Killing in the Slums: Social Order, Criminal Governance, and Police Violence in Rio de Janeiro

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Abstract

State interventions against drug trafficking organizations (DTOs) sometimes work to improve security, but often exacerbate violence. To understand why, this paper offers a theory about different social order dynamics among five types of criminal regimes – Insurgent, Bandit, Symbiotic, Predatory, and Anarchic. These differ according to whether criminal groups confront or collude with state actors; predate or cooperate with the community; and hold a monopoly or contest territory with rival DTOs. Police interventions in these criminal orders pose different challenges and are associated with markedly different local security outcomes. Evidence for the theory is provided by the use a multi-method research design combining quasi-experimental statistical analyses, extensive qualitative research and a large N survey in the context of Rio de Janeiro’s “Pacifying Police Units” (UPPs), which sought to reclaim control of the slums from organized criminal groups.

1 Introduction

Latin America is the most murderous region of the world. To understand the challenges the state confronts to control violence, the paper identifies the mechanisms and processes that allow the police to confront drug trafficking organizations (DTOs) and generate legitimate state order, as well as alternative conditions where police interventions fail, leading violence to escalate. Our paper contributes to various bodies of literature, including
drug trafficking violence, criminal governance, urban crime, policing, and the emergence of state legitimacy. The paper also generates knowledge about one of the most important security interventions in Latin America, Rio de Janeiro’s “Pacifying Police Units” (UPPs). The UPP sought to reclaim territorial control of the slums (favelas), controlled by drug syndicates and paramilitary groups.

The criminal underworld is far more complex than a distinction between ”stationary” versus ”roving bandits” (Olson, 1993). Our theory distinguishes among various forms of criminal governance that differ according to whether criminal groups collaborate or abuse the community; confront or bargain with the state; and contest territory or have monopoly control. The theory builds and expands a body of work on armed group governance (Popkin, 1979; Kalyvas, 2006; Metelits, 2009; Mampilly, 2011; Staniland, 2012; Arjona, 2017; Gambetta, 1996; Arias, 2017).

Existing literature has argued that state crackdowns on DTOs often exacerbate violence, drive displacement of crime, and DTO-DTO fights (Snyder and Duran-Martinez, 2009; Dell, 2015; Rios, 2015; Castillo et al., 2013; Calderón et al., 2015; Phillips, 2015; Lessing, 2015; Osorio, 2015; Durán-Martínez, 2015; Trejo and Ley, 2018). These contributions fail to explain why interventions are effective in some territories and escalate violence in others. Our paper uncovers formerly under-theorized heterogeneous consequences of police interventions. The UPP, we demonstrate, produced significant improvements in local security in some favelas and exacerbated violence in others. To understand why, our theory proposes to look into the micro-logics of criminal rule.

In territories where rival DTOs hold contested control – what we refer to as Anarchical criminal orders– our theory suggests that often only the police can bring a solution to the Hobbesian state of anarchy where life is “solitary, poor, nasty, brutish, and short.” By contrast, where criminal groups monopolize territorial control, the nature of the criminal order varies, on the one hand, depending on whether they establish cooperative or non-cooperative relationships with the community, and on whether they confront the state violently or collude with it. Where criminal groups cooperate with the community,
they often provide a form of local governance, much like rebel groups do (Popkin 1979; Mampilly 2011; Arjona 2017; Arias 2017). Under these conditions, drug lords can play the role of social order providers by sanctioning local criminals and offering ways to resolve conflicts. In this type of criminal order, state crackdowns undermine the criminal governance that is often critical to keep violent criminals at bay and might propagate criminal activity throughout the community. Disorganized crime can be worse for the population than organized crime, especially when the state has weak command of its security apparatus and the police has no legitimacy among the community. By contrast, where criminal groups hold monopoly control of a territory but establish a form of local governance that is predatory, either victimizing residents with ruthless governance methods or extracting rents from them, the paper demonstrates that state crackdowns can improve local security, much like police interventions in contested territories can.

Criminal groups also differ according to whether they collude or confront the state. These strategies are often driven by differing organizational and leadership styles, as well as long-term patterns of interaction with the police. Following Barnes (2017), we distinguish between criminal groups that emphasize violent confrontation, enforcement evasion or integration with the state. The paper demonstrates that police interventions vis-a-vis criminal groups that emphasize violence are more likely to produce armed confrontations with the police and killings of innocent civilians, which will likely work to undermine community acceptance of the police.

The paper contributes to an important policy debate about policing strategies in Latin America. Proponents of ”Iron Fist” strategies argue that heavy-handed tactics, including so-called “militarized” policing, are often necessary to enhance public safety. Opponents of militarized policing argue that it increases human rights violations and undermines community trust in the police. Throughout the region, Community-Oriented Policing (COP) reforms that aim to improve relations with the community have emerged as an alternative (Frühling 2007; Riccio et al. 2013; Moncada 2013b,a; Arias and Ungar 2009). The UPP corresponds to these types of police reforms. To our knowledge, this
is the first paper to provide credibly causal statistical evidence about the public safety consequences of COP relative to militarized strategies in the Latin American context.

Moreover, our paper generates knowledge about police legitimacy. An important body of research has established that police legitimacy depends on the perceived *fairness* of police officers’ behavior ([Tyler, 1988] [Tyler and Huo, 2002] [Hough et al., 2010]). This body of work emerges from policing scholarship conducted in the United States and Europe, where security conditions are different. This paper demonstrates that where people feel safer under the rule of drug lords than with the police, the state might have a difficult time gaining legitimacy. By contrast, where drug lords rule with ruthless governance methods or where they constantly fight turf wars, police are more likely to gain community acceptance.

This paper also speaks to work on non-state provision of public goods. In developing world contexts, non-state actors such as faith-based organizations, community-based organizations, family networks, and informal brokers might surpass the performance of weak, inefficient, or corrupt states ([Cammett and MacLean, 2014]). Our paper demonstrates the conditions under which criminal groups, paradoxically, provide security and where these spread violence.

Empirically, we use a multi-method design combining qualitative research, quasi-experimental analysis, and a large-N survey in favelas that were selected according to the criminal order typology. The dependent variable is success or failure to regain territorial control. The paper focuses on three quantifiable outcomes: 1) reductions of armed confrontations between DTOs and the police, proxied with killings by police and officers killed; 2) improvements in local security measured common crime indicators; and 3) community acceptance of the UPP measured with our survey.

Drawing on our qualitative research, the paper first provides evidence of the micrologics of the various types of criminal governance through the use of case studies. Second, we provide evidence of the effects of the COP policing strategy, relative to the militarized one, contrasting treated and non-treated favelas. Through generalized difference-
in-differences (DID), we demonstrate that the UPP reduced killings by the police by 45 percent, revealing an important benefit of the COP approach over the militarized one in terms of reductions of state-DTO armed confrontations and police violence. Nonetheless, these results reveal that the UPP had no discernible effects on homicides.

The paper subsequently explores the heterogeneous effects of the UPP focusing on treated favelas. This requires classifying these according to our criminal order typology. We rely on intelligence information the Military Police provided on territorial control prior to "pacification", which we confirm using automated text analysis of thousands of anonymous tips collected by an independent Brazilian NGO, Disque Denuncia. Through a series of DID statistical models, the paper demonstrates that in Anarchic criminal orders, where DTOs contest territory, the UPP reduced homicide rates by ending enduring turf wars. In Bandit orders where DTOs establish territorial control through ruthless governance methods, the UPP reduced homicides. In Predatory criminal orders, where criminal groups establish monopoly control to extract rents from the community, the UPP reduced extortion and burglary. The positive results in these criminal orders correspond to about sixty percent of the population intervened.

By contrast, in places where DTOs had established a collaborative relationship with the community under monopoly control, the intervention increased violence and crime. In Symbiotic criminal orders where DTOs establish collaborative relationships with the community and the state, the UPP produced substantial increases in common crime, including homicide. In Insurgent criminal orders, where DTOs cooperate with the community and confront the state violently, the COP strategy had the paradoxical result of increasing armed confrontations, turning these territories into war zones. These criminal orders constitute around 40% of the population covered and include some of the most visible favelas.

Lastly, using survey data we demonstrate that, as predicted by our theory, where residents felt safer under the rule of DTOs than with the police, the UPP lacks legitimacy. By contrast, where local security improved with the UPP, there is higher community
acceptance of the police. Moreover, those who were directly victimized by UPP officers through aggressive policing strategies prefer the UPP to leave their favelas and live under the drug lords. Our results underscore that police are the armed wing of the state that can become a source of violence rather than an instrument to control crime if not properly constrained.

2 The Case of Rio de Janeiro

Due to Brazil’s vast land borders with all three major production sources of cocaine – Colombia, Peru, and Bolivia – the country is an important transit point for drug smuggling to Europe. In addition, drug syndicates focus on internal markets. Cocaine consumption in Brazil has more than doubled since 2005 (Miraglia, 2015).

Three main drug factions compete for control of Rio’s favelas: Comando Vermelho (CV), Amigos dos Amigos (ADA), and Terceiro Comando (TC). In reaction to the prevalence of drug syndicates, vigilante groups or militias also emerged. Militias levy security taxes on inhabitants and businesses, and charge for services such as water, gas, etc. (Cano, 2013). The Military Police engaged in periodic “invasions” of the slums, relying on specialized battalions such as the Battalion of Special Operations (BOPE), trained in urban warfare, as well as tactical teams operating within the regular territorial battalions. The militarized policing strategy produced exorbitant levels of police fatal shootings. Police have killed more than 13,000 people in the state between 2003 and 2017, including 1,127 in 2017. The police has justified these killings on the grounds of legitimate defense or “resistance to arrest” (Auto de Resistência) and the judiciary never investigates or sanctions them (Brinks, 2007). Killings by the police are endorsed by larger society. According to a national survey collected in 2015, more than 50% of the Brazilian population agrees with the common phrase, “Bandido bom é bandido morto” (A good criminal is a dead criminal).[1]

[1]The survey was collected by Forum de Segurança Pública.
In anticipation of the 2014 World Cup and the 2016 Olympics, the state instituted the UPPs, whose mission was to regain control of territory from drug syndicates. Young officers were assigned to the UPP. The basic idea was that these would come with a fresh mentality, not socialized in the traditional militaristic approach. Training included principles of human rights and proximity-oriented policing. The UPP was inspired by notions of community-oriented policing (COP) in the sense of continuous patrols and proactive policing. The aim was to establish a more “proximate” relationship with favela residents and reduce armed confrontations. The way these concepts were implemented varied significantly from unit to unit according to the leadership styles of the commanders. Commanders would use varying strategies, including the provision of services such as soccer and karate classes for kids and the youth. Others would assign officers to engage in conflict resolution, mostly arbitrating fights among neighbors over use of space, garbage disposal, noise, etc. Most of them would hold meetings with the community to discuss about security conditions. These strategies broadly correspond to COP in the sense that the approach was meant to develop a more proximate relationship with the community (Frühling, 2007). The intervention entailed an initial pre-announced “invasion” by special operation units, including BOPE and sometimes the armed forces. After some months of ”stabilization”, UPP police officers were permanently assigned. In many occupied favelas, drug traffickers would flee. Some of these criminals would relocate to other areas of Rio.

The program began in 2008 in Santa Marta and gradually expanded to over 150 favelas. Table A1 in the Online Appendix shows the chronology of the interventions. The first stage of the ”pacification” included many of the favelas of the South zone next to the upper class neighborhoods of Ipanema, Leblon and Copacabana, as well as favelas near the Maracana stadium. The intervention in Complexo do Alemão – CV’s headquarters – marked the beginning of the second stage of the ”pacification”. The Armed Forces occupied Alemão for over 9 months until eight UPPs were installed in mid-2012. The

\[ \text{The UPP is not a COP approach in the sense of involvement of community members into policing.} \]
large favela of Rocinha, the heart of ADA, was occupied in 2012. The intervention and arrest of Rocinha’s drug lord occurred without firing a bullet. However, in the summer of 2013 a resident of Rocinha, Amarildo de Souza, was beaten and tortured by UPP police officers. He eventually died. The Amarildo scandal not only disrupted the “pacification” in Rocinha, but seriously damaged the legitimacy of the UPP among the wider public.

The occupation of Complexo de Maré – a large area in the North of Rio – by the armed forces marks the end of the “pacification.” The Brazilian Army occupied Maré from April of 2014 to June of 2015. The aim was to establish secure conditions for the implementation of the UPP, but that never took place. The UPP was not accompanied by an expansion of infrastructure and social welfare programs. For a couple of years there was a so-called UPP social, but money soon dried out and the police was left alone to deal with a complex socio-economic problem. For the most part, Rio’s security policies have corresponded to what Moncada (2013a) describes as a reactive approach to crime based
on short-term coercive measures that are seldom accompanied by urban development projects.

During the period, the security situation was improving, as can be seen in Figure 1. Between 2008 and 2013, killings by the police decreased by more than 68% and homicides by 40%. After 2013, police lethal violence started to increase, by 2017 reaching 1127 deaths in the state and 527 in the capital alone, almost as high as pre-reform levels. The number of police death also decreased from 43 officers in 2003, to 7 in 2011. But since that year this number has gone up to a total of 38 police officers dead in 2016.

3 Types of criminal orders

Our theory builds on years of fieldwork that began in 2012 and included more than a hundred interviews and numerous focus groups both with police officers and residents of treated and non-treated favelas, as well as a large N community survey. Building on this fieldwork and the literature on civil wars (Popkin, 1979; Kalyvas, 2006; Mampilly, 2011; Staniland, 2012; Arjona, 2017) and organized crime (Gambetta, 1996; Snyder and Duran-Martinez, 2009; Arias, 2017; Moncada, 2013a,b; Lessing, 2015; Barnes, 2017; Magaloni et al., 2017; Trejo and Ley, 2018; Durán-Martínez, 2015; Osorio, 2015), we argue that DTOs establish different types of social orders in the territories they seek to control. We distinguish between criminal orders according to: i. degree of territorial control; ii. patterns of interaction between DTOs and the state; and iii. type of relationship with the community.

3.1 Territorial control

DTOs don’t aim to overtake the state or secede but they seek territorial control. Territorial control allows DTOs to carve a safe space where they can hide from the state

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A detailed explanation of our seven-year-long fieldwork is provided in the Online Appendix section A2.
and their DTO rivals. It also allows them to extract resources from the drug trade and other illicit activities. DTOs seek control of territories that are valuable. The value of the territory is related to its suitability for drug production, processing, transportation, smuggling, and distribution (Calderón et al., 2015; Osorio, 2015). In the case of Rio, favelas near consumers markets of the South Zone are particularly valuable. Other favelas are strategic due to their closeness to the main port of Rio, where drugs are sent to Europe. Yet others are important because they are in the trafficking corridors where the bulk of the drugs and weapons arrive to the city.

Because conflicts over illicit activities cannot be resolved through a formal system of justice, DTOs aspire to keep monopolistic control. A first central factor determining the nature of criminal orders relates to whether criminal groups contest territory with their rivals or have monopoly control. Rio’s drug lords are called *Donos do Morro*—rulers of the hill. Establishing successful governance requires that the organization be able to sustain monopoly control of a territory, keep its armed men under control, and have a good relationship with the community. Under monopolistic control, time horizons lengthen and DTOs are more likely to invest in governance because they can be more confident of reaping future gains of cooperation (Olson, 1993; Kalyvas, 2006; Metelits, 2009; Mampilly, 2011; Arjona, 2017; Felbab-Brown et al., 2017; Arias, 2017; Magaloni et al., 2017).

### 3.2 Relationships with the state

DTOs vary in the way they interact with the state, from ”active partnership to mutual tolerance to violent discord” (Moncada, 2013b, 229). In the case of Rio, we follow Barnes (2017) to distinguish three types of criminal organizations in how they relate to the state: CV primary emphasizing *violent confrontation*, ADA with a strategy of *enforcement evasion*, and Rio’s paramilitary groups with a strategy of *integration* with the state.

These strategies are driven by DTO’s differing organizational styles and criminal
“ideologies” or street codes. CV emerged in a prison South of Rio, where the military regime imprisoned some of the most violent criminals next to political prisoners. When the criminals returned to the streets, they were using social justice to justify their criminal activities, with ideals of “peace, justice, and liberty”. They also came out with unique notions of hierarchy, organization, armed tactics, and an anti-state ideology. CV is known for offering money to assassinate police officers. On many occasions, CV has paralyzed the city, setting off bombs, burning buses and blowing up buildings of the Military Police. These strategies correspond to what Lessing characterizes as “violent lobbying”. ADA emphasizes corruption over violence. Although violence remains an indisputable tool, ADA’s primary focus is on success through commerce. ADA was also born inside the prison, where a famous drug lord, Uê, the founder and leader of TC, and Celsinho from Vila Vitém, joined forces to form a new criminal faction aimed at undermining CV’s dominance and becoming the main supplier of drugs in Rio. ADA rapidly gained high adhesion from traffickers, following a non-confrontational approach with the state and strategies of “hiding and bribing”.

Rio’s militias collaborate closely with the state. Formed by former police officers, prison guards, and firemen, the militias originally emerged as vigilante groups. Since 2000 the militias have expanded from a few isolated favelas to dominate hundreds of communities throughout the city, frequently expelling drug traffickers in the process. They seize territory to extract resources from inhabitants, levying security taxes and charging for local public services. Militias use their territorial control to gain voting constituencies and select politicians into the government.

We were told in interviews with favela residents that a drug lord in Alemão, Tota, would offer 3,000 reais for each police officer injured and 5,000 for each officer killed.
3.3 Community relations

Drug gangs don’t derive their profits from preying on the community but from the drug business. Because they produce, process, transport and sell drugs clandestinely, at a minimum, they require that the population not volunteer information to the police. DTOs also require more active collaboration to prevent rival gangs from invading their turfs. In Rio’s favelas, drug lords hire *fogueteiros*, who are normally located at strategic entry points. But they also resort to community informants to serve as the ”eyes and ears” of the criminals, alerting them of any suspicious activity. As is the case with armed rebels, pure coercion might be insufficient to entice the community to collaborate with DTOs (Kalyvas, 2006; Arjona, 2017; Mampilly, 2011; Staniland, 2012), and it might even be counter-productive, pushing residents to organize an armed resistance (Kalyvas, 2015), or to seek alliances with their gang rivals or the police.

To gain community collaboration, Rio’s drug lords often provide assistance in the form of foodstuffs, medicines, and loans. Second, they also regulate basic routines, such as who can access the favelas, and business activities – for example, permits for the moto-taxis, street vendors and food stands. Third, the most important function of governance drug lords provide is the *tribunal do tráfico*, a system of retaliatory justice. Traffickers punish criminal offenses, including domestic violence, through beatings, house arrests and even expulsion from the community. In a vivid description of the system of gang justice, a resident described how drug lords would execute thieves and exhibit their bodies in front of everyone (Sousa Silva, 2012). The informal system of justice is swift and effective, even if at times tyrannical (Arias and Rodrigues, 2006).

These governance practices are common throughout Rio’s favelas but the methods vary. A first important factor to consider is the drug lord’s personality. Some drug lords are referred to as ”heroes” but others are more feared because of their tyrannical methods. For example, a famous drug lord affiliated to CV, ”Dudu”, who for a short period in the 1990s ruled Rocinha, was known as a psychopath and notorious rapist (Glenny,
Rocinha residents remember him for his fearful cruelty, but remember other drug lords in that favela such as "Lulu", also from CV, with nostalgia.

Furthermore, the degree of DTO-community collaboration also depends on whether criminals are home-grown or come from other locales. Rio’s drug gangs are mostly composed of criminals with strong communal ties to the favela. Moral codes and a sense of solidarity ties these criminals to their communities. Residents often referred to them as "the boys", reflecting the fact that they grew up with them. Rio’s militias, by contrast, mostly come from outside of the community.

The degree of DTO-community collaboration is also shaped by the strength of the community, as in Arjona (2017) and Arias (2017). Most favelas are tightly knit communities with vibrant social lives (Perlman, 2005). Drug gangs commonly accommodate certain levels of independence of the community and negotiate with its community associations (Arias, 2017). Lulu da Rocinha, for example, established a council to mediate conflicts among his managers and soldiers as well as between the traffickers and the community leaders (Glenny, 2015, 102). Communities in other favelas are less cohesive. Interestingly, Rio’s militias have expanded toward the North and Northwest of the city. These communities were formed by more recent migration patterns and tend to be less cohesive.

There is a large variation on drug lords’ personalities and community cohesiveness in Rio’s favelas. Our theory emphasizes two more general aspects related to criminal organization and the strength of the leadership that influence how drug lords rule. A first regularity we underscore is that DTOs that emphasize violent confrontation with the state are likely to have a harder time restraining their armed men than DTOs that emphasize corruption and bribes. Criminals are not only motivated by greed and profits. They seek prestige and power within their organizations. The most successful drug lords within CV have hundreds of armed men under their command and carry out invasions to expand CV’s territories. These ”criminal warriors” are promoted to high ranked positions, including controlling favelas inside CV’s headquarters. By contrast, ADA values criminals
who are more capable of negotiating protection rackets with the police. Criminal warriors serve the DTO well for fighting, but when it comes to governing they have to be put aside, or at least strictly controlled.

Second, we emphasize the importance of a strong DTO leadership for disciplining criminal warriors. Without a strong leadership to control them, drug lords can be more unpredictable, capricious, and violent. An indisputable leader ”Marcinho-VP” has run CV from prison since the 1990s. He closely monitors a handful of drug capos to oversee general operations within the organization. Because of the importance of Alemão and its status as the headquarter of CV, Marcinho-VP has established processes to hold local drug lords accountable to him to ensure that he keeps men in the highest hierarchy of the organization controlled. However, CV allows a higher level of independence to drug lords from the favelas outside of Alemão. Despite the freedom to operate at their discretion, these drug lords unquestionably obey orders from Marcinho-VP. Generally, these orders are strategic and about the organization as a whole and less focused on daily operations or a drug lord’s management style of his favela. Marcinho-VP, who makes the last call in strategic matters for the organization, would sometimes eliminate local lords that are ”beloved” in their favelas to promote more trusted associates. The observable implication is that CV drug lords outside Alemão, with more independence from the central leadership, are more likely to be capricious and violent in their relationship with the community than drug lords inside Alemão.

3.4 Mapping criminal governance

These three dimensions produce five types of criminal rule, as illustrated in Figure 2. Insurgent and Bandit rulers emphasize violent confrontation in their strategies vis-a-vis the state but differ in how they interact with the community, the former under a stricter control by the criminal organization and the latter more loosely controlled. Symbiotic and Predatory criminal rulers expand their illicit activities emphasizing bargaining with
the state, but differ in how they relate to the community. Symbiotic rulers conduct their illicit activities without extracting profits from residents, while Predatory rulers extract rents from businesses and residents. The main difference between Symbiotic and Predatory criminal rule is not whether the group traffics drugs or not but how they relate to the community. In fact, Rio’s militias have increasingly become involved in drug trafficking. Moreover, although DTO derive most of their profits from drugs, sometimes these diversity to other illicit activities to extract resources from the community, turning into Predatory criminal groups. Lastly, in Anarchic criminal orders various DTOs contest territory.  

The following section discusses how each of these criminal orders are empirically validated in the case of Rio. The discussion draws on our qualitative fieldwork as well as the rich literature on criminal organizations in the favelas.

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5The term draws from Waltz (1967), whose theory established that where there is no monopoly of violence, an anarchic order enforced through mutual threats of violence emerges.
4 Evidence through case studies

4.1 Symbiotic Criminal Order

Rocinha is the largest favela of Brazil of more than 120,000 inhabitants. Located in the South Zone, this is one of Rio’s most valuable territories. In the past, the favela was controlled by CV until its leader was killed in 2004. After a intense power dispute, Nem assumed control and established peace forming an alliance with the rival drug faction, ADA. Nem ruled Rocinha until 2012, when the UPP was installed. The intervention in Rocinha occurred without the police firing a weapon.

In a fascinating journalistic account of Nem’s life, Glenny (2015) describes what the trafficker learned of how a drug lord leads a successful enterprise: ”There are three pillars upon which a effective leader builds his dominance: reputation within the community; acceptability to the local police; and authority within his organization” (p. 167). The trafficker believed that controlling his soldiers -young men with high levels of testosterone and eager to display muscle- was one of the biggest challenges of being a successful drug trafficker. The drug lord also wanted to maintain a good reputation with the community.

Nem had an army of police officers at his service. He hired police to train his men and directly assist with armed invasions. Police would lend him automatic weapons and transport criminals in their vehicles. Nem would also infiltrate the police to obtain information about impending operations. Additionally, Nem was famous for having on his payroll judges, prosecutors and members of the Civil Police, in charge of investigations.

Police interventions in Symbiotic criminal orders are likely to confront significant resistance from actors within the state. The association with traffickers in Rocinha had provided large amounts of money to state agents and police officers. When Rocinha was ”pacified”, a BOPE trained major assumed the UPP’s command and was cutting off the

\*\*\*From automated text analysis from Disque Denuncia complains. See Online Appendix section A3 and A4 for an explanation.\*\*\*
trafficker’s business. One interpretation of the *Amarildo* scandal is that police officers working in association with drug traffickers framed the UPP commander. Although their intention was to undermine the UPP in Rocinha, the scandal had a major impact in undermining the legitimacy of the UPP among the broader public. In an interview with one of the General Commanders of the UPP, we learned that there was suspicion that many offices were on the payroll of the traffickers and would simply refuse to patrol the streets.

The UPP came to break the peace that Nem had established. Residents systematically complained of the proliferation of disorder, with thieves, rapists, robbers, and in general drug traffickers responding to no drug lord roaming the streets. Moreover, armed confrontations between rival criminal groups inside Rocinha became frequent. With nobody in command, the favela became vulnerable to invasions by rival drug factions, especially CV. After a long and bloody battle that terrorized the community, by 2018 apparently CV was able to reestablish control. A resident lamented: “There a bullets flying everywhere. Before the UPP all you needed to do is avoid certain streets. Now nowhere is safe.”

### 4.2 Insurgent criminal order

Complexo do Alemão is a complex of 23 favelas with a population around 180,000. The history of betrayals and wars that took place within CV in Alemão led to the formation of ADA and TC. Despite these battles, “Marcinho-VP” established himself as the absolute drug lord, ruling Alemão since the 1990s from prison. He ordered the majority of the attacks that set off bombs, burned buses, and destroyed building of the police. In 2007, an unprecedented “war” operation involving the police, the army, and the navy took place in Alemão leaving many dead. During the 2007 Pan-American games Alemão was considered under siege.

Despite constant confrontations with the state, CV was able to insulate the commu-
nity from state violence. Residents reported that police would seldom enter; when they did, sirens would sound so everyone could hide. “Marcinho-VP” was able to keep drug traffickers inside Alemão under control. A resident who lived in front of one of the *bocas de fumo*[^footnote] reported that everyday he would see hundreds of drug traffickers but he ”felt safe because the traffickers never did anything to us”. The traffickers were also providers of social order, punishing thieves and criminals. They also delivered social welfare in the form of health, cash, and even food. A woman explained: ”If the resident got sick, needed medication and couldn’t afford the medicine, they would take the prescription to the *boca de fumo* and they [the traffickers] would buy it.”

In contrast to the peaceful ”invasion” of Rocinha, the intervention in Alemão resembled a military operation, where a critical challenge was to enter the territory. In November 2010, Alemão was occupied by a force of 1,200 military police, 400 civilian police, 300 federal police and 800 members of the Brazilian army. The Brazilian army occupied Alemão for around 14 months until the corresponding eight UPPs were introduced in mid-2012. The invasion of Alemão was not part of the original plan, but it was triggered by another terrorist attack in mid-November 2010. (Beltrame, 2014). COP strategies are hardly viable in this type of criminal order. Police officers are too vulnerable in the terrain. Some of the first police officers to ever die in a UPP assignment were killed in Alemão at the end of 2012. In an interview with the General UPP Commander we learned that the assassination of those police officers had convinced the Military Police that they needed to deploy better trained police officers to the UPPs, including BOPEs. Violent confrontations between CV and the police soon escalated, turning the territory into a war zone. A commander of one of the UPPs in Alemão explained: ”traffickers use war strategies against us. They ambush us to kill us .... everything is allowed for them in this war. Instead, are we supposed to follow rules?” Not surprisingly, the COP strategy made residents feel more exposed to police lethal violence than before the UPP was installed. A resident lamented: ”We can’t rest knowing that at any given moment, a

[^footnote]: *Boca de fumo*, smoke hole, is where traffickers conduct their operations.
war may explode or that a police officer can kill our sons”. Additional, the “pacification” caused an increase in common crime inside Alemão. A woman vibrantly explained:

Before the UPP, people wouldn’t just go around sticking knives to each other because the bandits would have killed them. The bandit needs to be present to avoid fights amongst residents, to prevent robberies inside the favela, to prevent rape, ...

4.3 Bandit rule

As the first favela of Rio, Providência has roots dating back to the late nineteenth-century, when free slaves and survivors of the Canudos war first settled there. CV controls the area since the 1980s. Our argument is that CV drug lords outside of Alemão are likely to establish a more capricious governance because they lack the same level of control and supervision Marcinho-VP has over drug lords in Alemão. These CV drug lords are also more vulnerable to invasions from rival gangs or the police because they don’t have the same military capacity as drug lords in Alemão. Their higher vulnerability often makes them excessively suspicious.

The most common complaints by residents living under a Bandit order include: i) display of violence that is intimidating; ii) the enactment of excessively cruel decisions in the ”drug lord’s tribunal”; and iii) sometimes they murder residents in cold blood on mere suspicions. Our informants shared some of the following examples:

Not long ago, there was a 17-year-old boy playing all day. After the traffickers found out that the boy was from a favela that belonged to ADA, they cut his ear. They put the ear inside a jar and made the boy walk with it through the Estação Central. A 7 year old boy brought the knife for the traffickers to cut the ear.

Other residents reported that the traffickers would ”burn residents alive” if they suspected they were spies. A woman explained how things had improved with the UPP: ”Before
there were sinister scenes at the *boca de fumo* in front of my house, many bodies lying dead there and the bodies being removed. These things no longer happen.”

### 4.4 Predatory criminal order

Batan is a neighborhood located in the West of Rio. The territory was heavily contested between ADA and TC. Residents report that during that period, there were high levels of violence towards residents, such as beatings, murders and home evictions. The patterns of abuse changed when the militias took control. The militias began to kill anyone involved with drug traffickers, often using cruel methods. A young man in Batan explained:

> A boy was involved with the traffic, using drugs and doing sh... He was caught by the militia. Then they took him, beat him, and tied him to a pole for everyone to see. The boy died, he was with no food or water for several days.

These summary execution groups started to emerge in the 1980s to "liberate" communities from the drug gangs. But militias’ main goal is to establish territorial control in order to extract resources from local economic activity and residents, regulating businesses, land distribution, and real estate (Arias, 2017). Moreover, militias charge heavy taxes not only for security but for services such as water, gas, etc. A young person in Batan told us:

> You are buying bread in the local store and the milita arrives and says 'where is the money?'. They come with ski masks, a black polo, silver or gold necklace to collect their money. The gas now costs 50 reais instead of 30 because the militia only allows one resident to sell it.

Militias are also involved in the business of arms trafficking, kidnapping, "Jogo do Bicho", nickel machines, and increasingly drug trafficking (Cano, 2013). The militias have become a mayor threat to public security, but because of their close association with the police,
they can rule their territories with little interference. Proponents of the militias argue that, without the extermination group, local communities would be more vulnerable to crime. In fact, a common view of militias is that they combine local military capacity, local knowledge, and extra-legal violence to enforce order where states cannot (Dube and Naidu 2015; Lyall 2010; Jentzsch et al. 2015).

4.5 Anarchic criminal order

Maré is a large area in the North of Rio, a valuable territory located in the main corridor where drugs and arms arrive to the city. CV and TC compete for control, and militias are also present, subjecting residents to constant violence. As Sousa Silva (2012) explains, frontier is a term residents of contested favelas normally use to refer to the territorial divisions established by the drug factions. Drug lords establish forms of micro-governance within their areas and some of the rules are similar to those in non-contested favelas—e.g., thieves are severely punished, drug lords provide welfare, they resolve conflicts, etc. But those living under the control of one drug gang normally don’t venture into the other side. A resident explained why:

When you don’t know the drug rulers and those persons don’t know you, there is suspicion. To circulate freely you need to know the norms of the territory. If you don’t it creates fear. The frontier is where one community ends and the other begins.

Residents dread invasions from rival gangs because shootouts terrorize everyone. A social activist in Maré explained that schools are regularly locked down because of armed confrontations. Nobody can leave their homes. The violence is significantly more intense near the frontier—some streets are known to locals as ”Gaza Strips.” When a rival gang invades territory, it is not uncommon that criminals evict from their homes or murder residents associated with their gang rivals. These dynamics resonate with contested areas during civil wars (Kalyvas 2006).
There are five negative consequences of living in Anarchic orders: i) residents being unable to circulate freely; ii) communities are permanently divided; iii) higher frequency of shootouts; iv) higher levels of fatalities as a result of gang turf wars, particularly affecting young men; and v) residents might be evicted from their homes and some executed in cold blood when invasions occur.

The police often emerges as the only actor that can end turf wars. One of the most commonly cited reasons to endorse the UPP is that it put an end to armed confrontations and territorial divisions. A man in Cidade de Deus explained:

The power of the traffickers weakened with the UPP. They sell drugs... the trafficking continues. But the UPP really reduced violence ... we don’t see guns anymore, or the barricades the traffickers used to avoid the police.

Cidade de Deus is the other Anarchic territory where we collected interviews. It is a group of favelas and housing complexes built in the 1960s in the West zone. The area was strongly contested between CV and paramilitaries prior the UPP. In contrast to Maré which never received a UPP, one was installed in Cidade de Deus in 2009.

5 Effects of police interventions

Our theory generates testable implications that we evaluate using statistical models. The outcome of police interventions is influenced by the preexisting criminal governance in four fundamental ways: 1) It determines how the state targets its interventions. 2) It shapes whether the intervention works to control common crime or violence escalates. 3) Criminal order influences how DTOs respond to the intervention; 4) Criminal governance and police behavior jointly influence the community acceptance of the police.
Table 1: Descriptive statistics by criminal faction

<table>
<thead>
<tr>
<th>Criminal Faction</th>
<th>Favelas</th>
<th>Estimated Population</th>
<th>Police per 1,000 (after intervention)</th>
<th>% of total favelas</th>
<th>% of total population covered</th>
<th>Mean pop. by UPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADA</td>
<td>11</td>
<td>143,733</td>
<td>9.82</td>
<td>6.75</td>
<td>17.24</td>
<td>35,933</td>
</tr>
<tr>
<td>Contested</td>
<td>39</td>
<td>143,906</td>
<td>11.4</td>
<td>23.93</td>
<td>17.26</td>
<td>23,984</td>
</tr>
<tr>
<td>CV (HQ)</td>
<td>22</td>
<td>163,994</td>
<td>13.50</td>
<td>13.5</td>
<td>19.67</td>
<td>20,499</td>
</tr>
<tr>
<td>CV (Other)</td>
<td>87</td>
<td>355,846</td>
<td>9.84</td>
<td>53.37</td>
<td>42.69</td>
<td>19,769</td>
</tr>
<tr>
<td>Milicia</td>
<td>4</td>
<td>26,085</td>
<td>4.10</td>
<td>2.45</td>
<td>3.13</td>
<td>26,085</td>
</tr>
</tbody>
</table>

5.1 Targeting police interventions

Table 1 reports which criminal factions controlled the favelas where UPPs were installed. The data was provided by the Military Police. The UPP covered more than 160 favelas, corresponding to over 20% of the population living in Rio’s more than 700 favelas. More than 70% of the UPPs were assigned to CV-controlled areas. 53% correspond to Bandit criminal orders (CV favelas outside Alemão), and 13% to Insurgent criminal rulers (favelas inside Alemão). In contrast, only 7% of ADA controlled favelas were selected. Moreover, only 2.5% of the treated favelas were ruled by the militias. Lastly, around 24% of the intervened favelas correspond to Anarchic criminal orders.

5.2 Outcomes related to local order

A second theoretical proposition is that the type of criminal governance influences how police interventions will impact homicides and common crime. Police interventions are more likely to succeed improving local security in Anarchic orders. We expect the police intervention to be effective, putting an end to enduring turf wars and territorial divisions, and to decrease DTO-DTO violence bringing a solution to the Hobbesian state.

In Predatory criminal orders we expect the UPP to reduce extortion and the illicit extraction of rents. Its impact on homicides is uncertain because, as explained above, militias might be more effective than the police dissuading crime. In Bandit orders, the

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*Refer to Online Appendix, section A3, for our empirical strategy to corroborate the information.*
intervention should reduce violence, reflected in lower homicides rates. The effect on other crimes such as robbery is uncertain because, after all, Bandit rulers provide social order using ruthless methods, which likely dissuade thieves.

Police interventions will have markedly different outcomes where the criminal governance maintains violence and local crime under control. In Symbiotic and Insurgent criminal orders, the intervention might have the paradoxical effect of propagating crime in the community, especially when the police lack legitimacy among the community.

The following reasons explain why the police might have a hard time filling the void left by the drug lords to control common crime. First, police lack local knowledge regarding who is who in the community and the nature of interpersonal dynamics drug lords know well. Their void would naturally be harder to fill in larger communities, where it is more difficult for police to acquire local knowledge. Second, the tribunal do tráfico is more accessible, swift and effective to resolve conflicts such as rape, robbery and murder. Formal systems of justice, by contrast, are too far removed from the favelas and normally serve the rich (Sousa Silva 2012). A third reason is reluctance to report criminals to the police out of fear of retribution by drug traffickers. The COP approach is based on the notion that residents and police can work together to identify and solve local security problems. It also presupposes that residents will inform the police about criminals. But when police and criminals are jointly present, residents might not tip the police. A person in Rocinha told us: “We feel scared, constrained, you know? Afraid of suffering reprisals from the traffic or from the police. So we close ourselves in, we live in fear . . .” Another resident explained: ”residents are scared [to talk to the police] . . . they might be a crook on the other side of the street ... they might think you are snitching on them.” A fourth challenge for the police is that, where institutions are weak, trust depends on personal knowledge of the individuals in charge. Drug lords often tend to be more permanent rulers. Frequent changes of UPP commanders disrupted the embryonic trust between the UPP and the community. Lastly, police abusive behavior is a significant factor that can obstruct a more proximate relationship with the community. With enough time, it could
be argued that police might be able to gain trust to fill the governance void left by the
drug lords. But if police officers are abusive and violent, they are likely to undermine
that trust (Riccio et al., 2013; Frühling, 2007; Moncada, 2013a; Arias and Ungar, 2009).

In addition to its effects of common crime, police interventions might exacerbate
conflicts among rival criminal factions. Where drug lords are killed or arrested, things
normally start to get bloody, as explained by Phillips (2015) and Calderón et al. (2015)
for the case of Mexico. Factions split and fight bloody succession battles. Rival gangs often
seize the opportunity to invade territory, increasing armed confrontations that inevitably
harm residents. The paradigmatic example is Rocinha. When Nem was arrested, CV
took this as an opportunity to invade the territory. In Alemão, by contrast, Marcinho-VP
remained in prison as the indisputable leader of CV and this is the reason why intra-DTO
fights didn’t begin in Alemão.

A third effect of police interventions is that they can push drug trafficking organiza-
tions to relocate (Dell, 2015; Castillo et al., 2013; Calderón et al., 2015). Although this
paper focuses on the local effects of the UPP, in section A14 of the Online Appendix we
demonstrate that the UPP had the consequence of pushing drug traffickers to organize
many of their operations outside the favelas, increasing violence in the city at large.

5.3 Outcomes related to police violence

It is reasonable to expect that, in contrast to the militarized approach of the past, the UPP
would reduce lethal police violence. After all, the UPP’s explicit mission was to regain
territorial control by establishing a more proximate relationship with residents and reduce
armed confrontations. However, the effect of the COP strategy on police lethal violence is
mediated by DTO responses. DTOs can respond to police interventions with violence, by
bribing the police, or relocating to where they can hide from the state. If DTOs respond
with violence – e.g., by killing police officers – COP strategies will largely fail because the
police is likely to respond with violence. It stands to reason that when police officers

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9 Refer to the Online Appendix section A14 for an estimation of spillover effects.
are killed, they are likely to retaliate out of anger and a desire for retribution, or simply because they feel vulnerable and need to deter future aggressions. DTO’s responses depend, on the one hand, on their organizational orientations. Our theory proposes that CV is likely to respond predominantly by killing front-line UPP police officers and ADA by bribing them. DTOs responses also depend on capacity to fight back versus flee. We expect CV to respond with more violence in Alemão than in the rest of its favelas for the following reasons. With the ”pacification” many CV drug lords would flee their favelas to relocate elsewhere, including to Alemão itself. Alemão is a large area with many more entrances. Some of the other CV-controlled areas are not only smaller, but often have one or two entrances where the UPP would install checkpoints. Our expectation is that in Alemão, where many CV drug traffickers took refuge, there is likely to be a higher number of police killed than in the other CV controlled favelas, where many drug traffickers relocated. We hence expect police lethal violence to decrease with the UPP in Bandit orders (CV favelas outside Alemão), but not in Insurgent orders (favelas inside Alemão). Where DTOs fight constant turf wars, these normally draw attention from the state, making Anarchic orders areas of high DTO-DTO and DTO-police violence. Both should decrease with the UPP. Lastly, in terms of Predatory orders, the effect on police lethal violence is uncertain in these territories. Prior the UPP, these favelas had no police presence and hence low levels of DTO-police violence. The presence of the police is likely to simply push the militas to other areas given that these normally don’t fight the state. Without militias, drug traffickers could simply move back into the territory, which might work to increase DTO-police violence. But it could also be the case that the UPP is able to establish territorial control without much violence.

10 Although many drug traffickers would flee Alemão with the ”pacification”, they would soon come back.
5.4 Outcomes related to police legitimacy

Shifting territorial control ultimately requires that the community endorse the police rather than the DTO as the legitimate embodiment of physical force. Our theory proposes that if residents are safer under the rule of DTOs than with the presence of the police, the police will fail to gain legitimacy. By contrast, when police repel DTOs and local security improves as a result, the community will endorse the police.

Additionally, our theory proposes that police legitimacy is influenced by police behavior and the nature of everyday interactions with residents. If police are abusive, it would be hard to gain community acceptance (Tyler, 1988; Hough et al., 2010; Tyler and Huo, 2002; Hough et al., 2010; Riccio et al., 2013; Frühling, 2007; Moncada, 2013a; Arias and Ungar, 2009). Residents reported problems such as aggressive searches and police inflicting physical harm. One man in Alemão explained: ”The police come here to kill, ... shooting, beating people up, thinking that everyone was a bandit.” The community will not confer authority to the police if they perceive officers to be violent and corrupt. A 50-year old woman in Alemão forcefully articulated the point, as she explained how the UPPs were behaving like the militias:

"We won’t get rid of a bandit to surrender ourselves to another one. Do you understand? Never ... The police charge the business owner, they charge for the band to play in the event, we need to pay them for everything ... You can’t do that! ... The bandits never charged us for anything. Not even a cent.

This part of our theory highlights that the state confronts a principal-agency dilemma as it attempts to regain territorial control. Sending thousands of poorly supervised officers is an ineffective manner to control crime. A General Commander of the UPP explained with utmost sincerity:

We no longer have control of what happens in the UPPs. The program expanded far too rapidly ... We have increasingly hired worst people, even
thieves. Just recently, a UPP officer was caught stealing while still wearing his uniform, can you believe it!

6 Data and methods

6.1 The causal effects of the UPP

This section evaluates the effects of the UPP relative to militarized policing by contrasting treated and non-treated favelas. Providing causal evidence on the consequences of the UPP requires selecting an adequate comparison group. Unfortunately there is not publicly available data at the favela level. For this reason, here we rely on a thorough effort to manually geo-code more than 22,000 lethal incidents between 2005 and 2015. The Ministry of Security provided the original data with the addresses. The information was available only for police fatal shootings and homicides.\[11\]

Figure 3 shows Rio’s favelas, the UPPs and the areas we selected for our research. Naturally, our unit of analysis corresponds to the geographic areas covered by UPPs. These borders were drawn to cover not only the favelas but also some areas outside of these, as can be seen in Figure 3. For the treated areas, we include the criminal incidents that occur inside the borders of the UPP, which include those that fall inside the favelas as well as outside their borders but inside the UPPs’. To construct a meaningful comparison group among non-treated favelas, we cluster lethal violence incidents at the favela level and also add incidents within their 100 meter buffers. This strategy makes the non-treated areas more closely comparable.

Table 2 shows basic sociodemographic characteristics of the favelas with and without UPPs. It also shows these characteristics for census tracks in the rest of the city, using data from the 2010 census. Relative to the rest of the city, households in favelas are significantly poorer. Treated favelas tend to be more populated and have more sewerage

\[11\]Details on the quality of the data, potential problems with underreporting, and details about the geo-coding process are provided in the Online Appendix, section A5.
Figure 3: Spatial distribution of UPPs in Rio de Janeiro

Favelas (light gray) and UPPs (dark gray) in Rio de Janeiro. Thicker lines represent the division of the city in police battalions (AISP) which are themselves subdivided into Delegacias (DP). We label the areas where we conducted our field work.

Figure 4 shows the trends in lethal violence in favelas with and without UPP. The vertical dashed line indicates the first BOPE intervention and the solid line shows the first UPP placement in 2008. Before the UPP program, favelas that were intervened had lower homicides rates but higher incidence of killings by the police. All favelas followed a decreasing trend in homicides and killings by police. Nevertheless, the decrease in killings by police was more pronounced in UPP areas. A key assumption for this analysis is that
Table 2: Summary statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Rest of city</th>
<th>Favelas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No UPPs</td>
<td>UPPs</td>
</tr>
<tr>
<td>Average population</td>
<td>1,528</td>
<td>2,922</td>
</tr>
<tr>
<td>Mean household income (Reais)</td>
<td>3,921</td>
<td>1,288</td>
</tr>
<tr>
<td>Habitants per household</td>
<td>2.85</td>
<td>3.30</td>
</tr>
<tr>
<td>% males 15 to 34 yo</td>
<td>0.49</td>
<td>0.49</td>
</tr>
<tr>
<td>Black population</td>
<td>0.10</td>
<td>0.17</td>
</tr>
<tr>
<td>Non-white pop.</td>
<td>0.44</td>
<td>0.67</td>
</tr>
<tr>
<td>Illiterate pop.</td>
<td>0.02</td>
<td>0.06</td>
</tr>
<tr>
<td>Garbage collection (households)</td>
<td>1.00</td>
<td>0.98</td>
</tr>
<tr>
<td>Sewerage coverage (households)</td>
<td>0.92</td>
<td>0.73</td>
</tr>
</tbody>
</table>

Total population 4,926,113 915,068 479,265
Observations 1 599 164

Descriptive statistics for favelas with and without UPP using 2010 Census data.

violence trends before the implementation of the UPP were similar between favelas. We offer evidence of these parallel trends in section A9 of the Online Appendix.

To measure the effect of the UPP on violent deaths we estimate the following generalized DID model:

\[ y_{i,t} = \gamma Post_{UPP_{i,t}} + \tau BOPE_{i,t} + \lambda_i + \alpha_t + \epsilon_{i,t} \]  

(1)

Where the dependent variables are homicides or killings by the police (in rates\(^{12}\) in favela \(i\) in the month \(t\). The “pacification” consisted of two non-overlapping actions: i) The occupation by BOPE or armed forces, usually taking place a few months before the UPP intervention; and ii) The establishment of a UPP unit in the area.

Therefore, we coded \(BOPE_{i,t}\) as a binary variable that takes the value of 1 during the period in which BOPE was present in the favela, and \(Post_{UPP_{i,t}}\) as a binary variable that takes the value of 1 after a UPP was introduced. The model also includes favela and

\(^{12}\)Rates are expressed per 100,000 inhabitants.
Smoothed loess lines provide an aggregated representation (span=0.1). The dashed vertical line correspond to the first BOPE intervention, the solid vertical line corresponds to the inauguration of the first UPP.

time fixed effects ($\lambda_i$ and $\alpha_t$, respectively).

A challenge to the empirical strategy is that violence could have been decreasing for reasons unrelated to the UPPs, including improved economic performance, the expansion of social policies or spillovers from *Bolsa Família*, a program significantly expanded during the government of Lula da Silva (2003-2011). To control for the overall decline of violence in the region, we present models including linear and cubic time trends. The most stringent version of the model uses favela-specific time trends. This strategy largely mitigates problems with omitted variable bias.

Table 3 shows the effects of the pacification on homicide (upper rows) and police killings (lower rows). The results in Table 3 demonstrate that, on average, the UPP had
Table 3: Pacification Effect on Homicides and Police Killings

<table>
<thead>
<tr>
<th></th>
<th>BOPE</th>
<th>UPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable: Homicides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>BOPE</td>
<td>−1.392</td>
<td>−0.054</td>
</tr>
<tr>
<td></td>
<td>(0.969)</td>
<td>(1.010)</td>
</tr>
<tr>
<td>UPP</td>
<td>−2.407***</td>
<td>0.215</td>
</tr>
<tr>
<td></td>
<td>(0.558)</td>
<td>(0.776)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Killings by the Police</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>BOPE</td>
<td>−2.924***</td>
</tr>
<tr>
<td></td>
<td>(0.628)</td>
</tr>
<tr>
<td>UPP</td>
<td>−3.421***</td>
</tr>
<tr>
<td></td>
<td>(0.440)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Favela FE</th>
<th>Common Time linear trend</th>
<th>Common Polynomial time trend</th>
<th>Time FE</th>
<th>Favela Specific Time trend</th>
<th>Clustered SE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
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<tr>
<td></td>
<td></td>
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<td>N</td>
<td>Y</td>
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<td>N</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>99,528</td>
<td>99,528</td>
<td>99,528</td>
<td>99,528</td>
<td>99,528</td>
<td></td>
</tr>
<tr>
<td>Number of units</td>
<td>754</td>
<td>754</td>
<td>754</td>
<td>754</td>
<td>754</td>
<td></td>
</tr>
</tbody>
</table>

Note: *p<0.1; **p<0.05; ***p<0.01

Regressions for the 2005-15 period with favela-month as the unit of analysis. The dependent variables (homicides/police killings) are measured in rates of 100,000 inhabitants.
no effects reducing homicides rates. However, the COP strategy had a substantial effect reducing killings by the police. The size of the UPP estimate for killings by the police averages -2.4 across columns 2-5. This implies a reduction of 2.4 killings by the police per 100,000 inhabitants per month. With 164 treated favelas, these estimates imply that there was a yearly reduction of around 134 killings, which mean that police lethal violence would have roughly been 45% higher without the UPP. A potential problem with our analysis is that with the UPP propensity to register homicides might have changed. Using our geo-referenced lethal violence data, in the Online Appendix section A8 we test for this potential problem by restricting the analysis to areas outside favelas that were assigned to the UPPs. In these areas, police presence prior the UPP was the same. Our conclusions remain unchanged, making us more confident that problems with underreporting are not driving the results.

7 Heterogeneous effects of the UPP

Our theory derives predictions about heterogeneous effects of the UPP according to criminal governance. For this section of the analysis, we focus on treated areas only. The coding of these orders is based on information on territorial control provided by the Military police, corroborated with automated text analysis of Disque Denuncia reports, as reported in the Online Appendix, sections A3 and A4.

We use a generalized DID design were our main dependent variables are common crime indicators (homicide, extortion, and burglary), and armed confrontations (killings by the police and officers killed in action). These data are publicly available at the UPP level before and after the intervention. Lethal violence incidents have less problems with underreporting, but burglary and extortion are more problematic crime indicators. 

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13Section A10 of the Online Appendix further present additional robustness tests, including a placebo test that artificially moves the data of inauguration of each UPP.
14As explained in the previous section, the data is not available for not-treated favelas.
15We do the best that we can to address this problem with our analysis of homicides, as explained above.
These incidents could increase with the UPP not necessarily because crimes actually increase but because more people report them. This is the reason why we chose not to include in the analysis crimes such as, for example, street theft or sexual assault. Reports of these crimes are commonly associated with having police nearby to report them, as well as with trust or lack thereof in the police. \[16\]

Vehicle theft is a more reliable indicator because victims tend to report this crime to the police to claim insurance coverage. However, this would be a poor indicator for Rio’s favelas, where most people don’t own cars or use motorcycles. Instead we focus on commercial burglary, defined as the unlawful entry into a business structure. For reasons analogous to vehicle thefts, commercial burglary might be more commonly reported to the police, although results for this crime should be taken with more caution than results for homicides or killings by police. The model is specified as follows:

\[
y_{i,t} = \tau_{BOPE} + \delta_{PostUPP} * O_i + \gamma_{PostUPP} * S_i + \eta_{UPP} * t + \lambda_t + \epsilon_{i,t} \tag{2}
\]

Where \(y_{i,t}\) represents the crime rates per 100,000 inhabitants. \(O\) stands for the criminal order prior the introduction of the UPP and \(S\) for the size of the area intervened. We include this variable because we expect the UPP to perform better in smaller favelas regardless of criminal order. The coefficient of interest is \(\delta\), which represents the interaction between the UPP entrance and type of criminal order. \(\gamma\) represents the interaction between the UPP entrance and size of the area. Here, \(\eta\) captures the favela specific time trend and \(\lambda\) is a fixed effect for time. This approach mitigates concerns over omitted variable bias and capture the high monthly variation of these outcomes. We cluster the standard errors at the UPP level.

Figure 5 plots the marginal UPP effects according to criminal order. The full models are reported in Table A13 in the Online Appendix. Overall, the results confirm our

\[16\] In fact, when we ran the statistical models with these crimes, all seem to increase with the UPP regardless of criminal order.
theory. The UPP brought marked reductions in homicides in Anarchic orders. It also reduced homicides in Bandit orders. The effect on homicides is positive and statistically significant in Symbiotic orders, which is fully consistent with our theory. In Insurgent orders the effect on murder is positive, although not statistically different from zero. An important result is that homicides don’t increase after militias are targeted. The effects of the UPP on burglary are similar to those of homicide, with the only exception that in Predatory criminal orders there are substantial reductions in burglary, suggesting that militias were not effective dissuading these crimes.

The UPP caused reductions in extortion in Predatory criminal orders. These results suggest that the main benefit of the UPP in Predatory orders is related to reductions in the extraction of economic rents, while those in Anarchic and Bandit orders to reductions in homicide rates. A surprising result is that the UPP produces increases in extortion almost everywhere but in Predatory criminal orders. These results could mean that UPP officers began to charge fees for permissions, as some our informants report. The effect of size (not plotted) support our contention that the UPP was more effective reducing homicides in smaller favelas. Size doesn’t impact extortion and burglary.

Figure 6 plots the estimates of the models for killings by the police and police officers killed. The results fully support our theoretical expectations. First, there are marked differences between Symbiotic and Insurgent orders in how the DTO responds to the police. In Insurgent orders, there is a substantial increase in the number of officers killed. The number of officers killed in Symbiotic orders decreases. Second, in terms of killings by the police, these decrease in Bandit and Anarchic criminal orders. In Symbiotic and Predatory orders they basically don’t change, while in Insurgent criminal orders, killings by the police even appear to increase.

One possible objection to our results might be that police strategy and not criminal order is what drives these differences. It could be that the police chose to repress more drug traffickers in certain areas, while in others it let drugs flow more freely, adopting what Lessing (2015) labels a "conditional approach" to dealing with DTOs. This strategy
Figure 5: Heterogeneous effects on common crime

Notes: Estimated UPP effects based on DID models presented in Table A14. Lines represent the 95% confidence intervals.

Figure 6: Heterogeneous effects on killings by the police and police officers killed

Notes: Estimated marginal UPP effects based on DID models presented in Table A14. Lines represent the 95% confidence intervals.
rather than the criminal order itself might explain why the UPP failed in some areas and not in others. The last model in Figure 6 shows the number of drugs seized. The results don’t support this argument. The UPP didn’t target differently drug trafficking in these criminal orders. In fact, drug seizures increased in every criminal order, probably reflecting more presence of police.

The last set of models presented in Figure 7 jointly explore the effects of size and criminal governance on homicides, killings by police and total lethal violence which adds both. In Insurgent orders there is a systematic increase in homicides, killings by the police, and hence total violent deaths. The effect is positive and statistically significant for medium and large UPPs only, suggesting than in Insurgent criminal orders the police was better fill the void left by the drug lords in smaller UPPs. In Bandit orders there are marked reductions of lethal violence, with the exception of medium UPPs, where homicides don’t decrease. In Symbiotic orders there is a substantial increase in homicides and this true for medium and large UPP, not small ones, again suggesting that size matters and that in smaller communities it less difficult for police to regain control. In Symbiotic orders killings by the police don’t increase irrespective of size, underscoring the differences with Insurgent orders. In Predatory orders, homicides decrease in small UPPs and there is little effect in the rest. Lastly, there are marked reductions in homicides and killings by police in Anarchic orders irrespective of size.

Another possible objection to our results is that they might be driven by a particular case. For example, results on ADA could be driven entirely by Rocinha, also the largest favela in Rio. We ran all the models excluding one UPP at a time, and all the results remain unchanged.

7.1 Police Legitimacy

Police will have a hard time gaining legitimacy where life under the rule of drug lords is safer than with the presence of police forces, and this is influenced by the preexisting
Figure 7: Heterogeneous effects on violent deaths by size of the UPP

Notes: Estimated marginal UPP effects based on DID models presented in Table A14. Lines represent the 95% confidence intervals. Size is constructed categorizing the covered population by each UPP into three quantiles.
criminal order. In addition to objective security outcomes, abusive policing practices should decrease police legitimacy. To test for these hypotheses, we collected a survey (N = 5,300) in various favelas selected according to our criminal order typology. The survey included Providência (Bandit order), Rocinha (Symbiotic), Cidade de Deus (Anarchic) and Batan (Predatory).\footnote{Since this last section is about the acceptance of the UPP we don’t include survey responses from Maré. For a full description of the survey and data collection see Online Appendix, section A12.} Unfortunately, it was not possible to collect surveys in Alemão because of daily armed confrontations.

The survey asked residents to evaluate the UPP as reported in Table \ref{tab:4}. For the analysis we will first model responses to the question about whether the UPP should stay or leave the favela. This is a prospective evaluation about whether it is better to have a UPP or be left under the rule of DTOs. We also will bundle together responses to all of these questions in a composite index of acceptability of the UPP, which Cronbach’s alpha is 0.74, revealing that the measure has internal consistency.

\begin{table}[h]
\centering
\caption{Evaluations of the UPP}
\begin{tabular}{lccc}
\hline
 & Yes (%) & No (%) & Partially (%) \\
\hline
Was the UPP Positive? & 31 & 22 & 35 \\
Community relationship with police improved? & 23 & 27 & 50 \\
Did your life and your family’s improved? & 28 & 10 & 62 \\
Do you want the UPP to leave your favela? & 15 & 46 & 38 \\
\hline
\end{tabular}
\end{table}

The data revealed that significantly more residents in Batan (75%) and Cidade de Deus (56%) want the UPP to stay in their favela than in Providência (37%) and Rocinha (27%). Our survey also included a battery of questions about victimization at the hands of police, which appears to be very high. 3\% reported that "the police inflicted physical harm on them"; 13\% had "their homes invaded by police officers"; and 15\% reported that someone in their family or friends had been "killed by the police". The survey also asked whether common crimes, shootouts, the ostensible use of weapons and police corruption increased or decreased with the UPP. Deterioration of these should diminish community
acceptance of the police.\footnote{For space limitations, we don’t include descriptive statistics of these variables.}

Our modeling strategy uses an OLS regression. In the first model on whether the UPP should leave or stay, the dependent variable is a 3 point scale.\footnote{3 is positive, 2 neutral, and 1 is negative evaluations} In the second model we combine the questions about the UPP reported in Table 4 into an index that goes from -1 (least favorable) to 3 (most favorable).\footnote{The Online Appendix Table A15 presents results using ordered probit estimates as well as a different index, our results remain unchanged.}

Figure 8 provides a visual depiction of the findings. The full results for both models are reported in Table A15 in the Online Appendix. Community acceptance of the UPP is markedly different in these favelas, as predicted by our theory. Residents in Cidade de Deus, our Anarchic order, exhibit the highest community endorsement of the UPP, followed by Batan (Predatory) and Providência (Bandit rule). Police legitimacy in Rocinha (Symbiotic order) is very low.

The results further demonstrate that police victimization produces strong negative
effects. Those whose homes were invaded, suffered physical assault, or had a family or friend killed by police are more likely to want the UPP to leave and to have negative evaluations regardless of criminal order. Decreases in armed conflicts between DTOs and the police and of overt use of weapons produce highly supportive evaluations of the UPP. Increases in crimes such as robbery, theft or rape lead residents’ to want the UPP to leave and produce more negative evaluations, as predicted by our theory. Similarly, when residents observe that police corruption increased, evaluations of the UPP are significantly more negative.

8 Conclusion

A state without police forces is not necessarily one of anarchy. Drug lords can establish different forms of governance. Some DTOs are effective containing violence and sanctioning crime. Police interventions to repel DTOs in this type of criminal order can escalate violence. But where communities are ruled by predatory criminal groups that extract rents from residents, or by DTOs that govern with ruthless methods, or where DTOs fight enduring turf wars, the police are more likely to improve local order and gain legitimacy.

Moreover, the paper generates knowledge about security policies in Rio. The UPP markedly reduced violence in Anarchic and Bandit criminal orders, which constitute around 60% of the population covered. The UPP reduced extortion and burglary in Predatory criminal orders, where Rio’s militias ruled. These were positive results and benefited many communities that had previously been abandoned to the rule of violent drug gangs or predatory militias. Moreover, prior the UPP, the militarized policing approach had generated exorbitant levels of killings by the police, affecting criminals as well as residents. The UPP significantly reduced the number of police fatal shootings.

Despite these positive results, the UPP ultimately fail for three reasons. First, it escalated violence in Symbiotic and Insurgent criminal orders. Second, abusive practices
by frontline police officers—torture, aggressive arrests, harassment, beatings, violence, and corruption—contributed to undermine the legitimacy of the UPP among favela residents. The state confronts a principal-agent problem with its police forces as it attempts to repel DTOs and regain territorial control. Police are the armed wing of the state and can become a source of violence rather than an instrument to control crime when not properly restrained.

Third, the UPP pushed DTOs to relocate outside the favelas, increasing the challenges to maintain order in the city at large and making the problem of crime and violence more visible to Rio’s middle class. This paper focused on the local effects of the UPP. The Online Appendix section A14 offers an empirical exploration of its spillover effects, which became particularly visible after 2013. The relocation of DTOs and the increase in violence outside the favelas, combined with the lack of proper state support in the form of meaningful expansions of socioeconomic investments and urban development projects, played critical roles to undermine the goal to generate legitimate state order in the favelas.
References


