Understanding Mexico’s Drug War

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My research agenda focuses on understanding a single question: If Mexico has long been a player in the illegal-drug industry, why is it only now that drug-related violence has spiked?

A brief of my research agenda

A wave of drug-related violence has hit Mexico. Since 2007, there have been 41,648 homicides in the country, all in direct relationship with drug trafficking activities (Castillo 2011, Rios and Shirk 2010). The escalation in crime has been brutal (See Section 1). Drug-related homicides have increased at least 30% every year, creating a total toll of 15,273 people just in 2010. This means traffickers are responsible for 47% of all intended homicides happening in the country (Rios and Shirk 2011). Border towns such as Jurez, particularly important for the transshipment of cocaine into the US, exhibit homicide rates of 185.9 victims per 100,000 inhabitants. These figures are equivalent to homicide rates in areas engaged in actual wars.

My goal is to find the reason behind this escalation in violence. I claim, Mexico is violent because its illegal drug industry evolved from one in which drug traffic organizations (DTOs) were stable oligopolies, as most illegal industries are¹ to one in which DTOs want to compete between each other (See Section 3). In legal industries, a decrease in competition would

¹Monopolistic arrangements –a single organization controlling a whole market– are not popular among illegal providers. A single, large firm is easier to target by authorities and is a more enticing booty for potential competitors (Reuter 1983, Fiorentini and Peltzman 1995, Gambetta 1996). Perfect market competition is not desired by criminals either. In perfect competition, criminals lack of extra profits meaning entering illegal industries become just as good a business decision as any legal option except illegal industries have negative externalities that affect the lives of their members in the long-term. For example, working in illegal industries comes with the cost of large exit barriers because of prosecution and gang loyalty (Western, Bruce and Wilson, William J.)
generate price wars or other forms of cartel punishments (Stigler 1964, Green and Porter 1984, Rotemberg and Saloner 1986). In illegal industries with low prosecution rates, a lack of competition evolves into violent confrontation (Snyder and Duran-Garcia 2009, Andreas and Wallman 2009). Mexico’s drug traffickers turned violent when more than one DTO started operating in a single territory.

When violence started increasing, Mexican authorities became more motivated to enforce laws. Previously, authorities had faced low incentives to prosecute DTOs because organized criminals did not represent a substantive threat to Mexico’s security (See Section 4). New enforcement operations locked Mexico into a vicious feedback loop of violence [Figure 1]. In the short term, law enforcement indirectly triggered violence by further increasing the incentives of DTO’s to compete between each other and within themselves. First, competition between DTOs decreased when enforcement operations weakened some DTOs, generating incentives for stronger DTOs to take advantage of the situation of their enemies and conquer new territories. Then, the capture of traffickers generated the need to replace leadership within DTOs which triggered secession battles, fragmentation and violence inside DTOs’ structure. Furthermore, fragmentation increased the actual number of DTOs in business. With more DTOs, the chances of experiencing violent confrontations also increased.²

Under the previous oligopolistic equilibrium, drug-related violence was self-contained. Contrarily, in the current climate, the motivations of each actor ultimately led to a feedback loop of violence.

The reason why the Mexican trafficking industry became more competitive can be found in institutional and structural changes, particularly in what I identify as the evolution of Mexico’s DTOs into higher-profiting, more-diversified firms. The combination of increased law enforcement in Columbia and decreased law enforcement in Mexico made Mexican traffickers wealthier and allowed them to extend their operations into other illegal businesses such as kidnapping, extortion, robbery and domestic distribution of drugs. With higher profits and with the newly acquired ability to get revenues from other illegal activities, activities which do not require the

²The expectation was that enforcement will weaken DTOs up to a point in which exercising violence between/within them would be impossible. This may indeed be the equilibrium of higher enforcement in the long run. Further research will have to be done when the time comes.
same level of structural organization or long-lasting corruption agreements that importing drugs into the US requires, middleman traffickers who previously needed to work under traditional Mexican kingpins realized the profitability of working independently. These middlemen became increasingly autonomous in their actions and finances, and competition increased when they split from their original organizations because there was no longer an incentive to remain loyal.

The diversification of criminals into other industries also increased the incentives of Mexican authorities to enforce the law. The electorate values enforcement operations only when organized crime affects them directly. When Mexican traffickers concentrated their business into exporting drug to the US, Mexico’s electorate was not bothered. Yet, when traffickers became kidnappers, extorters and domestic drug sellers, the pressure that Mexican authorities felt to increase their enforcement operations raised significantly.

The following is an outline of my current research agenda planned to provide a detailed answer to my overarching question. It has been organized in short briefs describing research questions, hypotheses, and methodology. First, I begin by measuring drug-related violence and estimating the accuracy of the measures that we have up until now. This will be my dependent variable in subsequent sections. Second, I provide a mechanism for measuring drug-trafficking activities within Mexico. No hypothesis can be tested until I determine when and where the object of my study operates. Third, I analyze traffickers’ behavior, in particular their competition
dynamics to assess whether this has been the cause of spikes in violence. I provide an empirical test of the effects of DTOs’ territorial competition in violence, and case studies to support my interpretation of the data. In the fourth section, I follow the same design but testing for the causes’ impact on government enforcement. Finally, a fifth section describes miscellaneous research endeavors that I am pursing as part of my broad agenda. These are answers to shorter puzzles and reactions to alternative hypotheses brought forth by journalists.

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3Third and fourth section rely on information generated at the second section to control for competition patterns and enforcement shocks. For example, to measure whether an enforcement operation had an effect on violence I test whether the detention of a trafficker working for DTO x, affected violence along all x’s territory.
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Section 1: Trends and measures of drug-related violence in Mexico

1.1 How violent are Mexican traffickers? Measuring drug-related violence from 1990 to 2010

Goal: Measuring drug-related homicides from 1990 to 2006 to complement official measures available only from 2007 to 2010.

Research design: Using a detailed dataset containing information on gender, age, location, and date of all 35,000 drug-related homicides officially measured by Mexico’s National Security Council during December 2006 - December 2010, I generated a profile of the average drug-related victim, an explanation of how this profile has changed over time, and how it differs from region to region within Mexico. This information, along with controls for law enforcement, the extensiveness of the drug industry, and determinants of general homicides in rural/urban areas (Villareal 2002, Eisenstadt 2010), will be used to predict the number of drug-related casualties from 1990 - 2006.

Empirics: Multiple imputation algorithm using bootstrapping for time-series-cross-sectional estimation as developed by Honaker, King, and Blackwell (2011), and not-covaried trend estimation assuming constant victim’s profile as described by Girosi and King (2008).

Inputs: (a) Gender and age of 35,000 victims of drug-related violence, (b) monthly general intended homicides (INEGI), and controls for (c) the effects of 2006 - 2010 enforcement efforts in drug-related violence, (b) the ability/experience of enforcement institutions, (c) agrarian conflicts and other determinants of rural homicides, and (d) local drug markets

Output: Estimated drug-related homicides per month, and municipality from 1990 to 2006 to be shared open-source.

Case studies: Study cases will be selected to test whether estimated drug-related violence figures match what previous ethnographic accounts have described as periods of large spikes in violence. I will use the cases of Tijuana 1994 (Blancornelas 2002), Nuevo Laredo 2005 (Corchado 2008), and Michoacn (Survesa 2009)

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4 A preliminary analysis of drug-related violence in Mexico has been published as a coauthored piece with David Shirk and is available here.

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**Preliminary findings:** Figures 2 to 7 show my preliminary estimates of drug-related homicides for six different states. Each line represents a different specification. Further details on the mechanics of estimation and access to preliminary data is possible under request.
Figure 4: Estimates of drug-related violence for Tamaulipas

Figure 5: Estimates of drug-related violence for Michoacan

Figure 6: Estimates of drug-related violence for Mexico City (DF)
1.2 How accurate are our measures of drug-related violence? Comparing official and media-generated figures of drug-related violence

Goal: Understanding when, where, and why media and official estimates of drug-related homicides differ.

Research Design: The media underestimates official figures of the number of drug-related homicides by about 17.53%, with a large variance at state level. While in states like Tamaulipas, the media predicts 29% more casualties than the government, in others like Sonora, Veracruz, Chiapas and Oaxaca it only reports less than half of the cases [Figure 8]. My working hypothesis is that the ability of the media to capture drug-related homicides diminish due to (a) structural factors determining news coverage (literacy rates, isolation of communities, extensiveness of rural areas), and (b) temporal shocks caused by the assassination of journalists.

Case studies: I will describe two cases of discrepancies between media and official reports: (a) Chihuahua, the most violent state in Mexico is underestimated by about 30%, and (b) the year 2009 –the year that generated the most inaccurate media estimates even though drug trafficking coverage had been improving systematically since 2006.

Empirics: OLS estimation

Dependent Variable (DV): The difference between the number of drug-related homicides officially reported and those reported by the media.

Independent Variable (IV): Urbanization, newspaper printing figures, distances to state’s capital, literacy rates, miles of paved roads, dates and places where Mexican journalists have been assassinated (Rios and Shirk 2010).

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5Coauthoring with David Shirk, Faculty at the University of San Diego and Director of the Trans-Border Institute
Figure 7: Share of total drug-related homicides that were not reported by the press
Section 2: Trends and measures of Mexico’s drug trafficking industry

2.1 Where do drug traffickers operate? Mapping territorial areas of influence of Mexican DTOs

Goal: Mapping areas of operation of Mexican DTOs at the municipal level with year to year variation

Research design: Any effort to understand why the Mexican drug trafficking industry became violent must start by knowing where traffickers operate. Up until now, public information about the industry came mostly from ethnographic and journalistic narratives that provide broad and vague mentions of the operations of DTOs at some Mexican states (Blancornelas 2002, Gomez 2005, Cruz 2009, Osorno 2009, Reveles 2009, Ravelo 2010, Rodriguez Castaeda 2010 and Hernandez 2010). Two other private sources of information on DTOs’ territoriality are also available. Intelligence offices such as the Center for Research and National Security (CISEN) –Mexico’s intelligence service office– or the Drug-enforcement Administration (DEA), have generated maps. However, their contents are regarded as confidential because of their usefulness for predicting national security policy and enforcement strategies. The second one, Stratfor, a consulting firm, has become the prime source of information on the topic (see for example NPR 2010), even though their identified territories are broad, quite imprecise, and rely on undisclosed sources as their inputs (Stratfor 2011).

As long as we know nothing about when and where a DTO started operating in a city/municipality, we won’t be able to accurately test any hypothesis regarding the effects of enforcement or competition on drug-related violence. Consider, for example, studies of the impact of US-Mexico gun trade in fueling DTOs activities. To the extent of my knowledge, the only empirical model available on the topic controls for “cartel activities” using “dummies for cartel states”, an imprecise category including those states “where the leaderships of Mexico’s largest cartels were based (sic)” without an explicit mention to how they were picked (Chicoine 2011).7

To overcome this severe data problem, I will develop a tool for tracking the territories in which a specified criminal organization operates using web information. Criminal organizations are

6Coauthoring with Michele Corcia, research fellow at Harvard’s Center for International Development
7Similar critics apply for studies on the impact of drug legalization in Mexico’s violence. As RAND Corporation (Kilmer, Caulkins, Bond and Reuter 2010) points in their own study, the difficulty with their projections is that they “require good information about [Mexican traffickers’] current level of involvement” in domestic territories.
traditionally tracked by intelligence services using information provided by local informants or individuals subject to criminal investigation. The tools are costly and require establishing long-term interactions at the field with significant risks for those collecting the information. My tool develops inexpensive intelligence information, taking advantage of the role that forums, blogs, and digital media have as depositaries of valuable, private information. I will adapt a search algorithm and use it to track all mentions done at news and specialized websites of the operations or presence of criminal organizations or any of their members. My program processes this information and returns a list of places and dates where a criminal organization was mentioned, which we later use as input to determine their main areas of operation. I also quantify the risks of missing and misleading information. Finally, I test our tool by tracking areas of operation of Mexican drug trafficking organizations (DTOs).

The results of my program will be complemented with a manual search of narco-messages\textsuperscript{8} in blogs, forums, local newspapers and general press [Figure 9]. Narco-messages will proxy for territorial presence by assuming that senders and recipients of them operate in the territory where it was left. I have already collected a dataset of about 1,400 different narco-messages most of them providing explicit information about the operation of a particular DTO/trafficker in an area.

**Empirics:** Python-code for automatized searches in Google news and selected blogs and Geographical Information Systems

*Input:* List of 350 drug traffickers, 54 gangs and their DTO of affiliation; other key search terms

*Output:* Maps of areas of operation of Mexican DTO’s to be shared, as open source, to all researchers studying drug-related violence in Mexico.

**Preliminary results:** The difference between the information we have (Stratfor) and what I expect to get is pictured in Figure 10.

\textsuperscript{8} “Narco-messages” are a particular form of communication used by Mexican drug traffickers. They are billboards left on the streets to among other reasons, clarify the reasons why they assassinated someone, intimidate other potential victims, identify themselves or their victims, communicate with citizens around the area, or give instructions to the investigators or journalists who know will eventually come to record the messages. Narco-messages go all the way from maxims like “you cannot be in good terms with God and the Devil (Redaccion Vanguardia 2010),” to fortuitous expressions like “Merry Christmas, jo, jo jo (sic) (Bueno 2009),” to messages directed to “the brave, noble and loyal people” of a Mexican town, letting them know that “this [violent vendetta] is for the good of all (Delgado Aleman 2009)”
2.2 How do drug traffickers move? Identifying patterns of criminal territorial mobility

**Goal:** Identifying the logic behind patterns of criminal territorial mobility.

**Research design:** Current research identifies two distinct motivations determining criminal patterns of territorial mobility (Gambetta 2010). Either criminals move proactively in order to expand their business into potential new markets, or reactively, such as when they flee from law enforcement operations. Using the maps of DTOs areas of operation created at section 2.1, I will test these two hypotheses.

**Empirics:** Network analysis and OLS estimation. Using an analogy of the Product Space, a tool used to study the evolution of comparative advantage and countries’ productive structures (Hidalgo, Klinger, Barabasi, and Hausmann 2007), I will identify the common patterns that DTOs have followed when moving along Mexico’s territory.

I will calculate network proximity measures between all 2,500 Mexican municipalities using information of trafficker’s presence year by year as my input. The result will be a $2,500 \times 2,500$ matrix of proximity measures. Drawing upon Product Space terminology, if many DTOs (i.e. countries) operate at the same municipalities (i.e. produce the same products), those municipalities (i.e. products) will be close to each other. To visualize the results, I will create a network with 2,500 nodes (one per municipality), linking only those where proximity measures

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*Coauthoring with Michele Corcia, research fellow at Harvard’s Center for International Development*
Figure 9: Estimates of drug-related violence for Mexico City (DF)
are above a defined threshold. I will name it the “map of mobility patterns.” All things being equal, a trafficker operating in a municipality will have higher chances to move her operations into municipalities linked to that municipality than into those that are not.

Finally, using this network as my dependent variable, I will test whether municipalities are closer because of market dynamics (proactive criminal movements) or law enforcement dynamics (reactive criminal movements).
Section 3: Traffickers’ contribution to violence

3.1 The effects of DTOs’ territorial competition in violence

Goal: Empirically testing the effects of territorial competition in drug-related homicides.

Research design: The Mexican government has repeatedly claimed that violence has erupted as a result of increased territorial competition between DTOs (Poire 2011), but it is precisely because of a lack of public data on when and where Mexican drug traffickers operate that the accuracy of such interpretation has never been tested empirically. Using the maps of DTO areas of operation created at section 2.1, I will test this hypothesis.

Empirics: $DV$: Drug-related homicides (official, press and own measures –as calculated in Section 1)

$IV$: The effective number of DTOs operating in a single municipality at a particular time calculated as a Herfindahl-Hirschman Index (HHI) of market concentration. I expect higher concentration to be associated with lower violence. The share of the market that each DTO controls in a municipality will be a function of the share of municipalities that such DTO controls in the state where the municipality is located. Following standards of the Antitrust Division of the Department of Justice, I will consider indices between 0.1500 and 0.2500 to be moderately concentrated and indices above 0.2500 to be concentrated.

3.2 Why have incentives for competition increased?

Goal: Understanding how large structural changes in Mexico’s illegal drugs industry are the root causes of higher territorial confrontation.

Research design: In this section I will provide a formal approach to understand, based on industrial organization entry models (Green and Porter 1985, Rotemberg and Saloner 1986) and principal-agent models, why incentives for competition increased. This will be the narrative behind results given at Section 3.1. Traffickers fight more because of institutional and structural changes in Mexico’s illegal drugs industry, particularly in what I identify as the evolution of DTOs into higher-profit, more-diversified firms.
Table 1: Selected study cases

<table>
<thead>
<tr>
<th>Case Study</th>
<th>Outcome was violent</th>
<th>Outcome was peaceful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baja California</td>
<td>Teo vs Tijuana, 2008</td>
<td>Tijuana and Sinaloa, 1998</td>
</tr>
<tr>
<td>Michoacan</td>
<td>Familia vs. Zetas, 2006</td>
<td>Familia and Sinaloa, 2010</td>
</tr>
<tr>
<td>Tamaulipas</td>
<td>Golfo vs Zetas, 2008</td>
<td>Golfo and Zetas, 2001</td>
</tr>
</tbody>
</table>

The reason why Mexican traffickers became more competitive can be found in institutional and structural changes, particularly in what I identify as the evolution of Mexico’s DTOs into higher-profits, more-diversified firms. The combination of increased law enforcement in Columbia and decreased law enforcement in Mexico made Mexican traffickers wealthier and allowed them to extend their operations into other illegal businesses such as kidnapping, extortion, robbery and domestic distribution of drugs. With higher profits and with the newly acquired ability to get revenues from other illegal activities that do not require the same level of structural organization or long-lasting corruption agreements that importing drugs into the US requires, middleman traffickers who were previously forced to work under the supervision of traditional Mexican kingpins realized the profitability of working independently. They became increasingly autonomous in their actions and finances. Competition increased when middleman split from their original organizations because market conditions decreased the payoffs for remaining loyal.

**Case Studies:** I will present study cases to provide evidence supporting my narrative. In all cases an external shock altered oligopolistic market arrangements, but the change resulted in violent confrontation in only half of the cases. The difference between those that had violent outcomes and those that did not lies in the degree of competition that the shock generated. Competition was larger when the amount of profits and the degree of diversification of the local criminal industry was larger.

The inputs for my study cases will come from (a) an extensive analysis of my narco-messages dataset described in Section 2.1, (b) interviews and fieldwork conducted at Mexico’s Drug War Zone (Rios 2008, 2009 and 2010), and (c) the reinterpretation of journalists’ accounts that attribute violence to the demise of the PRI (Blancornelas 2002, Gomez 2005, Cruz 2009, Osorno 2009, Reveles 2009, Ravelo 2010, Rodriguez Castaeda 2010 and Hernandez 2010).
Section 4: Government’s contribution to violence

4.1 The effects of government’s enforcement in violence

**Goal:** Empirically testing the effects of law enforcement operations in drug-related violence.

**Research design:** It has been claimed that none of the drug-related violence Mexico has experienced since 2007 would have existed if Mr. Calderon, president of Mexico, did not had launched an offensive against drug traffickers (Aguilar and Castaeda 2009). Yet, we still lack solid empirical evidence of this assertion. Most literature has been descriptive, pointing to the arrest of middleman traffickers as Mr. Beltran Leyva or Mr. Osiel Cardenas as the starting point of the escalation in violence (Freeman 2006, Guerrero 2009). The only empirical test available (Poire and Trujillo 2011) finds no relationship between the detention of middleman traffickers and increases in violence. However, this test uses an inadequate econometric specification and relies on undisclosed information sources. I will conduct my own empirical test.

I will explore two ways in which law enforcement may increase drug-related violence. First I will explore how law enforcement may directly increase violence by generating a higher number of deaths when enforcement operations claim the lives traffickers and law enforcement officials. Secondly, I will explore how law enforcement may indirectly increase violence by further increasing the incentives for territorial competition (i.e. violence between DTOs generated when enforcement operations lead to a weakened DTOs being attacked by a stronger one) or by generating conflicts within DTOs when new leaders have to be picked to replace detained leaders.

**Empirics:** I will use HHI measures of periods before and after the capture of middleman traffickers for inputs. Each measure will be taken within the territories of operation of each middleman. I will test whether the capture of a drug-trafficker increases DTOs competition. Note that because of changes in structural variables identified in section 3.2, I expect competition to increase even if law enforcement was absent. To avoid attributing the effects of structural changes to law enforcement, I will use a difference-in-difference approach and F-tests. In other words, I will “extract” the effect of structure by controlling for changes in competition that occurred in the areas where law was not enforced. For example, to test the effect of the capture of Mr. Edgar Villareal, alias “La Barbie,” in triggering DTOs’ competition, I will control for changes in competition happening in non-Barbie territories before testing whether the capture of Barbie affected violence within his territory.
4.2 Why have incentives for enforcement increased?

**Goal:** Understanding how large structural changes in Mexico’s illegal drugs industry are the root cause of increased law enforcement.

**Research design:** In this section I will provide a formal intuition to understand government’s prosecution efforts. Prosecution value is determined by the value that the electorate gives to it. Thus prosecution increases when organized crime diversifies into businesses that directly affect population, such as extortion, kidnapping and domestic sells of drugs. Following regulation theory, particularly the work of ([Rowoski and Kayser 2002](#)) based on Stigler (1971) Peltzman (1973), I will develop a formal model to fully explain my narrative. In my model, a politician decides whether to “collude” with traffickers and consent to corruption (not enforcing, accepting the cost) or “collide” and receive bribes (paying the cost of enforcement efforts at the risk of running trafficker out of business and losing all future bribes). Its decision is based on the value that the electorate gain from enforcement, which is a function of how much traffickers affect citizens.

**Case study:** I will show that Mr. Calderon’s enforcement efforts have concentrated on regions where traffickers were diversifying their illegal business into endeavors that are more harmful to society, such as the sale of drugs domestically. In particular, I will present the cases of Michoacan, Chihuahua and Guerrero during December of 2006.
Section 5: Parallel research projects

5.1 What do international cases tell us about potential ways to reduce violence?

**Goal:** Comparative, descriptive studies showing different policies that have resulted in decreases in organized-crime-related homicides/activities.

**Research design:** Study cases of Brazil, Colombia, USA, Russia and Australia. Descriptive statistics.

5.2 The role of local drug consumption in changing incentives for violence

**Goal:** Show the correlation between increases in the sale of drugs domestically and larger-scale drug-related violence.

**Research design:** I will present the first estimates of drug-consumption in Mexico at the sub-national level, from 1990 to 2010. Estimates come from overdoses and hospitalizations caused by illegal drug consumption. This unique data set will be used to understand the effects of drug-related violence in the generation of DTO competition [Figure 11].

5.3 Who becomes a drug dealer and why?  

**Goal:** Understand that the decision to become a trafficker depends more on their possibilities of getting a very large wage (i.e. length of right tail wage distribution) rather than in the average salary provided at the drug-trafficking industry -which are quite low and subject to large uncertainty.

**Research design:** It has been claimed that generating employment is the only way out of Mexico’s violence in the long term (Fregoso 2009). Employment, it is traditionally argued, will allow young Mexicans to avoid the criminal industry.

I disagree. Jobs are required but not all jobs will do the trick. We need to generate jobs that are attractive to those in danger to become traffickers, a subset of the population that psychological research has shown are more entrepreneurial, less dependable, and posses strong leadership skills (Fairlie 2002, Fairlie and Woodruff 2004). The jobs that are attractive for these people are those that provide a chance, even if minimal of becoming the boss, being independent and

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10 An older draft where this idea was first explored is available [here](#).
Figure 10: Different measures of local drug consumption in Mexico
have a large income. They do not care about the average wage they will get, they care about how far they can get if they become the best among their peers. They are sure they are. Jobs providing low/average salaries without chances of promotion will commonly be dismissed for jobs providing bad average salaries (even no salary at all) but with large changes of advance up. In short, what matters is the length of the right tail distribution, independently of its thickness or of the mean of the whole distribution.

In this section, I present the formal model underlying my argument, combining two main areas of labor economics literature: (a) the classic approach of Becker (1968) in which individuals face single criminal vs. legitimate market wages and (b) the Roy (1951) model in which skills yield different returns in the criminal vs. legitimate labor market sectors.

My model also generates an intuition for understanding why traffickers have become more violent than ever before. People in the field claim that a new generation of traffickers have emerged in the last years, a generation that disdains old mafia laws and is more violent. I claim this is not a generational factor but the result of the new ways in which Mexican traffickers are recruiting their members. As competition in and among DTOs has increased, so has the demand for new DTO members. As a result, recruiters have started searching for their new employees in non-blood-related circles. This new labor pool is more violent-prone and entrepreneurial.

5.4 Why are politicians being killed now more than ever?\textsuperscript{11}

Goal: Understand why recent years have seen the transformation of Mexican DTOs into highly violent political actors. Research design: since 2004, 27 Mexican mayors have been killed by organized crime, 15 just in 2010, a sharp contrast with a history of complete absence of political violence. I present a formal model of corruption dynamics to understand these outcomes and show that, if mayors are getting killed is not because traffickers are more powerful than the new political class emerged after Mexico’s democratization -as traditional accounts of corruption would argue but because of political decentralization.

My model develops as follows. Let a corrupt market be one in which a briber (corruption demander) and a bribee (corruption supplier) agree on the price of a bribe. The bribe buys protection and monopolistic trade rights over the region controlled by the bribee. Bribers maximize profits given by illegal revenues minus bribes. Bribees maximize utility given by bribes.
and honesty. If a potential bribee is not bribed, enforcement happens in the region with some probability which depends on the size of bribee’s honesty.

Bribers may kill the bribee if he cheats (either by enforcing or allowing another briber to profit in the region).

First, a single bribee and a single briber had agreed on the price of a bribe. Yet unexpectedly another bribee gets into the game. Protection is now offered by two different bribees and both are partial complements. The trafficker may bribe one bribee only but traffickers’ profits are much higher if they bribe both bribees.

There are two ways in which both bribees may coordinate to set the price.

- **With centralization.** One bribee sets the price of the bribe to maximize total bribe revenue and gives the second bribee a share of total revenue. Incentives are set such that second bribee has no motivation to charge a bribe on top of the one that the first bribee is already collecting.

  In practical terms, bribing one bribee assures compliance of both bribees.

- **With decentralization.** Both bribees set the price of bribes simultaneously. They play differentiated-goods Bertrand. Unlike in (a), bribing one bribee does not assure compliance of both bribees. If only one bribee is being bribed, there is a probability of second bribee to enforce in the region.

  Note that under the decentralized agreement, a bribee may cheat on an agreement by asking the second bribee to enforce in the region. The first bribee would get both the bribe, and the payoff of honesty (because traffickers are going to be prosecuted).

Both (a) and (b) yield different predictions for killing. Killing won’t happen in (a) because cheating is impossible given that, for practical purposes, the two bribees are actually one. Killing will happen in (b) when cheating.

In equilibrium the bribees do not to cheat. Yet, because of the random probability of enforcement, enforcement happens sometimes even without cheating. The trafficker won’t know whether enforcement happened because of cheating or because of ”bad luck.” They do not care.

To keep equilibrium binding, traffickers always kill when enforcement happens (similar to Green and Porter 1986)
### Table 2: Mexican mayors assassinated

<table>
<thead>
<tr>
<th>Mayor assassinated</th>
<th>Municipality</th>
<th>State</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hector Ariel Meixueiro</td>
<td>Namiquipa</td>
<td>Chihuahua</td>
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**Case study:** Explanations of each of the mayors that have been killed.