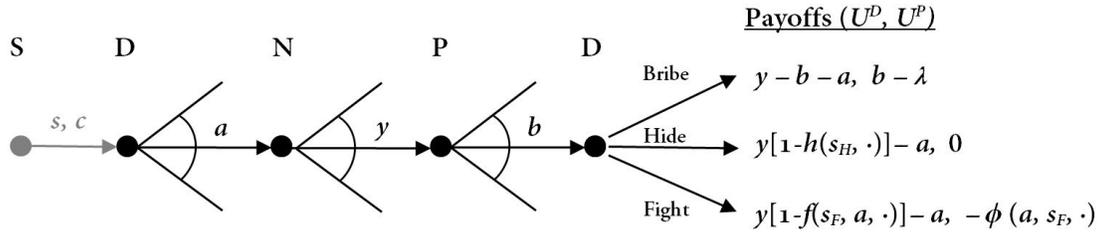


Figure 2. Game Tree For “Richer Specification” Model of Bribe Negotiation.

3.3 A Richer Specification

Thus far, we have considered hiding and fighting as separate strategies. To give D a meaningful choice between them, D now chooses a , which in equilibrium determines whether he will fight or hide in response to enforcement. I make D pay for his guns, but the more critical cost of fighting is the extra state repression it exposes D to, i.e. the *conditionality of repression*. This richer specification formalizes conditionality, as well as the defensive value of fighting relative to hiding, allowing the model to capture the trade-off between violent and non-violent strategies of corruption.

The game now starts with D purchasing arms (a) at a unit price of 1; these costs are sunk, even if no fighting occurs. I assume P observes a but not realized drug profits (y); cartel armament is likely to be more accurately observable than profits, in part because D has incentives to downplay y and to exaggerate a , so it is sufficient to assume that D can costlessly reveal a but cannot create the illusion of having more than a . The game then proceeds as before: drug profits (y) are realized, and since D chooses a before learning y , there is no signaling. I also redefine the distribution of y in terms of its mean value, μ , and a parameter ζ that indicates the degree of uncertainty: $y \sim U[\mu(1 - \zeta), \mu(1 + \zeta)]$. This clarifies a necessary condition on uncertainty for “State-Sponsored Protection” to be possible ($\zeta < \frac{1}{3}$) and, as in Dal Bó and Powell (2009), distinguishes short-term fluctuations in income (random draws of y) from shifts in the general economic climate (μ).

If D pays, he now gets $y - b$ but also pays his sunk costs for weapons ($-a$). P still receives $w + b - \lambda$; because w drops out in this specification, I set it to zero.¹⁹ If D rejects the bribe demand (playing H or F), P enforces; as before, enforcement causes D to lose some share of realized drug

¹⁹If λ is multiplicative, w matters. See appendix for details.

profits, depending on whether he hides ($h(\cdot)$) or fights ($f(\cdot)$). Now, however, state repression is assumed to be weakly greater if D fights—perhaps P can only use deadly force when fired upon, for example. Formally, assume that S now sets both the degree (s) and conditionality (c) of repression exogenously and publicly prior to play. If s_H and s_F represent the amount of repressive force P brings to bear respectively if D hides or fights in the last round, then $s_H = s_F(1 - c) \leq s_F$. Thus $c \in [0, 1)$ parameterizes *conditionality*: as repression becomes unconditional ($c \rightarrow 0$), the relative reprieve D gains by eschewing violence evaporates ($s_H \rightarrow s_F$).²⁰ For expositional simplicity, I further assume $s_F = s$, i.e. violent cartels face the full brunt of state repression. As before, P gets $w = 0$ if D hides and $-\pi(\cdot)$ if D fights.

Changes in conditionality, as formalized, only affect D 's payoff to hiding. This reflects two substantive considerations. First, states usually direct the maximum repression possible at cartels that employ anti-state violence; conditional policies, when implemented, usually take the form of “easing off” on cartels that eschew violence. Second, conditionality may be “one-way only”: switching from hiding to fighting may incur additional repression, but once a cartel starts killing police, switching back to hiding may not yield a commensurate reprieve. As formalized here, an increase in conditionality increases cartels' hiding payoffs relative to fighting; substantively, this may only apply to new or previously non-violent cartels, or when states “let bygones be bygones”. If violence locks in full-bore state repression, then changes in conditionality only affect cartels' choice to *become* violent, but cannot push them to eschew violence.

To endogenize D 's choice of a and analyze explicit solutions, I specify functional forms for h , f and π . The idea that s and a have both defensive and coercive effects, with opposite impacts on f and π , can be formalized with contest success functions (CSFs). CSFs can represent “the proportionate share of the prize won” (Hirshleifer 1989, 102); in this case, letting $f(a, s) \equiv \frac{s}{a+s}$, $f \in [0, 1]$ represents the share *lost*, since D retains $y(1 - f)$ under enforcement.

In a typical CSF specification, the other player would receive $y \times f$. Again, though, neither P (enforcers) nor S (policymakers) “wins” the street value of interdicted drugs, ruling out a typical

²⁰Ruling out $c = 1$ guarantees that non-violent trafficking is always subject to *some* degree of repression.

zero-sum formulation. Here, more firepower helps P mitigate D 's threatened punishment, so define $\pi(\cdot) \equiv \varphi \frac{a}{a+s}$. The parameter φ scales P 's distaste for physical confrontation, capturing the relative weight of “*plomo*” effects and reflecting Schelling’s (1966, 240) insight that coercive power “is not unconcerned with the interest of others” but rather “measured in the suffering it can cause.” For technical reasons, assume $\varphi \neq \lambda$.

Since hiding is a distinct “technology” from simply fighting without arms (which here would yield a total loss), let $h(\cdot) \equiv \frac{s_H}{\eta+s_H}$, where η is a parameter that captures the relative defensive efficacy of hiding. A low η implies that fighting yields significant defensive benefits over hiding; this might be the case if physical territory itself is valuable, so that fleeing—even if successful—leads to large cartel losses. Thus η can be seen as an inverse measure of the “territoriality” of the drug trade.

In this one-shot game, subgame perfect Nash equilibrium (SPNE) requires D to choose the highest-payoff action in the last round. Since D gets no intrinsic pleasure from hurting P , he can only credibly threaten to fight if, beyond some level of armament, it yields more profits than hiding:

$$\exists \bar{a} > 0 : a \geq \bar{a} \Rightarrow f(a, s_F) \leq h(\eta, s_H) \quad (\text{Condition 1})$$

That is, by acquiring \bar{a} or more arms, D guarantees (and indicates to P) that he will fight rather than hide whenever P 's bribe demand is too high relative to profits. (Conversely, to credibly “threaten” to hide, it must be the case that when $a = 0$, $f > h$.) Substantively, D cannot credibly threaten to fight unless he has sufficient firepower, and once he has, can no longer hide should he reject the bribe demand. This formalizes the idea that fighting and hiding approaches are, effectively, mutually exclusive.

Condition 1 requires fighting to have at least some defensive effect. To explore the possibility of violent corruption where fighting is purely coercive, we would need to abandon SPNE (i.e. permit non-credible threats) or move to a dynamic model where costly punishment in one round is sustained by its effects on future play, possibly through reputation-building. The latter is a promising avenue for future research. Here, I retain SPNE; the CSF specification assumes that cartel firepower has defensive value, and thus satisfies **Condition 1**: $a > \frac{\eta}{1-c} \equiv \bar{a} \Rightarrow f < h$; in addition,

$a < \bar{a} \Rightarrow b < f$. The parameter φ captures the relative weight of the coercive (“*plomo*”) effect of cartel firepower relative to its defensive effect; $\varphi = 0$ implies that violence is purely defensive.

Analysis I show some general results, then employ the CSF functional forms to analyze the fighting case, and present numerical examples to illustrate dynamics among equilibrium scenarios.

A strategy for D is a decision of how much to invest in armament (a), and a function mapping a , realized profits (y) and P ’s bribe demand (b) onto a choice of paying, hiding, or fighting.²¹ A strategy for P is a function mapping a onto a bribe demand, $b(a)$.

Lemma 2. *In equilibrium, D never plays $a \in (0, \bar{a})$; his strategy takes one of the following forms:*

$$\text{‘Hiding’} : \{a = a_H^* = 0, \left\{ \begin{array}{ll} H & \text{if } y \in [\underline{y}, \frac{b}{b(s)}) \\ B & \text{if } y \in [\frac{b}{b(s)}, \bar{y}] \end{array} \right\}\}; \text{ ‘Fighting’} : \{a = a_F^* \geq \bar{a}, \left\{ \begin{array}{ll} F & \text{if } y \in [\underline{y}, \frac{b}{f(a,s)}) \\ B & \text{if } y \in [\frac{b}{f(a,s)}, \bar{y}] \end{array} \right\}\}$$

P ’s strategy takes the form

$$b^*(a) = \begin{cases} b_H^*(a) & \text{if } a < \bar{a} \\ b_F^*(a) & \text{if } a \geq \bar{a} \end{cases}$$

These do *not* constitute multiple equilibria. Rather, P has a kinked best-response function, and D compares best-response payoffs for hiding ($a_H^* = 0$) to fighting ($a_F^* \geq \bar{a}$) strategies, then chooses $a^* \in \{a_H^*, a_F^*\}$ to maximize his expected utility.

The key outcomes remain the equilibrium bribe price (b_H^* or b_F^*) and the probability the outside option is taken (Pr_H or Pr_F). The derivations of b_H^* and b_F^* remain as above, and since $a_H^* = 0$, the hiding case is unaffected, but for the addition of comparative statics on c :

Proposition 1. *Assuming an interior solution and $a^* < \bar{a}$, the equilibrium bribe price b_H^* is increasing in λ and s , and decreasing in c . The probability of bribery occurring is decreasing in λ , increasing in s , and decreasing in c .*

As before, higher expected sanctions for bribe-taking (λ) deters bribery—this is why police corruption tends to be either rampant or rare, while crackdowns—increases in s —make bribes larger

²¹Formally, $\sigma_D = \{a \in [0, \infty), \delta(a, y, b) : [0, \infty) \times [\underline{y}, \bar{y}] \times [0, \infty) \rightarrow \{B, H, F\}\}$.

and more frequent because they reduce D 's outside option. Thus H_1 still holds: *crackdowns increase the demand for corruption*. Conversely, increases in conditionality (c) diminish the effective force P can apply in response to hiding, thus reducing D 's incentive to reach a deal; beyond some point, we get the ‘‘peaceful enforcement’’ corner solution:

Corollary 1. *For any set of parameter values, $\exists c^{NB} \in (0, 1) : c > c^{NB} \Rightarrow \widehat{b}^*_H \geq \bar{b}_H$, such that if $a = 0$, no bribes are paid.*

The fighting case is more complicated, since a is now a choice variable that affects P 's equilibrium demand, even under corner solutions: $b^*_F(a) = \max[\min[\widehat{b}^*_F(a), \bar{b}_F(a)], \underline{b}_F(a)]$. Noting that D fights if $y < \widehat{y} = \frac{b^*_F(a)}{f(a,s)} \in [\underline{y}, \bar{y}]$ and pays otherwise, he solves:

$$a^*_F = \arg \max_a \left[\int_{\underline{y}}^{\widehat{y}} y (1 - f(a, s)) \frac{1}{\bar{y} - \underline{y}} dy + \int_{\widehat{y}}^{\bar{y}} (y - b^*_F(a)) \frac{1}{\bar{y} - \underline{y}} dy - a \right] \text{ s.t. } a \geq \bar{a} \quad (5)$$

The full derivation of a^*_F is complex and addressed in the appendix. However, with reasonable bounds on parameters²² there is a range of s over which a^*_F is equal to the ‘unconstrained’ optimum \widehat{a}^*_F that maximizes the expression in brackets, as in the numerical example to come. I focus first on interior solutions, then discuss corner solutions substantively.

Taking comparative statics, the equilibrium bribe price b^*_F is increasing in λ and s , and the probability of bribery occurring ($1 - \text{Pr}_F$) is decreasing in λ , as in the hiding case. However, crackdowns do not always make bribery more likely:

Proposition 2. *Increases in s raise the probability of fighting if $\varphi > \lambda$, and decrease it if $\varphi < \lambda$.*

Thus the key result summarized in H_2 holds here as well: if violence is at least partially coercive (so that $\varphi > 0$ and police expect to suffer a relatively small sanction for bribe-taking (so that $\lambda < \varphi$), then *crackdowns increase traffickers' incentives to fight enforcers*.

To Hide or Fight? We can now explore the choice between fighting and hiding strategies; formally, D compares U^D_F , his ex-ante expected payoff when $a = a^*_F$ to U^D_H , with $a = a^*_H = 0$. This

²² $\mu > \varphi$ is sufficient but perhaps restrictive. Generally, we need $\mu > \frac{\varphi}{x}$ and $\zeta > x - 4\sqrt{x+3} + 7$. Setting $x = 2$ yields reasonable bounds: $\varphi < 2\mu$ and $\zeta > .056$.

calculation is sensitive to parameter conditions; mapping the parameter space reveals how changes in state policy (s and c) affect D 's choice.

Proposition 2 tells us that once in a fight-and-bribe equilibrium, crackdowns exacerbate fighting; they can also ‘flip’ D 's equilibrium strategy from hiding to fighting, as a numerical simulation illustrates. Figure 3's vertical and horizontal axes show D 's expected utility and choice of a , re-

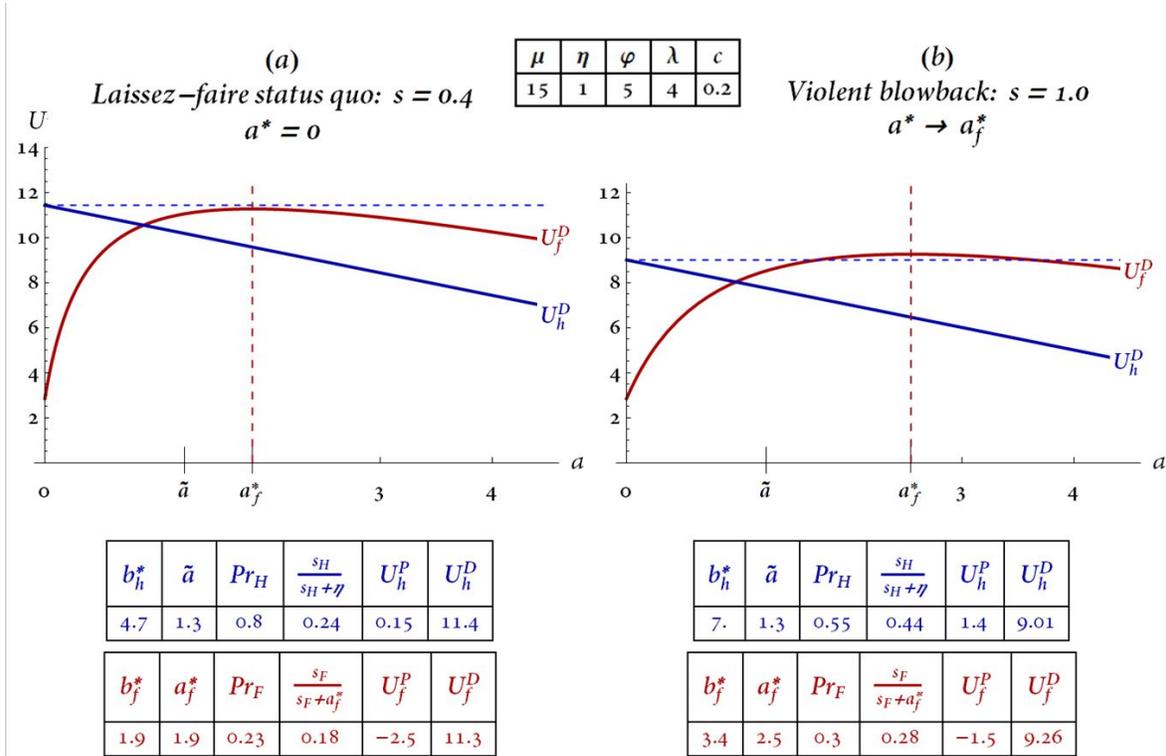


Figure 3. Numerical example of violent blowback. Starting from a low-enforcement status quo (panel (a)), a crackdown shifts D 's equilibrium strategy from hiding to fighting (panel (b)).

spectively. U_H^D is maximized at $a = 0$, shown by the dashed horizontal line for comparison. U_F^D is maximized at a_F^* (in these interior solutions, this equals the ‘unconstrained’ optimum \widehat{a}_F^*); D plays fight-and-bribe whenever that maximum lies above the dashed horizontal line. Scenario (a) represents a low-enforcement status quo. If D plays $a = a_H^* = 0$, P demands bribe $b_H^* = 4.7$ (which D pays 20% of the time). Playing $a = a_F^*$ would reduce P 's demand to $b_F^* = 1.9$, but arming and fighting costs outweigh this benefit, so D plays hide-and-bribe ($U_F^D < U_H^D$). In scenario (b), a crackdown raises s to 1. Now D is better off playing $a = a_F^*$ (since $U_F^D > U_H^D$), and fight-

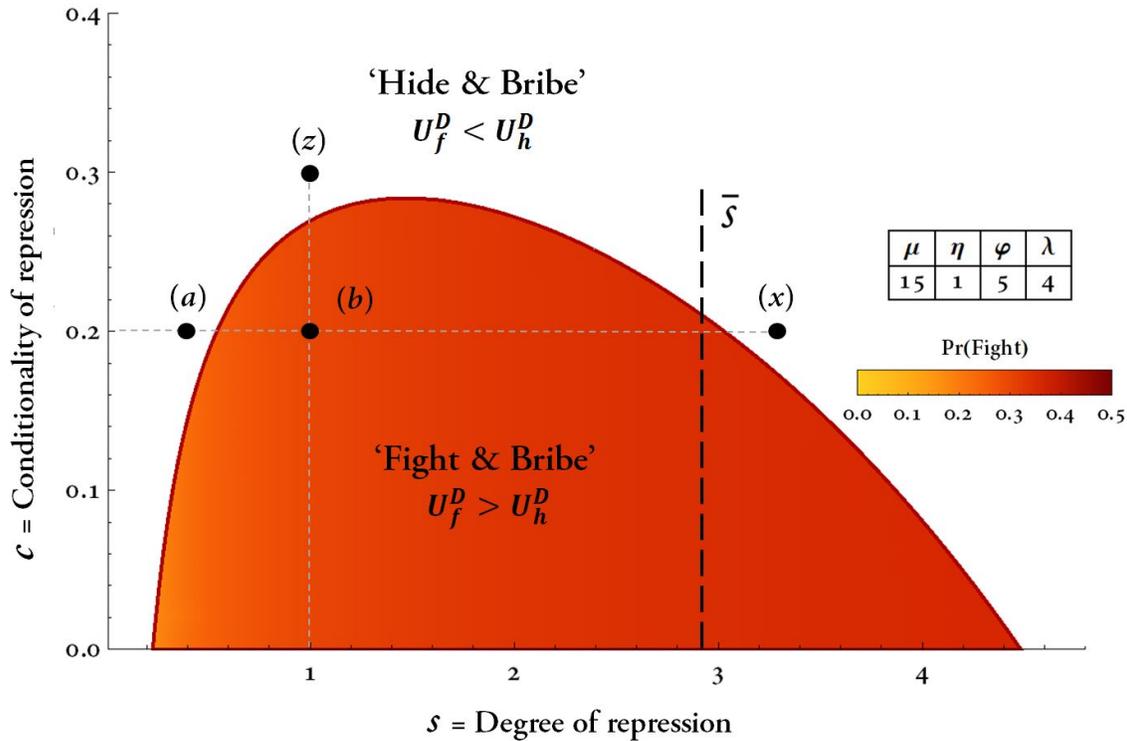


Figure 4. Plot of fighting and hiding regions, showing scenarios (a) and (b) from Figure 3. Crackdowns (increases in s) can cause both an abrupt switch to fighting strategies, and a smooth increase in the probability of fighting.

ing 30% of the time.²³ To gain intuition, note that in (a), D expects small total bribe payments ($\Pr_B \times b_H^* = .2 \times 4.7 = .94$) so can gain little by arming; in (b), expected payments under hiding are larger ($.44 \times 7 = 3.08$), making arming attractive.

Much of the parameter space is susceptible to such violent blowback. Figure 4 extends the simulation above, allowing s and c to vary along the axes, and plotting the region for which $U_F^D > U_H^D$. Within this region, the equilibrium probability of fighting (\Pr_F) is indicated by shading, and is increasing in s as per Proposition 2. Scenarios (a) and (b) from Figure 3 appear as points in this plane. The ‘hump’ shape captures countervailing pressures: the value of the additional leverage gained by fighting is proportional to s , but so is the cost of arms needed to achieve leverage. Thus at low s , intimidation is cheap but worth little; at high s , intimidation is valuable, but too costly.

One interpretation is that cartels fight when the state doesn’t crack down hard enough. From

²³Note the Pareto inefficiency of fight-and-bribe vs. hide-and-bribe: $U_F^D + U_F^P < U_H^D + U_H^P$, in spite of the fact that bribes are more common under fighting: $\Pr_F < \Pr_H$.

point (b), the state could expand repression out to point (x), inducing D to eschew violence. As the following proposition shows, there is always a degree of repression s^* above which D hides, even when repression is perfectly unconditional ($c = 0$):

Proposition 3. *For any set of parameter values, $\exists s^* \in \mathbb{R}^+$ such that $s > s^* \Rightarrow U_H^D > U_F^D$.*

Substantively, though, high levels of s may be infeasible or undesirable: states face resource and capacity constraints, opportunity costs, and at least some political limits on repressive tactics. If an upper bound like \bar{s} exists, then moving from (b) to (x) is infeasible, and hiding can only be induced by raising c . In fact, the state could pacify the cartel without raising s at all by increasing conditionality, say to point (z); at this level of conditionality, D hides for *any* s . This too generalizes: increases in conditionality raise D 's expected payoff from hiding relative to fighting, thus reducing s^* . Beyond some point, s^* reaches zero, and D never fights. Formally:

Proposition 4. *For any set of parameter values, $\exists \bar{c} \in (0, 1)$ such that if $c > \bar{c}$, D plays $a^* = 0$, P plays $b = \bar{b}_H$, and D always hides.*

The analysis illuminates the tradeoffs facing the state. Conditionality is an effective violence-reduction policy lever, and can be critical to breaking out of a fighting equilibrium when constitutional and capacity constraints restrict policymaker's choice of s . Moreover, reducing enforcers' discretion to prosecute non-violent traffickers can drastically reduce bribery, even in lieu of traditional anti-corruption efforts (i.e. trying to raise λ).

However, as modeled here, D 's utility is strictly decreasing in s and weakly increasing in c (strictly when hiding). Indeed, maximal conditionality ($c \simeq 1$) implies no interdiction of non-violent trafficking, maximizing D 's utility. For P , the opposite holds: except at critical points where D flips from fighting to hiding, P would always prefer a higher s and a lower c . This points to the *political* costs to leaders of raising conditionality: it can generate hostility or insubordination among enforcers,²⁴ while leaving cartels better off, exposing leaders to the venomous epithet of

²⁴If enforcers do not realize or believe that cartels will switch to hiding strategies under conditionality, they will always oppose it; convincing enforcers that conditional repression reduces cartel-state conflict could thus alter their political stance. In Rio, police leaders were initially skeptical over the conditional aspects of Pacification, but later explicitly embraced them.

‘accommodating the drug trade’.

Corner Solutions

As Figure 5 reveals, in different regions of the parameter space, corner solutions can pertain under hiding or fighting strategies, or both. An *equilibrium* corner solution further requires that D prefer such an outcome to his payoff under the alternative strategy (which may or may not be a corner solution). Thus in addition to the conditions listed in Table 1, hiding (fighting) corner solutions generally require high (low) conditionality.

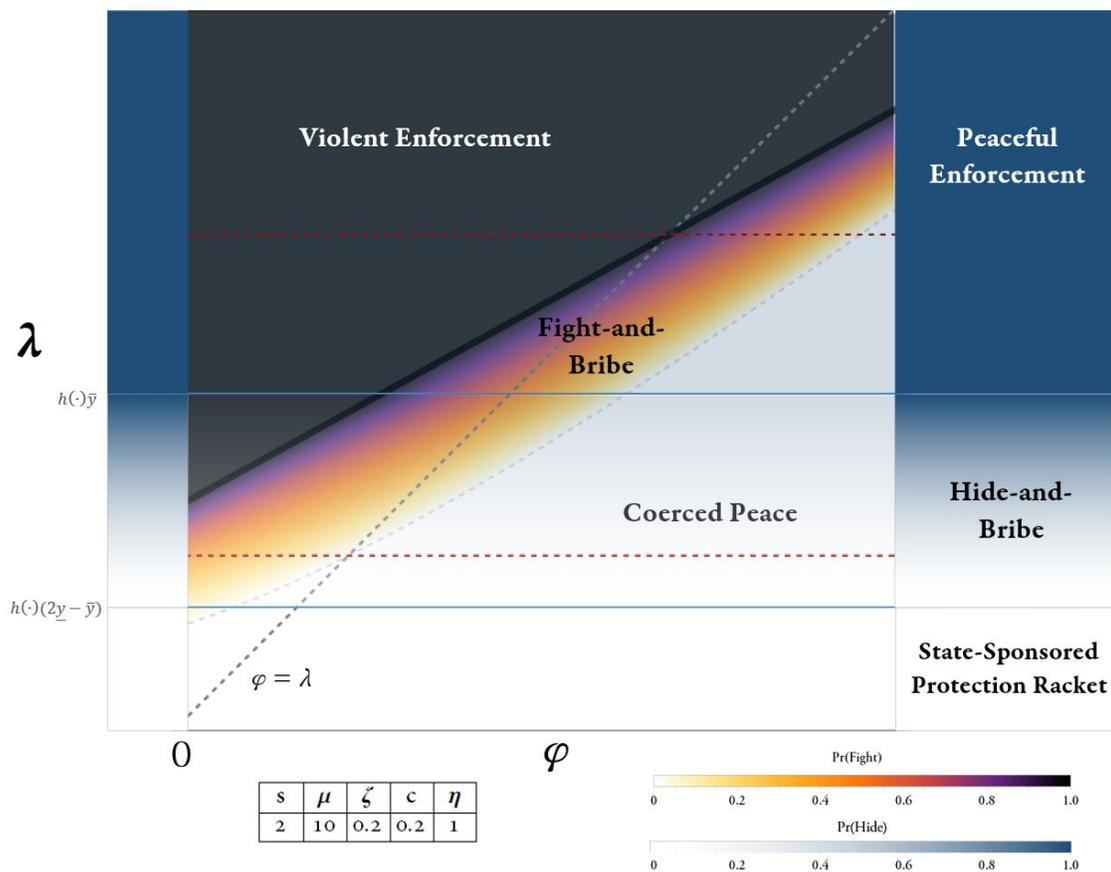


Figure 5. Plots of corner- and interior-solution regions, for hiding and fighting strategies, in the ϕ, λ plane. The plot of fighting outcomes appears “in front of” the hiding plot, which extends to either side for clarity. Since hiding equilibria are unaffected by ϕ , this plot features horizontal bands. For both plots, gradient regions correspond to interior solutions; ex-ante probability of fighting or hiding is shown by shading. Solid regions correspond to corner solutions: dark (light) regions represent no-bribe (all-bribe) outcomes.

One important take-away is that increases in λ , even if the state can effect them, do not nec-

essarily reduce violence, and may not even reduce actual corruption. Under fighting, increases in λ weakly increase the probability of fighting. But say a hide-and-bribe scenario prevails, and the state employs anti-corruption efforts, or deploys a less corrupt force, raising λ . This strictly reduces D 's payoff to hiding, and could lead him to switch to a fighting strategy, possibly even an all-bribe, coerced peace scenario. In other words, anti-corruption efforts could backfire, leading D to adopt “*plata o plomo*” threats that make bribery *more* frequent. Whether such a switch occurs depends critically on the conditionality of repression.

For example, “Peaceful Enforcement” occurs when s_H is small relative to λ ; this could be due to either low overall repression (s) or high conditionality (c). However, to get peaceful enforcement in equilibrium, D must prefer it to his fighting payoff, unlikely if s and c are both low; conversely, sufficient conditionality, as per Corollary 1, can always generate pure peaceful enforcement. From state leaders’ perspective, peaceful enforcement may seem optimal, but achieving it may be politically dicey. As noted, it requires reducing the repression leveled at non-violent cartels to the point that police cannot extract a viable bribe: $\frac{s_H}{\eta+s_H} < \frac{\lambda}{\gamma}$. At the same time, there must be enough repression off the equilibrium path to keep them from fighting. Peaceful, non-corrupt repression is thus constrained not only by the state’s capacity to catch and punish bribe-takers (λ), but also its ability to maintain repressive capacity in reserve ($s * c$), which may be politically unpopular if traffickers are seen as a demonic threat to society.

If, on the other hand, state leaders care more about extracting rents from traffickers than interdiction and preventing corruption, “state-sponsored protection” might seem optimal. This requires a very low λ and relatively little uncertainty about the true size of traffickers’ profits. State repressive force plays two coercive roles in this scenario. First, s_H must be high enough to induce traffickers to consistently bribe their way out of enforcement; at the same time, enough must be held in reserve (i.e. conditionality must be high enough) to deter cartels from fighting back.

This scenario corresponds clearly to the state-sponsored corruption racket that prevailed in Mexico until the 1990s. The state established direct linkages and even information-sharing procedures with traffickers, who were allowed to operate in exchange for regularized bribes. While failure to

pay was apparently punished enough to ensure regular compliance, it is also clear that repression was highly conditional: incidents of anti-state violence or other unacceptable forms of cartel behavior were severely and swiftly punished. Snyder and Durán Martínez (2009) offer compelling reasons why this racket collapsed, but not why it collapsed into violent corruption and not into a non-violent, hide-and-bribe or peaceful enforcement scenario. I argue below that Mexico's democratization in the 1990s brought a reduced capacity for conditionality, while Calderón deliberately reduced conditionality further, mostly for political reasons.

Under "Coerced Peace", cartels acquire firepower and use it to make credible threats that are never acted on in equilibrium. No actual fighting occurs, and violence remains off the equilibrium path.²⁵ This evokes Colombian officials' situation in the early 1980s, simply too afraid of Pablo Escobar to risk prosecuting him. A threatening note to a judge in a 1985 extradition case, for example, strongly suggests Escobar held enforcers to negative reservation values:

"We will DEMAND a favorable decision... We will not accept that you go sick. We will not accept that you go on holiday; and we will not accept that you resign." (Bowden 2001, 70)

Coerced peace may also obtain in smaller Mexican municipalities, where overmatched local police forces are not so much bribed as ordered not to interfere with cartel business, on pain of death.²⁶

By definition, marginal increases in s have no effect on Pr_F under corner solutions, though they raise the equilibrium bribe price, making D worse off and P better off. However, under "Coerced Peace", a large increase in repressive capacity can trigger cartel-state conflict: if s grows large enough, we move to an interior "Fight-and-Bribe" solution with positive probability of fighting.²⁷ In late 1980s Colombia, protective measures including anonymous (*sin rostro*) status encouraged intrepid officials to go after Escobar;²⁸ ironically, this may have contributed to the wave of cartel assassinations of judges during the period (CIJL 1990).

²⁵As in Dal Bó et al. (2006).

²⁶Interview, Executive Secretary, National Public Security System (SNSP), Mexico City, September 13.

²⁷In terms of Figure 4, when regions of coerced peace exist, they occupy the far left swathe of the fighting region; increases in s represent moves right-ward into darker territory.

²⁸Interview, former *fiscal sin rostro*, Medellín, December 24, 2010; interview, former attorney general, Bogotá, December 13, 2010.

Conversely, under “Violent Enforcement”, both sides prefer a fight to any available bargain; this generally occurs in low-corruption settings ($\lambda > \varphi$). At the same time, D must prefer violent enforcement to any available hide-and-bribe equilibrium; this requires that fighting provide a significant defensive benefit over hiding, $f(a_F^*, s) > b(\eta, s(1 - c))$. This is more likely when territoriality is high (low η) and repression is unconditional (low c). Substantively, a cartel facing relatively uncorrupt special forces may fight purely to minimize interdiction losses, especially if territoriality is high and police are licensed to use deadly force irrespective of cartel action. In Rio the elite BOPE police force originally had all these attributes: a reputation for incorruptibility (low λ), a warrior ethos of physical engagement (low π) and license to use deadly force irrespective of cartel behavior (low c). Prior to Pacification, traffickers frequently clashed with BOPE forces, despite being overmatched; Pacification’s pre-announced occupations effectively increased c , raising the relative payoff to hiding, and traffickers largely eschewed confrontation with the BOPE during these operations.

Overall, these corner solutions constitute the conceptual bookends of violent corruption. Violent enforcement is violent but not corrupt, and violence has an overwhelmingly defensive, brute-force value (signified by a low φ). As φ increases, the weight of the “*plomo*” effect increases relative to the defensive value of violence, and we move toward the other pole: coerced peace is corrupt but not violent, at least not on the equilibrium path, and violence plays an overwhelmingly coercive role. Everything in between can be fairly characterized as violent corruption.

4 Evidence from Case Studies

The model predicts differing outcomes depending on parameter conditions. This section locates the cases of Mexico and Rio de Janeiro within that parameter space, condensing, by necessity, decades of complicated history. In both cases, corruption is generally rampant and routinized—as popular expressions like ‘*la plaza*’²⁹ and ‘*arrego*’³⁰ attest—suggesting a low and stable λ (notwithstanding low-corruption elite units, discussed above). The drug market (μ) expanded significantly in Mexico

²⁹“The concession [from Mexican state authorities] to run the narcotics racket” (Poppa 2010, 42).

³⁰Traffickers’ regular bribe payment to Rio police (Soares et al. 2005, 259-260).

in the 1990s, as cocaine flows into the U.S. were diverted from the Caribbean (Andreas 1998, 160-161), but has probably been relatively stable since.

What has changed dramatically is the degree (s) and conditionality (c) of repression. In both cases, degree of repression has varied but trended upward. However, whereas in Rio conditionality sharply increased with the roll-out of the 'Pacification' strategy in 2008, in Mexico conditionality was high under single-party rule, but fell, first as unintended consequence of democratization in the 1990s and 2000s, then sharply and deliberately with Calderón's "impartial" crackdown. The model's predictions fit the observed outcomes: in Rio, a surprisingly abrupt switch by cartels from fighting to hiding in response to Pacification; in Mexico, slow escalation through 2006, then sharp 'blowback' in response to a massive, unconditional crackdown. This supports a central claim: changes in conditionality have stark effects on cartel-state conflict.

4.1 Rio de Janeiro: Pacification as Conditional Crackdown

For thirty years, Rio's favelas have suffered armed conflict between violent police corps that are institutional relics of authoritarianism, and 'cartels' whose origins as prison gangs make them atypically resilient and powerful. Here I abstract from this intriguing history to make two broad claims.

Claim #1: Pre-Pacification, crackdowns were unconditional; cartels played 'fight-and-bribe'.

For decades, repressive policy followed the swings of Rio's political pendulum between hard-liners, who gave police ever-increasing leeway, military capacity, and even financial incentives to use deadly force, and progressive reformers, who attempted to restrict violent police practice (Soares and Sento-Sé 2000). With a few important exceptions, however, what varied was the degree of repression, not its conditionality. Traffickers rarely received a clear signal from the state that eschewing violence would lessen the brunt of repression.

On the contrary, police actions in favelas were lethal and indiscriminate, with little effort to distinguish traffickers from non-participants much less condition the use of lethal force on traffickers' behavior. In a stark example from 2005, police on a favela drug raid killed two boys, aged 11 and 12, later claiming they were traffickers and had participated in a shootout (Figueiredo 2005).

Residents denied this, but no test for gunpowder was performed on their bodies, and police were never charged with wrongdoing (*O Globo* 2005). In such a setting, traffickers have every incentive to fight back when police enter the favela.

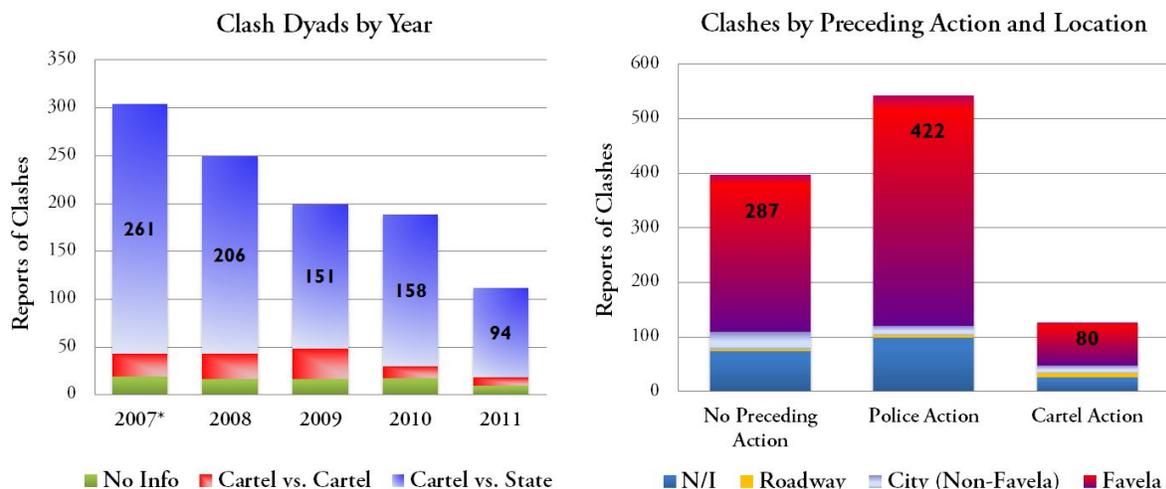
This incident attracted attention because of the victims' age, but systematic evidence confirms that repressive force was not conditional on traffickers' use of violence. Cano (1997; 2010) analyzes the universe of incidents in which police shot 'armed opposers' (i.e. not innocent bystanders) over a 30 month period. Were police truly acting in self defense, he argues, the ratio of fatal to non-fatal shootings would be less than one, as in U.S. cities (1997, 31). In Rio, even for whites in non-favela areas, the ratio was about two; for non-whites in favelas, it was more than eight (2010, 40). Forensic examinations were conducted in only a quarter of these cases; even then, tests for gunpowder on alleged aggressors' hands were rare (1997, 57).

Consistent with a 'fight-and-bribe' equilibrium, a longitudinal study of 230 drug traffickers (Silva 2006, 35-37) found that contact with police is more likely to result in abuse, confrontation, or bribery than effective enforcement. 73.5% reported having suffered police violence, while only 53% had ever been arrested and 28.5% imprisoned. Meanwhile, 54% had suffered police extortion, while 68% had been in at least one armed confrontation with police (compared to only 53% in confrontation with rival groups). In an earlier survey, 35% of traffickers under 18 said their worst work-related fear was death, followed by police extortion (30%), while among those over 18 fear of extortion ranked first; in both cases, fear of arrest was third.

Novel violent-event data reveals cartel-police clashes inside favelas to be the modal form of drug violence in Rio, confirming traffickers' fighting stance. Clashes, as opposed to unilateral actions,³¹ accounted for 46% of all reports of drug violence in Rio (compared with 10% in Mexico). The vast majority of clashes were between police and cartels, not among traffickers (Figure 6). Roughly half of all clashes were preceded by police-initiated action, almost always a police incursion into a favela,³² where at least 80% of clashes occurred.

³¹Violent actions are coded by type; a single category, 'clash', covers *any* situation in which two or more actors exchange lethal force. See Appendix B.

³²Police incursions that were themselves in response to violent actions are counted as cartel-initiated.



Source: Author's coding of newspaper reports; see Appendix B for details.

*Includes only June-December 2007.

Figure 6. Media reports of clashes in Rio, June 2007 - December 2011. The coding protocol recorded whether clashes were preceded by other actions, distinguishing police incursions, attacks by other cartels, or unilateral offensive actions by the involved cartel.

While frequent enough at the city-wide level, such clashes are hardly constant. On any given day, hundreds of favelas patrolled by openly armed traffickers were *not* the scene of shootouts, even though police certainly knew where to find traffickers. The logic of violent corruption—an ongoing, repeated interaction in which violence is the result of bargaining breakdown—helps explain this pattern of intermittent fighting.

One exception to this long history of unconditional repression was the GPAE (*Grupamento de Policiamento em Áreas Especiais*, Policing in Special Areas Units) project, a predecessor of Pacification. In a handful of favelas in 2001 (Ungar and Arias 2009, 418-421), GPAEs maintained a preventive presence and did not actively target traffickers who followed the rules: “Don’t walk around openly armed, don’t sell drugs near school, and don’t employ children.”³³ Homicides fell to zero the first year, and residents overwhelmingly approved of the program. Unfortunately, the formulator and original commander of GPAE was replaced in 2003 with a hard-liner who took a traditional repressive approach (Fernandes 2003, 98). Police violence rose, and cartels reverted to confrontational strategies in these communities. Nonetheless, GPAE showed that conditionality

³³Interview, GPAE founder and ex-commander, Rio de Janeiro, June 2003.

can induce traffickers to eschew fighting, and inspired the development of a conditional approach on a city-wide scale.³⁴

Claim #2: Pacification increased conditionality, pushing cartels into hiding strategies.

Governor Sérgio Cabral began his term with a traditional crackdown, culminating in the lethal but failed 2007 invasion of the Alemão favela complex, for decades the principal redoubt of Rio's largest cartel. The year ended with a record 1,330 civilians killed by police in armed confrontations (Figure ??). In 2008, his administration tacked, introducing the Pacification strategy.

Two aspects of Pacification made it clearly conditional. First, the state government pre-announced favela occupations, focusing on reclaiming territory rather than capturing or killing traffickers. This improves traffickers' 'hiding option', giving them a chance to flee or, for those unlikely to be identified, to disarm and 'melt' into favela society. Second, once established, community-policing units known as UPPs³⁵ explicitly prioritized violence-minimization over the interdiction and arrest of traffickers.

Both policies represent strong breaks with standard practice, and, as with GPAE before it, Pacification initially came under criticism for turning a blind eye. But whereas GPAE's backers were often on the defensive, Public Security Secretary José Beltrame, principal formulator of Pacification, forthrightly defended the approach: "We cannot guarantee that we will put an end to drug trafficking.... [The idea is] to break the paradigm of territories that are controlled by traffickers with weapons of war" (Phillips 2010). Beltrame defended the policy of allowing kingpins to escape (Bastos 2011), and when confronted with footage of drug sales in a UPP-occupied favela, did not apologize for what is perhaps the most difficult-to-swallow aspect of conditional repression, the need to apply less than maximal repression against non-violent traffickers:

"The basic mission was to disarm the drug dealers and bring peace to the residents. The footage

³⁴Interview, Sub-secretary of Public Security, Rio de Janeiro, February 22, 2013.

³⁵Unidades de Polícia Pacificadora ('Pacifying Police Units'); Cano (2012) provides detailed descriptions. 'UPP' has become a synecdoche for the larger Pacification strategy, and, due to its success, a 'brand name' for favela-based social programs.

doesn't appear to show anyone armed. [...] That positive outcome is worth infinitely more than the sale of a half dozen packets [of cocaine]" (Araújo 2010).

Pacification's 2008-09 rollout in highly visible, smaller favelas was successful but inconclusive: cartel-state violence declined but remained significant (Figure 6), as traffickers fled pacified areas for stronghold favelas, especially Alemão. Beltrame, echoing the conventional wisdom that traffickers were still entrenched in a fighting strategy, told U.S. officials that his planned invasion of Alemão would incur "traumatic violence" (Fraga 2010). In November 2010, as 2,700 police and soldiers prepared to confront some 1,000 traffickers holed up in Alemão, journalists, activists, and even force commanders warned of an impending bloodbath. Yet the operation lasted only a few hours, producing but three fatal casualties and less than two dozen arrests. The local kingpin fled, while lower ranks simply dissolved into the local population.³⁶

The 'pacification' of Alemão marked a turning point. In November 2011 a joint police, army, and navy operation captured Rocinha—the largest favela in Rio, and widely considered its most lucrative local drug market—in a matter of hours without firing a shot. In 2012, the state retook the extensive Manguinhos-Jacarezinho complex of favelas, again with little or no resistance. Traffickers do not seem to have been eliminated from pacified communities; rather, they have turned to hiding strategies.³⁷ Ethnographic evidence (e.g. Resende and Ansari 2012, 114; Siqueira et al. 2012, 85), especially Cano's (2012) systematic study of pacified communities, confirms this: "There's drugs, there are traffickers, but there are no more guns" (114) is a typical sentiment among residents.

A prominent alternative explanation for this abrupt switch in cartel strategy is the UPP units themselves, composed of new, uncorrupted recruits trained in human rights and proximity-policing techniques. Such efforts are to be lauded, and carefully monitored to guard against reversion to authoritarian practices. Yet the 'counterinsurgency' argument—that the UPPs won locals' hearts and minds, so undercutting traffickers' power that fighting became hopeless—is unconvincing. The shift in cartel strategy was too abrupt, and occurred too early in the Pacification process (when

³⁶Interview, resident activist and mother of trafficker, Complexo do Alemão, March 29, 2011.

³⁷Visit and interview with former trafficker, Complexo do Alemão, December 18, 2011. Visits and interviews with residents: Rocinha, December 15, 2011; Providência, March 27, 2011; Santa Marta, July 11, 2010; Chapéu-Mangueira, June 20, 2010.

many pacified communities were still occupied by shock troops) for the counterinsurgency effect to have been decisive. Similarly, the partial reversion of cartels to fighting strategies in the larger pacified favelas since 2013 was also abrupt, suggesting that cartels are responding more to state repressive policy than slow-moving process of state trust-building among residents (Cano 2012). The effective conditionality of the Pacification program probably fell after 2012 as the number of pacified favelas outstripped the state's ability to train and field UPP units.

4.2 Mexico: From “Play by the Rules” to “No Quarter”

The evidence that conditionality of repression has decreased in Mexico—eliminating disincentives for cartel violence—is fairly strong. How much of the positive incentives for anti-state violence derive from the dynamics of violent corruption, as opposed to other possible logics, is admittedly less clear. Indeed, any generalization about Mexico's highly complex conflict, with its ever-changing cast of cartels interacting with each other and multiple enforcement agencies across three levels of government, is suspect. Still, a decade since cartel-state violence first broke out, it is still a daily occurrence. The logic of violent corruption is as plausible a candidate explanation as any for that stunning fact. Again I divide the argument into two core claims.

Claim #1: Democratization weakened conditionality, pushing cartels toward fighting strategies.

Neither drug trafficking nor militarized anti-narcotics efforts in Mexico are new, but systematic anti-state violence by cartels is. Until the 1990s, the ordering of social and economic life by the hegemonic Institutional Revolutionary Party (PRI)—the *pax priista*—extended to the drug trade too.

The critical institution was the Federal Security Directorate (DFS), a political police force that came to oversee the regulation and taxation of the illicit drug trade (Aguayo 2001). Its mission “was to be twofold: on the one hand, it ensured that part of the [traffickers'] profits was levied in exchange for protection; on the other, it served as a mechanism for containing the violence and any political temptations on the part of the traffickers” (Astorga 2001, 428).

The DFS, and the PRI behind it, laid down rules of the game; traffickers either played by them or faced swift and certain punishment (Lupsha 1991; Poppa 2010). For decades, this clearly conditional approach produced a steady stream of bribes, little actual enforcement (Andreas 1998), and essentially no anti-state violence—a hide-and-bribe equilibrium that approached the “state-sponsored protection” ideal type identified in the model. Unlike “coerced peace”, in which officials would face punitive violence if they actually enforced the law (best exemplified by Pablo Escobar’s Medellín), cartels under the *pax priista* responded to rare enforcement with non-violent, evasive strategies. A key example was the 1989 surprise arrest of Miguel Ángel Félix Gallardo, undisputed “Godfather” of the then-hegemonic Guadalajara Cartel, allegedly during a bribe-negotiation meeting with his police protector; Gallardo responded with neither resistance nor posterior reprisals (Osorno 2009, 184, 216, Valdés 2013, 206-8).

The model reveals several necessary conditions for sustained state-sponsored protection. First, enforcers must face little or no sanction for bribe-taking, surely the case here since the protection racket was official state policy. Second, enforcers’ uncertainty over the size of profits must not be too large;³⁸ intriguingly, mechanisms to reduce such information asymmetries appear to have existed. Lupsha (1991, 50), quoting U.S. grand-jury testimony, offers a vivid example “once the processed marijuana [from the Rancho Búfalo plantation] arrived at the warehouse it was weighed in the presence of the various police agencies to be paid off. [...] After weighing, the payoffs were made in U.S. dollars; \$ 12.00 a pound to the [Mexican Federal Judicial Police], and \$17.00 a pound to the Rural State police.” Federal agents were permanently stationed in Chihuahua to monitor the group.

The model suggests that this regime also required both high repressive capacity (s) and high conditionality (c): the state must wield enough force to extract large bribes, while maintaining enough in reserve to dissuade traffickers from bribe-reducing violence. Such accumulation of and control over repressive capacity was made possible by the PRI’s political hegemony (Valdés 2013).

³⁸Formally, these two conditions are captured by the inequality $\lambda < b(2\bar{y} - \bar{y})$; that is, the sanction to bribe taking (λ) must be smaller than the interdiction rate (b) times $2\bar{y} - \bar{y}$, which is positive only when enforcers’ uncertainty is small relative to average profits.

One-party rule rendered moot the fragmentation of Mexico's federalist security institutions—as traffickers' turf grew, the locus of state control moved fluidly from local to state to the national level (Lupsha 1991, 44). Conversely, DFS's extinction in the wake of corruption scandals in 1985 (Grayson 2010, 138) presaged the end of the *pax priista*, as the PRI began to lose local and state elections, then control of Congress, and, finally, in 2000, the presidency. As PRI hegemony collapsed, institutional fragmentation came to the fore (Astorga 2001); with different parties controlling municipal, state, and federal enforcers, conditionality became less feasible. This mechanism may underly recent empirical findings that democratization—measured as political competition—drives violence in Mexico (Dube et al. 2013; Durán-Martínez 2012; Osorio 2012).

This period also saw the outbreak of severe turf war among cartels (Snyder and Durán Martínez 2009). The Gulf cartel and its private militia of rogue military officers, later christened 'Los Zetas', clashed with the Sinaloa cartel in Nuevo Laredo between 2004 and 2005, triggering deployment of federal forces and the first sporadic cartel-state clashes (Grillo 2011, 103-105). Nonetheless, it was not until Calderón's wholesale crackdown in 2006 that cartel-state conflict in Mexico truly erupted.

Claim #2: Calderón's crackdown intentionally reduced conditionality further.

Any crackdown would have been somewhat unconditional due to the institutional reasons discussed, but Calderón's approach was unconditional by design, in two key senses. First, Calderón conducted a highly public 'war' that he insisted would be impartial, with repression falling on all cartels equally. Second, his "kingpin" strategy of fragmenting cartels involved distributing high-value targets to different federal security agencies; this both solved and exacerbated the political problem of competition among security institutions, making coordinated, conditional repression in proportion to cartel violence all but impossible.

Both decisions flowed from the political conditions Calderón faced upon election in 2006, besting leftist mayor of Mexico City Andres Manuel López Obrador by the slimmest of margins (0.58%, just 240,000 votes). López Obrador, invoking the scandalous 1988 election-night fraud that had robbed his party of the presidency, declared the 2006 result invalid, mobilized a months-long occupation of Mexico City's *zocalo*, and called for a parallel cabinet to serve in protest. Calderón's

inauguration was marred by a brawl on the floor of Congress and a hasty exit.

The details are colorful, but Calderón's position was truly precarious. Taking on the cartels was, in part, a response to increasing drug violence and calls from beleaguered governors for reinforcements.³⁹ But it was also a political bet, influenced by Colombia's conservative president Álvaro Uribe. By garnering overwhelming support after improving security through an intense crackdown on Colombia's guerillas, Uribe showed that reducing violence was one, if not *the*, path to mass popularity for the right in Latin America. Calderón visited Bogotá in October 2006 while still president-elect; after a two-hour private talk with Uribe, and a joint staff meeting “dedicated exclusively to reviewing the Colombian model of combatting the drug trade”, particularly the role of the army (Albarrán 2012, 44), Calderón declared that, inspired by Colombia, he would prioritize a militarized fight against his nation's cartels (Jiménez 2015). Days after taking office, Calderón sent his top security officials to meet with Uribe, learn from Colombia's experience, and reactivate a high-level contact group (Bailey 2009; Pérez-Plá 2007).

The Colombian experience influenced both Calderón's grand strategy and his tactical decision to target kingpins and fracture the cartels—an approach that further reduced conditionality. Conventional wisdom held that cartel-state conflict in Colombia ended in 1993 because the dominant cartels had been decapitated, and the remaining splinter organizations lacked the firepower to challenge state authority; Mexico could learn from and reproduce such a “victory” (Bonner 2010). Meanwhile, top Colombian anti-narcotics officials advised Calderón to net some “big fish” quickly, to demonstrate capacity and win public support.⁴⁰ Targets were thus distributed among agencies—army, navy, federal police, etc.—producing competition for high-profile busts rather than coordinated, responsive state action.⁴¹ Fallen kingpins became trophies for rivalrous agencies; operational decisions were often taken autonomously from the presidency,⁴² and intelligence was often acted on immediately for fear of leaks or even inter-agency poaching (Felbab-Brown 2009).

³⁹Interview, former Calderón spokesman, February 23, 2013.

⁴⁰Interview, DEA Bogotá station chief, February 23, 2013.

⁴¹Interview, National Security and Intelligence Center (CISEN) officer, September 28, 2010.

⁴²Interview, Director, National Security Council Technical Secretariat, October 22, 2010.

This unconditional operational approach was consistent with Calderón's martial rhetoric—such as the oft-repeated phrase “no truce and no quarter”—which both tied his own hands and signalled that he would fight all cartels equally and maximally (Guerrero 2011, 89). Impartiality was critical to the legitimacy of Calderón's war: his predecessor Vicente Fox's anti-cartel crackdowns were rumored to have been a deliberate boon to the Sinaloa cartel (Grillo 2011, 93). Calderón faced similar accusations, not only on countless ‘narco-banners’, but in journalistic investigations whose conclusions the administration vehemently denied, insisting (again) that cartels were being “attacked in a manner proportional to their size” (Burnett et al. 2010). Thus, in the government's actions and its rhetoric, conditionality was the baby thrown out with the bath-water of corruption: traffickers could not expect to reduce their exposure to repression by eschewing violence.

This appears to have changed somewhat toward the end of Calderón's presidency. As early as 2010, intelligence officers advocated for a targeted approach (Valdés and Hope 2013), though military leaders were initially resistant.⁴³ In 2011, several sources reported an explicit government decision to target the Zetas for being the most brazen and violent cartel (Corchado 2011; Guerrero 2011, 89-90), while a special operation dealt serious blows to the group (Gómora 2011). The presidency, nonetheless, continued to deny and condemn any departure from an unconditional approach:

The federal government does not favor any criminal organization; it weakens them all systematically without distinction (Poiré Romero 2011).

After a gruesome August 2011 massacre by the Zetas that personally infuriated Calderón, the government increased pressure on the group (while still refusing to admit as much),⁴⁴ leading to major captures, including its top leader. Conditionality in-deed-if-not-in-word may have contributed to an important shift in Zeta strategy in 2012: where Zeta narco-banners previously sought to intimidate, they now downplayed Zeta antagonism toward the state, *denied* responsibility for major acts of violence, and expressed sympathy for victims (Corcoran 2011). One captured Zeta leader, at

⁴³Interview, former director, CISEN (2007-2011), September 12, 2013.

⁴⁴Interview, former CISEN senior official (2008-2011), May 17, 2013.

his May 2012 deposition, described ordering his operatives in Veracruz to lay low during a federal intervention to avoid confrontations (*Reforma* 2013), a hallmark of a hiding approach.

These shifts in conditionality are at a higher level of generality than the Rio case, where we have much better information about direct contact between police patrols and traffickers. In the Mexican case it is hard to systematically distinguish the operative logics of anti-state violence. Many state officials, like the army commander quoted earlier, argue that cartels attack state forces on purely defensive grounds, to minimize losses from enforcement. Another common view, put forth prominently by a former CISEN director is that anti-state attacks are largely an artifact of inter-cartel turf war. While far from dispositive, a correlational analysis of official data casts doubt on these explanations. First, the intensity of turf war is a surprisingly poor predictor of cartel-state conflict. Figure ?? presents a panel of monthly cartel-related homicide totals per state from 2007-2011. The data distinguish cartel-cartel homicides (*ejecuciones*) from cartel-state homicides (*enfrentamientos* and *agresiones*). The relationship is weak, and as we focus on times and places with the highest concentration of cartel-state violence, actually becomes negative.⁴⁵

Similarly, crossing homicide data with a panel of data on cocaine seizures gives us some sense of whether simply carrying out repressive activity somewhere necessarily leads cartels to fight back. Neither relationship is terribly strong, though eradication efforts are better correlated with turf war than cartel-state conflict. While it *could* be the case that anti-state violence is so effective at reducing the loss to enforcement that we see only a very weak correlation, a more plausible explanation is that anti-state violence deters *attempts* at enforcement, as per the violent corruption hypothesis.

5 Conclusion

Cartel-state conflict is both an intellectual puzzle and an extremely pressing policy concern. Canonical theories of conflict do not fit its basic contours, and real-world leaders have been surprised when militarized interventions failed to curb, and sometimes worsened, drug violence. This paper

⁴⁵A slightly stronger but hardly robust relationship holds among the middle half of observations ($R^2 = 0.28$). Of course, from a normative perspective, it is precisely the outliers at the top of the distribution we care most about.

makes three contributions. First, it conceptually delineates and formally models one key logic that drives cartels to attack the state, *violent corruption*, providing a rigorous framework for analyzing the effects of policy interventions. Second, it identifies an under-studied dimension of policy, *conditionality of repression*, as a critical explanatory variable. Finally, it applies this framework to two prominent cases, accounting for extremely divergent responses to militarized crackdowns.

I have thus far avoided normative conclusions. Ultimately, states and societies face hard trade-offs between three bad outcomes—drug trafficking, bribery, and violence—in addition to the costs of repression and incarceration. The analysis here suggests that violence, at least, could be drastically reduced, albeit at the price of going relatively easier on non-violent traffickers. Rio de Janeiro’s leaders took such a bargain; one hopes that other leaders—observing Pacification’s success in assuaging a bloody and seemingly endless conflict—would take it too.

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