Institutionalized Police Brutality:
Torture, the Militarization of Security and the Reform of Inquisitorial Criminal Justice in Mexico

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Abstract

How can societies restrain their coercive institutions and transition to a more humane criminal justice system? We argue that two main factors explain why torture can persist as a generalized practice even in democratic societies: weak procedural protections and the militarization of policing, which introduces strategies, equipment and mentality that treats criminal suspects as if they were enemies in wartime. Using a large survey of the Mexican prison population and leveraging the date and place of arrest, this paper provides causal evidence about how these two explanatory variables shape police brutality. Our paper offers a grim picture of the survival of authoritarian policing practices in democracies. It also provides novel evidence of the extent to which the abolition of inquisitorial criminal justice institutions – a remnant of colonial legacies and a common trend in the region – has worked to restrain police brutality.

"They taught us to arrest in order to investigate, not to investigate in order to arrest."
–Interview with a police officer, Mexico City

1 Introduction

What restrains police brutality – illegal arrests, coercion of witnesses, fabrication of evidence, and the use of torture to extract confessions? This question is closely related to a classic puzzle in political science: the origin and maintenance of constraints on the state's exercise of coercive power. As police forces are the institution through which modern states enforce laws in their territories and their repressive capacity constitutes a threat to the livelihoods of civilians, police ought to use force while adhering to the rule of law. These limits are essential to prevent state agents from using their coercive powers to subjugate and oppress. Pinker (2011) argues that the abolition of inhumane criminal punishments and torture to extract confessions is evidence of humankind's progress toward a more enlightened, humane, and peaceful order. Yet we know little about how societies achieve this transition in the first place.

Theoretical explanations for the consolidation of a range of related phenomena – from individual rights to democratic transitions to constraints on the state – tend to focus on the actions of elites, the middle class, or the median voter (North and Weingast, 1989; Weingast, 1997; Boix, 2003; Ansell and Samuels, 2010). Here, we examine a case of constraints on state transgressions committed by law enforcement agents against accused criminals, a group that typically lacks the political clout to produce changes in the social contract. A large body of work argues that democratic institutions reduce the incidence of torture. Political participation, electoral contestation, and freedom of expression can correct the excesses of state coercion (Davenport, 1996; Cingranelli and Richards, 1999; Davenport, 1999; Conrad and Moore, 2010). Moreover, democracies have more veto players including real judicial independence which enhance human rights protections (Powell and Staton, 2009; Michel and Sikkink, 2013; Conrad and Moore, 2010). But, as this paper demonstrates, the use of torture in criminal prosecutions can be a generalized practice even in democratic societies.

The scholarly literature on Latin American democratic institutions has paid close

attention to the evolution of judicial powers and independence as well as the role of courts in an institutional architecture that balances against other branches of government (Kapiszewski and Taylor, 2008; Helmke and Ríos-Figueroa, 2011; Helmke, 2002; Ríos-Figueroa, 2007; Navia and Ríos-Figueroa, 2005; Domingo, 2000; Sánchez et al., 2011). A related strand of research explores the economic role of courts in protecting property rights (La Porta et al., 2004; Acemoglu and Johnson, 2005). Less examined, however, is how the judiciary and the body of criminal law operate in concert to constrain the individual agents operating on behalf of the coercive apparatus of the state.

Without limits to the actions of police forces, there can be no democratic citizenship. O'Donnell (1993) captures the failure of universalistic democratic citizenship with his metaphor of "brown areas." Among scholars focusing on Latin America, Brinks (2007) was among the first to bring this concept to life with his analysis of the Brazilian and Argentine justice systems' failures to punish large numbers of police homicides. Other scholars have also emphasized how the legacy of authoritarianism and military control over the criminal justice system represent critical obstacles for democracy and police reform (Ungar, 2002; Shirk and Cázares, 2007; Uildriks, 2010; Cruz, 2011). Although there have been many attempts to modernize police forces throughout Latin America (Bailey and Dammert, 2005; Davis, 2006; Uildriks, 2009), there remains persistent skepticism about whether these reforms have worked. In one of the most comprehensive treatments of police forces in Latin America, González (2019) argues that undemocratic coercive police institutions persisted well after dictatorships ended and that meaningful police reforms only happen sporadically (i.e. when societal preferences converge and there is robust political opposition). In short, the link between democracy and limits on coercive institutions is, at best, unclear.

This paper explores the obstacles democratic states face in their attempts to restrain one of the most insidious forms of police brutality: torture. We highlight two main factors that allow this ruthless policing practice to persist under democracy. First, we emphasize the role of inquisitorial criminal justice institutions, which Latin American

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states have retained since colonial times. Few countries reformed these institutions at the time of their transitions to democracy and others have yet to abandon them. Because of their strong reliance on confessions, the absence of an independent judge to control the phase of investigation and counteract potential biases, and lax standards of due process, inquisitorial criminal justice systems expand opportunities for the police to torture.

A second reason why democratic states might fail to restrain their coercive apparatus relates to the persistence of violent challenges to the state. Transitions to democracy in Latin America coincided with a dramatic increase in crime and insecurity. The region is today the most violent in the world outside of war zones. These high levels of insecurity have often pushed governments to adopt *mano dura* security strategies, including police militarization and the deployment of the armed forces (Bailey and Dammert, 2005; Flores-Macías and Zarkin, 2019). These security policies have introduced elements of authoritarianism into democracy, subsequently bringing about denials of due process and violations of human rights (Godoy, 2006). This part of our argument is consistent with a strand in the human rights literature that argues that democracies generally torture less, but their "good behavior" disappears when they face violent dissent (Davenport and Armstrong, 2004). This line of work aims to make sense of why democratic states engage in torture against rebels or terrorists as in the cases of torture perpetrated by U.S. soldiers at Abu Ghraib in Iraq and Guantánamo Bay (Davenport et al., 2007; Greenberg, 2005; Danner and Fay, 2004). When there is a violent threat, the electoral incentives that otherwise restrain officials from resorting to torture might loosen. Following Walzer (2004), the people are unlikely to hold the executive accountable for "dirtying his hands" with torture if they believe it was conducted to keep them safe. Our paper expands upon this line of argumentation by considering threats to the state by criminal groups. In contrast to the torture democracies use against terrorists that is mostly sporadic and targeted, the form of torture this paper studies is generalized.

To understand the challenges democratic societies face in restraining institutionalized brutality, this paper focuses on Mexico, where prosecutors and police continued to

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use torture as their *modus operandi* in criminal prosecution years after the democratic transition, which took place in 2000 when the Institutional Revolutionary Party (PRI) lost power for the first time in over six decades of uninterrupted rule (Magaloni, 2006; Langston, 2017). During the autocratic period, courts gave confessions full probative value regardless of how they were obtained: it did not matter whether there were indications that the detainee had been beaten, suffocated, electrocuted, subjected to prolonged detention, or denied access to a lawyer. With no capacity to investigate, overworked prosecutors and police officers have traditionally relied on coerced confessions and the intimidation of witnesses as an attractive method to close cases. Moreover, in 2006, the federal government declared a war against drug trafficking syndicates and deployed thousands of soldiers to assist local police forces in fighting organized criminal groups (hereafter OCGs). This paper provides compelling empirical evidence that these security interventions substantially increased torture.

In 2008, the Mexican Congress approved a major criminal justice reform to abandon the inquisitorial criminal justice system. This reform included stronger protections for the rights of suspects and significant judicial oversight over police and prosecutors in the pretrial phase, all of which in theory should constrain torture. The reform was adopted at a time when the federal government had just declared the Drug War. Due to the lack of presidential commitment and the magnitude of the changes required, it would not be implemented until the following administration. This paper leverages the staggered implementation of the reform in nearly 300 judicial districts to causally identify its effects on torture. While our focus is Mexico, this institutional change is part of a broader regional trend of reforms that took place in fifteen Latin American democracies during the last two decades (Hammergren, 2008; Rodrigo de la Barra Cousino, 1998; Shirk, 2010). These criminal justice reforms are, according to Langer (2007), the deepest transformations that Latin American criminal procedures have undergone in nearly two centuries. Although the scholarly literature agrees about the relevance of these reforms, the fundamental question that remains unanswered is: did they work to restrain police

brutality?

Empirically, our data comes from the National Survey of the Population Deprived of Liberty (ENPOL) conducted by the Mexican National Statistics Agency (INEGI) in 2016. This survey draws on the responses of a representative sample of 58,127 prisoners to ten questionnaires covering their backgrounds, experiences with the criminal justice system, and lives in prison. ENPOL includes an extensive battery of questions, including questions on physical abuse, about how the police and agents of the public prosecutor[1] treated the prisoner at the time of his or her arrest.

To causally identify how militarized security interventions and criminal justice reform impact torture, our statistical analyses leverage the timing of implementation of "joint operations", on the one hand, and the implementation of the reform, on the other. We consider any individual as "treated" by this security intervention if he was arrested in a state at the time when militarized interventions took place.

Similarly, any individual arrested in a municipality after the new code of criminal procedure took effect is treated by the reform. As this reform was implemented on 65 different dates from 2014 to June 2016, it is unlikely that our findings reflect changes in conditions beyond the criminal justice reform. By including geographic and time fixed effects as well as individual controls, our empirical strategy controls for unobserved characteristics in all treated units that are constant over time, observed individual characteristics, and major events.

Our results compellingly demonstrate that militarized security interventions produce sharp increases in torture and other forms of police brutality. The effects are substantial – in the range of five to ten percentage points – depending on the coercive institution performing the arrest. Moreover, our results also demonstrate that the criminal justice reform significantly restrains these abuses. Depending on the model used and the coercive institution carrying out the arrest, the effects of the criminal justice reform are of a

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[1]The corresponding name in Spanish is Ministerio Público, which we abbreviate as MP throughout the paper.

similar magnitude. In relative terms the models show these are declines of up to 23% from baseline levels of abuse. Lastly, we demonstrate that the justice reform restrained abuses but less so when prisoners are accused of crimes the law classifies as part of the category of "organized crime." In these cases, weaker procedural protections and the greater likelihood of military involvement open the door to the persistence of torture and abuse.

2   Inquisitorial Criminal Justice in Latin America

In most ancient, medieval, and early modern societies, judicial torture was legal and formally regulated. In the Middle Ages, the torturer was employed by the King or the Inquisition. His function was to obtain confessions from suspects and heretics. Such confessions served as the "queen of evidence" (*Regina probationem*), which led to the systematic use of torture as a method of prosecution (Peters, 1996; Ruthven, 1978).

Beginning with England in 1700, most European nations abolished judicial torture by 1850 (Pinker, 2011). Criminal justice got imbued with rationalistic ideas, including that torturing people to extract confessions was an ineffective method to discern the truth. Instead, the notion that trials should be based on evidence was gradually embraced. Procedural reforms played a critical role to reduce torture in Continental Europe. In 1808, Napoleon introduced his *Code d'instruction criminelle*, which translated a number of ideas from the English model of criminal procedure to civil law (Langer, 2007). Its ideas spread across Europe, including Spain. When Latin American countries became independent, they rejected the more liberal European codes and kept the inquisitorial system that had prevailed in the Portuguese and Spanish Americas. The main characteristics of these inquisitorial codes are: the backbone of the criminal process is a written dossier (*expediente*) that the police and investigating judge compile with all procedural activity, pretrial investigations remain written and secret, the verdict phase is also predominantly written and lacks a jury, and the judge investigates, prosecutes, and adjudicates (Langer,

2007).

Because of their strong reliance on confessions and weak procedural standards, inquisitorial criminal justice systems expand opportunities for the police to torture. In their empirical cross-sectional study of torture, Conrad and Moore (2010) use a dummy variable for civil law countries as a proxy for inquisitorial criminal justice procedures and find that this increases torture. The problem with their approach is that, as the case of Latin America makes explicit, many civil law countries have actually abandoned the inquisitorial model. Hence, to our knowledge, there is no systematic empirical evidence that the inquisitorial model is associated with more torture.

During the last two decades, a major institutional transformation took place as many Latin American countries reformed their inquisitorial criminal justice procedures. The dates of these implementations were as follows: Argentina (1991), Guatemala (1994), El Salvador (1998), Costa Rica (1998), Venezuela (1999), Chile (2000), Paraguay (2000), Ecuador (2001), Bolivia (2001), Honduras (2002), Nicaragua (2001), Dominican Republic (2004), Colombia (2005), Peru (2006), and Mexico (2008) (Rodrigo de la Barra Cousino, 1998; Biebesheimer and Payne, 2001; Ungar, 2002; Langer, 2007). With a few exceptions, in most of these cases, reforms were adopted years after democratic transitions, which means that democracy in most cases was born with limited human rights protections. Although the new criminal justice procedures implemented in the region vary, most provide for an oral hearing and an adversarial process. Additionally, these new procedures expand judicial oversight over the investigation, institute legal checks on police actions, and add more procedural protections for defendants.

Despite the importance of the reforms, there are basically no empirical investigations about their impact. To our knowledge, the only exception is Kronick and Hausman (2019), who demonstrate that the reforms reduced the number of arrests in Columbia and Venezuela and increased extrajudicial killings in the latter case. Here, we explore how the reforms shaped torture in criminal prosecution in Mexico, the country which has taken longest to adopt them.

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3 The Case of Mexico

The scholarly literature argues that autocrats use repression, including torture, to extract information about potential conspiracies, to dissuade opponents, and to punish acts of dissent (Wantchekon and Healy, 1999; Davenport and Inman, 2012; Svolik, 2012; Blaydes, 2018). Our paper examines a case of widespread torture that the police and public prosecutors would use in common criminal trials. This does not deny that Mexico's autocratic regime resorted to torture to repress political dissidents. For example, there is ample evidence that during the Dirty War (1965-1982), torture was used as a way of pursuing political enemies (Castellanos, 2007; Aviña, 2012; González Villarreal, 2014). But torture was not always mandated by the top political leadership. It emerged as the *modus operandi* in criminal prosecution coercive institutions liberally use to extract confessions in criminal trials.

During the autocratic period, courts gave confessions full evidentiary value regardless of how they were obtained or if the suspect had not been given access to a lawyer. Magaloni et al. (2018) cite several jurisprudential theses that illustrate this problem. The Supreme Court in this period allowed as admissible confessions even if there was evidence of physical mistreatment or prolonged detention, ignored protests about denials of access to counsel, and placed high probative value on confessions made to the police even if the defendant tried to recant his statements before a judge. In short, the judiciary created a permission structure for police to violate fundamental rights in the administration of justice. Naturally, prosecutors and police came to see coerced confessions, the intimidation of witnesses, and the fabrication of evidence as attractive options for closing cases.

3.1 The militarization of security

The criminal justice system that democratic Mexico inherited was unprepared to face rising levels of insecurity. Alternation of political power at a local level in the 1990s and then when the National Action Party (PAN) won the presidency in 2000 broke down the

old ways of negotiating with criminal groups that had previously maintained order (Watt and Zepeda, 2012; Astorga, 2003; Ríos, 2013; Osorio, 2015; Dube et al., 2013; Trejo and Ley, 2018). At the same time, crackdowns in Colombia and the Caribbean made drug syndicates shift operations to Mexico (Castillo et al., 2018).

In 2006, President Felipe Calderón (PAN) responded to these security challenges by declaring a war against drug syndicates. During this war, the armed forces operated extra-judicially, using killings, arbitrary detention, and disappearances (Escalante, 2011; Anaya, 2014; Silva Forné et al., 2012, 2017). Magaloni et al. (2018) present empirical evidence that the Drug War sharply increased torture in two scenarios: a) when the armed forces detained a suspect, and b) when suspects were accused of drug trafficking.

Our theoretical approach proposes that militarized security interventions should increase torture by regular police forces as well. The government carried out militarized interventions known as "joint operations" through which the armed forces and federal police were deployed to assist local police forces in fighting organized crime. These security operations, we propose, introduced into law enforcement a combination of equipment, tactics, and culture that centers on violent conflict, a phenomenon commonly referred to as "militarization of policing" (Mummolo, 2018a). Alongside the use of these tactics and equipment comes a military mindset wherein the police treat suspected criminals as if they were enemies of the state, acting as if their job were to occupy a war zone. This process of police militarization is likely to increase the use of extrajudicial force and torture. We test the following hypothesis:

H1: *Militarized security interventions known as "joint operations" should result in significant increases in torture and this increase should not be driven solely by the military.*

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3.2   The 2008 criminal justice reform

In the midst of this violence, the Mexican Congress passed a major reform in 2008 that transformed the inquisitorial criminal system. In response to the aforementioned problems of the use of torture to extract confessions, the reforms make it unlawful to present confessions as evidence in court unless they are obtained in the presence of the suspect's defense attorney (Shirk, 2010). The prosecution of a crime is now handled by a panel of three judges. The controlling judge (*juez de control*) has the obligation to evaluate the legality of the detention, order the release of individuals whose detention was not carried out in a manner adhering to the provisions of the law, and exclude illegally obtained evidence. The trial itself has the second judge presiding through the sentencing of the defendant. Throughout this judicial process, there are provisions that restrict evidence obtained by violations of due process rights from entering the record. Finally, the third judge oversees the execution of the sentence. The reform further added procedural protections for defendants and instituted oral trials, thus allowing far greater opportunity for the defendant to challenge the prosecution's evidence. Another important change is the emphasis on the physical presence of judges during all hearings involving the defendant.

The reform would have failed to progress had it not been for substantial opposition to the Calderón administration's security policies within Congress. The bill that became the basis for the 2008 reforms was championed by the head of the Judicial Committee in the Chamber of Deputies, a member of the PRI (Shirk, 2010). This party saw in the criminal justice reform a way to impose stronger oversight over president Calderón's security policies. Under supporting legislation for these reforms, a new Federal Police would be created in 2009. Although the new Federal Police would have greater power to conduct intelligence and undercover operations, the reform would ensure more checks on their actions.

Additionally, as in other countries across the region, international factors played a

role in driving the reforms (Hammergren, 2003; Domingo, 2000, 1999; Langer, 2007). The Calderón government faced significant accusations of human rights violations from international organizations. Moreover, within the new architecture for bilateral security cooperation between the U.S. and Mexico – the Mérida Initiative – Mexico would receive billions of dollars from the U.S. to fight drug syndicates. Although these funds would mostly be allocated to equipment and training to enhance military and police capacity, Mexico had to commit to enhance the rule of law to get US financial and technical support. After the criminal justice reform was approved, significant resources from the Mérida initiative would go to facilitate Mexico's transition to the new criminal justice system.[2] Lastly, during the Calderón administration, civil society in Mexico began to mobilize against public insecurity, forced disappearances, and corruption in the criminal justice system (Gallagher, 2017). Although these protests were mostly against public insecurity, they would bolster support for deeper criminal justice reforms pushed by a small group of activists, human rights groups, and jurists organized around issues of due process, extrajudicial killings, and torture.[3]

The reform effort did not begin to proceed seriously until the Peña Nieto administration, when the new government began doubling its spending on federal grants to states to assist with implementing the reform (Rodríguez Ferreira and Shirk, 2015). In 2014, the federal government passed the National Code of Criminal Procedure, which all states were obligated to adopt and is the treatment we examine in this paper.

4   Judicial Checks on Prosecutions

Our theoretical discussion highlights judicial checks on prosecutors and police as one of the main reasons why the criminal justice reforms restrain torture. The reform introduced new protections like the explicit prohibition of torture and the fact that confessions are

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[2]Resources also came from other sources, including the Inter-American Development Bank.

[3]As part of the local activism movement we highlight the documentary by Roberto Hernández and Layda Negrete, *Presumed Guilty*, which exposed the injustice a Mexico's judicial system that presumes suspects guilty until proven innocent.

inadmissible in court unless they are extracted in the presence of a defense attorney. To be effective, these legal prohibitions require judicial willingness to enforce them. Thanks to the criminal justice reform, for the first time the Mexican judiciary would have an explicit constitutional mandate to impose checks on prosecutors and police. A critical question is the extent to which courts actually have begun to impose these controls.

In order to shed light on this mechanism, we use a structural topic model trained on a corpus of 2,078 Mexican jurisprudential theses. A topic model presents text generation as a hierarchical model in which an author draws a topic at random, then draws a word at random from a distribution over words that is specific to that topic; the model infers topics in a document conditional on the distribution of words in that document and the co-occurrence of words across documents (Blei et al., 2003; Blei, 2012). Here, we present results from a model with five topics.[4] The texts were scraped from the website of the Mexican Supreme Court covering the period from 1988[5] to early 2019 and are those that were classified by the Court as relating to criminal law. Decisions were classified based on whether a given topic was a plurality of the estimates for the thesis. We then plot the proportions of each year's decisions classified under each topic against the year the decision was published in Figure 1.

Topic 4[6] in this model is closely tied to concerns about basic human and procedural rights, international law, and torture. This topic begins as the least common class of decisions in 1990, then steadily increasing around 2008 when the reform process began. We note that although the reform was not implemented in the states until after 2014, the corpus of law was incorporated into the constitution in 2008, which opened the door for the Supreme Court to begin to interpret it.

Technically, most cases involving violations of due process rights and allegations of

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[4]Section 6 of the Online Appendix provides a discussion with several alternative topic models. All models show the same pattern of change in human rights and criminal procedure decisions.

[5]The Court's database of jurisprudential theses reports dates in the body of the text prior to 1988 rather than as metadata, which makes them difficult to extract reliably.

[6]Decisions falling under this topic as well as its frequent and exclusive words are discussed in greater detail in Section 7 of the Online Appendix.

Figure 1
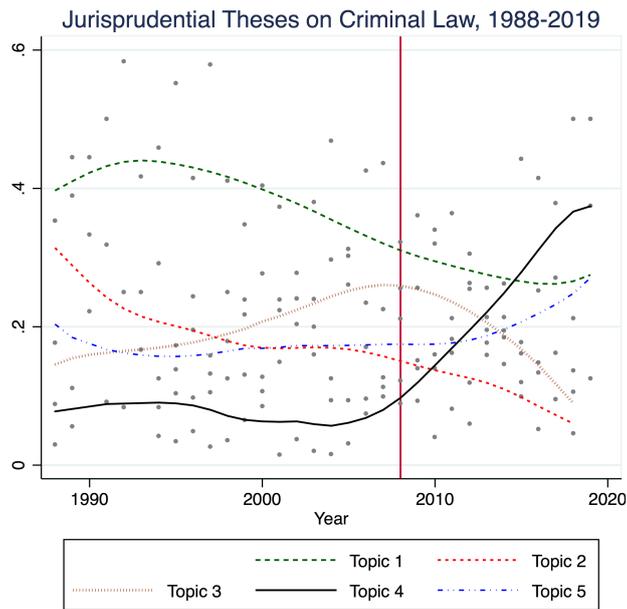
Note: This figure shows Supreme Court decisions relating to criminal law classified by a structural topic model. Lines are Lowess estimates for the overall proportion of each topic in each year. The vertical line marks 2008. Topic 4 corresponds to issues related to human rights and criminal procedure.

torture arrive in federal courts through *Amparo trials* (a form of habeas corpus). By raising constitutionality issues, cases could reach the Supreme Court even before the implementation of the reform at the local level. After implementation, it stands to reason that more cases related to violations of due process would begin to be heard before lower level courts, whose decisions can be challenged in Collegiate Tribunals. The Supreme Court has a right to take these cases. It goes beyond the scope of this paper to document how lower level courts are enforcing the new legal corpus, but we believe that variation across states in judicial capacity[7] and willingness to enforce the legal corpus might help explain why the reform is more effective in some states than others. We leave this question for further research.

To illustrate the importance of judicial checks for restraining torture, we discuss two highly visible rulings. The first involves a 2013 decision to release twelve people serving prison terms for a 1997 massacre in the community of Acteal, Chiapas, in which

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[7]We explore the role of judicial capacity in the Appendix, Section 4.6.

45 victims were killed. The Court argued that the evidence presented by the Attorney General's Office was illicit because he used "forged evidence and coerced testimonies" — the main evidence presented against the accused and by which they were all convicted. Another historic decision came in 2018 from the First Collegiate Tribunal of the 19th Circuit against the Attorney General's Office for its illicit investigative tactics regarding the disappearance in 2014 of 43 students from the rural college of Ayotzinapa. The Tribunal upheld the decision of a lower-level court that ruled in favor of four imprisoned witnesses who said they were tortured by the authorities as part of the federal investigation. Moreover, the tribunal condemned the Attorney General for having used torture as one of the components of a fabricated case.

Table 1: **Reform implementation dates examined**

State	Implementation dates (year - month - day)
Aguascalientes*	2014-11-07, 2015-05-01, 2015-11-06, 2015-12-11, 2016-05-27
Baja California	2015-08-11
Baja California Sur	2015-07-01, 2016-01-01, 2016-06-17
Campeche	2014-12-03, 2015-08-04, 2016-05-18
Coahuila*	2014-09-27, 2014-10-28, 2015-03-09, 2016-02-29
Colima	2014-12-31, 2015-09-01, 2016-05-20
Chiapas*	2015-02-25, 2015-09-23, 2015-11-25, 2015-12-30, 2016-03-31
Chihuahua	2016-06-13
Durango	2014-05-07, 2014-06-10, 2015-05-07
Guanajuato	2016-06-01
Guerrero	2014-09-30, 2015-03-03, 2015-04-03, 2015-05-03, 2015-08-05, 2016-05-20, 2016-05-25, 2016-06-01
Hidalgo	2014-11-18, 2015-07-14, 2015-09-29, 2016-02-16, 2016-06-07
Jalisco	2014-10-01, 2015-03-15, 2015-06-29, 2016-01-15, 2016-02-15, 2016-05-31
Mexico (City)*	2015-12-02, 2016-06-16
Mexico (State)	2016-05-18, 2016-06-18
Michoacan	2015-03-07, 2015-08-03, 2016-02-11, 2016-05-09
Morelos	2015-01-07
Nayarit*	2014-12-15, 2015-12-31, 2016-06-15
Nuevo Leon	2016-01-01
Oaxaca	2015-12-02, 2016-02-02, 2016-03-02, 2016-06-18
Puebla	2014-05-21, 2014-09-17, 2016-06-17
Queretaro	2014-06-02, 2014-09-29, 2016-05-30
Quintana Roo	2014-06-10, 2016-06-18
San Luis Potosi*	2014-09-30, 2015-03-27
Sinaloa	2014-10-15, 2015-06-01, 2016-01-15, 2016-06-13
Sonora*	2015-12-15, 2016-03-30, 2016-05-30
Tabasco	2014-10-04, 2014-10-06, 2014-12-15, 2015-04-06, 2015-08-24, 2015-10-19, 2015-12-07, 2016-04-25, 2016-06-06
Tamaulipas*	2015-10-15, 2015-11-05, 2015-12-04, 2016-01-11, 2016-02-03, 2016-03-01, 2016-06-13
Tlaxcala*	2014-12-31, 2015-11-30, 2016-06-18
Veracruz	2014-11-11, 2015-05-12, 2015-11-10, 2016-05-11
Yucatan	2015-09-22
Zacatecas	2015-01-05, 2016-01-04

Note: States with only one date imply that the reform was implemented across the state all at once, while those with multiple dates imply staggered implementation across judicial districts. * refer to states that implemented the reform by category of crime.

Exploratory interviews we collected with police officers in Guadalajara, Monterrey, and Mexico City between the fall of 2017 and first six months of 2018, which we discuss in Section 8 of the Online Appendix, reveal the expectation that judges will release suspects if police violate due process is a major force driving changes in police behavior, also contributing to change the way police corporations reward officers. Monetary bonuses for the number of arrests or "solved murders per month", which have been common practices, generate incentives for police to torture and, as some of our interviewees revealed to us, these incentives are "no longer compatible with the criminal justice system."

5   Implementation of the Reform

The staggered implementation of the reform is outlined in Table 1. The dates are the unique dates on which the reform was implemented within that state. States with only one date imply that the reform was implemented across the state all at once, while those with multiple dates imply staggered implementation across judicial districts.

There were three ways by which states updated their systems. States (a) created a timetable whereby the reform would take effect in specific geographic units (judicial districts or the entire state) on a certain date, (b) created a timetable whereby the reform would begin covering certain classes of crimes on a given date, or (c) chose some combination of the two. Asterisks indicate jurisdictions that implemented the reform following methods (b) or (c). We obtained the dates of implementation by state through the Supreme Court's website and state records.

As noted by Shirk (2010), the scope and scale of change contemplated under the 2008 judicial reforms were enormous. Existing legal codes and procedures needed to be revised both at the federal and state levels; courtrooms needed to be remodeled and outfitted with recording equipment; and judges, court staffs, police, and lawyers needed to be retrained to operate under the new system (p. 234). There is likely a great deal of heterogeneity in the way states have adjusted to the reform. On the one hand, states

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might rely more on coerced confessions due to organizational weaknesses and a lack of capacity to investigate crimes, which might partly be driven by absence of adequate personnel, protocols, training, and funding. Institutional corruption might also be driving lack of capacity to investigate crime. In many states, local police are regularly effectively captured by OCGs. Whether they are captured or not might be an important factor in whether they torture and whom they victimize. Moreover, as argued above, local courts independence and capacity also matter. Section 4.6 of the Online Appendix presents evidence that bureaucratic and judicial capacity are associated with less torture. In the main body of this paper, we will hold state level characteristics constant, seeking to identify the causal effects of the abandonment of inquisitorial criminal procedures on torture. We test the following hypothesis:

> **H2:** *Torture should decrease with the implementation of the criminal justice reform.*

5.1 The reform and "organized crime"

Despite the fact that the president approved the reform, it is important to highlight that it was not implemented until *after* the Calderón presidency was over. Moreover, the reform included loopholes to allow the federal government leeway when prosecuting "organized crime," which would not fall under many of the protections of the new laws. Organized crime is defined by the Federal Law as federal crimes committed by "three or more persons organized permanently or repeatedly" for the purpose of committing serious crimes such as terrorism, drug trafficking, counterfeiting, arms trafficking, human trafficking, organ trafficking, kidnapping, and car theft. In cases involving organized crime, the reform entailed a constitutional amendment to allow for the sequestering of suspects under *arraigo* (extended pretrial detention) for up to 40 days without criminal charges (with a possible extension of an additional 40 days). Many of these crimes correspond to the federal jurisdiction and hence the loopholes in the law affect more

federal prisoners. Prisoners may be held in solitary confinement and placed in special detention centers created explicitly for this purpose.

Given these legal exceptions with respect to organized crime and also in line with the existing literature on "violent dissent" (Davenport et al., 2007), our theoretical approach proposes that high levels of organized criminal threat should increase torture and other forms of police brutality. We test the following hypotheses:

H3: *Torture should be likelier when the threat of organized crime is high.*

H4: *Organized crime threats should mitigate the effects of the reform restraining torture.*

H5: *Federal prisoners should be subject to more abuse than state prisoners.*

H6: *The criminal justice reform should constrain abuses against suspects accused of common crimes, but still grant leeway to commit abuses against criminal suspects accused of "organized crime".*

To measure organized crime threats, we focus on turf wars. Existing literature agrees that militarized security polices and the arrest of drug kingpins spread violence (Dell, 2015; Lessing, 2015; Calderón et al., 2015). Turf wars erupted between drug trafficking organizations fighting for control of the most valuable drug trafficking corridors and border cities to smuggle drugs to the U.S. At the same time, the arrest of drug kingpins had the effect of fragmenting criminal organizations and breaking up chains of command. Drug syndicates began to diversify their portfolio into extortion and other crimes, including human trafficking. To identify turf wars we focus on extraordinary increases in violence, defined as periods when homicide rates in a municipality increase by more than three standard deviations relative to the municipality's historic mean. Figure 2 displays the municipalities where there was a turf war during the period of implementation of the reform.

Figure 2: **Turf wars from 2013 to 2018**
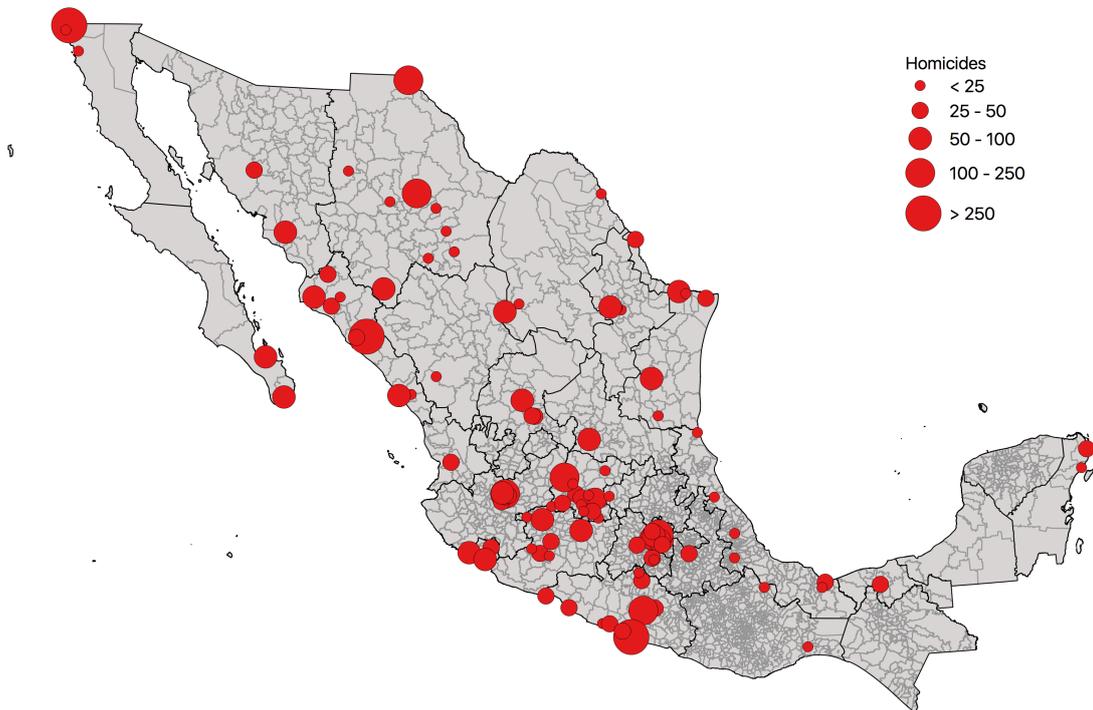
Notes: The figure shows the incidence of turf wars at the municipality level defined as increases in homicides of more than three standard deviations from the municipality's historic mean. Homicide data since 1990 is for males ages 18 to 39 and comes from SINAIS. We draw from Robles (2016) to calculate these turf wars.

6 Data

Our data come from the National Survey of the Population Deprived of Liberty (ENPOL), conducted by INEGI. The survey contains ten questionnaires covering the backgrounds of incarcerated individuals, their experience of the criminal justice system, and their lives in prison. We distinguish between two different kinds of torture derived from the ENPOL. First, we examine what we call "brute force." To construct our measure of brute force, we use two questions: (a) whether the individual was beaten or kicked and (b) whether the individual was beaten with objects. Responding affirmatively to one of the questions constitutes brute force torture.[8] We contrast this with what we term institutionalized torture. Following Magaloni et al. (2018), we take this as torture that requires a dedicated space, equipment, or training to be carried out effectively. Since this kind of torture requires physical and human resources in the form of space, specialized equipment, and some degree of training to avoid killing the victim,[9] we believe that it requires some level of institutional endorsement and support to take place, either in the cells of police stations, the prosecutor's headquarters, or a clandestine detention center. We operationalize this concept by using questions about whether a respondent was crushed with a heavy object, electrocuted, suffocated or submerged in water, burned, or stabbed while in custody. If the prisoner responds that he was subject to one of these five abuses, he is coded as having been subject to institutionalized torture. Finally, we include reports of threats by authorities either to press false charges or to harm a detainee's family. We thus have the following measures of violence and intimidation:

1. Brute Force

2. Institutionalized torture

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[8]The wording for these questions as well as more details of how the surveys were collected by INEGI are provided in the Online Appendix, Section 1.

[9]It is for this reason that governments often employ medical professionals in clandestine torture centers. See, for instance, the use of doctors by the Argentine military during the Dirty War or by the CIA in its post-9/11 torture program.

3. Threats

7 Abuse in the Mexican criminal justice system

Table 2 reports the different forms of abuse prisoners experienced. The table distinguishes between reported abuses *before* the prisoner arrived at the MP and abuses *at* the MP. It reports the percentage of prisoners experiencing some kind of abuse and the total numbers in parentheses. Notably, violent forms of institutionalized torture are alarmingly common. These forms of institutionalized torture are slightly more common before the suspect arrives to the MP, and probably take place either in a clandestine detention center or at the police headquarters. Many prisoners report other kinds of abuses, including being held incommunicado, stripped, restrained or tied, or blindfolded. The data also suggest many prisoners are subject to abuses both before and after arriving at the MP.

Table 2: **Abuses reported by prisoners**

Type of abuse	Before public ministry	At public ministry	At both
Brute force			
Beatings	58.61	38.16	33.24
	(34,067)	(22,184)	(19,322)
Beatings with objects	38.98	22.95	18.52
	(22,658)	(13,341)	(10,766)
Institutionalized torture			
Crushed with heavy objects	37.14	22.77	18.20
	(21,588)	(13,233)	(10,582)
Suffocated or submerged in water	36.63	24.83	20.15
	(21,291)	(14,431)	(11,712)
Electric shocks	19.87	13.83	10.33
	(11,551)	(8,037)	(6,002)
Burned	6.66	4.35	2.80
	(3869)	(2,529)	(1,629)
Stabbed	3.96	2.31	1.18
	(23,00)	(1,341)	(685)
Threats			
False charges	51.80	39.49	31.99
	(30,107)	(22,955)	(18,594)
Harming family	28.93	29.11	15.31
	(16,816)	(16,922)	(8,899)
Other abuses			
Held incommunicado	57.74	47.81	39.26
	(33,560)	(27,791)	(22,819)
Stripped	45.67	38.16	29.55
	(26,545)	(22,183)	(17,175)
Tied	41.19	28.82	23.23
	(23,944)	(16,752)	(13,502)
Blindfolded	40.54	26.60	22.10
	(23,563)	(15,459)	(12,848)

Notes: This table shows reported rates of different kinds of abuses for the entire sample of state and federal prisoners. We show the total number of prisoners in each category in parentheses.

Table 3 classifies abuses into the three categories that will be used for the empirical analyses: brute force, institutionalized torture, and threats. The table also includes basic descriptive statistics that will be relevant for our analysis. The descriptive statistics reveal that abuse is endemic throughout social and demographic subgroups of the data. The data reveal that municipal and ministerial local police forces perform the overwhelming

majority of the arrests. As expected, there is a significantly higher incidence of torture for prisoners detained in federal prisons and among those who were detained by the military and federal police. These data reinforce the findings in Magaloni et al. (2018), which show that the armed forces are significantly more prone to engage in torture. Although the army, in theory, have better training, better weapons, and may be less corrupt, they deal with more violent threats and engage in more armed combat against OCGs than local police forces do. Moreover, their specialized training, equipment, and culture makes them more prone to use extrajudicial force (Pérez Correa et al., 2015; Flores-Macías and Zarkin, 2019).

Those accused of theft are equally or more likely to be tortured and brutalized than those accused of homicide. These data reveal that the Mexican inquisitorial criminal justice system punished poverty, detaining and torturing thousands of people for petty theft. There is a higher incidence of torture among those accused of kidnapping, possession of illegal weapons, extortion, and drugs commerce. The last rows of the table show that 66% of respondents reported been subject to brute force, 54% to torture and 65% to threats.

Table 3: **Covariates of Torture**

Characteristics	Brute Force	Torture	Threats	Proportion	Total
Arresting Authority					
Municipal police	62.3%	46.5%	57.9%	28.7%	16,655
State police	67.5%	57.0%	65.0%	13.9%	8,057
Ministerial police	65.4%	55.2%	66.6%	36.0%	20,928
Federal police	69.2%	60.0%	74.5%	8.1%	4,737
Military	78.6%	69.5%	75.0%	7.4%	4,287
Prison					
State Prison	64.2%	52.1%	62.7%	88.2%	51,293
Federal Prison	77.4%	68.7%	80.3%	11.8%	6,834
Crimes					
Homicide	64.6%	54.3%	63.3%	23.7%	13,702
Rape	50.6%	37.0%	48.4%	10.5%	6,106
Theft	70.3%	55.8%	65.8%	33.1%	19,199
Drugs (commerce)	74.0%	63.6%	79.0%	4.4%	2,549
Drugs (possession)	68.5%	59.1%	73.0%	8.5%	4,926
Extortion	82.7%	74.1%	83.6%	1.5%	846
Illegal weapons	85.0%	76.1%	82.2%	11.9%	6,869
Kidnapping	88.1%	80.9%	88.6%	9.8%	5,674
Sex					
Male	66.6%	54.7%	64.5%	94.8%	55,081
Female	51.8%	42.8%	71.7%	5.2%	3,046
Education					
Primary or less	61.4%	49.4%	59.6%	26.0%	15,100
Secondary	67.6%	55.5%	66.0%	47.0%	27,245
High School	70.3%	59.2%	70.5%	18.3%	10,600
College or postgraduate	61.3%	53.9%	67.8%	4.6%	2,673
Speaks an indigenous language					
Yes	57.7%	47.1%	59.3%	6.7%	3,882
No	66.4%	54.6%	65.2%	93.3%	54,235
Age at arrest					
18-25	73.0%	60.4%	68.8%	35.4%	20,373
26-35	68.0%	56.2%	67.6%	35.9%	20,663
36-45	59.6%	48.8%	61.5%	19.1%	11,012
46-55	46.8%	36.8%	50.2%	6.9%	3,956
56-65	36.0%	26.8%	39.2%	2.1%	1,200
65+	23.5%	16.1%	27.6%	0.6%	319
Total Abuses					
Proportion	65.8%	54.1%	64.8%		
Number	36,713	30,115	36,124		

Notes: The rows show the percentage of prisoners in each of the subgroups experiencing abuse. Columns 4-5 report the percentage and total number falling in each category.

In terms of how truthful prisoners' responses might be, it is important to mention that although the majority of respondents had been convicted, those who were in prison waiting for a sentence could have assumed that their answers were consequential for their sentences and might possess more incentives to lie. Table 4 shows the conviction status of the prison population: around 68% had been convicted at the time of the survey, 29% were waiting for a sentence, and 2% were "partially" sentenced. The table also shows the percentage of individuals in each group who reported abuses. Propensities to report abuse are lower among convicted prisoners than among those who had not been convicted, which suggests that the latter group might be giving systematically different responses. The "partially sentenced" group shows a significantly higher propensity to report abuses. We deal with this in the Appendix by matching on sentencing status.

Table 4: **Conviction status and reported abuses**

	Brute Force	Inst. Torture	Threats	(Num)
Not Sentenced	67.81%	58.21%	69.79%	17,069
Sentenced	64.42%	51.69%	62.09%	39,525
Partly Sentenced	81.25%	83.79%	81.87%	1,337
(Num)	36,713	30,155	36,124	

Notes: Rows 1-3 show reported rates of abuse by conviction status. Row 4 shows total number of prisoners reporting each kind of abuse. Column 4 shows the total number of prisoners in each conviction category.

8 Trends

Our dependent variables correspond to the three forms of abuse defined above. Each is a binary indicator for whether a respondent reported that kind of abuse. We will use OLS regressions because our models include geographic and time fixed effects, which generate problems in logistic regressions. In Table A3 of the Online Appendix, we present our main models using logits and all of our results hold. To explore time trends, we run the following model:

$$y_{ist} = \alpha + \lambda_s + \gamma_t + \epsilon_{ist} \tag{1}$$

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Figure 3: **Year of arrest and types of abuse**
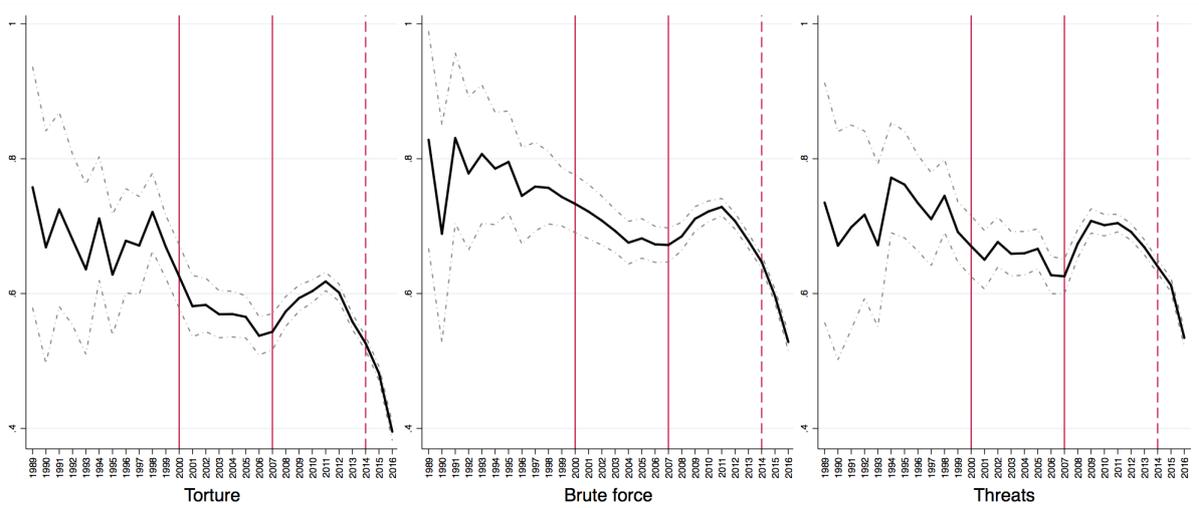
Notes: The figure shows predicted rates of different forms of abuse by the year of arrest, and their
95% confidence intervals from three OLS regressions. All models include year and state fixed effects.
The first vertical solid line is the year the PRI lost the presidency (2000). The second vertical solid
line indicates the onset of the Drug War (2007). The vertical dashed line is when states began to
implement the reform (2014).

where y_{ist} is a dichotomous indicator that takes the value of 1 if prisoner i reports
any type of abuse that corresponds to our definition of institutionalized torture, brute
force, or threats. The model uses fixed effects for the year and state where the prisoner
was detained (λ_s and γ_t, respectively).

We plot predicted rates of abuses for all prisoners by their year of arrest. As shown in
Figure 3, institutionalized torture, brute force, and threats seem to decline gradually until
2006. After that, these abuses increase precipitously until about 2012. These increases
coincide with the the onset of the Drug War. Abuses then decline with the end of the
Calderón presidency. The implementation of criminal justice reform after 2014 appears
to accelerate the rate of decline. From these time trends we, of course, cannot infer
the causal effects of the Drug War or the reforms. The sections below offer a series of
statistical tests to demonstrate causal effects.

9 Effects of the Reform

To estimate the effects of the reform, we merged the survey data with the dataset of reform dates described in Section 5. To assign prisoners to the reform, we focus on states that implemented the reform in specific geographic units (judicial districts or the entire state) on a certain date, which are the majority of states.[10] For states that have multiple implementation dates, each corresponding to defined regions or judicial districts within the state, we examine the municipality where the arrest took place and identify whether that arrest took place before or after the implementation of the reform in that municipality. Any individual arrested on or after the implementation date in a given municipality is considered to have been arrested under the new system.

Table 5: **Abuses before and after the criminal justice reform**

	Average, all pre-reform	Average, all post-reform	Difference	p-value
Brute Force	67.63	47.74	-19.89	0.00
Institutional Torture	56.31	37.53	-18.77	0.00
Threats	65.04	47.66	-17.37	0.00
Total No.	29,833	2,743		

Note: Percentage of prisoners experiencing each form of abuse in the pre and post-reform periods. Row 4 indicates the total number of prisoners arrested in each of the periods. The total number of prisoners drop with respect to those reported in Tables 1-3 because we only include prisoners from states that implemented the reform using the geographic criteria.

Table 5 classifies the data in the pre-reform and post-reform era. The comparison of the entire pre- and post-reform periods shows a dramatic decline in the occurrence of these abuses. Estimating the causal effect of the criminal justice reform on torture is complicated by the fact that unobserved factors may simultaneously lead to the implementation of the reform and affect torture. Our strategy for overcoming this identification challenge relies on a difference-in-difference statistical approach where first, we use judicial district, municipal, or state fixed effects to hold constant time-invariant characteristics of the local police organizations, judges, and authorities. Second, we use fixed effects for the year of

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[10]For those states that updated by category of crime, we do not have fine-grained enough information about the crimes respondents were accused of to match them against the specificity of the statutes covered by the implementation decrees.

the arrest. These are essential to capture national policy effects (e.g., the onset of the Drug War, alternation of political power in office and electoral competition, etc.).

The model specification is as follows:

$$y_{ist} = \alpha + \beta_1 T_i + \sum_k \delta_k X_{ik} + \lambda_s + \gamma_t + \epsilon_{ij} \tag{2}$$

where y is a dichotomous indicator that takes the value of 1 if prisoner i reports any type of abuse that corresponds to our definition of institutionalized torture, brute force, or threats. T_i is an indicator variable for treatment. The model also includes k individual covariates as well as judicial district and time fixed effects (λ_s and γ_t, respectively). In terms of individual-level controls, we include age at arrest, gender, education, indigenous language, and income.[11]

Table 6: **Effects of Criminal Justice Reform: OLS models**

	Torture	Brute	Threats	Torture	Brute	Threats	Torture	Brute	Threats
Reform	-0.0591**	-0.0796***	-0.0712***	-0.0392*	-0.0559***	-0.0547***	-0.0502*	-0.0674***	-0.0659***
	(0.0193)	(0.0177)	(0.0157)	(0.0177)	(0.0162)	(0.0135)	(0.0195)	(0.0179)	(0.0159)
Constant	0.724**	0.640*	1.200***	0.355	0.242	0.777***	0.511	0.456	1.116***
	(0.276)	(0.259)	(0.0645)	(0.304)	(0.297)	(0.0497)	(0.332)	(0.315)	(0.0270)
N	37632	37669	37625	37632	37669	37625	37632	37669	37625
State FE	Y	Y	Y						
Judicial District FE				Y	Y	Y			
Mun. FE							Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y

Notes: Estimated coefficients for the criminal justice reform from OLS regressions. All models include socio-economic characteristics and year fixed effects. Standard errors (in parentheses) are clustered by judicial district. *** : p < 0.001, ** : p < 0.01, * : p < 0.05, +: p ¡ 0.1.

Results of the regression models are provided in Table 6. We find consistent effects of the reform, in the range of four to eight percentage point reductions of different forms of police brutality, depending on type of abuse and model specification. Models 1 to 3 use municipal fixed effects, models 4 to 6 state fixed effects, and models 7 to 9 use fixed effects at the judicial district level.[12] In all specifications, we find statistically significant negative effects of the reform.

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[11]Details about how we constructed this measure are provided in Section 1.2 of the Online Appendix.

[12]Since this is the treatment unit, unless otherwise specified, our preferred unit fixed effect when modeling the effects of the reform will be judicial district.

In section 4.5 of the Online Appendix, we present evidence of pre-treatment parallel trends. Following Autor (2003) and Angrist and Pischke (2009), we estimate models with monthly leads and lags of the treatment. The models show little evidence of a prior effect, with leads near zero. Additionally, we estimate a stricter model that relaxes the assumption of a common trend by estimating models with unit-specific time trends. These latter models were estimated using state, judicial district, and municipal level time trends. We also estimate this using months, rather than years, as the temporal unit of analysis. We further estimate our main results with state-year fixed effects, to avoid assuming linear trends in the data when controlling for changes over time. All 42 models considered in that section of the Online Appendix still pick up the effect of the reform, dramatically bolstering our confidence in our identification strategy.

10   Confounding factors

A possible objection to our results is that the decline in torture could result from the fact that, after the reform, police might be arresting fewer criminals for less serious crimes and these persons might be less likely to be tortured. As part of the presumption of innocence, the 2008 reforms seek to limit the use of pretrial detention. Under the new laws, pretrial detention is intended to apply only in cases of violent or serious crimes, and for suspects who are considered a flight risk or a danger to society. Although many argue that the law gives too much leeway for interpretation, one of the implications of this law is that we should observe fewer detentions for less serious crimes.

In Figure 4, we present coefficients from OLS models for monthly arrests by crime before and after the reform according to crime. Our sample has fewer arrests for theft after the reform and slightly more prisoners arrested for kidnapping. We also inquire if the composition of our sample by arresting authority changes with the reform. As shown in Figure 4 our sample's proportion of arrests by the armed forces, federal, and state police do not change with the reform. We have a slight increase in the proportion of

Figure 4: **Proportion of arrests around reform by crime and coercive institution**
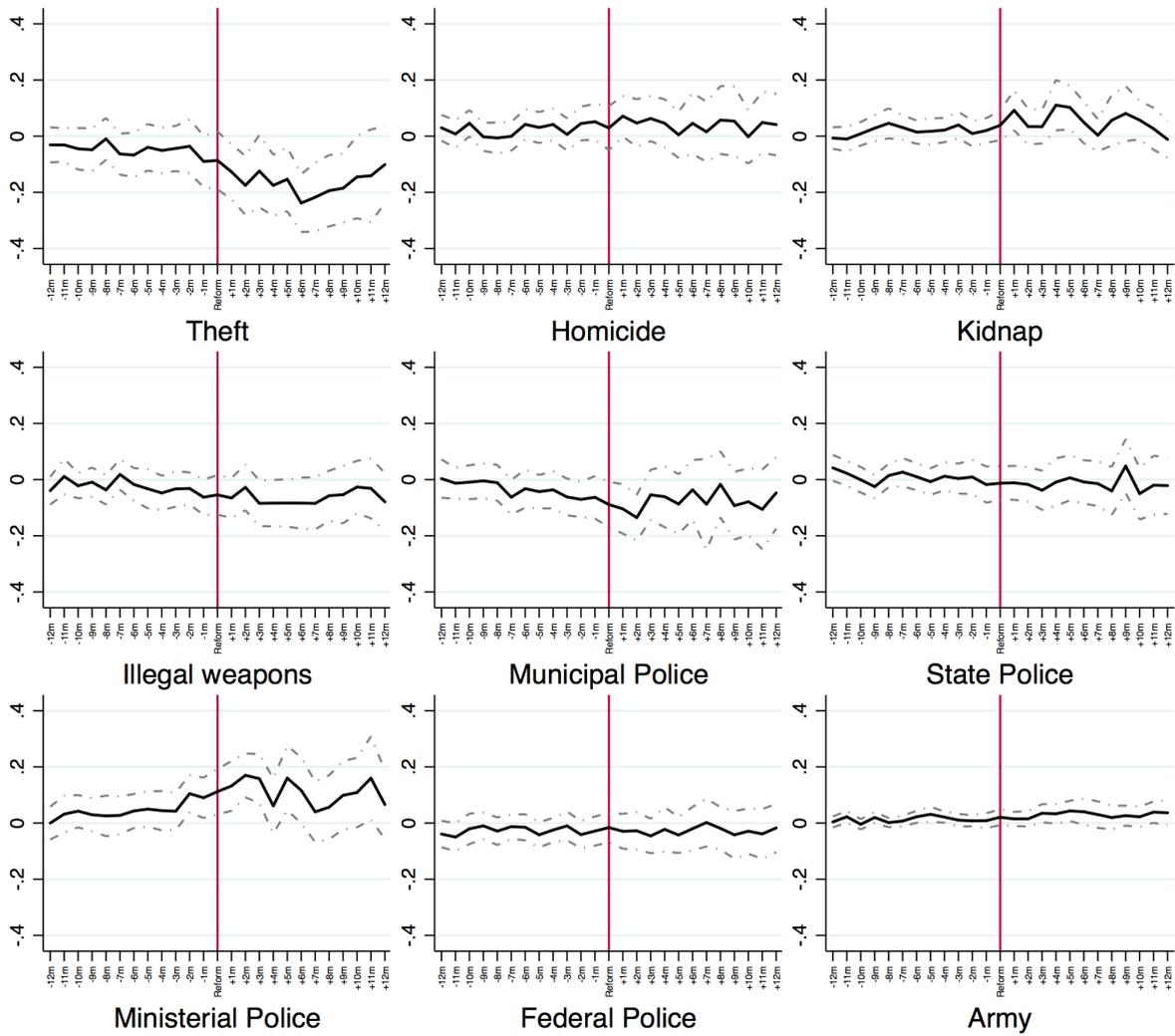
Notes: The figures show predicted arrests by crime and arresting authority for the 12 months before and after the implementation of the reform and their 95% confidence intervals from nine OLS regressions. Full tables of coefficients are shown in Section 4.7 of the Online Appendix. Errors are clustered at the judicial district level. The vertical line is the implementation of the reform.

prisoners in our sample arrested by the ministerial police and a decrease in arrests by the municipal police.

The fact that the post-reform sample sees declines in arrests for theft and arrests by municipal police poses a problem for our analysis. Table 3 shows that individuals arrested for theft are a substantial portion of our sample and are actually tortured at high rates, though they are far from the most likely to be victims. Moreover, municipal police torture at lower rates than other authorities and although this would work against our argument that the reform reduces torture, we need to account for this potential confounding factor as well. To deal with this problem we cannot simply run a regression controlling for these covariates, as we have just shown that some of these variables are themselves affected by the treatment of interest. Consequently, we follow the procedure set out in Imai et al. (2011) and its implementation in Imai and Yamamoto (2013) to explore whether and how these factors mediate the effect of the reform in reducing torture. They propose a method to estimate both the average causal mediation effect, or the effect of the mediator, and the average direct effect of the treatment. Briefly, we estimate two equations – one for the moderator (M_{ist}) and one for the dependent variable (Y_{ist}):

$$M_{ist} = \alpha_1 + \tau T_{ist} + \lambda_t + \gamma_s + \epsilon_{ist} \tag{3}$$

$$Y_{ist} = \alpha_2 + \tau T_{ist} + \beta M_{ist} + \lambda_t + \gamma_s + \epsilon_{ist} \tag{4}$$

Where α is an intercept, τ is the coefficient on the treatment, β is the effect of the moderator, and λ and γ are year and judicial district effects, respectively. Their method then generates predictions for the mediator under treatment and control, then uses these values to predict missing values in a potential outcomes model that includes the mediator and the treatment. Their method uses bootstrapping to estimate uncertainty.

The purpose of this exercise is not to identify the causal pathway, but rather to see if, while being generous to the hypothesis that our results are being driven by these imbalances in posttreatment covariates, we find evidence that the mediator explains our

Table 7: **Mediators**

	Coefficient	Lower 95% CI	Upper 95% CI
Torture			
Mediator effect: police	0.0034	−0.0004	0.0075
Direct Effect	−0.0565***	−0.0898	−0.0245
N 35,675			
Mediator effect: theft	−0.007***	−0.0105	−0.003
Direct Effect	−0.0388*	−0.0748	−0.0019
N 37,633			
Brute Force			
Mediator effect: police	0.0013	−0.0001	0.0034
Direct Effect	−0.067**	−0.0989	−0.0355
N 35,711			
Mediator effect: theft	−0.0082***	−0.0126	−0.0042
Direct Effect	−0.0547***	−0.0873	−0.0223
N 37,671			
Threats			
Mediator effect: police	0.0044	−0.0004	0.0093
Direct Effect	−0.0681***	−0.0937	−0.0425
N 35,666			
Mediator effect: theft	−0.0036***	−0.0064	−0.0015
Direct Effect	−0.0534***	−0.0824	−0.0252
N 37,630			

Notes: Results from a mediation analysis testing whether the pre- and post- treatment imbalance in arrests by the municipal police and arrests for theft is driving our results. All models include socio-economic characteristics. Bootstrapped standard errors clustered by judicial district are reported in parentheses + *** : $p < 0.001$, ** : $p < 0.01$, * : $p < 0.05$, +: p ¡ 0.1.

effect. We run this for each of our dependent variables twice – once using arrests for theft as the moderator and again using arrests by the municipal police. The results from this test are reported in Table 7; the direct effect remains when accounting for the mediation, which appears to be quite small in substantive terms across all the models.

11 Robustness tests

In Table 8 we present a series of robustness tests. First, we test whether there is a detectable effect of jurisdictions anticipating the reform's implementation. Each state legislature published official declarations announcing the timetable for the reform's implementation in 2014. We constructed a variable to indicate the period *after* the reform's

Table 8: **Placebo tests for the criminal justice reform**

	(1) Torture	(2) Brute	(3) Threats	(4) Torture	(5) Brute	(6) Threats	(7) Torture	(8) Brute	(9) Threats
Anticipation effects									
Reform announced	-0.00782	-0.0112	0.0125	-0.00598	-0.0122	0.0135	-0.00580	-0.0108	0.0128
	(0.0162)	(0.0155)	(0.0161)	(0.0161)	(0.0153)	(0.0161)	(0.0167)	(0.0157)	(0.0163)
Reform	-0.0529*	-0.0789***	-0.0397*	-0.0449*	-0.0708**	-0.0371*	-0.0473*	-0.0707**	-0.0387*
	(0.0217)	(0.0219)	(0.0190)	(0.0213)	(0.0219)	(0.0188)	(0.0226)	(0.0228)	(0.0194)
Constant	0.392	0.404	0.357	0.652**	0.527*	0.435	0.457	0.493	0.398
	(0.217)	(0.223)	(0.238)	(0.224)	(0.229)	(0.233)	(0.240)	(0.256)	(0.228)
N	31,181	31,215	31,182	31,181	31,215	31,182	31,181	31,215	31,182
Two years									
Placebo	-0.00553	-0.00256	-0.00344	0.00341	0.00820	0.00144	0.00410	0.00753	-0.000581
	(0.0126)	(0.0113)	(0.0119)	(0.0126)	(0.0110)	(0.0109)	(0.0128)	(0.0113)	(0.0118)
Constant	0.717*	0.642*	1.203***	0.351	0.243	0.771***	0.513	0.463	1.122***
	(0.287)	(0.269)	(0.0609)	(0.304)	(0.298)	(0.0494)	(0.329)	(0.313)	(0.0279)
N	35,004	35,038	34,994	35,004	35,038	34,994	35,004	35,038	34,994
Three years									
Placebo	-0.0247	-0.0153	-0.0144	-0.0238	-0.0134	-0.0190	-0.0183	-0.00475	-0.0170
	(0.0170)	(0.0158)	(0.0133)	(0.0166)	(0.0160)	(0.0126)	(0.0173)	(0.0168)	(0.0135)
Constant	0.718*	0.641*	1.203***	0.354	0.244	0.773***	0.513	0.463	1.122***
	(0.287)	(0.269)	(0.0608)	(0.304)	(0.298)	(0.0495)	(0.329)	(0.313)	(0.0279)
N	35,004	35,038	34,994	35,004	35,038	34,994	35,004	35,038	34,994
Four years									
Placebo	-0.0301	-0.00581	0.00433	-0.0260	-0.00130	0.00735	-0.0326	-0.0104	-0.00730
	(0.0183)	(0.0161)	(0.0165)	(0.0166)	(0.0144)	(0.0135)	(0.0190)	(0.0165)	(0.0164)
Constant	0.717*	0.641*	1.203***	0.352	0.243	0.771***	0.515	0.464	1.122***
	(0.287)	(0.269)	(0.0611)	(0.304)	(0.298)	(0.0495)	(0.329)	(0.313)	(0.0279)
N	35,004	35,038	34,994	35,004	35,038	34,994	35,004	35,038	34,994
State FE	Y	Y	Y						
Judicial District FE				Y	Y	Y			
Mun. FE							Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y

Notes: Entries are estimated coefficients from OLS regressions for placebo tests that move the start dates of the reform two, three and four years before the actual dates. All models include socio-economic characteristics. Standard errors (in parentheses) are clustered at the judicial district level. *** : $p < 0.001$, ** : $p < 0.01$, * : $p < 0.05$, +: $p < 0.1$.

timetable was first announced but *before* the reform was actually implemented. This means we then have a sample divided into the pre-reform but pre-announcement era, the post-announcement but pre-reform era, and the reform era. When we ran these models, we did not find anticipation effects.[13]

We implemented additional placebo tests in which we artificially move the date of the implementation of the reform beyond our "announcement period" to two, three, and four years prior to the actual implementation. We repeat the specifications from the main model analyzing these "faked" reforms truncated at the date of the real reform. We report the coefficients on the artificial reform variable in Table 8 and find no significant

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[13]The full table is in Appendix Table A13.

effects across any of the models.

Lastly, in section 4.3 of the Online Appendix, we rerun our tests and use coarsened exact matching on crime, arresting authorities, and sentencing status to ensure balance in covariates that may be unbalanced in the pre- and post-reform periods and related to the outcome variables. Our results hold after we match on these variables. The Online Appendix also shows that the results are robust to the exclusion of any state in Tables A10-11.

12 Militarized security interventions and organized crime

Our theoretical approach proposes that militarized security interventions and organized crime threats increase torture, thus working in the opposite direction of the criminal justice reform. To model the effect of militarized security interventions, this part of the analysis focuses on the Calderón presidency, when the armed forces and federal police where deployed to assist local police to combat crime through "joint operations." Our theoretical approach stresses that arrests during these security interventions should be associated with more torture. Our model specification is as follows:

$$y_{ist} = \alpha + \beta_1 D_{st} + \sum_k \delta_k + \lambda_s + \gamma_t + \epsilon_{ist} \tag{5}$$

where y_{ist} is a dichotomous indicator for abuse reported by prisoner i and D_i is an indicator variable for treatment or whether the prisoner was arrested in a state during a joint operation. The model also includes k individual covariates as well as unit and time fixed effects (λ_s and γ_t, respectively).

Results are presented in Table 9. Model 1 shows that militarized operations substantially increase torture by almost 10 percentage points. Model 2 shows that the effect of militarized security interventions persists even after controlling for municipal-level turf

Table 9: **Effects of Militarized Security Interventions on Torture**

	(1) Torture	(2) Torture	(3) Torture	(4) Torture
Joint Operation (JO)	0.0953***	0.0513*	0.0854***	0.0685*
	(0.0202)	(0.0236)	(0.0220)	(0.0298)
Turf war				
Turf War		0.0391*		
		(0.0180)		
Federal prison				
Federal Prison			0.173***	
			(0.0157)	
Federal Prison x JO			0.00482	
			(0.0227)	
Arresting authority				
State				0.110***
				(0.0139)
Ministerial				0.0988***
				(0.0106)
Federal				0.168***
				(0.0190)
Army				0.288***
				(0.0180)
State x JO				-0.0132
				(0.0289)
Ministerial x JO				-0.0139
				(0.0240)
Federal x JO				0.0376
				(0.0419)
Army x JO				-0.0243
				(0.0341)
Constant	0.834***	0.611***	0.854***	0.745***
	(0.202)	(0.0356)	(0.217)	(0.208)
N	25712	19860	25811	24309
State FE	Y			Y
Municipal FE		Y	Y	
Year FE	Y	Y	Y	Y

Notes: Entries are coefficients from OLS regressions, and standard errors, clustered by municipality, in parentheses. All models include socio-economic characteristics. We truncate the data to cover all the arrests until the end of 2012, covering the Calderón administration's interventions but excluding arrests after that period. *** : $p < 0.001$, ** : $p < 0.01$, * : $p < 0.05$, +: $p < 0.1$.

wars, which also increase torture. To define turf wars, we add a dummy variable indicating that an arrest took place either in the same year as a war or where a turf war had occurred within the prior two years. As expected, turf wars are associated with more torture. Model 3 interacts joint operations with the prison jurisdiction, and shows that, as expected, federal prisoners are subject to significantly more torture, but finds that joint operations worsen conditions for state and federal prisoners alike, lending support to our argument that these militarized interventions also increase torture among state-level police forces. Model 4 interacts joint operations with the arresting authority. The armed forces and federal police engage in significantly more torture than state, ministerial and municipal police forces. There is no evidence, however, that joint operations have heterogeneous effects depending on the arresting authority.

In Table 10 we present placebo tests by artificially moving the date of joint operations back by one, two, and three years. We find no significant results for these "fake" joint operations. In Section 4.5 of the Online Appendix, we also explore the data for parallel trends and demonstrate that torture has similar trends in states with and without joint operations prior to the start of these security interventions. We also include models with state-specific time trends. The results are robust.

Table 10: **Placebos for federal military interventions**

	(1) Torture	(2) Torture	(3) Torture	(4) Brute Force	(5) Brute Force	(6) Brute Force	(7) Threat	(8) Threat	(9) Threat
One year	0.0399			0.00534			0.0109		
	(0.0306)			(0.0319)			(0.0256)		
Two years		0.0418			0.000441			0.0327	
		(0.0261)			(0.0236)			(0.0233)	
Three years			0.0414			0.0152			0.00593
			(0.0252)			(0.0232)			(0.0212)
Constant	0.647*	0.649*	0.650*	0.546*	0.545*	0.548*	0.727*	0.731*	0.727*
	(0.258)	(0.258)	(0.259)	(0.266)	(0.266)	(0.267)	(0.287)	(0.288)	(0.287)
N	13,130	13,130	13,130	13,149	13,149	13,149	13,122	13,122	13,122
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y	Y	Y

Notes: Entries are coefficients from OLS regressions where we artificially move the dates of federal military interventions known as "joint operations" back by one, two, and three years. Standard errors, clustered by municipality, are reported in parentheses. Data for these tests truncate all data at the beginning of the real federal intervention to avoid including data after the real treatment is applied. All models include socio-economic characteristics. *** : $p < 0.001$, ** : $p < 0.01$, * : $p < 0.05$, +: $p < 0.1$.

12.1 The criminal justice reform and organized crime threats

Our theoretical approach proposed that the criminal justice reform should still grant leeway to victimize suspects accused of organized crime. It also proposed that high levels of threat from organized crime should mitigate the effects of the reform. To test these hypotheses, Table 11 presents the results of various models and analogues for brute force and threats are presented in Appendix Tables A17-A18.

Model 1 interacts the reform with turf wars. It shows that these basically eliminate the effects of the reform, although the standard errors are large due to the fact that in the post-reform era there is a small sample size of arrests during a turf war. Model 2 interacts the reform with municipal-level homicide rates. The results suggest that higher homicide rates translate into more torture. In contrast to turf wars, high homicide rates do not make the reform less effective. Model 3 interacts organized crime with the reform. As mentioned previously, the reform included a list of crimes that are excluded from some procedural protections because they are bundled into the category of "organized crime." To operationalize this, we use the following crimes: kidnapping, drug commerce, possession of illegal weapons, and homicide. Since the law defines "organized crime" as federal offense and those accused of this tend to be detained in federal prisons, our measure of organized crime also includes federal prisoners.[14] Model 3 shows that prisoners accused of organized crime are subject to more torture. The model also demonstrates that, as expected, the reform does not constrain abuses against criminals accused of organized crime. Model 4 shows that the reform reduces torture significantly more when the arresting authority is the ministerial police. While we note that the armed forces and federal police appear to perpetrate less torture after the reform, the standard errors are too large to reach statistical significance (likely because of the small number of observations arrested by these authorities after the reform).

Models in Tables 9 and 11 demonstrate that militarized interventions and the criminal

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[14]Unfortunately, there are not enough observations for federal prisoners detained after the reform and hence we are unable to differentiate between federal prisoners accused of organized crime and federal prisoners accused of other crimes.

Table 11: **Heterogeneous effects of the reform: organized crime and coercive institutions**

	(1) Torture	(2) Torture	(3) Torture	(4) Torture
Reform	-0.0436**	-0.0379	-0.0575**	0.00526
	(0.0167)	(0.0214)	(0.0186)	(0.0266)
Turf wars and homicides				
Turf war	0.0151			
	(0.0132)			
Turf war x reform	0.0973			
	(0.0551)			
Homicide rate		0.000278**		
		(0.0000978)		
Homicide rate x reform		-0.000125		
		(0.000668)		
Organized crime				
Organized crime			0.101***	
			(0.00821)	
Organized crime x reform			0.0527*	
			(0.0254)	
Coercive institution				
State				0.0918***
				(0.0127)
Ministerial				0.0702***
				(0.00902)
Federal				0.0746***
				(0.0174)
Army				0.139***
				(0.0214)
State x reform				-0.00648
				(0.0286)
Ministerial x reform				-0.103**
				(0.0313)
Federal x reform				-0.0771
				(0.0470)
Army x reform				-0.0932
				(0.0649)
Constant	0.939***	0.765***	0.324	0.282
	(0.0374)	(0.0979)	(0.319)	(0.296)
N	33731	37241	37632	35586
Year FE	Y	Y	Y	Y
Judicial District FE	Y	Y	Y	Y

Notes: Entries are coefficients from OLS regressions. Standard errors, clustered by municipality, in parentheses. All models include socio-economic characteristics. Analogous tables for brute force and threats are presented in Appendix Tables A17-18. *** : $p < 0.001$, ** : $p < 0.01$, * : $p < 0.05$, +: $p < 0.1$.

justice reform have opposite effects on torture. As we examine five authorities in these models – municipal police, state police, ministerial police, the federal police, and the military – we need to correct for the increased possibility of a false discovery in these models. In the Online Appendix we employ the approach in Benjamini and Hochberg (1995)[15] to control for the false discovery rate. In terms of the reform, we find that the coefficient on ministerial police remains significant. As we do not find significant heterogeneity by authority in the corresponding model in Table 9, we do not run it for joint operations. In the Online Appendix section 7 we further calculate marginal increases in torture holding the arresting authority constant. Again, we correct for the increased possibility of a false discovery and find that, consistently, torture and other forms of abuse drop significantly with the reform when the arresting authority is the ministerial police. It is at this stage in the process when coerced confessions, evidence fabrication, and witness intimidation are more likely to be carried out, and where the reform has imposed more constraints. Marginal effects for the federal police and the armed forces are also negative, but they do not reach statistical significance. Finally, we find strong positive effects for the ministerial, municipal and federal police for the case of joint operations. These results support our theory that when regular police forces act alongside the armed forces, the former engage in more torture.

13 Conclusion

Our paper tackles a fundamental question about the nature of the state's coercive apparatus: how do societies develop and institute more humane approaches to criminal justice? While police brutality can take many forms, this paper focuses on one of its most morally transgressive and outrageous manifestations: torture. The paper provides evidence of the role of two factors accounting for institutionalized police brutality in democratic states.

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[15]Briefly, we set $\alpha = 0.05$ and rank p-values in ascending order. We then compare the p-value to $\frac{i}{m}\alpha$ where i is the rank of the p-value and m is the number of tests. The modified test now compares the ith p-value from the interaction coefficient to $\frac{i}{m}\alpha$. We reject the null only if the p-value is smaller than this modified test.

First, we have argued that criminal justice institutions strongly influence police behavior. Inquisitorial criminal justice systems, while reformed in Europe two centuries ago, persisted in Mexico and many other Latin American countries until recently. Prosecutors and police in Mexico came to systematically rely on coerced confessions to resolve cases and judges allowed these as admissible in court even when there was evidence of physical mistreatment. This created a disturbing path dependency – institutions that began relying on coerced confessions never invested in investigative capacity, which meant that the Mexican criminal justice system became utterly incapable of sorting criminals from innocent people. The cruelty of the system manifested not only in the violence it imposed but in the high number of wrongful convictions it likely produced after torturing people into making false confessions. Moreover, the data presented suggest that the inquisitorial criminal justice system would torture – and subsequently convict – as many prisoners accused of common theft as those accused of homicide. These brutal coercive institutions persisted in Mexico years after the democratic transition.

A second factor that accounts for the persistence of abusive coercive practices under democracy relates to rising levels of crime and insecurity. When criminal groups began to fight bloody turf wars in Mexico, police forces responded with more brutality. Rising insecurity also brought the adoption of heavy handed security polices – including through the deployment of the armed forces – that deepened authoritarian tendencies in police forces. The military's mission is predicated on the use of force. Working alongside the armed forces, regular police were imbued with equipment, tactics and a mindset that caused systematic increases of torture. Police militarization is a common phenomenon not only in Mexico but in other Latin American countries (Flores-Macías and Zarkin, 2019). Our findings bolster the notion that these security strategies erode protections for basic rights that many citizens of democracies take for granted.

Despite this grim picture of the institutionalization of torture under democracy, our paper offers room for optimism. The paper demonstrates that the reform of the inquisitorial criminal justice system and the introduction on more judicial checks on police, a

common trend in the region, has worked to decrease human rights abuses in Mexico. Further research is needed to understand how criminal justice reforms impact human rights in the broader Latin American context, where during the last decades there has been a regional trend towards the abolition of these inquisitorial institutions.

Our findings also contribute to the body of work on the micro-logic of police behavior, which, until now, mostly focuses on the U.S. Following Mummolo (2018b), we distinguish between two understandings of police brutality. One emphasizes potentially immutable officer traits as the culprits of police misconduct, including issues such as authoritarian personalities, racial biases, machismo, cynicism, aggression, and substance abuse. According to this line of investigation, torture could be explained as an inhumane act by sadistic individuals hard to restrain through institutional reforms. Our paper supports a second line of investigation that emphasizes the impact of institutions and organizational norms on police violence and that understands the phenomenon as one that can be controlled with institutional design. In particular, we have argued that the introduction of stronger judicial checks on prosecutors and police is essential to restrain abuse. More research is needed to trace the evolution of jurisprudence and the behavior of courts on procedural rights in criminal trials.

Another critical avenue for further research is how society responds to these reforms and whether mechanisms of electoral accountability might restrain or enable authoritarian policing practices. Reforms that constrain police might plausibly lead people to associate the incidence of crime in their community, regardless of whether crime rates change, with new procedural protections built into the criminal justice system and generate societal pressures to reverse these reforms. Moreover, while one may reasonably expect opposition to an abusive police force in a democracy – repression runs counter to democratic norms and any given individual may reasonably fear falling victim to abuse – fear of crime and insecurity might engender societal preferences for sadistic punishments and abusive policing. Another issue to consider is that individuals who have not had personal contact with the criminal justice system might be unaware of or indifferent to the suffering it

engenders. Additionally, a question for further research is how criminal behavior changes in response to an institutional overhaul of criminal prosecution. If police perceive that the institutional constrains severely restrain or weaken their capacity to imprison criminals, the backlash might come from within coercive institutions. As in the case of Venezuela and Brazil, police could begin to act as *vigilantes* and engage in extrajudicial killings to combat crime (Kronick and Hausman, 2019; Magaloni et al., 2020).

Lastly, while our paper has optimistic implications about the prospect of restraining torture, we note that high levels of brutality still persist in Mexico. Moreover, the reform justifies exempting many offenses by tying them to the threat of organized crime. Weak procedural protections for these offenses and the military involvement in law enforcement continue to open the door to abuse.

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