When the State steps down: evidence from Police Strikes in Brazil.

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Introduction

Drastic shifts in police affect criminals and civilians through channels arguably different than a marginal change in the number of police officers. Therefore, extreme events such as police strikes may not be interpreted as an instrument of the overall effect of police on crime. The socio-economic context where abrupt shifts in police occur affect the response of criminals, especially if organized criminal groups are strong and the state hardly holds a monopoly on the use of force. More specifically, criminal gangs have a central role in escalating violent crimes after an abrupt shift in the police. This paper shows that gangs exploit police strikes to attack rival groups. Facing the state's absence, a reduction in the probability of police intervention led criminal gangs to intensify conflicts in contested turfs.
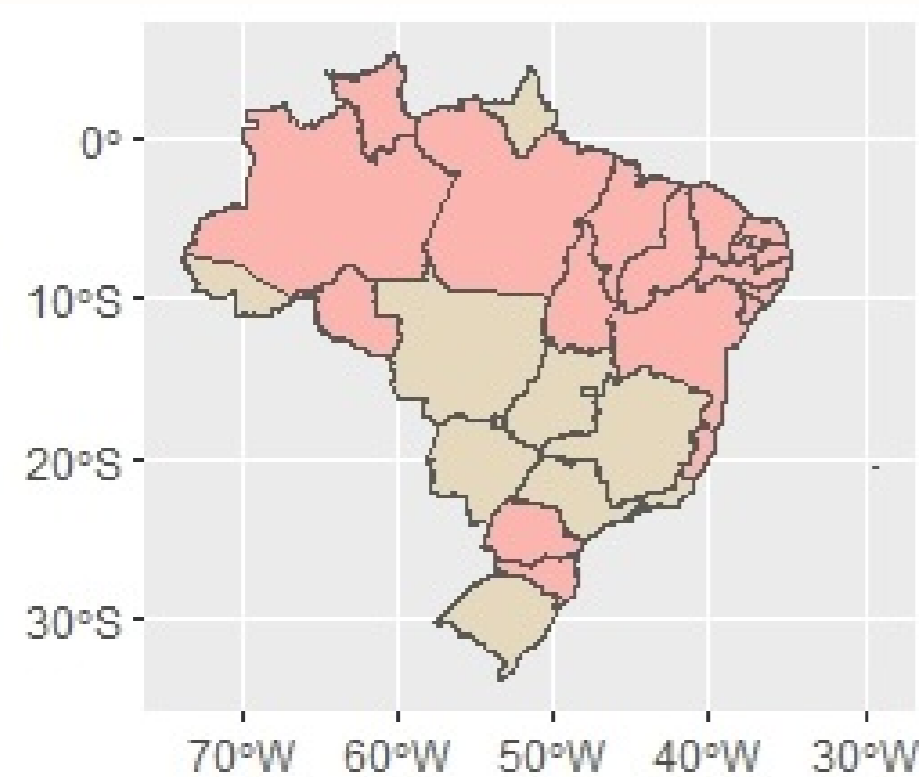

Figure 1: Police Strikes in Brazilian states (2000 to 2020).

Empirical Strategy

The reduction in policing that I analyze comes from 29 Military Police strikes, 194 Civil Police strikes registered since 2000 in different Brazilian states, and daily homicide observations at the state level. Some states do not show Military or Civil Police strikes during this period. The identification comes from the variation in homicides: (a) across states affected and not affected by a police force strike and (b) before and after a strike in states affected.

States that registered strikes are the target group, while those that have not suffered this shock are the non-target group. I include a series of time-fixed effects so that all common shocks in the evolution of homicides across states are absorbed. I also include state-fixed effects to control for unobservable crime determinants invariant at the state level. The difference-in-differences estimator of the police effect on homicide using the following model is:

$$\text{homicides}_{it} = \alpha_i + \beta_1 * PM_{\text{strike}_{it}} + \beta_2 * PC_{\text{strike}_{it}} + \phi_t + \mu_{it}$$

A Model for Gang Conflicts

Why would an abrupt reduction in policing increase violent deaths? In some Brazilian states, gang conflicts are a significant cause of homicides.

When more than one gang decides to exploit the same turf, the bargaining by the flow of traffic rents usually leads to violent outcomes. To illustrate how shifts in policing can trigger a criminal gang war, I present a model of conflicts where gangs choose to fight if the expected outcome of attacking is larger than accommodating. The Police Force in this setting is a player who imposes additional losses on criminals.

Suppose that gangs A and B bargain by ("a pie") equal to V. The Military Police (player C) interferes if there is an outbreak of violent conflicts. Initially, gangs A and B keep a *status quo* division of the pie equal to Q_A and Q_B such as $Q_A + Q_B = V$, respectively. In each period, gangs $g = A$ or B can choose to use violence to lock in a payoff $D_g(t)$. If in time t a gang decides to break the status quo division and use violence to fight for a monopolistic position it obtains:

$$D_g(t) = (p_g * V - L_g) + (1 - p_g) * 0 - p_C * L_C$$
$$= (p_g * V - L_g) - p_C * L_C$$

Therefore, a criminal gang decides to start a war when the expected payoff of a conflict is larger than the current status quo division of the *pie*, i.e.:

$$D_g(t) > Q_g(t)$$

Police strikes in states disputed by criminal gang reduce the threat of police intervention (p_C) and decreases losses in a gang war. Combining previous equations, I show how changes in the probability of police intervention p_C trigger violent conflicts:

$$(p_g * V - L_g) - p_C * L_C > Q_g$$
$$p_g * \frac{V}{L_C} - \frac{(L_g + Q_g)}{L_C} > p_C$$
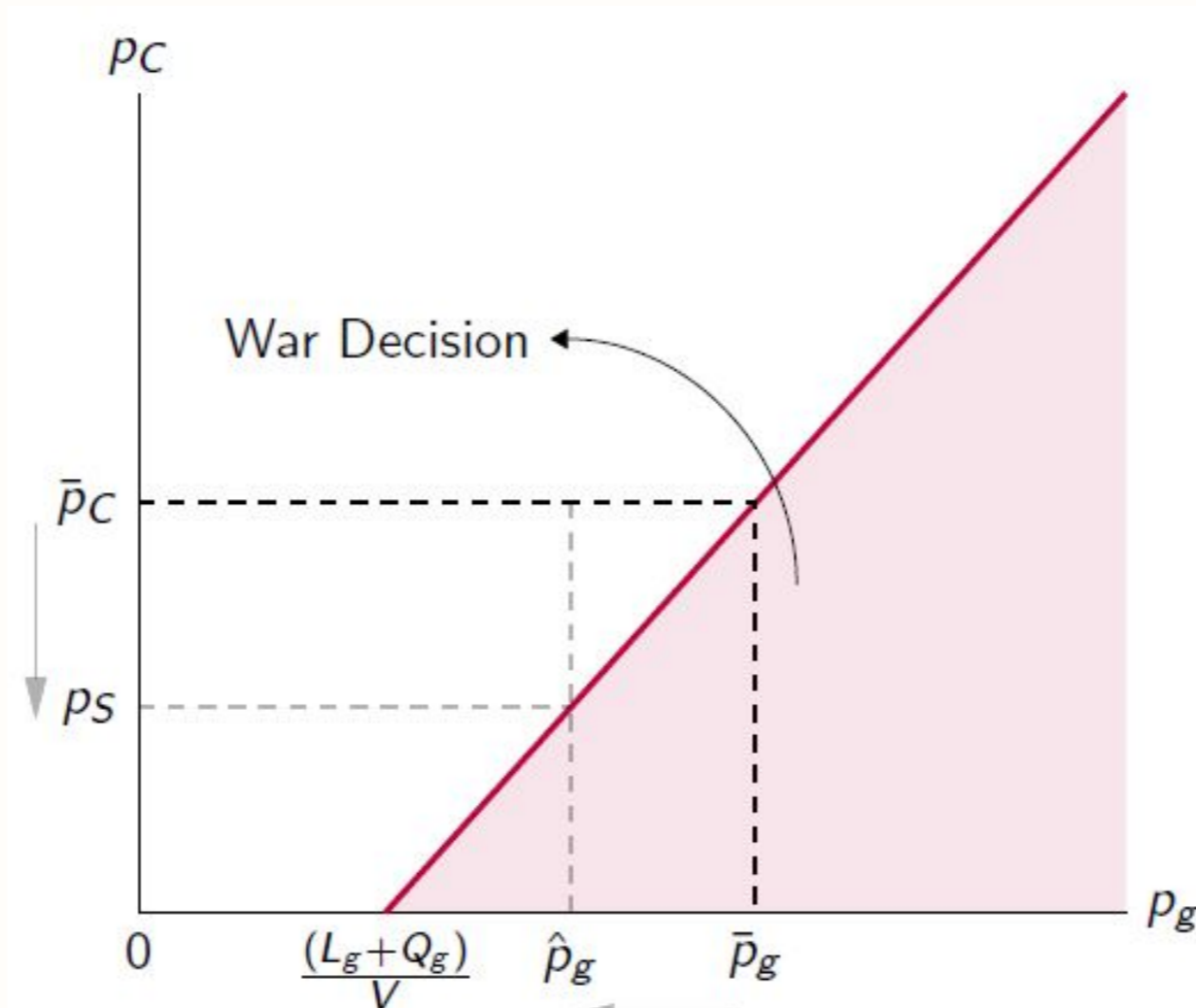

Figure 2: Shifts in Police Intervention and Gang Conflicts.

Result and discussions

Table 1 report my main results. I highlight the estimates for Military Police strikes (β_1). The results show that a sharp decrease in police patrols causes a significant increase in total homicides (especially men's deaths). The β_1 coefficient represents a **45% increase in daily homicides** compared to the average from 2000 to 2020.

Further, I investigate if there was a previous increase in homicides just before the public announcement of a strike. If the Police decide to go on a strike precisely during a period of growing violence, my results would capture a previous trend of violence. I display in Figure 3 the results of an Event Study that validate the parallel trend assumption. **The effect of police strikes on days 2 and 3 is equivalent to 65% more deaths compared to the average level of homicides**.

Table 1: Daily Homicides on Police Strikes (Brazil, 2000-2020)

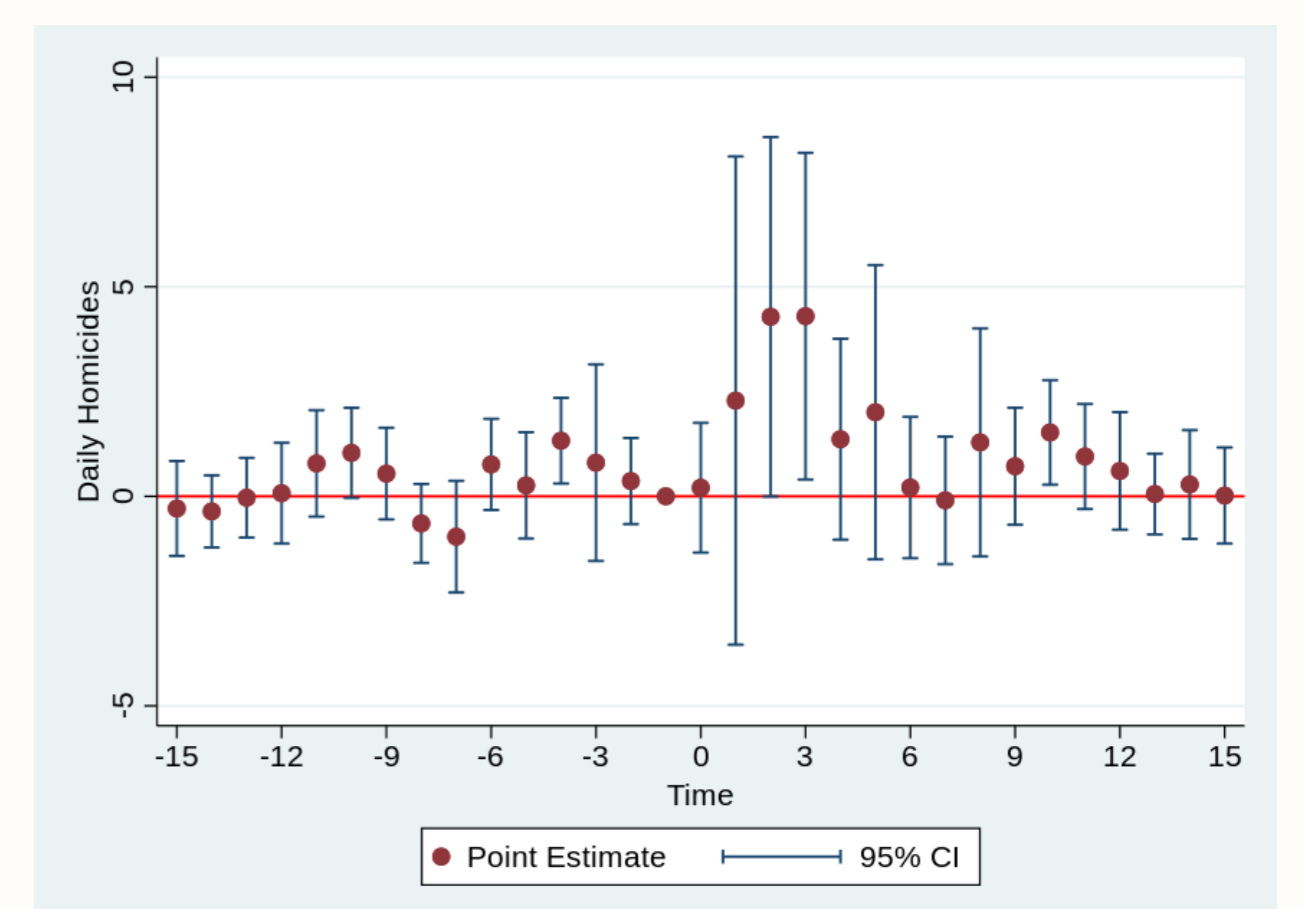| Variable	β_1	Lower	Upper
Homicides (Total)	2.934	0.880	4.988
Homicides (Men)	2.829	0.825	4.833
Homicides (Women)	0.104	-0.022	0.230

Figure 3: Event Study - Police Strikes

Last, to test the relevance of Gang Conflicts in the increase of homicides, I perform a Case Study using very granular data from Ceará state. In this setting, I have information about previous convictions of individuals killed from 2014 to 2020. Table 2 shows that **about 70% of the increase in homicides is driven by the deaths of individuals previously convicted** of drug trafficking, robbery, and illegal gun possession.

Table 2: Daily Homicides on Ceará Police Strike (2020)

Variable	β_1	Lower	Upper
Homicides (Total)	0.878	0.536	1.220
Suspected Gang Members	0.610	0.296	0.924

Summary and conclusions

This paper shows that police strikes cause a large and significant increase in violent deaths. My results highlight that the increase in homicides in police strikes differs from marginal changes in policing. Moreover, my findings show that shifts in the probability of police intervention reduce the cost of confrontation and increase the expected payoff for criminal gangs attacking the rival. The inability to commit leads to conflicts since gangs choose to fight rather than allow the rival to attack first. My work sheds some light on the role of criminal gang conflicts in evaluating the effect of police on crime. I expect to contribute to public policies targeting violence reduction by presenting these results, especially showing that the interplay between criminal gangs and state authorities is crucial to evaluating the effect of shifts in the police on crime.