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Santa Barbara

Beyond Cartels and Kingpins:
A Theory on Behavioral Patterns of Drug Trafficking Organizations

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by

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by

Cecilia Farfán-Méndez

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In 1978 Edward Said published his tour de force *Orientalism* explaining that the motivation for his work was not exclusively an academic matter yet it was an “intellectual matter of some very obvious importance”. In accordance with Said, without presuming equal achievement, researching drug trafficking organizations and the consequences of the war on drugs is not an exclusively academic matter to me, yet it is an intellectual matter of significant importance for those who know Mexico is decidedly more than the stories about violence and want a better future for the country than the one outlined in the last decade.

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All errors and omissions are my own.

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ABSTRACT

Beyond Cartels and Kingpins:
A Theory on Behavioral Patterns of Drug Trafficking Organizations

by

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In a post 9/11 world where security threats are not coterminous with state actors, Drug Trafficking Organizations (DTOs) are increasingly becoming sources of non-conventional threats both to Mexico and the United States. Even though this type of organized criminal activity is not recent, policy makers and scholars have nearly without exception treated DTOs exclusively as cartels, headed by one or few kingpins who can oversee an entire operation and who belong to the violent and obscure all-encompassing category of ‘el narco’. As a result, Mexico and the United States have pursued a misguided strategy focused on capturing and extraditing those who they believe to be top DTO leaders, in the hope that this would disrupt DTO activity. However, despite serving the same market for illicit drugs, DTOs do not share identical structures, nor do they exhibit equal behavior under similar circumstances.

This dissertation proposes a typological theory that identifies more contingent and specific behavioral patterns of DTOs. I identify subtypes of structures of DTOs—hierarchies and wheel networks—and conditions under which diversification of criminal activities occurs. I show that DTOs with hierarchical structures emerge in supply chains of imported illicit drugs engage in risk-averse behavior for laundering money and punish shirkers without resorting to extreme violence. In contrast, DTOs with wheel network

structures emerge in supply chains of locally produced illicit drugs, engage in risk-tolerant money laundering activities and punish shirkers using all types of violence. These differences have implications for law enforcement strategies to track and limit DTO activity. Furthermore, I show that targeting kingpins prior to the declaration on the war on crime combined with the later deployment armed forces against the drug trade had the unintended consequence of expanding a market for protection. This market for protection generated opportunities for diversifying criminal activities, such as kidnapping, extortion, and trafficking of illegal goods other than drugs. Wheel network structures enter this market for protection while hierarchical structures generally abstain from diversifying their criminal portfolio. The interaction of structure with the market for protection partially accounts for the diverse levels of violence observed across the country.

I test the typological theory by examining transnational DTOs based in Mexico identified by the Foreign Narcotics Kingpin Designation Act as of February 2015. Mexico represents a useful case for understanding how DTOs operate because it allows comparing multiple DTOs employing an empirical strategy focusing on within-country variation across time and states. In addition, with the war on drugs declared by former President Calderón (2006-2012) Mexico experienced a dramatic shift in policy that allows for experimental treatment of DTOs that allow examining variation in behavior by DTO type. It is, therefore, possible to examine how the same exogenous shock affected the behavior of different types of DTOs, as a result of organizational characteristics. Lastly, unlike other single-drug exporting countries, Mexico traffics a wide array of illicit

drugs to the biggest drug market in the world. On an aggregate level, Mexican DTOs import, produce, and distribute a volume of illicit synthetic, and semi-synthetic drugs that could not be observed in other known sources. Mexico thus offers us the opportunity to observe the effects of product type and market type, as well as being of significant policy impact in its own right.

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Figure 1 Map of Mexico and DTO Hubs



INTRODUCTION

DRUG TRAFFICKERS AS ORGANIZATIONS

In a post 9/11 world where security threats are not coterminous with state actors, Drug Trafficking Organizations (DTOs) are increasingly becoming sources of non-conventional threats both to Mexico and the United States¹. In less than a decade since the deployment of military personnel to combat the illicit drug trade, the levels of violence observed in Mexico have escalated to an estimated drug-related death toll of 100,000 people (Shirk et.al. 2013) in addition to the average rate of disappearance of one individual approximately every two hours (Campa 2015). In 2014, close to 60 percent of the Mexican population considered public safety and crime to be the most important issues, yet over 93 percent of crimes were unreported due to low societal trust in state institutions regarding their ability to provide and guarantee security². Furthermore, of the estimated value of \$320 billion for the global illicit drug trade, Mexican organizations, which dominate wholesale trade in illicit drugs in the US, have an estimated profit of \$30 billion or between three to four percent of Mexico's gross domestic product (GDP)³.

¹ While drug trafficking organizations are colloquially referred to as drug cartels, a more rigorous treatment should eliminate the concept of cartel given that, in economic terms, cartel implies an *agreement* among firms either to restrict output or fix prices in order to maximize profit. While collusion sometimes occurs in oligopolistic competition, collusion does not occur within organizations in drug trafficking in particular with the purpose to fix prices or restrict output.

² National Survey of Crime Victimization and Perception on Public Safety 2014.

³ As Beittel (2013) points out: “[T]here is a lively debate about how large the annual profits from drug trafficking actually are and what fraction flows back to Mexico from the United States.

Even though Mexico and the United States have laws that define what constitutes organized crime, to date existing research has failed to provide a theoretical understanding that systematizes how DTOs operate. Both policy makers and scholars have nearly without exception treated DTOs exclusively as cartels, headed by one or few kingpins who can oversee an entire operation and who belong to the violent and obscure all-encompassing category of ‘el narco’. As a result, Mexico and the United States have pursued a misguided strategy focused on capturing and extraditing those who they believe to be top DTO leaders, in the hope that this would disrupt DTO activity. US Congressional reports prepared for evaluating the Mérida Initiative⁴, for example, highlight how US intelligence helped Mexican marines arrest the leader of Los Zetas DTO as well as find and arrest Joaquín Guzmán Loera a.k.a. ‘El Chapo,’ classified as “the world’s most wanted drug trafficker” (Seelke and Finklea, 2014). Ironically, ‘El Chapo’ subsequently escaped—for the second time—in July 2015 in a dramatic prison break that many believe would not have been engineered without the connivance of top Mexican authorities. ‘Chapo’ was recaptured by the Mexican Army in January 2016; an event that was heavily publicized by the Mexican government including alleged footage filmed during the confrontation.

Estimates vary among US government agencies, ranging from \$22 billion (DEA), to \$19 billion to \$29 billion (US Department of Homeland Security) and even a broader range of \$8 billion to \$25 billion (US State Department)” (Beittel 2013: 38).

⁴ The Mérida Initiative is a security partnership built on the principle of shared responsibility between Mexico and the United States to combat organized crime. The partnership focuses on four pillars: disrupting organized criminal groups, institutionalizing the rule of law, creating a 21st century border, and building strong and resilient communities.

During President Calderón's tenure (2006-2012) Mexico captured or killed 25 of the 37 alleged top leaders of DTOs (Beittel 2013) and in the six years since the implementation of the security partnership, Mexico fulfilled 641 extradition requests to the US compared to only 279 for the previous 11 years (Seelke and Finklea, 2014). Nevertheless, according to the United Nations' World Drug Report 2014, in 2013 illicit drug use in the United States by persons aged 12 years or older reached the highest level in the past decade matched by equally high retail prices—the highest in the world—thus showing a booming business environment hardly disrupted by targeting alleged kingpins.

Despite serving the same market for illicit drugs, DTOs do not emerge in a unique setting or share identical structures, nor do they exhibit equal behavior under similar circumstances. What is missing in the literature is examining DTOs as organizations rather than assuming similar responses to government or opponents' actions (Astorga 2005; Ríos 2011; Sabet 2012; Shirk et.al. 2012; Dell 2013). My research challenges the notion that DTOs are unitary, homogenous actors that mostly traffic illicit drugs. This is important because without a theoretical understanding that correctly identifies actual and potential combinations of organizational structure and criminal behavior it is highly unlikely that we will be able to identify linkages between recurring causes and effects. For example, organizations with hierarchical structures provide incentives for long-term participation rather than defection unlike wheel network structures where members engage in rent-seeking behavior due to short-term incentives. Targeting the top leader in a hierarchical organization will not splinter and weaken the DTO due to security concerns that the captured members will reveal information in exchange for a deal with law enforcement.

Alternatively, in a wheel network structure it is not possible to target a top leader because by design there is some degree of shared control and authority over different areas of operation.

Without these links it is difficult for scholars to inform policy strategies that target the weaknesses of each organization, thus continuing with a rather unsuccessful approach of focusing on salient criminals. In short, the conventional wisdom of organized crime has precluded the introduction of relevant measures that can identify, investigate, and limit the opportunities for this type of criminal activity to grow (Klerks 1999; Xia 2007). Similar to any other human organization, DTOs exhibit areas of sophistication as well as commonplace issues that afflict legal organizations. It is necessary, therefore, to understand these areas of sophistication as well as their unexceptional traits to design policies that weaken DTOs in the long-term rather than just continuously “put out fires” as characterized by a high-level government official (US Government official in personal communication with the author, January 2015).

For this research, organizations are understood as a group of individuals bound by some common purpose to achieve objectives, created with purposive constraints and in the course of attempts to accomplish their objectives are a major agent of institutional change⁵ (North 1990). A note on definitions is important. DTOs are not the same as a mafia

⁵ It should be noted that for North organizations and institutions are not coterminous. According to North, institutions are the rules of the game in a society, or, more formally, are the humanly devised constraints that shape human interaction. They structure incentives in human exchange, whether political, social, or economic (North 1990: 3). Therefore, in this research the concept of institutions and organizations is *not* used interchangeably.

because a mafia is a set of firms that produces, promotes, and sells extra-state protection to consumers in primarily, but not exclusively, the illegal market sector (Gambetta 1993; Hill 2003). DTOs are not a mafia because their primary activity is not the provision of protection although it may occur as part of their criminal portfolio. In contrast, DTOs could be conceptualized as organized crime. While there is not a consensus on the definition⁶, the common element is that this does not simply mean crime that is organized implying that the group is not randomly formed for the immediate commission of an offense (Schelling 1984: 180). Following the United States' Law Enforcement Strategy to Combat International Organized Crime (2008) from the Department of Justice, international organized crime refers to those,

Self-perpetuating associations of individuals who operate internationally for the purpose of obtaining power, influence, monetary and/or commercial gains, wholly or in part by illegal means, while protecting their activities through a pattern of corruption and/or violence or through an international organizational structure under which international organized criminals operate⁷.

⁶ The United Nations Convention Against Transnational Organized Crime signed in the year 2000 and entered into force in 2003 defines organized criminal group as a “structured group of three or more persons existing for a period of time and acting in concert with the aim of committing one or more serious crimes or offences established in accordance with this Convention, in order to obtain, directly or indirectly, a financial or other material benefit” (UN Convention against Transnational Organized Crime, Article 2). While both Mexico and the United States are parts to the Convention, the definition provided by the US Department of Justice and used in this research provides a better understanding of the *modus operandi* of DTOs. Consequently, while the definition provided by the UN has a wider acceptance among states, the definition by the DOJ is more accurate for the present research.

⁷ Law Enforcement Strategy to Combat IOC, Department of Justice, 2008.

While not all organized criminal activities are drug trafficking, the DTOs studied in this research are conceptualized as organized crime. Therefore, in this research the term DTO and organized crime will be used interchangeably.

This dissertation proposes a typological theory that identifies more contingent and specific behavioral patterns of DTOs by identifying subtypes of structures—hierarchies versus wheel networks—when each structural type is chosen, and conditions under which diversification of criminal activities occurs. A typological theory is a mid-level theory used to specify independent variables and provide hypotheses on how they operate individually and under what conditions they behave in configurations to produce effects on specified dependent variables (George and Bennet 2009: 235).

To construct this framework, I maintain three assumptions: first, DTOs incur information costs in keeping track of the array of prices relevant to their transactions as well as contractual costs. Second, DTO agents pursue, at least some of the time, their economic private interests (versus the economic interests of the DTO). Third, DTOs need to offer separate and selective incentives to motivate rational, self-interested individuals to act in a group-oriented way.

Three general hypotheses follow from these assumptions. First, the type of structure, either a hierarchy or a wheel networks emerges in different supply chains for illicit drugs⁸. Second, the structure of the organization, either a hierarchy or a wheel

⁸ A supply chain is defined as “a set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer” (Mentzer et.al. 2001: 4). As the authors further note supply chain and

network, determines the principal-agent issues that DTOs will encounter, the methods used to punish shirking, and the methods preferred to launder money. Third, the military intervention by the Mexican government in drug trafficking activities expanded a market for protection that resulted in diversification of criminal activities for some DTOs, which explains the geographical patterns of types and levels of violence across the country.

I contend that the type of supply chains used for distributing illicit drugs determines the type of structure of the DTO. Specifically, hierarchical structures emerge in supply chains focused on imported illicit drugs whereas wheel networks emerge in supply chains focused on locally produced illicit drugs. Furthermore, the type of structure determines the type of business model followed by the DTO which explains patterns for money laundering, adverse selection problems, and punishment of shirkers. Hierarchical structures have reduced adverse selection issues, employ restricted methods to punish shirking, and engage in risk-averse money laundering. In contrast, wheel network structures have increased adverse selection issues, employ unrestricted methods to punish shirking, and engage in risk-tolerant money laundering.

In this research, risk is not understood as a higher probability of occurrence of an unwanted event. Rather risk is conceptualized as a greater variability in the potential outcomes of a decision or action regardless if the outcome is desired or not (Risk expert in personal communication with the author, May 2016). In this sense flipping a coin is less risky than throwing a dice, but buying a lottery ticket is riskier than throwing dice.

supply chain management are not interchangeable concepts. Whereas supply chains are distribution channels, supply chain management “requires overt management efforts by the organizations within the supply chain” (Mentzer et.al. 2001: 4).

Following expected utility theory, risk-averse individuals require a higher compensation (risk premium) for investing in a risky project compared to risk-tolerant individuals⁹. That is, a risk-averse individual is compensated for taking on greater variability in the outcome of an event. Risk-tolerance, however, does not imply risk-seeking behavior. A risk-seeking individual derives utility from variation in itself. That is, she would be willing to pay in order to have a greater variability in the outcome. Whereas individuals at times may exhibit risk-tolerant behavior, such as a gambler in Las Vegas, individuals tend to be risk-averse. As it will be examined in detail in chapters five and six, wheel networks tolerate risk at higher rates than risk averse organizations insofar the risk premium they require is lower compared to that of risk averse organizations.

In addition, I hypothesize that the military intervention of the Mexican government in drug-trafficking activities generated an unintended consequence in the form of a market for protection because it exacerbated three conflicts: DTOs against the state, DTOs against each other, and intra-DTO fights. I argue that interaction of the DTO structure with the

⁹ Prospect theory (Tversky and Kahneman 1979) provides an alternative explanation to the one from expected utility. For the authors choice under risk is not determined entirely by a final state of endowment nor is it reference-independent. In contrast, Tversky and Kahneman argue that preferences are determined by attitudes to gains and losses, defined relative to a reference point. Contrary to the linear function of gains and losses in expected utility theory, prospect theory assumes that choices are evaluated relative to a reference point that defines an acceptable outcome rather than expected utilities (McDermott 1992; Bendor 2001). Cumulative prospect theory, a revision of prospect theory, argues that individuals do not weight probabilities in a linear manner but they tend to overweight extreme yet unlikely events while underweighting average events. This leads individuals to be risk-averse about gains but risk-tolerant about losses which results in people preferring smaller surer gains than uncertain larger gains. While the framework of prospect theory can provide a better understanding of how individuals make choices under risk, the main challenge lies in knowing both individual characteristics of decision makers as well as the context in which the decision was made i.e. how it was framed; a great difficulty when studying organized crime.

market for protection encouraged the diversification of some DTOs into additional criminal activities such as kidnapping, extortion, and trafficking of illegal goods, which results in increasing predatory violence. However, the incentive to participate in the market for protection affected wheel network DTOs more strongly than hierarchical DTOs. These incentives, associated with the location of wheel network DTOs versus hierarchical DTOs, explain in part the diverging patterns of drug-related violence across Mexican states.

Figure 1.1

Supply Chain of the DTO and Expected Structure

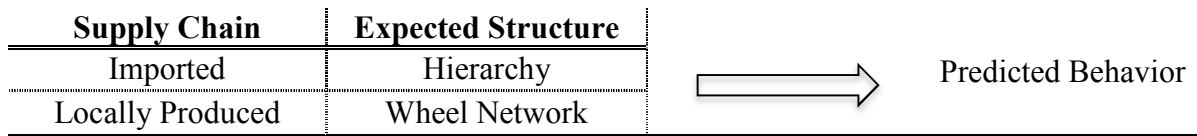


Table 1.1

Structure of the Drug Trafficking Organization and Predicted Behavior

		Predicted Behavior				
		Adverse selection	Money laundering	Punishment of shirkers	Criminal Activities	Use of Violence
Structure	Hierarchy	<i>Reduced</i>	<i>Risk-averse</i>	<i>Restricted</i>	<i>Drug trafficking</i>	<i>Non-predatory</i>
	Wheel Network	<i>Increased</i>	<i>Risk-tolerant</i>	<i>Unrestricted</i>	<i>Kidnapping, extortion, illegal goods</i>	<i>Predatory</i>

Overview of the Dissertation

The dissertation is organized as follows: Chapter two reviews the literature that informs the typological theory. Specifically, it examines literature on the new economics of organization, network theory and analysis, and theoretical works for understanding crime. I show that this dissertation contributes on a general level to the literature on organized non-state violence and, in particular, to understanding DTOs as organizations rather than only in relation to their interactions with other government or non-state actors. Chapter three presents the typological theory and explains the theoretical mechanisms. It shows that hierarchies and wheel network structures can be expected to exhibit different patterns of behavior in particular for money laundering methods and punishment of shirkers. In addition, it explains why the government intervention in the drug trade expanded a market for protection and how this market for protection interacts with the structure of organizations to explain the variation in the types of violence observed in the country. Chapter four operationalizes the hypotheses introduced in chapter three and explains why Mexico-based transnational criminal organizations represent a good case for understanding behavioral patterns of DTOs. Chapters five and six present the results by analyzing empirical data collected during fieldwork in Mexico and the United States as well as the publically available documents related to DTO activity. In particular, chapter five explains the origins of the DTOs as well as their money laundering patterns and trafficking of illegal goods other than drugs whereas chapter six focuses on the violent behavior exhibited by DTOs. Chapter seven summarizes the argument and concludes.

CHAPTER TWO

PREVIOUS LITERATURE

This chapter provides a review of the literature used to inform this research. First, I present a brief discussion on new economics of organization literature as well as social network analysis and network theory, which serve as the foundation for the typological theory. The analysis of these strands informs the discussion of the distinction between hierarchies and wheel networks including how they emerge, how they solve collective action problems, and how they punish shirking or defection. This analysis is important because while overall covert hierarchies and wheel networks face similar challenges to those encountered by overt structures; they respond differently to these challenges, in part due to how they achieve collective goals and monitor agents' performance within the organization. That is, while both hierarchies and networks face collective action problems, it is the structure that determines *how* they solve them. In addition to collective action challenges, there are also divergent preferences and imperfect information present in both types of structure (Akerlof 1970; Gibbons 2012; Laffont and Martimort 2003). Again, the structure determines *how* each will design incentives to arrive at optimal or second-best solutions to ameliorate adverse selection and moral hazard issues. In short, hierarchies and networks take different approaches to reveal the type of the agent or increase the amount of effort the agent puts towards the production of a given output.

Next, I examine the works on organized non-state violence, in particular rational choice models used for understanding criminal activities as well as the current scarcity of theoretical literature on drug trafficking organizations. I conclude the chapter with a discussion of the contributions of understanding DTOs as organizations in their own right rather than only focusing on organizational learning and adaptation.

2.1 New Economics of Organization

The new economics of organization framework employs the methodology found in neoclassical economics while incorporating the notion of conflict into the design of institutions and choices made by decision makers in order to have a more accurate representation of the interactions among agents. The emphasis of the models used in this framework is not on whether a given assumption is realistic, but on its usefulness for generating testable hypotheses with predictive implications (Friedman 1953). Consequently, the tools of economic theory encouraged political scientists to think seriously about incentives and their effects on actors who were previously viewed as unconstrained and isolated by focusing on elements such as the contractual nature of organizations, markets vs. hierarchies, and transaction costs (Miller 2005; Williamson 1975). A key feature of the new economics of organization is that it translates the findings from economics in order to explain research questions relevant to political scientists although this translation is not necessarily straightforward (Moe 1984; Moe 1990).

The new economics of organization framework, therefore, is the starting point for understanding the existence of hierarchies in contexts where actors face a number of

constraints in their agency. Transaction costs theories suggest that firms are hierarchical because they resolve market failures generated by team production externalities thus creating an incentive system that aligns self-interest with group efficiency (Alchian and Demsetz 1972; Coase 1937; Miller 1993; Moe 1984). Therefore, hierarchies exist because the costs of transacting are reduced by shifting to a nonmarket arrangement that internalizes some of the transactions costs for factor owners. In equilibrium some transactions will take place in the firm while others occur in the market. Put differently, “[hierarchy is preferred] when groups are large enough that leaders need to delegate, when operatives will not conduct those activities exactly as leaders would like absent some supervision, and when unsupervised operatives are likely to take (...) damaging actions” (Shapiro 2013: 11). By definition, therefore, a hierarchy can be understood as organizations devised optimally to process information, acquire knowledge, and monitor individuals (Garciano and Van Zandt 2012).

However, while hierarchies originate because they resolve a market failure, their survival is contingent on an incentive system that aligns self-interest with group efficiency. According to transaction cost economics, in hierarchical structures, a central component of the incentive scheme relates to the manager who has to credibly commit to not appropriate all the rents generated by subordinates. This is because the manager’s payment depends on guaranteeing that there are few free-riders within the organization. The more free-riders, the lower the team’s overall output, and the lower its efficiency. Put differently, the manager has an incentive to monitor the work of the employees because his benefit is

strictly contingent on the overall output of the team¹⁰. By the same token, employees are willing to pay for the manager, to the extent that the manager's pay depends on production by the firm, because it represents a cost-efficient way to monitor team production, achieve efficiency, and therefore distribute the profits to employees. If the manager steals the team's profits, the employees have no incentive to produce within the organization. In contrast, if the manager does not steal all the rents, employees have an incentive to produce in order to obtain a greater distribution of the firm's profits.

By one estimate, credible commitment by the manager is best achieved through a set of activities that have traditionally been in the realm of politics rather than economics: allocation of generally accepted responsibilities, rules of the game, and property rights that provide long-run incentives for investment in the firm (Miller 1993). The investment both from management and participants in a hierarchy creates costs that incentivize cooperative behavior rather than defection. The higher the costs from the management perspective to replace a member and the higher the costs for individuals to invest in a hierarchy translate into higher levels of positive inducements in this type of structure.

Even with an incentive scheme in place that aligns preferences, monitoring remains a central imperative of hierarchies because groups generally experience agency

¹⁰ Formally: "The specialist who receives the residual rewards will be the monitor of the members of the team. The monitor earns his residual through the reduction in shirking that he brings about, not only by the prices that he agrees to pay the owners of the inputs, but also by observing and directing the actions or uses of these inputs. *Managing or examining the ways to which inputs are used in team production is a method of metering the marginal productivity of individual inputs to the team's output* (Alchian and Demsetz 1972: 782)

problems¹¹. As the second assumption of this research proposes, DTO agents pursue, at least some of the time, their private economic interests. Consequently, successful collective action does not follow from aligned preferences and it will be necessary for organizations, regardless of their structure, to provide separate and selective incentives to motivate individuals to cooperate for a collective good (Olson 1965).

Successful collective action is central for DTO survival because by criminalizing specific goods and services the state effectively relinquishes any regulation that can monitor and enforce transactions in this market. Specifically, DTOs need to detect free riders because as Schelling explained, acts committed by rational, self-interested criminals generate externalities borne by all criminals collectively; if crime is centrally coordinated, criminals as a group have an interest in moderating the behavior of all mostly to prevent unwanted law-enforcement attention (Schelling 1984). Interestingly, while DTOs can use violence to coerce members to contribute to the cost of obtaining the collective good, empirical findings suggest that DTOs are not constantly violent, nor do they rely exclusively on threats of violence towards their members. Therefore, DTOs offer, at least some of the time, positive separate and selective incentives to motivate their members to act for the collective goal.¹² It follows, thus, that a principal in a hierarchy will use a wide array of selective incentives to motivate his agents to work. However, he will refrain most

¹¹ Agency problems arise when three conditions exist: (1) a principal needs to delegate certain actions or decisions to an agent: (2) the principal can neither perfectly monitor the agent's actions, nor punish him with certainty when a transgression is identified, and (3) the agent's preferences are not aligned with those of the principal (Shapiro 2013: 33).

¹² Olson considers both positive as well as negative selective incentives. In particular coercion is a type of negative selective incentive (Olson 1965).

of the time from using extreme violence to prevent shirking from other workers. This is because agents who have become managers represent a significant investment of time and resources of the organization. Part of the investment lies in the training and tradecraft taught to the manager, but an equally important part lies in determining the agent's 'type': trustworthy or not trustworthy. Eliminating a manager thus represents a high cost that can only be justified if the agent's cost to efficiency is higher than the cost of replacing him. The trade-off lies in knowing the type of agent recruited.

Informational asymmetries within hierarchies are particularly relevant given the promotion-per-performance mechanism that exists in this type of structure in which in principle an agent is only promoted to the next level if she meets *a priori* determined performance criteria (Aoki 1998). According to one model that studies internal characteristics of terrorist organizations, there are two dilemmas that limit their effectiveness:

Security-control tradeoff: preferences over tactics are not perfectly aligned, so that some agents want to attack different targets or want to conduct more or fewer attacks than their leaders; principals cannot perfectly monitor their agents' tactical planning nor wield a threat of violence over them; and political goals are being placed at risk by the types of tactics operatives would employ if left to make their own decisions (Shapiro 2013: 56)

Security-efficiency tradeoff: agents below the leadership are less than perfectly committed or want to spend money differently than leaders would like; principals cannot perfectly monitor their agents' uses of money nor credibly punish them for observed infractions; and resources are constrained so that leaders will not just accept the financial inefficiencies created by agency problems (Shapiro 2013: 56-57).

In this dilemma model the principal knows more than the agent "either through years of experience or a more developed social network that provides a rich knowledge

base about how to respond in a given environment that subordinates generally lack” (Shapiro 2013: 28). However, even though the model recognizes that principals are better informed, it overestimates the informational asymmetries within hierarchies because it discounts the effect of the promotion-per-performance mechanism¹³. Therefore, while informational asymmetries exist, their effects will be mitigated as an agent moves up through the ranks. This is because agents generally start at the entry-level of the firm and by the time they reach managerial positions they have provided significant information on their performance and their true type to higher levels in the hierarchy.¹⁴ In short, as soon as an agent is promoted, there is information on this individual and this information only grows as she acquires more responsibilities. This is important because unlike other structures, hierarchies have internal mechanisms that ameliorate the consequences inherent in divergent preferences and delegation. Given the high costs both from management and agents in a hierarchy it is expected that principals will behave in a risk-averse fashion.

To summarize, hierarchies originate because they solve team production externalities that reduce transaction costs by selecting a non-market arrangement. In order to survive hierarchies need to design an incentive scheme that aligns self-interest with group efficiency. Nevertheless, even when the preferences are aligned, groups still experience agency problems because by design hierarchies require delegation that creates informational asymmetries. Therefore, it will be necessary to offer a separate and selective

¹³ This information structure, in which “principals have better task knowledge than their agents, is the opposite of the structure presumed in most studies of delegation” (Shapiro 2013: 28).

¹⁴ The consequences of information asymmetry are exacerbated in particular because Shapiro (2013) only considers two levels of operation: tactical and managerial roles.

incentive to motivate individuals to act in a group-oriented way. This separate and selective incentive will tend to be positive in hierarchies in particular due to the high investment in developing human capital by management and time and application by agents who participate in a hierarchy. Lastly, the promotion-per-performance mechanism present in this type of structure ameliorates the inherent problems of delegation by providing information on the agent as she moves up through the ranks.

2.2 Social Network Analysis and Network Theory

Applications of social network analysis are not new to criminal behavior. In fact, sociograms, and sociomatrices identifying individuals' co-offenders (Shaw and Mckay 1931; Moreno 1932) have been used since the 1930s in order to describe criminal enterprises (Carrington 2011). Network analysis, however, is different from network theory. While network analysis is mostly a methodological paradigm for examining complex social structures (van der Hulst 2009), network theory examines mechanisms and processes that interact with network structures to yield certain outcomes for individual and groups (Borgatti and Halgin 2011). Both network theory and analysis are however, used in a restricted fashion in terms of understanding criminal behavior due to severe limitations on data collection (Klerks 1999; van der Hulst 2009). Consequently, tools from social network analysis have been used in order to try and develop more than just descriptions of criminal groups. Nevertheless, the problem is that even when social network analysis can produce mathematical propositions that measure the centrality of a node in a given network, for example, these measurements lack theoretical mechanisms that can help

anticipate patterns of behavior.¹⁵ In its most developed form, network analysis uses mathematical computations in order to quantify characteristics of network activity, social roles, and associated social mechanisms like power (Wasserman and Faust 1994; van der Hulst 2009). By contrast, network theory discusses theoretical mechanisms that operate mostly through information flows (Granovetter 1973; Burt 1992).

Because theoretical mechanisms in network theorizing are based on information flows, networks are generally understood as “a set of actors or nodes along with a set of ties of a specified type that links them” (Borgatti and Halgin 2011, 1169). However, it is the researcher who *defines* a given network by selecting the types of ties and nodes she will analyze. Notably, in making a particular choice, the researcher does not claim that only these ties exist or are significant but that the specific configuration has a measurable effect on performance (Balkundi and Kilduff 2006; Borgatti and Halgin 2011). This is important because unlike social network analysis where the location of a node is what matters, with network theory the emphasis is on the type of tie. Put differently, network theory focuses on dyadic variables that examine the relationships among actors as an explanation for network outcomes instead of individualistic explanations that focus on attributes of actors that are treated as independent cases (Wellman 1988; Brass et.al. forthcoming). Consequently, similar to transaction cost economics that allows us to

¹⁵ The concept of closeness centrality describes a node’s position in a network as the distance of the node to all others in the network (Borgatti et.al, forthcoming).

examine the behavioral patterns of the firm, network theory moves beyond explanations based on individuals to mechanisms that reoccur in network structures¹⁶.

Network theory is also important given the different types of network structures that exist. Unlike hierarchies that generally maintain a fixed structure and differ on how tall or flat they can be, the *US Army Military Guide to Terrorism in the Twenty First-Century* identifies three basic types of network structures depending on how the nodes are connected to each other: chain, all channel, and wheel (hub or star).¹⁷ While social network analysis, therefore, would produce different descriptions based on these structures, network theory provides behavioral patterns that are general in scope and can be applied to different network structures although some behaviors may occur more frequently in one type of structure over another (personal communication McGuire 2014).

Unlike hierarchies that emerge due to market failures caused by team production externalities, networks emerge in settings where the rigidity of a hierarchy gives networks a comparative advantage thus placing emphasis on know-how, the demand for speed, and

¹⁶ Other authors identify organizational network research as a research program in the sense described by Lakatos (1970). Rather than distinguishing between social network analysis and network theory, they outline four interrelated principles: importance of relations between organizational actors, actors' embeddedness in social fields, the social utility of network connections, and structural patterning of social life (Kilduff, Tsai and Hanke 2005; Balkundi and Kilduff 2006).

¹⁷ *Chain*: each cell links to the node next in sequence. Communication between the nodes is by passing information along the line.

Hub and Star (Wheel): cells communicate with one central element, but the central cell need not be the leader or decision maker for the network. In a wheel network the outer nodes communicate with one or two other outer cells in addition to the hub.

All-channel: all nodes are connected to each other. The network is organizationally flat indicating there is no hierarchical command structure above it. Source: *A Military Guide to Terrorism in the Twenty First Century*, US Army, 2007.

trust (Powell 1990). In networks, in contrast to hierarchies, individuals are hired for an expertise that cannot be internally produced and cannot be imposed from above or dictated by authority (Powell 1990). This premium on expertise, therefore, will contribute to a network's survival if it can disseminate and interpret the new information it acquires through the agents' tacit knowledge. In short, information flows are crucial for collective action within networks. For example, strong ties among network members can produce cliques, which in turn promote effective collective action (Kahler 2009, Serena 2014). Alternatively information flows can also generate brokerage, or connect cells that were previously disconnected thus activating collective action (Burt 1992; Kahler 2009). Consequently, given that information flows in several directions, rather than top to bottom as often occurs in hierarchies, dark networks—those involved in illegal activities—have flexible structures that enable them to react quickly to changing pressures from opponents (Milward and Raab 2003).

In addition, while in hierarchies the manager has to credibly commit to not stealing all the rents produced by the subordinates, the role of leadership in networks is significantly less clear and arguably under-theorized (Balkundi and Kilduff 2006; McGuire 2002; McGuire and Silva 2009). By design, network structures do not have top managers because the structure provides some degree of shared control and authority over different areas of operation. Nevertheless, even if management in networks is complicated due to the fluidity of the structure there are some propositions on the role of leadership in public policy and administrative structures (McGuire 2002; McGuire and Silva 2009) based on the information flows characteristic of network theory. This model is particularly

useful for understanding covert networks because it assumes that even when there are various leaders there is accountability for the satisfactory delivery of public goods and services (McGuire 2002: 600). Analogously, in DTOs with network structures there is accountability for the satisfactory delivery of illegal goods. As stated by a high-ranking official, to be a successful wholesaler of illicit goods, similar to the transnational organized criminal organizations examined in this research, it is necessary to provide a steady supply or distributors will use a different source. Four specific types of behavior are identified for network managers given different environments:

Table 2.1
Managerial Behavior Exhibited by Networks Given Different Environments

Expected Managerial Behavior			
Activation	Framing	Mobilizing	Synthetizing
Identifying and incorporating the persons and resources needed to achieve program goals. Skills, knowledge, and resources of potential participants must be assessed and tapped into.	Behaviors used to arrange and integrate a network structure by facilitating agreement on participants' roles, operating procedures, and network values.	Behaviors used to develop commitment and support for network processes from network participants and external stakeholders. Ongoing task for achieving network effectiveness.	Enhance conditions for productive interaction by minimizing and removing informational and interactional blockages for cooperation.
Observed Environmental Constraints			
--Clear program objectives --Wide distribution of resources needed	--Unclear or multiple program objectives --Competing assessments of effectiveness exist	--Unclear or multiple program objectives --Competing assessments of effectiveness exist --Wide distribution of resources needed	--Clear program objectives

Source: Developed by the author adapted from McGuire (2002: 602-608).

An important point regarding these behaviors is that managers do not have a priori *preferences* over which type of behavior they follow but, rather, they employ specific

strategies due to environmental constraints (McGuire 2002: 608). For example, a manager in a wheel network DTO does not have a specific set of strategies used for developing commitment from network participants but he will adapt his mobilizing strategies contingent on whether or not they are currently engaged in conflict with rival organizations and/or the government. During a conflict either with the state or a rival organization it is expected that a manager will try to develop commitment from the network participants at a higher rate than absent any confrontation. Furthermore, the common denominator to these strategies is the knowledge the manager has of his resources and how he ensures that information flows to the adequate links.

This emphasis on information rather than control and supervision implies that there is not necessarily a clear investment in human capital from potential managers and time and application by members in the organization that creates long-term incentives for cooperation. For example, a manager in a DTO with a network structure that has a wide distribution of needed resources will spend time identifying and incorporating the persons and resources needed to achieve the desired outcomes such as securing chemical precursors for the manufacture of synthetic drugs and recruiting individuals with tech expertise for producing pirated movies—Los Zetas DTO has its own brand of bootlegged films found at street markets in some states in Mexico. The process of identifying and incorporating these resources distributed in a number of locations is different from aligning incentives of self-interest with group efficiency like the ones in hierarchies. This is because the process involves finding and recruiting the resources needed but this does not automatically translate into employees who will work towards achieving

organizational goals. In hierarchies in order for the individual to receive benefits from participating in the organization his behavior has first to contribute in achieving organizational goals and this cannot be divorced from the output produced by the entire team. Consequently, self-interest rather than altruism links organizational efficiency to individual actions. Furthermore, in networks individuals do not require their self-interest to align with organizational goals—i.e. the entire network-- to receive benefits from their participation. Given that different network processes may activate at different times to achieve distinct goals—producing pirated movies and stealing fuel for sale in the black market might not occur simultaneously nor receive the same amount of resources—self-interest aligned with organizational goals is only necessary at the cell level to achieve a specific network process and therefore receive benefits from participation. Consequently, defection and shirking are ever-present risks in network structures because those within a network organization must carefully balance the marginal benefit of each new link to the network against the risk of exposure and ineffective collective action through *ongoing* activation, mobilization, framing and synthezizing (Kahler 2009; McGuire 2002).

The potential for shirking and defection is enhanced due to the lack of a promotion-by-performance mechanism. That is, because networks tend to hire individuals for their expertise (activation), principals lack information about the true type of recruit. For example, when El Golfo DTO recruited deserters with special operations training from the Mexican army it was solely interested in their ability to work as bodyguards for the top management of the DTO rather than considering how they could contribute to the overall operation of the DTO and the risk it represented to hire deserters. In a business where trust

is paramount, this example illuminates the drawbacks of hiring based on expertise and lacking a promotion-per-performance mechanism. While the former army men proved to be quite successful in their role as bodyguards, their initial betrayal to the Mexican army denoted a proven lack of loyalty towards their employees that manifested later when Los Zetas—the army deserters—broke away from El Golfo and began fighting them for territory and their business.

The paradox is simple: in a structure where information is crucial for survival, there are not enough mechanisms for learning the true types of individuals it incorporates thus increasing an organization's vulnerability. By the same token, the principal in a network will have more selective incentives at his disposal for coercing his employees because, unlike hierarchies, new links in a network are not generally a significant investment of time and resources by the organization. Again, because they are hired for their expertise rather than developed within the organization, eliminating them does not represent a high cost as long as there are replacements available.¹⁸ Principals in networks will have lower levels of certainty about the true type of members but have unrestricted methods to punish shirking.

Lastly, structures that also share kinship ties introduce distortions to the general findings discussed for hierarchies and networks. Discussing how family members introduce distortions to the structures is important insofar some DTOs also incorporate

¹⁸ It is true that the pool of potential recruits is not infinite and ostensible smaller for illegal activities compared to legal ones. However, a pool still exists and while it may be costlier to recruit agents for covert networks than overt ones it remains a possibility.

family members to their operations. Structures that also share kinship ties can be expected to offer positive inducements at a higher rate than structures that do not share kinship ties. In addition, organizations with family links allow principals to have higher levels of certainty about the true type of the agent but restrict even further how shirking is punished.

In hierarchies with family ties it may not be necessary to follow the entry-level performance rule to promote an agent to the next rank because the manager already has detailed information on the type of agent. It is important to note that knowing the true type does not necessarily guarantee efficiency.¹⁹ However, alternatives to punishing shirking will be more restricted compared to hierarchies with no family links because it may be harder for a principal to employ extreme violence, such as killing his son, to prevent shirking by other workers. In networks with family ties, information may flow successfully and create strong cliques; however it will also limit the opportunities for brokerage, transmitting information among cells, if there are few links outside the family structure, which can limit collective action. Similar to hierarchies, networks with family links will also reduce the available methods to punish shirking.

2.3 Organized Non-State Violence

The typological theory proposed in this dissertation advances theoretical mechanisms mostly based on theories from the fields of economics and network theory. While the typological theory is a novel approach, it contributes on a general level to the literature that has also used rational choice models to analyze organized non-state violence.

¹⁹ I thank John Bailey for pointing out this concept.

This literature can be classified into three main strands. A first strand explores the different strategic choices involved in violence mainly focusing on bargaining models derived from Rubinstein (1982). The focus is on private information with incentives to misrepresent, indivisibility, and commitment problems (Fearon 1998). For example, restricting violence may be a signal of the level of trustworthiness of a group to comply with an agreement (Kydd and Walter 2002) or the type of violence employed may signal the type of objective the group is pursuing (Kydd and Walter 2006). This matters for two reasons; first it shows that violence is a strategic choice and not a preference inherent in individuals engaged in illegal activities. Second, it demonstrates that a better understanding of organized non-state violence requires disaggregating the type of violence that organizations employ. That is, not all violence is equal in terms of its effects and the goals it seeks to achieve.

A second strand pays attention to policy responses by the state both on the treatment of the threats and state building in environments with weak institutional capacity. According to this literature, non-state actors such as insurgencies require the support of the population to be successful. Thus, an effective policy response involves winning the 'hearts and minds' of the population in which insurgents operate (Kilcullen 2009 and 2010; Kalyvas 2006). Moreover, indiscriminate force on the part of the state against the threat may have the undesired effect of incentivizing the population to join insurgent lines (Lyll 2009) to a greater degree than unemployment and poverty (Berman et.al. 2011; Blair et.al. forthcoming). Although DTOs are not insurgencies, this strand is relevant for this research because it provides a theoretical framework for understanding why some

DTOs engage violently with the populations of the locations in which they operate while others seek to acquire the support of the population. For example, DTOs that employ the local population for producing drugs will tend to be less violent towards the civilians of the locations where they operate as compared to DTOs that do not employ the local population for their operations. Furthermore, the ‘hearts and minds’ approach pursued by the state is sometimes also employed by DTOs who want to acquire the loyalty of the population in order to limit or dissuade their cooperation with law enforcement agencies.

A third strand, especially developed after the attacks of September 11, focuses on how non-state violence is organized and why the type of organization matters. While this strand sheds light on agency problems experienced mostly by terrorist organizations, their insights are limited for understanding DTOs mostly because terrorist groups are generally examined in view of their political goals while DTOs are usually motivated by profit-seeking goals. According to this literature the types of resource endowments available determine the ability of the organization to enforce commitment on its members, which explains variation in the type of violence observed (Weinstein 2007). Moreover, this strand also shows that organizations that are highly efficient at producing violence are mutual aid organizations that can weed out free riders through mechanisms that identify potential shirkers²⁰ (Berman 2009) or organizations that provide ‘pleasure in agency’ even

²⁰ According to Berman, mutual aid organizations are the equivalent of club-like behavior in economic terms. Consequently, terrorist organizations that also provide charitable activities to their members weed out potential shirkers because “those who sacrifice gain acceptance as full members, while those who do not suffer marginalization, shunning, or even expulsion. This sacrifice and selection is divisive but crucially effective: it weeds out potential members who might shirk their responsibilities in mutual aid” (Berman 2009: 16).

in high-risk movements²¹ (Wood 2003). Furthermore, this strand shows that illicit organizations can also be characterized using the principal-agent model (Bueno de Mesquita 2005; Kahler 2009 Shapiro and Siegel 2007; Shapiro 2007; Shapiro 2013). In line with the arguments advanced here, this body of literature shows that organizations engaged in non-state violence are not unitary actors. Agency models, therefore, help identify the different commitment levels exhibited by the leadership and lower ranking members thus informing the diverse incentives at play in order to fulfill organizational goals.

Specific applications of rational choice to studying crime include works by Gambetta (1997), Hill (2003), and Milward and Raab (2003). Gambetta's work is a turning point in the scholarly literature related to organized crime by emphasizing the entrepreneurial aspect of the Sicilian mafia in contrast to accounts that focus on depicting them as individuals who see violence as an end rather than as a resource. That is, a mafia is an industry which produces, promotes, and sells private protection (Gambetta 1997). Moreover, Gambetta and Hill explain the conditions under which a market for protection can emerge, both in rural contexts such as nineteenth century Sicily (Gambetta 1997) as well as developed countries as post-WWII Japan (Hill 2003).

Gambetta, Hill, and Milward and Raab also provide compelling explanations of how criminal organizations solve collective action problems, for example, through the use

²¹ For Wood, people participate in high-risk insurgencies not from potential material gains but from moral and emotional reasons, "to act in defiance of unjust authority, to claim recognition as equal subjects whose personhood needs to be respected" (Wood 2003: 253). Repression for the Salvadorian government validated the insurgents' cause further encouraging support from civilians.

of symbols that formalize membership of individuals with initiating rituals or through figurative kinship ties. Moreover, these works also demonstrate how models of the firm, agency frameworks, and network analysis can be extended to understand illegal organizations. The hypotheses advanced in this dissertation are built on the assumption that such frameworks can be used to understand Mexican DTOs as well. In particular, one of the hypotheses derives directly from Gambetta's work, arguing that currently there is a market for protection where Mexican citizens become willing customers of DTOs as a consequence of the perceived incapacity of the government to ensure public safety.

The literature on organized non-state violence has so far paid little attention to DTOs because they have not typically been seen as producers of violence but rather their violent behavior is generally regarded as a byproduct of their main criminal activity of distributing illicit drugs. From a sociological perspective, the DTO literature focuses on describing the mythification of drug lords (Astorga, 1995; Mendoza-Rockwell, 2007) using hybrid approaches of sociology, rational choice, and network analysis to examine drug trafficking activities in relation to the state's response to drug violence (Astorga, 2005; Heber 2009; Ríos 2012; Sabet, 2012; Shirk et. al., 2012; Valdés 2013; Xia 2007). These studies produce very detailed information on DTO activities in a wide array of contexts such as China, Mexico, and Sweden as well as the actions of the government but do not shed light on the strategic choices made by these organizations with the exception of recent work that explores specific co-optation and coercion strategies (Diaz-Cayeros et.al., forthcoming) as well as the effect of specific political parties on drug related violence (Dell 2011; Ley 2013).

Empirical studies on Mexico-based DTOs also include the work of Magaloni et.al. (2015) Phillips (2015), and Dickenson (2014). These works examine the effects of DTO decapitation on violence types and levels observed across the country. Using the same data set, albeit different methodologies and different robustness checks, the authors find opposing results²². Whereas, Phillips finds that “decapitation in the past three, or possible six, months is associated with a *reduction* in drug-related homicides” Magaloni et.al. find that “neutralization of drug cartel leaders have *positive (i.e. exacerbating)* short-term effects not only on DTO-related violence but also on homicides that affect the general population [...] particularly to places that are connected to the transportation network and are thus “strategic” for the drug-trafficking business” (Phillips 2015: 334 emphasis added; Magaloni et.al. 2015: 1458 emphasis added). Similarly to Magaloni et.al., Dickenson found that “removing DTO leaders is associated with additional murders, with a larger increase in the DTO’s home state than the state in which the leader is removed” (Dickenson 2014: 652).

In spite of the empirical contributions of these works, including their clear implications on policy decisions, they fail to disaggregate DTOs and instead treat them as if they shared identical structures. For example, Dickenson discusses leadership within DTOs as “well organized, often with several levels of command, each with their own

²² Phillips and Magaloni et.al. used government data compiled by the Ministry of National Defense, Ministry of Interior, Attorney General’s Office, Federal Police, and Mexican Army. The database classified homicides presumed to be related to drug violence per municipality from December 2006-September 2011. Although it is unclear the criteria for each category, homicides were divided into three groups: confrontations, aggressions, and executions. An in-depth analysis on this dataset is presented in chapter four.

geographic and strategic areas of responsibility” (Dickenson 2014: 652). Similarly, Phillips argues that criminal organizations are “primarily motivated by material incentives [and] seem more likely to be consistently affected by the loss of a leader in the short term. Furthermore, he argues that violence is a fundamental part of the identity of criminal groups and one of the indispensable qualities of a member of a criminal organization is the proven ability to use violence (Phillips 2015: 325; Varese in Phillips 2015: 327).

In a more nuanced discussion, Magaloni et.al. acknowledge that “the internal organization of DTOs might further affect their vulnerability to leadership replacement” (1460). However, contrary to the typological theory advanced here, they argue, “hierarchical, coherent, and centralized organizations might be more vulnerable to leadership killings or captures than horizontal, amorphous, and decentralized groups” (1460). Nevertheless, despite briefly discussing potential differences linked to internal structures, Magaloni et.al. use Grillo’s (2011) characterization of DTOs as :

[H]ighly decentralized organizations, in which *plaza* head run cells that are semiautonomous. Each cell makes money in its own territory and delivers it to lieutenants, who deal with the kingpins or capos. A cartel’s kingpin typically has near absolute control over his lieutenant subordinates who respond directly to him. Lieutenants are responsible of overseeing the operation of the various criminal cells in their area of influence. The lieutenants also oversee the selection of plaza heads, who appoint cartel *sicarios*, or killers, and *halcones*, or hawks, who are “the eyes and ears” of DTOs in charge of identifying those who seek to traffic without permission. These kinds of decentralized and amorphous criminal organization are likely to be less vulnerable to leadership captures.

Two considerations are important. First, this conceptualization is a hybrid description of DTOs that combines elements from wheel network structures and hierarchies as defined in this research and Grillo obtained it from an interrogation

video of a former member of La Familia Michoacana DTO. Second, without taking into account the structure of each DTO, it remains unknown whether capturing or killing kingpins is associated with increases in DTO related violence, and if so, to what extent. In this sense, existing empirical work on government strategies against alleged leadership remains incomplete and occasionally misguided by neglecting an analysis that examines the structure of each DTO as a variable of interest.

It is important to note that the inconclusiveness on the findings of decapitation as a strategy and the lack of attention to internal characteristics mirror the literature on High Value Targeting (HVT) on terrorism studies that the works on DTO decapitation heavily draw from. For example, using data from Israeli counter-terrorism policies during the Al-Aqsa uprising, Hafez and Hatfield (2006) conclude that targeted assassinations do not decrease rates of Palestinian violence nor do they increase them in the short or long run. In turn, they argue that “it may well be that the political utility of targeted assassinations is more effective than its military one” although they do not discuss how this mechanism would operate (Hafez and Hatfield 2006: 5). In contrast Frankel (2010) and the essential empirical work from Johnston (2012) find that HVT in fact can be a successful strategy if accompanied by other long-term tactics.

According to Frankel (2010) HVT can eliminate important decision makers creating a leadership vacuum therefore highly centralized groups will suffer a greater impact from the removal of these leaders (19). By examining successful and

unsuccessful attempts on leadership removal, Johnston finds that leadership decapitation increases the chances of war termination as well as the probability of government victory, reduces the intensity of militant violence and the frequency of insurgent attacks²³ (50). However, “killing or capturing insurgent leaders is usually not a silver bullet [...] decapitation is more likely to help states achieve their objectives as an operational component with an integrated campaign strategy than as a stand-alone strategy against insurgent and terrorist organizations” (Johnston 2012; 50). Furthermore, the main value of HVT hinges on the “ability to predict potential second-order effects of the removal of key figures [...] but the attacking force often lacks the detailed knowledge of the organizational dynamics to sufficiently judge the impact of successful kinetic operations” (Frankel 2010: 26).

Despite these findings, work on HVT has only dealt with internal dynamics on a superficial level. To the knowledge of the author, only the recent work by Jenna Jordan (2014) has examined the implications of organizational characteristics in relation to decapitation. In other words, Jordan offers theoretical mechanisms to explain the empirical findings discussed by Johnston (2012) who does not provide a framework for explaining the variation on decapitation success. Specifically, drawing on Weber and Weinstein (2007), Kalyvas (2006) and Kilcullen (2009; 2010) Jordan finds that a group will be able to withstand decapitation as a function of two factors: bureaucratization and communal support. Similarly to Johnston and Frankel, Jordan

²³ Examining successful and unsuccessful attempts is important because unlike previous studies that only examined successful cases, a sample that includes both allows Johnston to deal with causal inference difficult in other research designs (Johnston 2012: 47).

also concludes that leadership targeting alone is not sufficient to defeat a terrorist organization.

Of particular importance on DTO structure and behaviors is the work by Kenney (2007) on the Colombian case, specifically the Medellín organization usually identified with Pablo Escobar and its competitor, the Cali organization. Kenney uses a hybrid framework that combines works from bounded rationality (Cyert and March 1963; March and Simon 1958; Simon 1947) and organization theory, mainly organizational adaptation and replication (DiMaggio and Powell 1983; Hannan and Freeman 1977) in order to explain how Colombian DTOs were able to learn and adapt and become more efficient in their operations than law enforcement. Kenney argues that the network structure of these organizations provided them with the needed flexibility and information flows that enabled them to outsmart government measures. Consequently, Kenney conceptualizes drug trafficking as an ongoing process, an “enterprise [that] incorporates ‘lessons’ from experience into practices and procedures that guides subsequent behavior, in the process developing larger, more diverse repertoires of action” (Kenney 2007: 37).

Nevertheless, an important issue with Kenney’s work is that while he conceptualizes the Medellín and Cali organizations as networks, he uses theoretical concepts drawn from hierarchies to explain their success in adapting to law enforcement strategies. For example, the author discusses how Colombian drug traffickers got promoted from within by catching “their manager’s eye through proficiency and diligence”

and how they acquired their knowledge through a process of trial and error (Kenney 2007: 44; 55). Consequently, even though his contribution is valuable by shedding light on how organization theory is useful for understanding covert organizations and organizational learning, his work, by combining a network conceptualization with theoretical mechanisms more common in hierarchies, leaves important questions unanswered regarding the specific characteristics of structural types and their impact on behavioral patterns of drug traffickers²⁴.

While DTOs do not operate in a vacuum, they do not solely react to the state or opponents' actions. That is, explanations for their behavior are not exclusively based on the formulaic approach: when state does A, DTO does B. Even when we take context into account, DTOs exhibit differences in their behavior irrespective of action by the state or by their rivals. As Serena points out, “the ability to adjust organizational inputs and outputs to accomplish organizational goals –is *partly a function of organizational design*” (Serena 2014: 22, emphasis added). Consequently, it remains to be seen how the structure of drug trafficking organizations influences their behavior.

Lastly, the literature available on DTOs is for the most part journalistic, which raises at least three consequential problems for analyzing DTO behavior. First, the existing investigative journalistic accounts have important discrepancies regarding

²⁴ The author also presents an organization chart (p. 35) that combines elements of a hierarchy and a network, in this sense Kenney's argument is closer to hybrid covert structures such as the Iraqi Insurgency and Al-Qaeda analyzed by Serena (2014) and Kahler (2009) respectively. Hybrid structures generally have hierarchical management where decision-making is mostly centralized and lower levels divided in cells that do not communicate with one another and perform specific tasks.

relevant events in the life of these organizations. For example, authors generally consider a territorial division that took place at the end of the 1980s as the starting point for turf fights among DTOs. Nevertheless, there is disagreement regarding who initiated the division, who received which territory, and when it actually happened. There is no definitive study that has attempted to explicitly triangulate these accounts, leaving a plethora of versions of even the most basic facts pertaining to the operation of DTOs²⁵. Second, there are few primary sources available for understanding life within the organizations. This is partly due to a Manichean approach towards DTOs that delegitimizes accounts derived from members of organized crime. However, even the availability of a few primary sources presents challenges given the ulterior reasons and self-serving motives by known drug traffickers to provide interviews at different points in time. Third, and in line with public policy, accounts made available by state policy-makers generally focus on who they believe to be top leaders and relevant members of the organization rather than operational managers of the DTOs. This generally results in neglecting a holistic understanding of the DTO in favor of individual accounts that tend to exaggerate the individual's role rather than revealing overall behavioral patterns within

²⁵ The recent analytical effort from the online news source *Animal Político* through narcodata.animalpolitico.com is an important exception that seeks to provide open data sources on drug trafficking operations in Mexico. According to the portal the main source of information were documents obtained through Mexico's Freedom of Information Act from the Attorney General's Office. Additional sources of information include Astorga (2005; 2015) and Valdés (2013) as well publically available data from the media and interviews with policy experts. Nevertheless, despite the methodological note and the discussion on sources, *narcodata* does not discuss the criteria for including accounts by some authors and excluding others who have also written on the topic. In short, what is missing is the criteria they used to decide which version of events was privileged and why this was the case.

DTOs. That is, Joaquín Guzmán Loera a.k.a ‘El Chapo’ did not coordinate a transnational drug trafficking operation by himself but this point seems to be often lost.

Critically, I argue that if we only examine DTOs’ interactions it follows that we only analyze relational characteristics rather than behavior exclusive to *each* organization irrespective of context. It is necessary then, to understand how DTOs behave contingent on characteristics of the organization itself rather than reactions to behavior exhibited by other actors. Details of how DTOs conduct their operations are precisely the information that scholars and policy makers should be interested in because this is what allows us to understand the characteristics that co-occur and thus explain how they are connected. In short, by studying which types of behavior tend to occur with which types of structural organization, we can better anticipate their actions. On a general level, my dissertation contributes to the literature that examines organized non-state violence by examining how organized crime needs to be disaggregated using existing theoretical frameworks from economics and network theory that focus on organizational behavior. On a specific level, my research contributes to an in-depth understanding of transnational DTOs that operate in Mexico and the United States and the security challenges they represent to both countries.

CHAPTER THREE

A TYPOLOGICAL THEORY EXPLAINING BEHAVIORAL PATTERNS OF DRUG TRAFFICKING ORGANIZATIONS

The goal of this chapter is to move from anecdotal evidence about how DTOs operate to theoretically grounded propositions. This chapter defines and proposes a typological theory of behavioral patterns of drug trafficking organizations based on existing theories of hierarchies and networks and the origin and operation of markets for protection. The theory asserts that the structure of drug trafficking organizations is chosen as an optimal alternative depending on whether the illicit drugs trafficked are imported or locally produced. Furthermore, drug trafficking organizations will exhibit different behavior regarding adverse selection issues, their money laundering preferences, and punishment for shirkers depending on the structure of the organization. In addition, they will diversify their criminal activities given the existence of a market for protection exacerbated by military intervention and its interaction with structural characteristics of the DTO.

It should be noted that the typological theory advanced here focuses on managerial levels within DTOs and is not intended to predict behavior for the entire organization. As it will be examined in detail in chapters five and six, what happens at lower levels of the organization is unclear due to serious data constraints. Focusing on the managerial level, however, remains a significant question because it is in this sphere

where consequential decisions for the DTO are made. In this sense, while the decisions made by management are not deterministic, their behavioral patterns are more relevant for the organization compared to what happens at lower levels. This chapter does not intend to offer the only plausible analysis of behavioral patterns of drug trafficking organizations. Instead, it aims to specify a few variables that influence how DTOs launder their proceeds, how they punish shirking, and why they diversify their criminal activities. A comprehensive evaluation of behavioral patterns of DTOs would undoubtedly include many other variables that a fully specified theory could incorporate.

I maintain three assumptions: first, DTOs incur information costs in keeping track of the myriad of prices relevant to their transactions as well as contractual costs. Second, DTO agents pursue, at least some of the time, their economic private interests. Third, DTOs need to offer separate and selective incentives to motivate rational, self-interested individuals to act in a group oriented way.

3.1 Defining Typological Theories

In order to generate valid descriptive and causal inferences, it is important to make a distinction between data-set observation and causal-process observation (Collier, Brady, and Seawright, 2004). A data-set observation is the equivalent of an observation in the normal statistical sense or adding a row in a rectangular data set while a causal-process observation is an “insight or piece of data that provides information about context, process, or mechanism, and that contributes distinctive leverage in causal inference (Collier et.al. 2004: 277). Therefore, a causal-process observation “can resemble a

‘smoking-gun’ that confirms causal inference in qualitative research, and is viewed as an indispensable supplement to correlation-based inference in quantitative research as well” (Collier et.al. 2004). Causal-process observations are relevant for the development of a typological theory because as Mahoney (2010) argues, some of the functions they have are to develop, elaborate, and specify more precisely a given theory or hypothesis (Mahoney 2010). In contrast to Keohane, King, and Verba (KKV), who advise researchers to avoid typologies and classifications except as temporary devices for collecting data, scholars in the post-KKV approach distinguish conceptual typologies from explanatory typologies (Mahoney 2010).

A fully specified typological theory provides hypotheses on all the mathematically possible types relating to a phenomenon. In this case, types are defined as “specified conjunctions or configurations of the variables” (George and Bennett 2005: 237). However, because typological theories are mid-level theories they tend to concentrate on types that have the greatest implications for theory building or policymaking thus are rarely fully specified (George and Bennett 2005). An important characteristic of typological theories is that they serve to define pathways through which particular conjunctions of the variables relate to stated outcomes. That is, they are flexible in regards to equifinality (shared outcomes). For example, while a disease may arise through different causal paths, and exhibit varying symptoms and degrees of severity, pathologists focus on syndromes or clusters of causes and outcomes rather than a single manifestation of a particular disease (George and Bennett 2005: 236). In the case of researching DTOs where the ability to collect data is scarce, equifinality is an

important trait insofar it allows for the possibility that the same outcome arises through different pathways without foregoing discriminating and contingent explanations as well as policy recommendations. Furthermore, by allowing the possibility of equifinality, validity is not threatened because we can be cautiously confident that the independent variables had a causal effect on the dependent variable, albeit not exclusively through one mechanism.

George and Bennett distinguish between inductive and deductive typological theories based on how they are built. Inductive typological theories follow a ‘building-block’ approach where the goal is the cumulation of findings and increasingly sharper distinctions between different configurations of the variables. While these different configurations have the potential for creating too much complexity, one advantage of typological theories is that they are used specifically because they allow modeling of complex phenomena without oversimplification. Moreover, it can be argued that as it stands today we do not need to worry about adding too much complexity when it comes to understanding DTOs because so far they have been treated as unitary actors. Consequently, modeling through an inductive typological theory will allow clarifying similarities and differences among DTOs, facilitating comparisons, and incorporating interaction effects.

A brief discussion on endogeneity is important. As explained by Chenhall and Moers (2007) when theorizing about organizations, if equilibrium conditions are assumed—when agents are performing optimally—then examining the consequences of

independent variables, such as structure on behavioral patterns is problematic. Although the authors analyze management accounting systems within firms, their discussion can be extended to structures. If we assumed that ‘all organizations are optimizing all the time’ then this would imply that different structures do not have organizational behavior consequences. If this were to be generalized to all consequences, then structure would have no effect since everything would be driven by exogenous determinants.

Nevertheless, the assumption that the structure of organizations has no impact on behavioral patterns is not very realistic insofar agents *choose* structures of organizations contingent on goals they want to achieve and external constraints. Therefore, in order to examine how structure affects behavioral patterns of DTOs and minimize the consequences of endogeneity—mainly a lack of confidence on the implied causality—I propose a two-step model where supply chains determine structure and then structure determines money laundering, punishment of shirkers, and diversification of criminal activities. While this does not entirely remove endogeneity issues, it allows the model to account for an essential explanatory variable—structure—without assuming it as an exogenous characteristic. Additional measures to ameliorate the consequences of endogeneity include triangulation and process tracing in order to identify the causal chain and causal mechanisms and avoid omitted variable bias while also allowing for equifinality; an important trait when studying phenomena with important data constraints. For an extensive discussion of the methodology followed in this research, including process tracing and constructing typological theories see chapter four.

3. 2 Supply Chains and DTO Structure

Hierarchies

Consider a demand for an illegal substance that incentivizes individual entrepreneurs to enter the market and supply it. Similar to legal markets, fulfilling this demand requires incurring information costs—learning the prices relevant for the transactions—and contractual costs—preparing, negotiating, and concluding agreements. Given these transaction costs, individual entrepreneurs may organize themselves hierarchically because it is more efficient in producing output and minimizing the costs of transactions than individual action (Coase 1937).

Likewise, a hierarchical drug trafficking organization may be formed in order to reduce the costs of conducting exchanges with owners of inputs involved in the production and distribution of illegal substances. When illicit drugs are *imported* the organization may decide on a hierarchical structure. Hierarchies provide information on the type of agent with whom exchanges are conducted to a greater degree than other organizational structures by constantly generating information and developing trust through repeated interactions. Trust is a central characteristic for hierarchical DTOs. As Robert Jervis (2013) explains

[Individuals] who are more trusting will be willing to enter into more and riskier agreements than will those who are low on this dimension. They will place a higher likelihood on others cooperating and will accept arrangements in which reciprocity is delayed and inexact, in part out of the belief that the other will see the long-run advantage of a sustained relationship (164).

Indictments in the United States show that transactions among producers in Colombia and distributors in Mexico of illegal drugs often involve arrangements with delayed and inexact reciprocity due to the inherent challenges of conducting transnational illegal businesses. For example, if a shipment is postponed due to heightened law enforcement activities or challenges in the manufacturing process, both the owner and the purchaser of cocaine must trust each other in order to benefit from their risky enterprise over a sustained period of time.

Developing trust with a given number of producers—as opposed from purchasing illegal drugs from different suppliers each time—allows hierarchies to benefit from economies of scale by reducing the per unit cost of production as the quantity produced increases. In this sense, by establishing long-term relationships with the owners of inputs, distributors of imported drugs can negotiate prices that allow them to maintain the total cost of their operation within predictable estimates that are otherwise affected by changes in variable costs. For example, natural disasters along trafficking routes and production centers may increase the cost for transportation. The ability to maintain a per unit price with suppliers within a price band—a system that lets price to vary within a determined floor and ceiling—will allow the DTO to remain profitable in view of unforeseen risks. Economies of scale, however, come at a cost for hierarchical DTOs. The lower the number of suppliers it has, the more vulnerable it will become to disruptions either by rival organizations or the state; potentially halting the production and forcing the DTO out of the market.

The process of developing trust also allows individuals to learn best practices and adjust their operating procedures accordingly which increases the likelihood of DTO survival. As Keeney (2007) points out, “trafficking enterprises incorporate ‘lessons’ from experience into practices and procedures that guide subsequent behavior, in the process developing, more diverse repertoires of action” (37). Hierarchies, by allowing frequent contact and generating information are optimal structures for individual to learn and adapt their behavior that will allow them to participate in the market. In sum, the key in choosing a hierarchy as a structure rests on its effectiveness to process information, acquire knowledge, and monitor individuals (Garciano and Van Zandt 2012).

Wheel Networks

Consider a demand for an illegal substance that incentivizes individual entrepreneurs to enter the market and supply it. In this scenario, however, illicit drugs are not imported but produced locally or purchased from a middleman rather than from owners of inputs at distant production centers. In this kind of market it may be more cost-efficient for entrepreneurs to organize themselves into a network rather than assume the costs of building a hierarchy. Local production of drugs does not require knowing whether an agent is trustworthy as long-term contracts are seldom needed. Rather, it is sufficient for the producer to hire an agent with the skill to manufacture the illicit substances. If a local producer does not meet the expectations of the drug traffickers another manufacturer can replace him without incurring significant costs for the organization.

In a wheel shape each cell communicates to one central element and this cell is not necessarily the decision maker for the network. In this type of network, the outer nodes communicate at most with one or two outer cells in addition to the hub. Network structures privilege expertise rather than trust or management skills learned from higher levels as in hierarchies. Notably, it is the direction of the information flows that characterize this network structure.

Unlike hierarchies that can benefit from economies of scale, DTOs that manufacture illegal drugs cannot take advantage of the inverse relationship that exists between quantity and the cost of production. However, the high volume/low price of synthetic drugs allows the organizations to spread the risk through a network that has flexibility to continue production even if some elements are targeted by the state or rival DTOs. Wheel network DTOs, therefore, are especially cost-efficient structures for the production of synthetic drugs.

This decentralized structure also serves two main functions that together protect the viability of the operation. First, if a cell is targeted either by the state or rival organizations distribution may be disrupted but not suspended. Second, the intelligence that a cell can provide to law enforcement or rival organizations is limited therefore protecting the rest of the organization even when an individual cell is dismantled.

Cost-efficiency and flexibility in production come at a cost for wheel networks in at least two respects. First, because networks hire based on expertise and do not develop human capital within their ranks, turnover of personnel is high. This high turnover rate

causes networks to suffer from inhibited adaptability (Serena 2014: 16) limiting the possibilities to learn and accumulate knowledge of how to import drugs despite law enforcement attempts to limit this activity. High turnover rates prevent individuals from developing trust with input owners which is crucial for establishing an illicit drug import business. Therefore, while drug trafficking in and of itself is a complex task, local production requires lower levels of expertise compared to an operation that involves importing the drugs prior to their distribution. Second, given that the covert nature of the business prevents them from meeting regularly, network DTOs are unable to train individuals limiting the complexity of the tasks they can perform (Serena 2014: 18). Consequently, while they might be able to produce local drugs with an average level of competence, they are ill equipped, unlike hierarchies, to deal with the complexity of importing drugs and distribute them in local and foreign markets.

3.3 Risk Appetite, Punishment of Shirkers, and Money Laundering

In hierarchical firms rewards are not allocated randomly but based on performance which generates a need for knowing the individual contributions in producing output. The challenge is that the product offered to the market cannot be evaluated in terms of the individual contribution to production, creating incentives to free-ride and shirk. When a shipment of illegal drugs is delivered to the wholesaler it is not possible to individually evaluate the contribution of each person involved in the process. The covert nature of the operation further complicates generating accurate metrics on performance. Due to these potential externalities of free-riding and shirking, it

is necessary to monitor individual inputs through a supervisor or manager. The manager will reduce her incentives to shirk if she receives the residual rewards—profit—of team production. In other words, the manager of the DTO will receive her payment if the functions of each team member are performed efficiently. However, in order for the incentive system to be complete, the manager also has to credibly commit to not appropriating all the rents generated by her subordinates.

The manager in a hierarchical DTO does not necessarily exert control only through authority but rather by having the right to the residual claim, having the right to renegotiate contracts, and monitoring performance. For example, managers within a DTO, those who oversee a *plaza* and therefore coordinate the distribution and logistics of trafficking within a territory may receive greater responsibilities within the organization as they perform successfully a series of tasks. Evidence from indictments suggests that even family members experience contract renegotiations, acquiring more responsibilities as they contribute to the success of the operation or, in contrast, reducing their participation given subpar performance. Consequently, the central relationship is *contractual* with coercion as a second-best option given the illegal nature of the market in which they operate. The presence of a manager however does not preclude the existence of agency problems.

Hierarchies face principal-agent issues because agents will pursue their private economic interest some of the time. In a DTO, a manager may seek to expand his operation within a particular territory without approval of other managers to seek

additional profits. Likewise, a manager may alter the purity of a drug in order to sell more product at higher prices. It should be noted that these strategies could not be implemented constantly; otherwise, the manager risks permanent exclusion from the organization.

In hierarchies, however, the adverse selection problem—knowing the agent’s true type—will be ameliorated at the management or monitoring level due to the informational mechanisms inherent in hierarchies: the direct supervision that exists among the different levels of the organization. In hierarchies individuals are promoted to the next level based on *a priori* performance criteria such that individuals can only acquire more responsibilities and tasks if they perform adequately in each set of duties assigned to them for each level. This implies that while the recruitment process may not provide mechanisms for learning the true type of agents, their performance within the hierarchy does.

Similar to hierarchies, wheel networks also experiences agency problems. However, because a wheel network hires based on expertise it does not devise mechanisms that reveal the true type of agent beyond recruitment. For example, a wheel network DTO may be interested in the expertise of a methamphetamine ‘cook’ and selects him based on this trait alone. The individual, however, will not receive more rewards by acquiring more responsibilities because the structure of a wheel network prevents him from engaging in activities besides cooking methamphetamine and thus promoted based on *a priori* determined performance criteria. On the contrary, the managers of networks spend time in identifying and incorporating the resource

(activation), facilitating agreement on participants' roles and operating procedures (framing), trying to generate commitment for the processes (mobilizing), and removing informational barriers (synthetizing).

In the context of a wheel network DTO this implies, for example, that a manager spends time identifying and incorporating new 'cooks' who can produce methamphetamines with higher levels of purity to widen their profit margin, generating consensus among contract killers with varying levels of skills on who is in charge of different stages of the operation as well as the amount of violence recommended for each stage, and coopting and/or coercing public officials into helping with their operation rather than a rival DTO. The managers in wheel network structures, therefore, are more interested in the recruitment process than in grooming agents who, by design, will not be promoted within the organization. The goal is to recruit an adequate individual for each task needed to be performed and after the recruitment process is completed, there are limited mechanisms to acquire information about the true character of the agent. The lack of investment of time and resources both from managers and agents in grooming an individual creates a high discount rate (present gains are valued more than future gains).

The presence of an informational mechanism—or its absence—influences the risk appetite observed in DTOs in at least two areas: punishment of shirkers and money laundering. In hierarchies, agents who want to increase their rewards (which are not allocated randomly) will try to perform at higher levels, which translates into an investment of time and resources. By the same token, managers who seek to delegate will

also invest time and resources in teaching agents how to perform the tasks needed for organizational efficiency. These high costs both for managers and agents incentivize risk-averse behavior. Put simply, an individual who has invested his resources in a hierarchy will minimize the opportunities to jeopardize acquiring more rewards for his performance. Nevertheless shirking will occur because agents pursue at least some of the time their economic private interest.

Understanding hierarchies as a structure that generates long-term incentives is not the current norm in scholarly literature focused on organized non-state violence. To the knowledge of the author, the most developed work on organizational structure and non-state violence is the analysis by Jenna Jordan (2014). Her model shows that terrorist organizations with high levels of bureaucratization and popular support will be more resilient compared to terrorist groups that lack institutionalization and the support of the population in which they operate. Jordan uses bureaucratization as an explanatory variable in lieu of the concept of hierarchy because her analysis is based on a framework that characterizes hierarchies as susceptible to decapitation.

Nevertheless there are two flaws with the foundation of Jordan's argument. First, Jordan uses Carley, Lee, and Krackhardt's (2001) definition of hierarchies as structures where the essential characteristic is an individual "with the highest cognitive load—the most people to talk to, the most information to process, the most tasks to do, the hardest tasks to do, the most people to negotiate with to get the job done, etc" (Carley and Ren in Carley, Lee, and Krackhardt 2001: 84). This is important because by understanding a

hierarchy as a structure with one or few individuals that have high cognitive loads the necessary implication is that leadership removal will destabilize the structure. In turn, by understanding hierarchies as organizations where delegation and mentorship occurs regularly and these processes generate a flow of information that develops learning and trust—as advanced in this research—then leadership removal does not destabilize the structure because the existing mechanism for rising to top levels prevents cognitive load from developing in the first place.

Second, Jordan uses Carley's (1991) model of group stability but misrepresents the concept of stability as defined by Carley. According to Jordan, Carley's model shows that decentralized organizations are harder to destabilize than hierarchical organizations (Jordan 2014: 10). However, in Carley's model perfect stability is "an equilibrium condition [...] where everyone knows everything that anyone knows" (Carley 1991: 336, 343). Consequently, unlike Jordan's interpretation of stability as survival, Carley's model only shows that hierarchies can be less stable *to the extent that information may not be shared among group members*. Stability and survival, therefore, are not coterminous in Carley's theory, which raises important questions of using Carley's findings on stability as the foundation for explaining inherent weaknesses in hierarchies.

Jordan's theory of organizational resilience, however, is similar to the typological theory presented in this research. Even though Jordan uses the notion of bureaucracy, her findings are similar to the arguments I make on hierarchies. In particular:

Highly bureaucratic terrorist organizations are more likely to experience smooth leadership transitions. Thus the violent or sudden removal of a

leader should be less destabilizing in hierarchical groups, which have clear succession processes. Moreover, the clear division of responsibilities found in such organizations allows them to continue functioning because each member has specific duties. Finally, rules and procedures make the organization much less dependent on the leadership²⁶.

The ramifications of the typological theory advanced here go beyond DTOs. Insofar studies in terrorism and decapitation, assume an inherent weakness in hierarchical structures policy recommendations will tend to favor an HVT strategy. However, by considering hierarchies as structures that effectively process information—on practices and individuals—acquire knowledge, and monitor agents then theoretical and policy implications challenge HVT as a strategy, even when accompanied by other tactics.

Punishing Shirkers

Punishing shirkers within hierarchical DTOs takes into account the costs both to the monitor, i.e. the organization, as well as to the agent, which reduces the levels of violence against agents who renege on the contract. Using extreme violence—killing—creates significant costs for replacing the manager who is eliminated. Since managers within hierarchies are not easily replaced, other types of punishment become more attractive alternatives²⁷. This does not imply that coercion is not an option for punishing shirking but rather that the extreme forms of violence usually assumed as the normal

²⁶ Jordan 2014: 13.

²⁷ The pool of potential recruits of managers for DTOs is further reduced by the lack of trust in illicit enterprises. Unlike legal activities where there is flexibility in the labor market, managers within DTOs rarely can change organizations. This is because monitors cannot be sure if the agent's loyalty is with its new or former organization therefore reducing his value as an asset for the organization and decreasing the flexibility in the labor market for DTOs.

response of DTOs are not actually optimal choices for hierarchical organizations, thus discouraging their use. On average, therefore, hierarchical DTOs will use violence towards their members at a lower rate compared to other organizational structures.

DTOs have to punish shirkers themselves because unlike activities outlined by legal contracts, DTOs cannot use the courts to enforce contracts. Consequently, not only do hierarchical DTOs monitor the fulfillment of the contract but they also have to punish those who renege on their obligations. Given the common media portrayal of DTOs it is tempting to argue that DTOs will punish shirkers exclusively through coercion and that this fear of violence is what guarantees obedience. Nevertheless, because there are costs to the organization resulting from the use of violence (such as unwanted law enforcement attention), it makes sense to see relationships within a hierarchy as contractual with coercion as a second-best solution. Agents within the hierarchy have incentives to refrain from engaging in behaviors that would endanger the organization as a whole. Equally important, because managers are developed within a hierarchy rather than acquired from outside, the high cost of replacing a manager encourages risk-averse behavior.

Due to the risks of participating in an illegal market, individuals who lack long-term incentives for cooperation will have high discount rates that bolster risk-tolerant behavior. For example, the methamphetamine cook knows he cannot be promoted within the organization and faces penalties, if caught, for participating in an illegal enterprise which motivates him to try to obtain quick gains and leave the organization either to

create his own DTO where he can capture a larger (managerial) share of the profits, or exit the illegal market completely with his bounty.

These risk-tolerant incentives inherent in wheel network structures have important implications for money laundering and punishment of shirkers. Like hierarchical organizations, wheel network DTOs cannot resort to law enforcement to punish shirkers. However, a wheel network DTO, invests much less than a hierarchical organization in developing and promoting managers. While costs are still greater than zero for *finding* the resource, its lower investment in *developing* agents makes extreme violence a more cost-effective alternative for punishing shirkers in wheel network structures.²⁸ That is, wheel networks can replace managers at a lower cost than hierarchies, which allows them to use higher levels of violence against the agents who renege on their contracts. Even resorting to extreme violence—killing—imposes relatively minimal costs on the organization. This theoretical mechanism does not imply that only homicide is used to punish shirking but rather than extreme forms of violence are more viable choices for this specific structure of DTO. On average, therefore, wheel network DTOs will use violence against their members at a higher rate compared to other organizational structures.

Money laundering

Risk-aversion within hierarchies also has an effect on how the DTO chooses to launder its proceeds. DTOs need to launder their proceeds because the illicit source of

²⁸ This does not assume that the pool of potential recruits is infinite. Rather, it shows that structures that hire based on expertise (networks) have more flexibility in adding links compared to organizational structures that spend time and resources developing a manager.

their income requires special methods of placing their proceeds into the legitimate financial system in order to use them in the long-term. While not all the proceeds are laundered, given that some is spent and/or buried,²⁹ the well-documented cases, discussed further in chapter five, of HSBC, horse racing, music management, the fashion district in Los Angeles, California, and the gold-for-cash scheme in Chicago, Illinois provide evidence that money laundering occurs, at the very least in these ways.

Although money-laundering is always somewhat risky, risk-averse hierarchies, prefer to launder their proceeds, generally but not solely, through methods that lower the probability of losing assets including financial and human capital ones. Money laundering through schemes that lower the probability of losing personnel and money solve adverse selection issues for the DTO. DTOs with risk-averse managers will prefer to launder money through a system that lets them know when they have raised suspicion before they have to deal with law-enforcement. In this sense, if their actions attract attention they have time to devise a different strategy to secure the funds as well as the personnel involved in this aspect of the business. In the case of institutions that provide financial services, when an entity is found to have violated anti-money laundering regulation it is the entity, and not the DTO, that has to face the consequences of the infringement. By following a risk-averse strategy in laundering proceeds, hierarchical DTOs may experience operational costs if their strategy is uncovered, but they will retain their assets and managers, both of which are costly to obtain in hierarchies. Therefore,

²⁹ According to high-level government sources some drug traffickers prefer to bury their money (a practice called ‘clavos’ –literally ‘nail’ in Spanish) rather than laundering it. If the trafficker is caught, the drug trafficker or his family can still use this money.

entities with medium albeit not absent compliance practices will likely be targeted by hierarchical DTOs.

Risk-tolerant behavior also has an effect on how wheel network DTOs choose to launder their proceeds. Like hierarchical organizations, wheel network DTOs need to integrate their illicit income into the regular financial system in order to use these funds without forfeiting them to law enforcement. Wheel networks will generally but not solely launder their proceeds through riskier methods that are quick but not covert. Risk-tolerant methods for laundering money entail direct contact with law enforcement if discovered. Unlike schemes that prevent the loss of money and personnel, risk-tolerant money laundering methods lack a buffer that gives the DTO time to shield and move assets. When discovered, the network will lose both the assets as well as personnel involved with this side of the business.

Risk-tolerant money laundering is further incentivized if the wheel network has weak transmission of information among cells—brokerage. Brokerage among the different cells is not performed efficiently therefore cells cannot exchange knowledge on successful practices and will only observe failed strategies performed by other cells. Because the loss of a cell is not an insurmountable problem for the network structure, there are no incentives to learn about best practices but rather incentives to focus on short-term gains.

3.4 Market for Protection and Diversification

A market for protection is said to exist if there are willing consumers and suppliers of protection. Protection becomes a coveted good in transactions where at least one party does not trust the other to comply with the rules (Gambetta 1997: 2). It is irrelevant if protection is both a poor and costly substitute for trust; what matters is that, from an economic vantage point, the market is efficient. Put simply, there is an individual interest in purchasing protection and firms can make a profit from the prevalent distrust. Protection is sold on a private basis to individual customers with the price varying depending on wealth, the type of service required, and what qualifies as the ‘whims of the seller’ (Gambetta 1997: 7).³⁰ Firms that produce, promote, and sell private protection are better known as mafia.

The military intervention against DTOs in Mexico had the unintended consequence of expanding a market for protection that criminals could exploit because it exacerbated three conflicts: DTOs against the state, DTOs against each other, and intra-DTO fights. While former President Calderón deployed the military in response to reported heightened levels of violence in some states³¹, the three conflicts that were

³⁰ Even though Gambetta does not make it explicit, the mafia is a first degree monopoly such that every unit of protection that the mafia sells is matched by the maximum amount that individual customers are willing to pay yielding an efficient equilibrium.

³¹ Guillermo Valdés Castellanos head of Centro de Investigación y Seguridad Nacional 2007-2011 (CISEN per its Spanish acronym) equivalent to the National Security Agency in the United States argues that when Calderón came to power he had no choice but to confront organized crime that had been ignored by the previous administration. In particular, Valdés poses that violence is a *sine qua non* condition of illegal markets. Therefore, the growth and spread of DTO

exacerbated along with the unprecedented escalation on the types and levels of violence observed called into question the essential Weberian notion that the state had the legitimate monopoly of the use of force within its territory (Weber 1919). Not only were homicides on the rise but individuals were beheaded, hung from pedestrian bridges, and melted in acid highlighting the inability of the state to limit the growth and escalation of violence in places where it intervened through deploying military personnel. Furthermore, the increase in the violation of human rights against civilians perpetrated by the armed forces undermined the credibility by the Mexican state of regulating public and private law. Not only did the Mexican state violate at an accelerated rate basic rights of the population in its pursuit of drug traffickers, it also failed to punish its officials, in this case members of the armed forces, for doing so.

This argument does not imply that prior to Calderón's tenure law enforcement agencies or the armed forces had an unblemished record of human rights protection. The violence employed by some DTOs and the collusion of law enforcement agencies with criminals were well-documented facts not lost in Mexican citizens. However, by launching an all out war on drugs and taking the confrontation to the public sphere, affecting the everyday lives of citizens, the deployment of armed forces escalated the types and levels of violence observed across the country to unprecedented levels. Citizens, therefore, were no longer protected against the fear of cruelty. Judith N. Shklar's notion of the 'liberalism of fear' explains that liberal democracies are 'more a recipe for survival

activity would inevitably imply an increase in violence, NOT the intervention by the state (Valdés 2013 capitalization added).

than a project for the perfectibility of mankind’ therefore the first right of those living under a liberal democratic regime is ‘to be protected against the fear of cruelty’ (Shklar in Keohane 2002: 281). Given the types of violence exhibited by DTOs and the systematic human rights violations by members of the armed forces the population was no longer protected against the fear of cruelty undermining the legitimacy of a recent democratic state.

In this scenario of public confrontation, the state was unable to credibly commit to regulating public law—the one that stipulates and governs the behavior of the state (North, Wallis, and Weingast 2009: 43). The lack of credible commitment in public law had a spillover effect that impacted credible commitments in private law—the one that governs relationships among individuals that the state will enforce (North, Wallis, and Weingast 2009: 43). Absent credible commitments in public and private law, citizens found themselves severely constrained in their ability to form basic contractual organizations, precisely the ones that utilize a third party—the state—to enforce agreements. As chapter six will examine in detail, without societal trust in the state, individuals in locations with high military presence and wheel networks had little choice but to comply with DTOs perceived as fulfilling the role of enforcer.

Considering the existing demand for enforcement and protection, some DTOs have diversified their criminal activities. Specifically, the decision to diversify depends on the structure of the DTO. On average, hierarchical DTOs will refrain from diversification due to two inherent characteristics of this type of structure: risk-aversion and development of resources from within. Diversifying criminal activities, in particular

those linked to a market for protection such as extortion and kidnapping, attracts attention from law enforcement due to increased contact with the civilian population. Whereas wholesale distribution and sales of illicit drugs requires contact primarily with other criminals, extortion and kidnapping require predatory behavior towards the general population. Due to the risk-aversion of managers in hierarchies, and their long-term incentives for cooperation rather than defection, it is unlikely that they will follow a strategy that increases the probability of getting caught.

Additionally, as previously discussed, hierarchies generally follow a promotion-for-performance rule. In particular, managers are only promoted if they comply with *a priori* determined criteria for performance such that they learn to perform tasks already conducted by the organization. In short, innovation is not a strong trait of hierarchies. Therefore, risk-averse managers in hierarchical DTOs not only shy away from unnecessary law enforcement attention, they also lack the expertise to diversify their criminal activities. On average, hierarchies will exhibit lower levels of violence than other structures because diversification of criminal activities is not part of their business model.

In contrast, wheel network structures will enter the market for protection due to two traits inherent in this type of organization: decentralized decision-making and risk-tolerant behavior. Given that wheel network structures operate with cells, attracting the attention of law enforcement is not unduly costly for the organization. If a cell is dismantled it has limited intelligence it can provide law enforcement about the activities

of other cells, therefore not jeopardizing the entire organization. Additionally, a dismantled cell does not represent a significant cost for the organization because it can be easily replaced due to the emphasis on hiring based on expertise rather than development within the organization.

Furthermore, because wheel network structures incentivize risk-tolerant behavior due to the high discount rate of its members, activities that generate additional short-term profits such as kidnapping and extortion represent an optimal choice. On average, wheel networks will exhibit higher levels of violence than other structures because they have to credibly signal potential victims about the consequences of non-compliance with the DTO requests. Put simply, violence is a necessary component of the business model of wheel network DTOs.

3.5 Summary of Hypotheses

Table 3.1 Hypothesis O: *The supply chain of imported and locally produced illicit drugs influences the type of structure the DTO acquires.*

Supply Chain	Expected Structure
Imported	Hierarchy
Locally produced	Wheel Network

Table 3.2 Hypothesis S: *The structure of the organization, either a hierarchy or a wheel network influences the appetite for risk, the methods used to punish shirking, and the methods to launder money.*

Structure	Risk Appetite	Extreme punishment of Shirkers	Money laundering methods
Hierarchy	Low	Less likely	Risk-averse
Wheel Network	High	More likely	Risk-tolerant

Table 3.3 Hypothesis M: *Wheel networks are more likely to diversify their criminal activities given the expansion of a market for protection.*

Structure	Business Shock	Diversification of criminal activities
Hierarchy	Expansion of the market for protection	No
Wheel Network		Yes

CHAPTER FOUR

METHODOLOGY AND CASE SELECTION

This chapter discusses the benefits of process tracing and elite interviewing as a strategy for building a typological theory in areas with important data constraints. In addition, the chapter also defines and explains how each of the variables introduced in chapter three are to be measured as well as methods used to evaluate each hypothesis. Lastly, the chapter discusses the case selection and the data collection strategies followed during fieldwork in Mexico and the United States.

4.1 Process Tracing in Constructing Typological Theories

Process tracing is an adequate method for building a typological theory. “Process tracing is an analytic tool for drawing descriptive and causal inferences from diagnostic pieces of evidence—often understood as part of a temporal sequence of events or phenomena” (Collier 2011: 824). Similar to other within-case analysis methods, process tracing tries to identify the intervening causal process—the causal chain and causal mechanism—among independent variables and the outcome of the dependent variables (George and Bennet 2005: 206). In other words, process tracing helps establish the causal process observations discussed by Collier et.al (2004) that are at the core of typological theories.

Empirically, doing research on criminal activities is inevitably problematic not only because criminals may try to enhance their reputation but also because government

sources do not enjoy an unblemished record of openness and honesty in their presentation of information (Hill 2003). Process tracing is particularly advantageous given the complexities of studying illegal organizations. As Collier explains,

[T]he descriptive component of process tracing begins not with observing change or sequence, but rather with taking good snapshots at a series of specific moments. To characterize a process, we must be able to characterize key steps in the process, which in turn permits good analysis of change and sequence.³²

In using process tracing, it is possible to ameliorate these risks by systematically examining diagnostic evidence from multiple sources and obtain multiple observations on the degree to which the behavioral characteristics predicted by the typology exist. Bearing in mind that any one observation might be biased, to the degree that observations from multiple sources agree, we can have more confidence in them.

One of the most important instruments in the process tracing strategy is a timeline that lists the sequence of events in order to consider the kinds of evidence that confirm or disconfirm the causal ideas embedded in the narratives and identify the tests appropriate for evaluating this evidence (Collier 2011: 828-829). In order to identify the key steps in the development of DTOs I constructed a timeline using multiple sources. Given that for some events there is more than one account, the events listed on the timeline relate only to events that in fact took place rather than only being speculations by different authors. The data for the events such as the arrest of a known drug trafficker or the interdiction of a shipment comes from publically available documents either from the media and/or the government. Events for which there is more than one account, such as alleged meetings

³² Collier 2011: 824.

held by DTOs to agree on territorial distributions, are left out because given the methodology involved in process tracing it would not be possible to identify them with certainty within the sequence of events ultimately affecting our understanding of key moments within the lives of these organizations.

In addition to constructing the timeline of events, I conducted field interviews with journalists, policy experts, and former and current government officials. Elite interviewing is a useful complement to process tracing because it compensates for the lack or limitations of documentary evidence and:

[A]llow the researcher to collect first hand testimony from direct participants and witnesses regarding critical events and processes, and provide the researcher with a means to probe beyond official accounts and narratives and ask theoretically-guided questions about issues that are highly specific to the research objectives.³³

The sampling to be used for process tracing in this research followed positional rather than reputational criteria. That is, I identified desirable respondents given their specific position vis-à-vis counter-DTO policies and analysis instead of choosing them by whether or not they were deemed influential in the processes studied (Tansey 2007). In some cases, positional criteria led to reputational interviews but this was not often the case due to anonymity concerns by the respondents.

In sum, the establishing a sequence of events combined with elite interviewing in Mexico and the United States along with fine-grained evaluation of publically available

³³ Tansey 2007: 486.

documents produced by international organizations, the Mexican and US governments, and the media allow generating and assessing causal process observations necessary for theory development.

4.2 Specification of the Variables

Table 4.1 Definition of Variables

Supply Chain	Set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer. (Mentzer et.al. 2001)	<i>Imported</i>	Distribution channel for illicit drugs manufactured in production centers located in other countries.
		<i>Locally produced</i>	Distribution channel for illicit drugs manufactured in production centers located in the country.
Structure	Sum total of the ways in which an organization divides and coordinates its labor into distinct tasks. (Mintzberg 1979).	<i>Hierarchy</i>	Defined vertical chain of command, control, and responsibility. Intelligence flows up and down organizational channels and may not move horizontally. There is specialization of functions in subordinate levels who only have contact with their immediate superior (Lee 2007). Promotion to the next rank occurs if agents meet certain performance criteria (Aoki 1998).
		<i>Wheel Network</i>	Cells communicate with one central element. The central cell need not to be the leader or decision maker for the network. In a wheel shape, outer nodes communicate with one or two other outer cells in addition to the hub. Capabilities are not evenly distributed and promotion to the next rank does not occur if agents meet certain performance criteria. Nodes are linked in a flat structure.
Market for Protection	There are willing consumers and suppliers of protection. Protection becomes a coveted good in transactions where at least one party does not trust the other to comply with the rules. (Gambetta 1997).	<i>Expanded</i>	Agents perceive low barriers of entry to the market either from the state or rival organizations incentivizing entry.
		<i>Contracted</i>	Agents perceive high barriers of entry to the market either from the state or rival organizations deterring entry.

Punishment against DTO agents	Imposition of penalties as a result of a rule violation. Also used to change the payoffs of shirking.	<i>Restricted</i>	Limits extreme forms of violence: death and torture.
		<i>Unrestricted</i>	Includes extreme forms of violence: death and torture
Money laundering	Sanitizing of proceeds of crime so that one can spend the funds as though they had been acquired legitimately. Generally it involves three sequential elements: placement, layering, and integration. Placement is the introduction of the funds into the financial system, whether through cash deposits or more complex methods. Layering is a set of activities intended to distance the funds from their point of criminal origin. Integration involves converting illegal proceeds into apparently legitimate business earnings through normal financial or commercial operations. Not all money-laundering transactions involve all three distinct phases. (Levi and Reuter 2006; Board of Governors of the Federal Reserve System 2002)	<i>Risk-averse</i>	Placement is conducted through the banking system and integration is usually conducted in the main hub of operations.
		<i>Risk-tolerant</i>	Placement is conducted in additional channels besides the banking system and integration is not limited to the main hub of operations.
Violence	Use of physical actions or coercive threats of physical action. (North, Wallis & Weingast 2009)	<i>Predatory</i>	Physical actions and coercive threats given to government officials, including the army, rival DTOS, and civilians.
		<i>Non-predatory</i>	Physical actions and coercive threats given to government officials, including the army, and rival DTOs.

4.3 Evaluating the Hypotheses

The procedure for evaluating the hypotheses and building a typological theory in this research is process tracing. To generate the typology, each case will be evaluated and coded according to the independent variables in order to match the expected behavioral patterns. The tests follow the smoking gun test described by Collier. “The metaphor of a “smoking gun” conveys the idea that suspect who is caught holding a smoking gun is presumed guilty. However, those with no smoking gun may not be innocent” (Collier 2011: 827). In this sense, passing a smoking gun test is sufficient but not necessary for the validity of a given hypothesis (Bennett 2008; Collier 2011; Mahoney 2012; Van Evera 1997). It should be noted that a smoking gun test is stronger than a straw-in-the-wind test yet not as affirming as a doubly decisive test. A straw-in-the-wind test “can increase the plausibility of a given hypothesis or raise doubts about it, but are not decisive by themselves [...] thus provide neither a necessary or sufficient criterion for accepting or rejecting a hypothesis and they only slightly weaken rival hypothesis” (Collier 2011: 826). In turn, a doubly decisive test “provides strong inferential leverage that confirms one hypothesis and eliminates all others. They meet both the necessary and sufficient standard for establishing causation (Collier 2011: 827).

By constructing a timeline of events, I hypothesize causes that are sufficient for the expected behavioral patterns and the mechanisms that link the causes to the outcomes. By showing that the causes are sufficient for the mechanisms I can establish that the

causes are sufficient for the outcome. It would be logically impossible for the cause to be sufficient for the mechanism but not the outcome (Mahoney in Mahoney 2012: 583). Using smoking gun tests is compatible with process tracing considering the incomplete picture of the life of these organizations available to researchers. The critical events used for process tracing such as an individual's arrest, the interdiction of a shipment, and disruption of a money laundering scheme constitute failures on the part of the DTOs. In other words, successful criminal activities remain largely unknown to the public precisely because law enforcement was unable to stop them. Despite only observing these organizational failures or sub-optimal outcomes the central point is that there is significant variation on the conditions that foster the emergence of the subtypes of structures and the effects that the structure has on behavioral patterns. The key, therefore, is to test their behavior *comparatively*: do hierarchical DTOs and wheel network DTOs exhibit substantively different patterns of behavior when exposed to different stimuli?

Notably, the typology was developed *prior* to conducting research on the behavioral responses of different types, rather than generating types based on observations of behavior. Similar to Shapiro's empirical strategy in terrorism studies, this method generates evidence that can help falsify the theory because evidence collected from interviews represents independent evidence from the one used in the initial inductive stage (Shapiro 2013: 303).

The following tests were used to evaluate the hypotheses advanced in this research:

HS1: Hierarchies restrict the methods to punish shirking or defection at the management level seldom using extreme violence.

To confirm this hypothesis, hierarchies should punish shirking or defection from their managers at a lower rate than networks. If hierarchies engage in torture and murder to punish shirking or defection more often than wheel networks then this hypothesis would be rejected.

HS2: Hierarchies will engage in risk-averse money laundering methods.

To confirm this hypothesis, hierarchies must place their proceeds from illicit activities generally using methods that will minimize the loss of personnel and assets as well as integrating the proceeds from the main hub of operations. If we frequently see hierarchies getting caught using risky money laundering schemes we can reject this hypothesis.

HS3: Networks allow extreme violence to punish shirking, at any level.

To confirm this hypothesis, networks should be more likely than hierarchies to punish shirking or defection from their managers with extreme violence. If they engage in torture and murder to punish shirking or defection as frequently (or less frequently) than hierarchies, then this hypothesis would be rejected.

HS4: Networks will engage in risk-tolerant money laundering methods.

To confirm this hypothesis, networks must place their proceeds from illicit activities using methods that, if caught, increase the probability of personnel and assets loss. Furthermore, they must conduct their integration in several locations and not generally in

their hub of operations. If networks use methods that preserve personnel and assets and mostly conduct their integration in the hub of operations, then this hypothesis is rejected.

HM₁: States with high military presence and wheel network DTOs have an expanded market for protection.

To confirm this hypothesis, states with a high military presence and wheel network DTOs must have lower than national average levels of trust towards state institutions in charge of providing and guaranteeing public safety. If states with a high military presence and network DTOs have high levels of trust towards state institutions that provide and guarantee public safety, then this hypothesis is rejected.

HM₂: States with a market for protection experience diversification of criminal activities including predatory violence such as kidnapping, extortion, and the trafficking of illegal goods other than illicit drugs.

To confirm this hypothesis, states with a market of protection must have higher per capita rates of kidnapping, extortion, and trafficking of illegal goods other than illicit drugs than states with non-predatory violence. If all states experience similar levels of violence including kidnapping, extortion, and trafficking of illegal goods then this hypothesis is rejected.

4.4 Case Selection

The DTOs studied in this research are organizations that operate transnationally, are primarily based in Mexico, and were recognized by the US Foreign Narcotics

Kingpin Designation Act as significant actors in international drug trafficking as of February 2015: Sinaloa, Los Zetas, La Familia Michoacana, and Los Caballeros Templarios.³⁴ Mexico represents a useful case for understanding how DTOs operate because unlike countries like Afghanistan and Peru that mostly traffic one illegal drug, opium and cocaine respectively, Mexico traffics a wide array of illicit drugs including semi-synthetic and synthetic ones. For over 100 years, Mexico has been a producer of heroin as well as marijuana with most of the cultivation and processing taking place in the area known as the Golden Triangle that includes the states of Chihuahua, Durango, and Sinaloa. More recently, methamphetamine seizures in Mexico have exceeded those in the United States. In 2012 alone, Mexico seized 63 percent of the methamphetamine seized in North America (Canada, Mexico, and the United States) indicating the country's prominent role in the production and distribution of synthetic illicit drugs.

In addition, Mexican DTOs operate in the biggest drug market in the world—the United States. According to the United Nations' World Drug Report 2014, in 2013 illicit drug use by persons aged 12 years or older reached the highest level in the past decade,

³⁴ The goal of the Foreign Narcotics Kingpin Designation Act is “to deny significant foreign narcotics traffickers, their related businesses, and their operatives access to the US financial system and to prohibit all trade and transactions between the traffickers and US companies and individuals” (Office of the Press Secretary 2009). The Foreign Kingpin Act authorizes the President to take these actions when it is determined that a foreign person plays a significant role in international drug trafficking. The Foreign Kingpin Act can identify foreign entities as well as foreign individuals given that kingpin is defined as “any citizen or national of a foreign state or any entity not organized under the laws of the United States, but does not include a foreign state” (Office of the Press Secretary 2009). The Foreign Kingpin Act allows the Department of Treasury to impose economic sanctions against kingpins, their businesses, and operatives and allows for criminal penalties for those who violate the Act.

reaching 16 percent in 2012 compared to 14.5 percent in 2002. Retail prices in the United States are on average the highest in the world. For example, in 2012 purity-adjusted retail prices per gram of heroin averaged US \$800 in the United States compared to US \$400 in 12 countries in Western and Central Europe (UNODC World Drug Report, 2014). Even though Mexican authorities and some journalistic accounts argue that the violence among DTOs is the result of a contraction in the cocaine market in the United States that prompted them to fight over a smaller profit share, the rise in illicit drug use as well as the substitution of other drugs for cocaine implies that on average Mexican DTOs have operated in a stable business environment. This in turn allows us to understand how DTOs behave without interaction effects from the pressures of a decreasing profit margin. On an aggregate level, Mexican DTOs import, produce, and distribute a volume of illicit synthetic and semi-synthetic drugs that could not be observed in other known sources.

Mexico's production of several illegal drugs and its proximity to the largest drug market allows for an empirical strategy that examines the different types of DTO structures in one location and therefore isolate factors that may be driving some of the variation in behavioral characteristics. Furthermore, using within-country variation across time and states allows us to control for confounding factors by holding constant country-level variables like the political system, economic shocks, and public safety budget that may impact DTO activity.

More importantly, with the open war on drugs declared by former President Calderón (2006-2012), Mexico experienced a dramatic shift in policy that allows for

experimental treatment of DTOs. The shift included an open declaration of war on crime, the deployment of military personnel to combat DTOs, and an unprecedented level of cooperation on security issues with the United States. Consequently, it is possible to examine how DTOs behave given the same exogenous shock thus highlighting the differences in their behavior as the result of organizational characteristics shedding light on the varying levels and types of violence observed across the country.

4.5 Data Collection and Streams

Field Interviews

A total of twenty-two interviews were conducted in Mexico, including Mexico City, Coahuila, and Nuevo León during the months of July and August 2014. The interviews were conducted with journalists, policy experts and officials in the federal government directly linked to counternarcotic policies either during the Calderón administration (2006-2012) or the Peña administration (2012-2018). Given the sensitivity of the dissertation topic, all respondents were informed that the interviews were strictly confidential and off the record such that the information shared could not be traceable to the source nor directly quoted in this research. This served as an incentive in particular for government officials to agree to be interviewed and to differentiate myself as a researcher and not a journalist³⁵.

³⁵ In Mexico there is very weak culture in terms of understanding the difference between an academic researcher and a journalist. Compared to countries like Japan where research and development expenditure is close to 3.5 percent of the GDP, Mexico spends less than half a percentage point in this area (World Development Indicators, World Bank, 2014). This has

The interviews were semi-structured with interview guides tailored for each respondent and with open-ended questions. The types of questions asked included questions about experiences that focused on the actions of respondents, opinion questions in order to establish their thoughts on topics related to their role in counternarcotic policies or analysis, and knowledge questions that sought to establish what the respondent considered a fact rather than what is true objectively.³⁶ All the interviews were conducted in person and without a tape recorder in order to avoid creating an artificial environment, answer to non-verbal signs given by respondents, and guarantee confidentiality. Despite the lack of recording, notes were taken during the interview and transcribed on the same day after the interview in order to preserve as much detail as possible. On average, all interviews were between 60 and 90 minutes long.

Interviews were scheduled first with journalists and policy experts and subsequently with government officials. This was done in order to acquire information that had not been published that would serve to design topical probes that would prevent current and former government officials from providing answers that could be found on public sources. The journalists and policy experts chosen for the interviews were selected based on their work regarding Mexican DTOs. A central criterion for selecting journalists was the publication of a book of investigative journalism rather than just articles in

resulted in a very limited understanding of the role of academic researcher and a general lack of trust that the information shared with researchers will not be made public or cited. Overall, explaining that the Office of Research and the Institutional Review Board guarantee the confidentiality of the information serves little in ameliorating these perceptions.

³⁶ Categories of types of questions from Patton 1990.

magazines and newspapers. The books generally focused on understanding one or several DTOs rather than focusing on individuals within the organization. Moreover, the book had to justify its arguments with data from multiple sources including primary ones.³⁷ Policy experts were selected based on how long they had been interested in the war on drugs in Mexico and whether their analysis was distinct from the official rhetoric. All the journalists and policy experts contacted for the project agreed to be interviewed³⁸.

Interviewing past and current government officials after meeting with journalists and policy experts proved to be a successful strategy. On average, the interviews produced information that is not available publicly and is very unlikely to be published in the next few years. In Mexico, given the sensitivity of the issue and confidentiality concerns, interviews with government officials, past and current, were generally arranged through a middleman: that is, an individual or individuals within my personal network who also knew the respondent and could therefore provide a personal guarantee about the seriousness of my research and confidentiality, would provide access to the respondent. While employing a middleman proved to be central to gaining access to government officials, it also created two limitations. First, given the personal relationship of the

³⁷ Books authored by journalists were specifically excluded if one source was heavily used to support the information as well as books that mostly quote informants without the possibility of independently verifying the information presented.

³⁸ Given that the journalists contacted had authored investigative work on DTOs published as books it is likely that security concerns about their work were not aggravated by discussing information they had made public. In terms of policy experts, their agreement to discuss their work with a researcher probably reflects an interest in advancing their arguments in view of the disagreement that exists among analysts about the causes for drug trafficking and adequate policy responses. Furthermore, similar to journalists, the work had been published such that meeting with me did not create additional security concerns.

middleman to the respondent it was not possible to ask questions that could potentially jeopardize their relationship. Second, because of the personal connections used to acquire interviews, I was also limited in my ability to point out inconsistencies in the respondent's answers with the same freedom had the middleman not been necessary. This does not imply that the questions asked were superficial, but that I had to take into consideration the consequences of all of my actions not only for me as a researcher but also for other individuals involved in the process of securing the interviews.

The elite interview strategy followed in the United States differed from the one used in Mexico in employing a middleman. A total of 11 interviews were conducted in Washington D.C. during the months of January and February 2015. Similar to the strategy followed in Mexico, journalists and policy experts were interviewed first followed by interviews with government officials. The number of interviews in Washington D.C. differs from Mexico for two important reasons. First, whereas in Mexico drug trafficking and its consequences is one of the main topics in the national agenda thus involving high-level government officials, drug trafficking in Mexico is not a security priority for the United States. Consequently, the number of government officials involved in this area is considerably smaller compared to the number of public servants in Mexico engaged with the topic. Second, whereas in Mexico there is a high rotation of public officials, especially at high levels, the rate of rotation of public servants in the United States is lower. Whereas in Mexico it was necessary to interview three individuals from the same agency to obtain information on counter-DTO policies for the last decade, in the United States the same public servant had been with the agency for over a decade

working on the same topic. In short, public servants in the United States who have worked on counter-DTO policies regarding Mexico constitute a smaller pool of public servants than those in Mexico; however their experience in the area is generally greater than that possessed by officials in Mexico. Therefore, whereas the number of interviews in the US is lower than the one in Mexico, the expertise provided by the interviewees at least partially compensates for the apparent lack of numbers.

It should be noted that both in Mexico and the United States interviews with primary sources within DTOs were not conducted. Unlike sociologists (Venkatesh 2007) and undercover agents (Pistone 1997) who have engaged with criminal organizations, this dissertation did not use these types of sources. First, integration within criminal organizations usually takes years as the studies cited demonstrate and the scope of this research did not require at least half a decade of field study. Second, it is unclear if it is possible to make a distinction between an objective observer and a participant-observer, which would have placed me in grey areas regarding the law due to the illicit activities of DTOs. Third, it would be impossible to gain comparable levels of trust with rival organizations, which would then have defeated the purpose of this research of building a typological theory of DTOs rather than a case study of a particular DTO.

In addition to field interviews that provided observations on the degree to which the dependent and independent variables predicted by the typological theory exist, each of the variables was also measured using multiple data streams including government sources, media accounts, and information from government and non-government

international organizations. The following section explains how, in addition to the data collected in field interviews, each variable was measured.

Punishment against DTO agents

In order to determine the types of punishment used, the data employed derived from journalistic accounts, publicly available police interviews of captured members, and messages released by DTOs in order to communicate the reasons for their actions (a.k.a. ‘narcomantas’ in DTO parlance). Journalist accounts are useful because they report on important events within the organizations. For example, when an agreement among leaders of different DTOs was violated by one organization this resulted in conflicts among DTOs and within DTOs that in turn punished specific agents for their actions. In addition, police interviews of captured members sometimes reveal conflicts within organizations and in turn how the conflict was resolved. Police interviews of captured members are available online due to the media strategy mostly followed during the Calderón administration and sometimes used during the Peña term. Briefly, the strategy involved presenting alleged captured top members to the media during a press conference often conducted by members of the Federal Police or the armed forces. This press conference was often followed by videos where the captured criminal answered questions regarding the operation of his DTO. Lastly, messages released by the DTOs, albeit not necessarily truthful, provide evidence in terms of how a DTO wants to be perceived by the public, which also generate evidence for understanding how they treat their agents. It

should be noted that this is also the case for publicly available police interviews of captured members.

Types of money laundering

In order to show whether DTOs engage in risk-averse or risk-tolerant money laundering I used indictments from US courts, electronic correspondence among Hong Kong Shanghai Banking Corporation's (HSBC) top managers related to money laundering activities in Mexico and the United States, and data from the Office of Foreign Assets Control (OFAC) of the Department of Treasury. Indictments are useful to detail the methods that DTOs use to launder money because in order to charge individuals with 'Conspiracy to Launder Monetary Instruments' it is necessary for the prosecution to discuss 'manners and means' in which the individuals attempted to (or successfully) laundered money. Furthermore, the electronic correspondence among HSBC managers that was made available through the 2012 US Senate Hearing on 'US Vulnerabilities to Money Laundering, Drugs, and Terrorist Financing: HSBC Case History' provides a rare and valuable insight into how one bank detects money laundering threats and how it deals with them. Consequently, it provides evidence for understanding why even when banks detect suspicious activities, DTO managers may continue to launder money through the banking system. Lastly, data from OFAC provide specific information on individuals within DTOs and their activities related to money laundering. OFAC produces and publishes this information because their findings provide evidence for designating individuals on the sanctions list that US business and

individuals should refrain from engaging in any commercial manner. Therefore, data from OFAC specifies the individuals within DTOs and the type of methods they use to launder money. Aggregating the data from these three sources as well as data from interviews in Mexico and the United States provided evidence for supporting the argument that DTOs launder their profits in diverse ways.

Violence and Diversification of Criminal Activities

One of the goals of this research is explain variation in the types and levels of violence experienced in the country as a function of the expansion of the market for protection. In order to demonstrate this variation I used national cross-state panel data on reported murders, kidnappings, and extortions since 1997. Data on violence remains a contentious subject among scholars and close observers of the Mexican case. This is because there are at least four different data sets that have been available to the public which report different categories. During Calderón's presidency, his office made public a data set of deaths per city by state that allegedly reported exclusively drug-related violence. The data was coded and compiled based on how the person was murdered and whether it happened during a shoot-out among rival organizations. These data were available from 2007 until 2011. With the beginning of President Peña's term, however, these data set is no longer available. Moreover, analysts in Mexico (Hope 2013) have raised important question on how exactly the information was coded. That is, what were the criteria by the office of the presidency to determine whether a person's death was the result of an execution or a battle among DTOs.

The second source is death tolls kept by major newspapers in the country. They report deaths attributed to DTOs. However it is unclear how they code these deaths and different newspapers often have different aggregate results both at the state and national levels. The third source is the National Institute for Statistics and Geography (INEGI per its Spanish acronym), which has information on homicides from 1990 up to 2014. However, within the ‘homicide’ category murders are not disaggregated into intentional homicide and manslaughter. This is a concern because given that homicides are used as a proxy for measuring DTO-related violence, manslaughter observations could potentially overestimate the homicide rate in the country thus obscuring the link of DTO activity and the market for protection with higher levels of violence. While INEGI’s data set is not optimal for this research, their panel data is used for robustness checks available in the Appendix

The most reliable data for the argument presented in this research are the one reported by the Attorney General. Due to known corruption in law enforcement institutions, it is highly likely that these data are biased towards a low estimate. However, because the data come from offenses that in fact took place since 1997 and the bias is systematic with no reasons to believe it varies considerably over time, it is possible to analyze how violence has varied over the years including those periods where the government had not openly declared a ‘war on crime’. While these data are not coded as criminal activities related to drug trafficking such that murders cannot be solely attributed to drug violence, it allows testing for diversification of criminal activities because it includes extortion and kidnapping. In this sense, states with high levels of extortion and

kidnapping and a high number of murders provide strong evidence to infer that murders are the result of drug-trafficking activities and not an unrelated phenomenon. Furthermore, the data on murders are disaggregated into intentional and manslaughter categories such that intentional homicides can be used as a proxy for understanding drug-related violence.

Given the wide variation in the population of the 31 states plus Mexico City I use a standard rate of violent activities per 100,000 inhabitants to allow comparisons among states. In order to estimate homicide, kidnapping, and extortion rates per 100,000 inhabitants for each state for the years 1997-2014 I used population data from INEGI for the years 1995, 2000, 2005, and 2010 and estimated data for missing years using linear interpolation and extrapolation. An important weakness of these data, however, is that they are available only at the state level rather than for cities. This is a concern because not all cities within a state are equally important to DTOs therefore, with the current data available it will be possible to explain variation on violence across states over the years but not within states.

Homicide, kidnapping, and extortion rates were incorporated to a new panel data set. I generated the new panel using data from “*Un país invadido: todos los estados ocupados por el narcotráfico*” available in narcodata.animalpolitico.com, I coded states for presence of wheel networks using a dummy variable if a state in a given year had at least one wheel network DTO. That is, if a state had both the presence of a wheel network and hierarchical DTOs it was coded as 1 insofar the relevant characteristic for

the analysis is that a wheel network DTO operates in a state, not that it has control of the state. This is because once a wheel network DTO sets up operation in a location it will initiate predatory activities even if it cannot conduct them in the entire territory. One important difference regarding the data obtained from narcodata.animalpolitico.com is the coding for hubs of operation. Whereas *narcodata* allows for different DTOs operating within a hub, I coded Tamaulipas as a 1 for the period 1997-2014 and Sinaloa as a 0 for the same period. This is because qualitative data strongly suggests only one DTO has operated in the state. All other states and years coincide with *narcodata*'s classification. The new panel data also has a dummy variable coding for years of the war on drugs, and years without an open war on drugs. Therefore, for all states years 1997-2006 are coded as 0 and years 2007-2014 are coded as 1. Finally, the data set also has an interaction term generated from the presence of wheel network DTOs and years on the war on drugs.

In order to estimate the effects of the war on crime in states with wheel network DTOs, I use a fixed effects regression with Newey-West standard errors using the `newey2` command from Stata³⁹. A fixed-effects specification was chosen in order to control for time-invariant characteristics within each state and therefore estimate the net effect of the military deployment and wheel network DTOs on the levels of violence. Furthermore, Newey-West standard errors were chosen in order to correct for heteroskedasticity and autocorrelation within the panel. A fixed effects model with Newey-West was selected as a conservative strategy keeping in mind that to the extent

³⁹ The `newey2` command is an extension to the official `newey`.

that predictor variables are statistically significant and in the desired direction, we can be cautiously confident the effects on violence are related to DTOs and the war on drugs.

Rates for extortion, kidnapping, and homicides were transformed by taking their natural logarithms. The log transformation was chosen in order to deal with outliers as well as to maintain the assumption of continuous and unbounded dependent variables. Graphical analysis using standardized normal probability plots comparing the rates to their logarithmic transformations is available in the Appendix. Kernel density plots showing the distribution of the residuals for each regression are also reported in the Appendix.

In addition to the data set available from 1997, data from international government and non-government organizations provide supporting evidence for understanding decreasing societal trust in state institutions and as a result the varying levels of violence (including diversification of criminal activities) across the country. Specifically I use indicators on the confidence in the government from the Organization for Economic Development and Cooperation (OECD) for the years 2007 and 2014 and I complement this information with available survey data on temporal expectations from the Economic Commission for Latin America and the Caribbean for the years 2000, 2004-2011, and 2013. Data on temporal expectations also comes from the Global Corruption Barometer published by Transparency International in cooperation with Gallup. Given that Mexico did not participate in all the years for which the survey is available, I use data for the years 2003, 2006, 2011, and 2013. Lastly, I also use data on

the perception of corruption in the public sector from Transparency International for the years 1995-2011 from the Corruption Perception Index (CPI). Even though data on the CPI is available through 2014, a change in methodology in 2012 creates additional complications for evaluating the data as a panel. Whereas for 1995-2011 the scale of corruption was from 0-10 (10 equals a corruption-free country), from 2012 onwards is from 0-100. It should be noted that while I present the data on perception of corruption of the public sector for the years 1995-2011 for the purpose of understanding a generalized and increasingly worse perception of the Mexican government the individual data points are not comparable over time⁴⁰.

For individual state analysis I use data from the National Survey on Crime Victimization and Perception on Public Safety (ENVIPE per its Spanish acronym). While this survey is only available since 2011, it offers important indicators on how the population *perceives* security in their state as well as the role of government institutions in regards to law enforcement. Perceptions of safety are important because they indicates how people feel about living in a particular state regardless of whether or not they have been the victims of a crime. Consequently, if a high percentage of the population of a particular state believes it is a matter of time before they become the victim of a crime, we can easily understand the motivation of citizens in seeking other sources of protection,

⁴⁰ According to the updated methodology, scores for the years 1995-2011 are not comparable over time because “the CPI was based on perceptions of corruption in each country/territory relative to the other countries scored and ranked on the index [...]. The index captured the rank position of each country in each data source, so that country scores were highly dependent on the changes in scores of the countries around it in the index” (An updated methodology, Transparency International Corruption Perceptions Index, 2012).

either in private security services or—perhaps—even at the hands of those who would victimize them, the DTOs.

The hypothesis, however, states that exploiting a disorderly market for protection not only increases the types of violence observed but it also explains diversification of criminal activities in order to include trafficking of illegal goods other than illicit drugs. In order to show that trafficking of illegal goods occurs I employ a cross-case comparison to explain why some DTOs attempt to obtain higher profits by diversifying into other criminal activities while other DTOs forego additional rent-seeking behavior. This is important because variation in rent-seeking behavior from a similar criminal activity requires different policy responses in order to significantly reduce the financial gains of DTOs in areas besides illicit drug trafficking. I therefore argue that DTOs with managers who are risk-seekers will attempt to obtain higher profits compared to DTOs with managers who are risk-averse and prefer to attract low levels of attention from the state and rival criminal organizations. I demonstrate this difference empirically by using newly compiled data on theft from pipelines per municipality from 2000 to 2014 in states where at least one illegal tap was detected as well as court documents detailing transactions of stolen Pemex products by DTOs and US companies⁴¹.

There are, however, some important reservations with these data. The information was first requested in 2013 by a large-circulation newspaper via Mexico's legislation equivalent to the Freedom of Information Act in the United States. Pemex responded to

⁴¹ Petróleos Mexicanos (Pemex) is Mexico's state-owned oil company.

the request arguing that the information could not be found and therefore could not provide the data. The newspaper then filed an appeal to the National Institute for Access to Public Information and Data Protection that ordered Pemex to locate the information and fulfill the request. It is unclear therefore, if Pemex had the information but refused to make it public or if it lacked a systematic way for collecting and saving the data. The fact that Pemex did not argue that national security considerations prevented it from sharing the information (a common practice among Mexican government agencies preferring secrecy such as the Army and Navy) suggests that the institution was not trying to conceal the data but rather lacked a systematic method for collecting and saving the data.

Given that Pemex only included states where at least one illegal tap had been found, there is information for 26 of 32 entities. The missing states are: Baja California Sur, Campeche, Colima, Guerrero, Nayarit, and Quintana Roo. In general, it seems unlikely that not a single illegal tap was found in fifteen years for six states. Furthermore, missing data for Campeche further suggests irregularities with the information. This is because the complex including Cantarell and Ku-Maloob-Zaap located in the Bay of Campeche in the Gulf of Mexico, are the most productive oil fields in the country⁴². It should also be noted that according to Pemex 60 percent of the theft occurs at collection center and 40 percent occurs directly at pipelines. While it is unclear how Pemex

⁴² Two factors might ameliorate the concerns about missing data for Campeche: 1) Precisely due to its key role in oil production for Mexico, this area is heavily guarded thus effectively deterring theft. 2) While there are pipelines built from the fields to the mainland, most output is processed in platforms and transported in sea tankers which could partially explain the lack of illegal taps in this state.

calculates this amount, it is important to note that the data used in this research only examines theft occurred at pipelines.⁴³

Even with these data constraints, the information provided by Pemex is useful for understanding the diversification of criminal activities. Stealing byproducts of oil extraction includes a plethora of criminal activities including kidnapping and extortion of Pemex employees, money laundering, and trafficking of illegal goods that results in increased financial gains and firepower for DTOs. More importantly, panel data from 2000 allows comparing theft levels before and after the government declared war on crime in 2007. Additionally, the hubs of operation for the DTOs examined in this dissertation are included in the data provided by Pemex thus allowing comparisons of how DTOs behave given the same criminal activity in their more important areas of operation. For example, while the states of Sinaloa and Tamaulipas, both hubs of DTOs have high reported levels of theft from Pemex only the DTO that operates in Tamaulipas engages in additional criminal activities by trafficking the stolen goods whereas the DTO that operates in Sinaloa mostly uses stolen diesel for their operations and service stations to launder money.

Expansion of the market for protection

In order to show how the market for protection deteriorated I use evidence from the timeline I built detailing when and how the first wheel networks emerged. This shows how by targeting kingpins emerging criminals used wheel networks structures that could

⁴³ <http://eleconomista.com.mx/industrias/2015/06/01/almacenes-mayor-robo-combustibles-pemex>

better serve the market for synthetic drugs as well as further diminish the impact of going after alleged leaders. Furthermore, in order to show how the market for protection was distorted I use evidence from the dramatic policy shift of deploying military assets in order to engage in combat DTOs. Acquiring specific information on the deployment and operation of military assets in order to engage in combat DTOs is not possible due to the restrictions on the information classified as essential for national security. While data on the number of military assets used against DTOs would be the most direct measure of this variable, there are proxies that could help estimate the degree of military intervention per year and state. In this sense, while I cannot measure the treatment, i.e. the deployment of military personnel, I can estimate which states have been treated by knowing some of the consequences of the treatment; in this case systematic violations of human rights. Reports by international human rights organizations strongly suggest that the deployment of military personnel as a policy of the war on drugs significantly increased violations of human rights against civilians perpetrated by the armed forces. Therefore states with continuous military intervention as a policy of the war on drugs are often accompanied by higher levels of human rights violations.

In order to show the systematic violation of human rights as a consequence of the deployment of armed forces I use evidence from six human rights reports, three from Human Rights Watch for the years 2009, 2011, and 2013 and three from Amnesty International for the years 2009, 2012, and 2014. These reports are a useful and accurate source of information because they constitute evidence from public-private partnerships in international negotiating systems. As Börzel and Risse point out, the complexity of

international systems has increased the incorporation of non-state actors as official members. In these arrangements “non state actors provide consensual knowledge, expertise, and also moral authority and legitimacy” (Börzel and Risse 2002: 6). In the case of Amnesty International the authors argue:

[F]rom the 1980s on, Amnesty International has established itself as a legitimate source of knowledge and moral authority in the human rights area [...] as a result there is hardly any major international human rights agreement which Amnesty International did not shape in crucial ways—from the Convention against Torture to the recent establishment of the International Criminal Court.⁴⁴

To make this measurement more robust I complement general findings from the reports with data from Mexico’s National Commission of Human Rights (CNDH per its Spanish acronym). Specifically, I use information from their annual reports on the number of complaints classified as human rights violations filed against the Army and the Navy as well as the number of recommendations issued by the Commission for the Army and the Navy for the years 2000-2014⁴⁵ ⁴⁶. Notably, the recommendations provide

⁴⁴ Korey in Börzel and Risse 2002: 7.

⁴⁵ Note that in Mexico, the Ministry of Defense is in charge of the army whereas the Ministry of the Navy is in charge of the Navy. This is important because unlike the centralized structure of the Department of Defense from the United States complaints against the Ministry of Defense of Mexico only include the army rather than all the armed forces.

⁴⁶ Recommendations are public documents detailing the human rights violations and identify steps that government institutions need to follow to redress them. The *recomendación* is issued at the conclusion of an in-depth investigation conducted by the Commission. As explained by Human Rights Watch, per the law regulating the Commission it is duty to “follow up and to ensure that the recommendation is totally complied with including cases where the recommendation was not accepted” (Neither Rights Nor Security, Human Rights Watch, 2011: 209). I exclude recommendations issued by the Commission regarding provision of health services for beneficiaries of military personnel.

information on the location of where the violation took place allowing to estimate which states have experienced violations to a greater extent than others. As amply documented in the Human Rights Watch and Amnesty International reports, complaints filed at the Commission represent only a small fraction of the actual number of violations that occur due to a widespread distrust towards the Commission and its ability to help victims. Furthermore, the number of recommendations issued by the Commission is even smaller than those of the complaints due to the slow revision of cases by the Commission. Despite these data constraints the available information is a useful way for showing that human rights violations against civilians increased as a result of the deployment of military personnel and therefore confidently estimate the degree to which states have military presence since the year 2000.

Structure

Determining the structure of each organization relies on journalistic accounts and indictments from US courts. The journalistic accounts employed are investigative accounts of specific DTOs. The strength of these journalistic accounts is that they used primary sources to produce their books and/or articles. Consequently, these journalistic accounts represent the closest data that can be collected without interviewing DTO actors. Furthermore, the data from indictments provide additional information on the structure of the organizations because, similar to measuring types of money laundering, the prosecution needs to specify ‘manners and means’ in which the individuals attempted to distribute controlled substances in the United States. By analyzing how the individuals

communicated, transported illegal drugs, and how payments were received there is valuable information regarding the structure of the DTO. It should be noted that for cases where there is more than one indictment, the first and last indictment were the ones used to generate evidence about the structure. This is because intermediate indictments likely reflect negotiations between the prosecution and the defendants such that it is not possible to determine how the charges dropped in intermediate indictments accurately reflect the activities of the DTO. Notably, indictment information provided details generally not specified in journalist accounts.

CHAPTER FIVE

HOW DTOs EMERGE, PUNISH SHIRKERS, LAUNDER MONEY AND CONTRABAND OIL

This chapter explains how hierarchical and wheel networks emerge by identifying the type of supply chain they use to distribute illicit drugs and provides evidence that corroborates the existence of each structural type. It also examines how the structure the DTO adopts affects its preferences for punishing shirkers, the methods used in money laundering as well as trafficking of illegal goods other than drugs. Two considerations are pertinent: first, this chapter does not intend to be a comprehensive history of DTOs in Mexico. Other authors have conducted extensive historical and sociological work in this area. Second, the money laundering and contraband methods discussed in this chapter are not presumed to be the only ways in which DTOs conduct their operations but useful cases for constructing a typological theory.

5.1 Emergence of Hierarchical DTOs

Drug trafficking by Mexican organizations into the United States is not a recent phenomenon. Chinese immigrants who worked in the Pacific coast of the country, specifically the state of Sinaloa, first brought opium to Mexico in the early XIX century. Sinaloa proved a suitable location for the cultivation of poppy allowing local production to flourish and the establishment of opium dens. While not socially acceptable, opium dens remained legal until the early XX century. The 1914 Harrison Narcotics Tax Act regulating the sale of opiates and cocaine in the United States and the establishment of

Prohibition in 1920 further incentivized a black market for forbidden substances. Illegal trafficking of drugs between Mexico and the United States, therefore, has existed for over 100 years⁴⁷.

Nevertheless, before Mexican DTOs acquired their current level of notoriety, it was Colombian DTOs, in particular the Medellín organization that once smuggled substantial amounts of cocaine into the United States. This organization wielded the production and trafficking along the Caribbean route through small aircraft using Cuba, Bahamas, and Nicaragua as air bases with Florida as final destination. Consequently, up until the extradition of managers to the United States, the emergence of rival organizations, and a decrease in popularity given their use of violence against civilians, the Medellín organization controlled a significant portion of the cocaine traffic into the United States with a smaller share for Mexican organizations⁴⁸. This situation changed once the Caribbean route was ‘closed’ by the United States. Given the geographic configuration along the Caribbean route it was possible for the United States’ law enforcement agencies to patrol and confiscate drugs moved through this area prompting

⁴⁷ By one account, the United States government first came across narcotics as a significant problem in the acquired territory of the Philippines won from Spain in 1898 that had high levels of opium addiction. As a result, in 1912, thirteen countries signed the International Opium Convention attempting to ‘control or to cause to be controlled, all persons manufacturing, importing, selling, distributing, and exporting morphine, cocaine, and their respective salts’ (Newark 2011: 71-72).

⁴⁸ In 1989 in an attempt to pressure the government against signing an extradition treaty with the United States, the Medellín organization planted a bomb on a commercial flight (Avianca 203) aimed at killing then-presidential candidate Cesar Gaviria. Despite other social services provided including housing in the city of Medellín, this act had an important cost on popular support for the organization. Gaviria won the presidential election in 1990.

a reconfiguration of distribution channels between Mexican and Colombian organizations.

In the literature on DTOs, this period is known as the ‘Mexican Trampoline’ (Grillo 2011; Osorno 2010) in order to refer to the increasing traffic of cocaine through Mexican territory destined for the United States. It is in this period when Sinaloa adapted its kinship-only structure to a hierarchy that incorporated members who were not necessarily blood related in order to develop contacts with Colombian organizations and individuals with access to cocaine production centers. The expansion into the cocaine business generated a new supply chain of imported drugs along with the existing supply chain of locally produced heroin and marijuana. With the demise of the Caribbean route, cocaine producers in Colombia transferred the risk of distribution to Mexican organizations without exiting a profitable market. Through this imported supply chain, Colombian organizations retained leverage vis-à-vis Mexican organizations because coca leaves require specific conditions to grow providing them with natural control over production of cocaine paste.

Sinaloa was a strategic partner given their vast experience in the heroin and marijuana markets in the United States. The plantation of poppy as well as the expansion of opium dens in the state of Sinaloa bolstered the development of producers and traffickers of illegal substances ultimately generating what is known today as the golden triangle among the states of Sinaloa, Chihuahua, and Durango. Even though it is possible that the Sinaloa DTO changed cocaine’s levels of purity by adding other

chemicals, they still required cocaine paste to produce other semi-synthetic drugs such as crack. The required input of cocaine paste maintained the relationship with Colombian DTOs and created a more specialized division of labor within Sinaloa that managed supply relationships in addition to distribution and money laundering functions.

Choosing a hierarchical structure under these circumstances was an optimal strategy. Given the illegal nature of the business it was preferable to organize activities through known actors in order to develop trust between producers and distributors. Absent a trustful relationship, Colombian manufacturers would have found themselves in a situation where they either had to distribute cocaine on their own and face legal consequences in the United States or constantly negotiate prices and drop-off locations with different wholesalers who might be undercover law enforcement agents. The hierarchical structure of Sinaloa allowed lowering transactions costs by internalizing costs related to negotiating prices for the product and transportation as well as arrangement for delivery for producers and distributors in Colombia and Mexico. Additionally, by having a fixed wholesale buyer, Colombians could secure distribution of their product in the consumer market and prevent accumulation of inventory; both costly and risky for profitability and longevity in the drug trade.

Despite the existence of free-lance ‘mules’ who transported cocaine to the US in search of buyers (Saéñz-Rovner 2010), this type of trade would not have been enough to maintain or expand the production in Colombia. In 1983 production in the manufacturing facilities of *Villa Coca*, *Tranquilandia*, and *Coquilandia* in the province

of Caquetá, Colombia was estimated at twenty tons per month (Eddy et.al. 1989: 291). Despite the low labor costs, \$243 in 2016 dollars per month and a regular free trip home for each manual worker, the investment in the cocaine manufacturing complex in Caquetá represented a sunk cost for the Medellín DTO, thus incentivizing production rather than a reduction in quantity. In 1983, the retail price for two grams of pure cocaine powder was the equivalent of \$800 in 2016 dollars⁴⁹.

More importantly, the relationship with Sinaloa provided an existing infrastructure for transporting and distributing cocaine in the United States which was mostly lost by Colombians as the result of law enforcement efforts and the cocaine wars among the so-called ‘cocaine cowboys’. By 1980, Colombians were the third largest immigrant group in the Miami-Dade County in Florida after Cubans and Puerto Ricans (Saéñz-Rovner 2010: 107). The large presence of countrymen had allowed Colombians to use their compatriots for distributing drugs in the United States. In 1979 the Federal Reserve Bank of Miami reported a \$5.5 billion surplus which was greater than the combined surpluses of every other Federal Reserve Bank branch in the country (Gugliotta and Leen 1989: 67-68). However, as violence among Latino immigrants intensified in Miami business was disrupted, arguably eliminating valuable human capital that could have dealt with the intensified surveillance along the Caribbean route⁵⁰.

⁴⁹ “Is There a Cocaine Shortage?”

http://voices.washingtonpost.com/fact-checker/2007/11/is_there_a_cocaine_shortage_1.html

Date accessed: May 17, 2016

⁵⁰ Despite the arrival of 125,000 Cubans to Florida during the Mariel boatlift, several studies (Martinez 1997; Martinez, Lee; Nielsen 2001; Martinez Nielsen, Lee 2003) have shown that

Although it is unclear why and who started the conflict—mostly attributed to Griselda Blanco a.k.a ‘The Godmother’—the violence in Florida, in particular in the South, supports the argument on the disruption of distribution and transportation channels. Whereas in 1980 the homicide rate in the United States was 10.2 per 100,000 inhabitants, Florida had a homicide rate of 14.5. A decade earlier, the United States had a homicide rate of 7.9 compared to 12.7 for Florida⁵¹. Notably, Miami-Dade county, on the southern tip of Florida and where most of the cocaine shipments were delivered, had the highest homicide rate of the state (Wilbanks and George 1984). The homicides targeting Colombian drug traffickers at the Dadeland shopping mall in 1979 “marked the start of a series of wars in Miami that were fought in public without care or concern for who might get hurt. People were gunned down at shopping centers, in restaurants, and at busy intersections during rush hour” (Eddy et.al. 1988: 67). As characterized by a Miami-Dade homicide detective “for rival Colombian gangs, Dade County had become a war zone [...] the fucking Colombian dopers would kill anybody who happened to be in their way (Díaz in Eddy et.al. 1988: 67).

The high levels of violence resulted in intensified law enforcement activity, including the creation in 1982 of Centac 26 (Central Tactical Unit) an elite force including DEA agents, New York City police and Metro-Dade detectives funded by the

violence among immigrants known as “*marielitos*” was lower compared to Latino residents who arrived prior to boatlift.

⁵¹Source: <http://www.ucrdatatool.gov/Search/Crime/State/RunCrimeTrendsInOneVar.cfm>
FBI, Uniform Crime Reports as prepared by the National Archive of Criminal Justice Data.
Date accessed: May 18, 2016.

federal government to go after high-level targets in Miami (Gugliotta and Leen 1989: 67). One of his founders explained,

We were to target particular people and make their lives a misery, and continue to do that until we caught them doing something illegal, and put their ass in jail, or until we killed them. We weren't going to violate their constitutional rights, but they were either going to die, go to jail, or leave Florida⁵².

Furthermore, in March 1984 Colombian agents and the DEA raided *Tranquilandia*, resulting in the confiscation of fourteen tons of cocaine, and documents incriminating members of the Medellín DTO (Scott and Marshall 1991: 97). In 1985 Griselda Blanco, an important distributor for the Medellín DTO was arrested in California and in 1987 Carlos Lehder, a central figure in transportation and distribution through the Bahamas was extradited to the US. The weakening of the Medellín organization along its production and supply chain would provide growth opportunities for the Colombian-based Cali DTO closely linked to the development of wheel network DTOs in Mexico. This point will be further analyzed in section 5.2.

Evidence from the superseding indictment for case number 14-CR-0658-DMS discusses the existence of the 'Sinaloa Cartel' as a transnational drug trafficking organization based in Sinaloa Mexico (1). According to the third superseding indictment for case number 09-CR-383 top managers within the Sinaloa DTO negotiated prices and coordinated the transportation and storage of multi-ton shipments of cocaine from Colombia and Panama to Mexico using Boeing 747 cargo aircraft, private aircraft, submarines and other submersible and semi-submersible vessels, container ships, go-fast

⁵² Díaz in Eddy et.al. 1988: 70-71.

boats, fishing vessels, buses, rail cars, tractor trailers, and automobiles (4; 9). These data are similar to the most recent information (November 2014) produced by the Office of Foreign Assets Control (OFAC) that shows the Sinaloa DTO maintains business relationships with the Perez Ocampo and the Cuellar Hurtado organizations. In both cases, associates from Colombia use air and maritime routes departing from Colombia, Ecuador, and Venezuela to ship cocaine to Mexico.

The most compelling evidence on the Sinaloa-Colombia link is the deeply woven business relationship with the Cifuentes Villa organization. The 2010 and 2011 indictments that simultaneously bring criminal charges against the Colombians and Sinaloa DTO managers and the well-documented connection that exists between the two provide extensive information to show the existence of the partnership and details on how transactions are conducted⁵³. According to information from OFAC the Cifuentes Villa organization operates in Colombia, Ecuador, Panama, Uruguay, Mexico, and Spain and is allegedly responsible for financing and coordinating multi-ton cocaine shipments via speedboats, fishing vessels, and airplanes. Data from OFAC (February 2011) show that the Cifuentes Villa organization is an extremely intricate operation including at least 46 commercial enterprises, six of which are located in Mexico. This is why despite the

⁵³ The Indictment filed in the United States District Court Southern District of Florida, Case Number 07-20508-CR-LENARD has a second superseding indictment filed on January 30, 2014.

captures in November 2012 and 2014 of top managers it is unlikely the organization ceased its operations entirely^{54 55}.

Information from the Department of State alleges that “Since 2008 [Cifuentes Villa] has most likely obtained and imported over 31,000 kilograms of cocaine to the United States, and is purportedly the *primary source of supply for cocaine for the Sinaloa Cartel in Mexico*”⁵⁶. The indictment filed in the Southern District of New York, indicates the Cifuentes Villa organization held meetings in Ecuador in order to arrange the transportation of tons of cocaine from Colombia to Mexico. Furthermore, the second superseding indictment of 2014 shows that managers from the Sinaloa DTO and the Cifuentes Villa organization met in Guatemala and Colombia since 2004 and “knowingly and intentionally manufacture and distribute a Schedule II controlled substance, knowing that such substance would be unlawfully imported into the United States in violation of Title 21” (3-6).

⁵⁴ According to Insightcrime, the Cifuentes organization “has been involved in the international drug trade for over two decades, working with several generations of Colombian criminals, including the Medellín Cartel, its successor group the Oficina de Envigado, the Norte del Valle Cartel, and paramilitary army the United Self-Defense Forces of Colombia (AUC). Source: <http://www.insightcrime.org/news-analysis/arrest-social-climbing-colombian-drug-family>. Accessed: March 8, 2016.

⁵⁵The siblings Jorge Milton, Dolly de Jesus, and Hildebrando Alexander Cifuentes Villa were captured between 2012 and 2014 in Venezuela, Colombia, and Mexico respectively. The arrest and extradition of the Cifuentes Villa siblings has led some analysts to forecast the demise of the organization. However, OFAC’s data from 2011 linked at least 27 individuals working for the organization. Furthermore, and consistent with the argument advanced in this research, the arrests and extradition of the Cifuentes Villa siblings while a shock to the organization do not necessarily imply the extinction of the enterprise specially with the ample experience they have in the business.

⁵⁶ Source: <http://www.state.gov/j/inl/narc/rewards/171614.htm>. Accessed: March 12, 2016. Emphasis added.

Based on OFAC data this organization has a sizable amount of available capital, even when considering the estimates are biased towards a low appraisal due to data constraints. Of the 46 companies, three with available information have \$50 million of registered capital. This is important because unlike legal transactions where customers can pay upon receipt of the merchandise, drug traffickers involved in importing drugs may pay producers once the product has been sold in the United States or wait to conduct transactions that attract little attention from law enforcement or financial regulators. According to the indictment filed in the Eastern Division of the Northern District of Illinois, the Sinaloa DTO “fronted” multi-kilogram quantities of cocaine and heroin to their wholesale buyers in the United States, shipping the illegal drugs on consignment without payment at the time of delivery (10). Once the drugs had been sold at retail points, the Sinaloa DTO received payment for the drugs. On average 1500 to 2000 kilograms of cocaine were sold on a monthly basis in Illinois (10).

Evidence provided by informants in Mexico further corroborates data from indictments and OFAC. A recurring example given by interviewees on how Sinaloa and Colombian organizations build trust was the 2008 event raided by Mexican police in Mexico City where eleven Colombians were arrested. The Colombians were in Mexico in order to fulfill a 500-kilogram cocaine shipment to their Mexican associates. This particular raid became notorious due to the fact that it took place in a luxurious property that included performances by famous artists and a zoo of exotic animals such as lions, a

white tiger, black panthers, and even a hippopotamus⁵⁷. According to official sources, Colombians and Sinaloa members used the property to party as well as to conduct business transactions related to the purchase and transportation of cocaine via maritime routes.

Data from interviews revealed that sending Colombian associates to Mexico is a common practice as a symbol of trust. For example, a Colombian organization may send one of its members to Mexico ahead of a shipment. The idea is to show commitment to the transaction insofar if the shipment is not delivered then the Sinaloa DTO can take the Colombian as a hostage until the shipment is fulfilled. By the same token, the Sinaloa DTO signals trust to its counterparts in the South American country by providing for the envoy and even showering him or her with lavish entertainment and gifts while business is conducted. At its peak, trust among Colombians and Mexican drug traffickers has also produced marriages. More notably the relationship between Sandra Beltrán Ávila a.k.a. ‘Queen of the Pacific’ (also alleged niece of Félix Gallardo) and Diego Espinoza Reyes a.k.a. ‘Tiger’ who coordinated monthly multi-ton shipments of cocaine on tuna vessels traveling along the Pacific coast.

Incorporating individuals as part of the exchanges signals strong commitment and trust among partners. Notably, one of the Cifuentes Villa top managers was arrested in Mexico in 2014 and according to a testimony related to Case number 07-20508-CR-LENARD, he was there to guarantee cocaine shipments from Colombia to the Sinaloa

⁵⁷ Source: <http://www.elespectador.com/impreso/internacional/articuloimpreso85144-narcos-se-les-aguo-fiesta>. Accessed: March 3, 2012.

DTO. This was known at least since 2010. Before his arrest, during a motion hearing in 2012 in the District Court for the Southern District of Florida for one of the Cifuentes Villa siblings, the US Attorney's Office stated "the second brother—and this—the second brother has been incredibly close to Chapo Guzman in Mexico for the last two years" (19).

Taken together, the indictments filed in California, Florida, Illinois, and New York along with data from OFAC and interviews conducted in Mexico show that producers in Colombia and the Sinaloa DTO generally financed or 'fronted' cocaine shipments and received payments until the drugs had been sold in the United States and the money had been transferred to members of the Sinaloa DTO. The ability to finance and or "front" cocaine shipments illustrates the level of trust among business partners in Mexico and cocaine production centers given that on average their transactions involved delayed and inexact reciprocity. It also illustrates high levels of trust within the organization because even though shipments of illegal drugs were marked with different symbols to identify the supplier, payments were not divided but sent in bulk. Meaning that top managers have to trust one another to receive accurate payments for the drugs they have supplied. In sum as Astorga (2012) writes, "in the history of the relationships between Colombian and Mexican traffickers bloody confrontations have been very few" (182, author's translation from Spanish).

The Sinaloa DTO also has strong incentives to monitor its subordinates and prevent free-riding within the organization because until the DTO sells the drugs in the

US it carries all of the risk and none of the rewards of distributing cocaine. Sinaloa, therefore, adopted a system where the employees of the organization needed to act in an efficient and team-oriented way in order to receive pay-offs for their work. This translated into an organization where employees were groomed to achieve the complex tasks delegated to them effectively increasing the investment in human capital both for the individual and the enterprise. Furthermore, because the manager's pay also depended on successful collective outcomes, managers had to make sure they employed and developed qualified individuals who could attain higher profits that would ultimately translate into higher rewards for management. The adoption of the *plaza* system in the late 1980s provides compelling evidence on the grooming and supervision that takes place in hierarchies.

The *plaza* system was a division of drug routes among junior operatives of the Sinaloa DTO in order to prevent turf wars that would decimate the business⁵⁸. *Plazas* were not exclusive because other traffickers were allowed to traffic in someone else's

⁵⁸After the murder of the DEA agent Enrique Camarena in 1985 due to his role as an informant the leadership of the Sinaloa organization was severely weakened. This is because Camarena's murder was a considerable mistake allegedly committed by a top manager within the Sinaloa organization. By killing a DEA agent, the organization attracted unwanted attention from the United States who pressured the Mexican government in prosecuting the guilty parties. Even though an agent from the DEA engaged in undercover work violated Mexico's sovereignty, the United States would not ignore the murder of one of its agents in particular by an organization that smuggled illegal substances into their country. Above all, the hard line maintained by the United States served as an example of the government's view of illegal substances and the role that Mexico played in supplying the United States. It should be noted, that until former Secretary of State Hillary Clinton's visit to Mexico in 2009, the problem of illegal substances was framed as the responsibility of the countries that supplied the drugs. In 2009, under President Obama's administration, the rhetoric change to one of shared responsibility where the demand and the supply countries played important roles in trying to address this problem.

territory as long there was a quota or right of way paid (Blancornelas 2002; Osorno 2010). Who established the *plaza* system is a question that remains unclear. According to Astorga (2005) and Blancornelas (2002) this division was put in place by the known trafficker Félix Gallardo while Félix Gallardo (2010) argues that it was the Mexican government, through President Salinas' chief of police Guillermo González Calderoni who divided the territory⁵⁹. By some accounts, the division took place before the incarceration of top management. However, according to Félix Gallardo, he and González Calderoni met several times to discuss what would happen regarding the Camarena case and also to discuss specific smuggling operations in the northern part of the country in order to request protection for some of his operatives. The relationship continued until 1989 when González Calderoni arrested Félix Gallardo⁶⁰. Notably, most of the agents involved in Félix Gallardo's arrest knew him since 1971 because they had worked together in Sinaloa's police force where Félix Gallardo worked as a bodyguard for the governor's children (Osorno 2010).

⁵⁹ According to one high-level Mexican government official, it is likely that neither the government nor the organization were strong enough to impose the *plaza* system on the other party. Alternatively, the source suggested it was more likely that both the DTO and the government were equally strong and the *plaza* system derived from an arrangement among more or less similar parties (Former government official in discussion with the author, July 2014).

⁶⁰ According to Astorga (2005) and Blancornelas (2002) Félix Gallardo and González Calderoni were *compadres* or godfather to their children. Even though González Calderoni's specific involvement is hard to specify, it is clear that he had considerable knowledge of the illegal business given that he entered the witness protection program of the DEA after being accused in Mexico of illicit enrichment and protecting drug traffickers. In 2003 González Calderoni was murdered in Texas after leaving his attorney's office.

Notwithstanding when and who established the *plaza* system, what is important is that drug routes were divided among junior operatives of the organization, thus ushering a new era of leadership and demonstrating the possibility for transition at the management level even in view of a serious attempt to extinguish the organization. Among the successor operatives are individuals who are currently serving their sentences or indicted in the United States as well as members who remain at large. On average the existing leadership of Sinaloa started in the business by working with traffickers that had extensive experience in the illegal drug market. The once junior employees achieved those positions by learning the know-how of a business of over fifty years in the state of Sinaloa unlike other DTOs in Mexico. The relevance of the *plaza* system hinges on what it signals: the ability of hierarchies to generate promotion-performance mechanisms and maintain relationships for importing illegal drugs.

For example, case number 09-CR-383 discusses the role of top members in the *plazas* of Culiacán (in the state of Sinaloa) and Juárez (in the border state of Chihuahua) where the managers controlled the flow of narcotics through their areas and coordinated the deliveries of multi-kilogram quantities of cocaine and heroin into the United States, as well as deliveries of bulk quantities of US currency to the Sinaloa DTO (7). Data from OFAC from May 2013 lists an additional eight *plaza* managers covering two states, Baja California and Sonora including five border cities: Mexicali, San Luis Río Colorado, Sonoyta, Nogales, and Agua Prieta. Inland *plazas* include Caborca, Altar, and Cananea. Data from interviews explained the relevance of the *plaza* system as a way to invest in assets that reduce the risk of trafficking drugs including bribed officials,

infrastructure, warehouses in Mexico and the United States, and distributors (Policy expert in discussion with the author, July 2014).

Vicente Zambada and Alfredo Guzmán, sons of ‘Mayo’ and ‘Chapo’ respectively are identified as logistical coordinators for the Sinaloa DTO in charge of overseeing the delivery of multi-kilogram quantities of cocaine and heroin into the United States. Rather than managing one city the evidence suggests they were in contact with wholesale purchasers in the United States. The participation of Vicente and Alfredo is relevant for a number of reasons. First, contrary to common portrayals of first-born children taking over criminal enterprises, Vicente and Alfredo were groomed for those roles and neither is the eldest offspring. For example, although Alfredo was only 22 years old at the time of the first indictment brought against him, he had more responsibilities than his brother Ivan who was 29 years old. This is likely part of the informational mechanisms inherent in hierarchies that allow supervisors to reveal the true type of agents and solve adverse selection problems. In this case, which son was better prepared to handle business operations in the United States.

Evidence from phone conversations highlights Alfredo’s role in arranging heroin drop-offs with wholesale buyers in the United States, however price and quality discussions of the product were left to Vicente and ‘Chapo’ Guzmán. Specifically, US law enforcement created a ruse through their informants where they lied about the quality of the heroin received in order to negotiate a price reduction due to the difficulties of placing product of lower quality. The scam was put in place to get ‘Chapo’

Guzmán on record discussing drug trafficking matters. Once a price reduction was agreed on, ‘Chapo’ gave the phone to an unknown entity for instructions on how to make payments (Exhibit A, 1-2). Managers for the Sinaloa DTO also informed wholesale buyers that they would meet to discuss the poor quality of the heroin⁶¹.

Evidence collected during fieldwork further corroborates the grooming process of Vicente Zambada. According to interviewees, compared to his siblings, both male and female, he was the one with the clearest entrepreneurial vision. Furthermore, rather than being educated in traditional ways for the drug trafficking business, he was developed as a ‘next-generation’ resource that could operate the business using sophisticated management practices (by some accounts Vicente graduated from university with a degree in business although this information could not be verified). The idea was that Vicente would become a type of chief financial officer able to oversee the wealth management of the organization. In addition, Vicente was portrayed as a low-profile individual who did not lead an ostentatious lifestyle that would attract unwanted attention (Former and current Mexican government officials in discussion with the author, July and August 2014). This is important because it refutes the notion that drug-traffickers enjoy luxurious lifestyles in the public eye⁶².

⁶¹ Whereas the informants said the quality of the heroin was only 40 percent pure, in reality Sinaloa shipped product with purity levels above the 90th percentile according to testing performed by the DEA (8).

⁶² Vicente was arrested in Mexico City in March 2009 and extradited to the United States in February 2010. In the United States Vicente alleged he could not be prosecuted because he had immunity through a deal made with the DEA where he agreed to provide information on rival organizations in exchange for freedom to operate for the Sinaloa DTO. Even though the DEA

Further evidence on Sinaloa's hierarchical structure comes from the arrests of top managers. When members of the organization have been captured this has not prompted members of the DTO to separate and form new criminal enterprises derived from a security concern that the incarcerated individual has shared intelligence with law enforcement in exchange for a deal. This provides a plausible explanation of why even though Fonseca, Félix Gallardo, and Quintero (until August 2013) have remained incarcerated in maximum security prisons their families have been able to remain in Sinaloa and Jalisco with seemingly comfortable lifestyles. If the information provided by the OFAC is correct, Quintero's family, under the protection of the Sinaloa organization, has been able to maintain at least twenty companies in order to launder money. This is a significant number of enterprises considering that Quintero was incarcerated from 1985 until 2013.

Moreover, according to a former member turned state witness, during 'Chapo' Guzman's first incarceration in Almoloya and Puente Grande (1995-2001) the Beltrán Leyva family provided him with financial resources in order to corrupt officials and have privileges inside the center (Peña in Osorno 2010: 142). More importantly, on the multiple occasions 'Chapo' has been arrested, none of his direct family members also involved in the drug trafficking business, including children, ex-wives, and father-in-law

acknowledged briefly meeting with him in Mexico City, the judge determined Vicente was not able to prove the existence of such deal. In the submitted by the US Attorney, the US government concluded "Not one witness or document supports defendant's breathtaking claim that the United States government conferred defendant (and other members of the Sinaloa Cartel) immunity from prosecution" (16). Interestingly, one of the attorneys for Vicente was also part of the legal team of John Gotti associated with the Gambino crime family in the United States.

have been arrested. Similarly, despite the arrest of several sons of Ismael Mayo Zambada a.k.a ‘Mayo’ and their extradition to the United States, ‘Mayo’ and other family members remain at large including daughters, wives, brothers, and brothers-in-law.

These examples are relevant because they show that the structure of the organization provides long-term incentives for participation rather than defection. Some top managers within the organization have been involved with drug trafficking approximately for fifty years. At the most basic level they show the DTO has procedures in place when top managers are incarcerated and can credibly signal that it is best to continue with his allegiance towards the organization. Not only will the individual have a job when freed, just like it has happened on ‘Chapo’s’ several arrests and subsequent escapes, but his family will be provided for. The incentives are more robust due to the presence of kinship ties that further strengthen loyalty among members.

Despite the self-serving reasons behind meeting with national and international media, the known interviews given by the top managers Félix Gallardo in 2010, Ismael ‘Mayo’ Zambada in 2010 and Joaquín ‘Chapo’ Guzmán in 2015 illustrate the realities of management within hierarchical organizations that challenge kingpin narratives forged around individualistic accounts. In 2010, in discussing the hypothetical scenario of being arrested, Zambada expressed a deep fear of being locked away. More importantly, he offered the following scenario “One day I decide to turn myself in so the government can execute me. My case must be exemplary, a lesson for everyone. They execute me

and everyone is euphoric. However, in a few days time we realize nothing changed.” Zambada continues, “the drug trafficking problem involves millions. How to rule them [drug traffickers]? Regarding managers [who are] locked up, dead, or extradited *their replacements are already out there*” (Zambada 2010, author’s translation, emphasis added).

Similarly, when asked “do you think it’s true you are responsible for the high level of drug addiction, for the fact that there are so many drugs in the world?” Guzmán responded “no, that’s false, because *the day I don’t exist, it’s not going to decrease in any way at all*”. Furthermore when questioned “did your drug business grow and expand when you were in jail? Did business get better or worse?” he said “from what I can tell, and I know, everything is the same. Nothing’s decreased. Nothing’s increased” (Guzmán 2016, emphasis added).

5.2 Emergence of Wheel Network DTOs:

Zetas, La Familia Michoacana, and Caballeros Templarios

Understanding the origin of Zetas and subsequently the emergence of La Familia Michoacana and Caballeros Templarios requires briefly revisiting the geography of the border states between Mexico and the US as well as the operation of the now severely diminished Golfo DTO. The Golfo organization had its major area of influence, as its name indicates, along the Gulf of Mexico with its hub of operations located in the state of Tamaulipas that shares a border with Texas. This is important because even though Mexico shares a border with four states—California, Arizona, New Mexico, and

Texas—it is Texas that accounts for 1254 miles of the 1900 mile-long border. Neighboring Texas increases the number of access points to the United States even if all are not equally valued. Tamaulipas is home to one of the busiest ports between Mexico and the United States: Nuevo Laredo⁶³.

Before integrating illegal drug distribution to their business, Golfo exploited its proximity to Texas by initially smuggling alcohol into the United States during Prohibition and then smuggling goods that were either unavailable or too expensive to purchase in Mexico and reselling them in the black market. The business was particularly profitable before the North American Free Trade Agreement (NAFTA) came into force in 1994. As an established smuggling organization, El Golfo expanded its operations to drug trafficking, exploiting both the rise of the Cali DTO in Colombia, once competitor of the Medellín DTO, and a growing demand for synthetic drugs that could be produced locally. Tracing the emergence and expansion of wheel networks DTOs in Mexico therefore requires understanding the rise of the Cali DTO and the consolidation of the market for illicit synthetic drugs.

After the Medellín DTO experienced important setbacks to their operations in Colombia, the Caribbean, and the United States, the Cali DTO used the opportunity to expand its operations in the United States. Although the Cali DTO initiated its drug business at a similar time than the Medellín DTO, its managers generally maintained a

⁶³ According to the United States Department of Transportation, in 2014 approximately 1.5 million loaded truck containers crossed through Laredo in addition to one million buses carrying passengers, and ten million personal vehicles. In contrast, 239 loaded truck containers and 31,000 personal vehicles crossed through Sasabe, Arizona.

low-key profile who understood the benefits of Medellín's public image. For example, in 1982 Pablo Escobar obtained a seat at the Chamber of Representatives as an alternate member for the Colombian Liberal Party whereas in 1983 Carlos Lehder founded the National Latin Movement with the goal of getting rid of the extradition treaty between Colombia and the United States (Gugliotta and Leen 1989). In contrast, members of the Cali DTO purposefully stayed away from the public eye.

In the mid-1980s the Cali DTO attempted to set up cocaine laboratories in the United States benefiting from looser regulations on the chemicals used in the production of the drug. Not only were chemicals cheaper in the US, there were also no reporting requirements if the chemicals were not exported. The DTO calculated they could export cocaine base to the United States and manufacture the final product—cocaine—closer to wholesale and retail locations. At this time, the Cali DTO also established contact with Mexican DTOs in order to try to and set up new cocaine processing laboratories (Chepesiuk 2003: 6). By the 1990s the Cali DTO decentralized and used different Latin American countries with various entrepreneurial purposes. By one estimate, Guatemala became the largest warehouse for the illicit drug, Haiti became a transportation hub, Ecuador became a drop-off point for precursor chemicals, and Brazil was used for money laundering (Chepesiuk 2003: 110-111).

By 1992 the relationship of the Cali organization with the Golfo DTO became a strategic partnership. Just like the Sinaloa DTO offered an established infrastructure for smuggling goods and individuals into the United States, the Golfo's DTO experience

since Prohibition afforded the Cali criminal syndicate access to the largest market for illegal drugs via Texas⁶⁴. However, unlike the relationship between Sinaloa and its Colombian associates, the Golfo DTO would prove to be ill prepared for the amount of cocaine the organization sought to smuggle through the Mexican route. This is because the Golfo DTO was not able to adapt from a kinship structure to a hierarchical one similar to Sinaloa at the time they entered the cocaine business. When the Golfo DTO got involved with the cocaine business, two known family members were top managers: Juan Nepomuceno Guerra, who initiated the smuggling business in the 1930s, and his nephew Juan García Ábrego. Rather than recruiting additional members who could take over the complex tasks, García Ábrego was the primary contact with the Cali DTO, smuggling drugs through Yucatán to South Texas earning him the first spot as an international drug trafficker on the FBI's Most Wanted List (Chepesiuk 2003: 112).

Their problems were further exacerbated when in the mid-1990s key managers both in Mexico and Colombia were arrested or turned themselves in, thus hampering any learning process and structural change that could have been in place for the Golfo DTO. Specifically, in 1995 two founding members and top managers of the Cali DTO—Gilberto and Miguel Rodríguez Orejuela—were arrested and although there was strong evidence to suggest the brothers were conducting business from jail through Miguel's son—William Rodríguez—the arrest of Juan García Ábrego in early 1996 and

⁶⁴ The incentive to contact Mexican organizations was particularly strong insofar one of the Miami-based managers for the Colombian DTO, Harold Ackerman dubbed “Cali Cartel's ambassador to the United States” was arrested thus prompting a need for new routes (Chepesiuk 2003: 244).

subsequent deportation to the United States (he was born in the United States) halted the relationship between the two organizations⁶⁵. García's brother, who had also been involved with the organization was unable to take over because he had been arrested in 1994 on money laundering charges in the state of Nuevo León and although he was released in 1995, he was rearrested the same day and sent to a prison in Mexico City (Ravelo 2009: 108).

By the time the new management of the Golfo DTO settled, not without conflict, the organization no longer had links in Colombia and in turn was purchasing cocaine in Central America and smuggling to the border state of Tamaulipas. The large number of seizures along the border with Texas reflects the lack of business acumen compared to those in California and Arizona, under the Sinaloa DTO trafficking points. Table 5.1 shows the cocaine seizures within 150 miles of the US-Mexico Border in kilograms for the years 1999-2002.

⁶⁵ The Cali DTO continued using the Mexico route to smuggle cocaine into the United States. They formed a partnership with the Carrillo Fuentes organization that pioneered using commercial aircraft for smuggling large quantities of illegal drugs compared to the smaller aircraft used in the Caribbean route. This technique earned Amado Carrillo Fuentes the moniker of 'Lord of the Skies'. Today, the Carrillo Fuentes organization is better known as the Juárez DTO due to its operation in the city on the border state of Chihuahua. The Juárez DTO is beyond the scope of this research. However, important questions remain in terms of its relationship to the Sinaloa DTO insofar several accounts exist depicting the interaction both as adversarial and collaborative. A better understanding of the relationship of the Juárez DTO vis-à-vis Sinaloa would provide important insights regarding the transnational drug trade involving Colombian associates.

Table 5.1 Cocaine Seizures in Kilograms, 1999-20002

	1999	2000	2001	2002
Arizona	5,265	2,252	3,034	2,538
California	7,118	6,001	4,140	3,381
New Mexico	749	219	171	392
Texas	24, 137	14,210	12,777	15,998

Source: Texas Drug Threat Assessment, National Drug Intelligence Center, 2003.

The loss of Colombian associates and the rise of synthetic drugs would play a significant role in the future of the Golfo DTO and the emergence of wheel- network DTOs.

In 2003 the United Nations Office on Drugs and Crime produced its first global assessment on ecstasy and amphetamine-type stimulants (ATS) where it identified an expanding market. According to the report seizures at the global level increased ten-fold over the 1990-2000 decade. In its analysis “small capital investment, ease of manufacture, low cost of precursors and equipment and high volumes make the ATS business extremely lucrative despite low (unit) prices” (UNDOC 2003: 34). In 2003, the UNODC estimated the retail market value of synthetic drugs at \$65 billion with a mark-up between wholesale and retail as high as 300 percent (47).

By 2008, the Global ATS Assessment identified synthetic drugs as firmly established in the global illicit drug market with use exceeding that of heroin and cocaine combined (10). According to the report, “the methamphetamine market has moved from being a cottage-type industry (with many small-scale manufacturing operations) to a market characterized by a higher level of integration and involvement of organized crime groups that control the entire chain of provision of precursors, to

manufacture, and trafficking of the end-product” (17). Similar to legal products where consumer preferences change, in the early 2000s synthetic drugs were preferred over cocaine and heroin due to a misguided perception of lower health risks and enhancement of performance and communication skills both in leisure and occupational settings (11). While cocaine had been the ‘it’ drug of the seventies and eighties, synthetic drugs became more fashionable at the turn of the century.

Regionally, production in the United States declined due to increasing controls on chemical precursors and dismantling of small-scale laboratories but production increased in Mexico as indicated by larger seizures of synthetic drugs along the US-Mexico border (15). According to the report, “Mexico has emerged as the primary supplier of methamphetamine to the USA in recent years” (89). This is relevant because in 2008 North America was one the largest markets for synthetic drugs in the world, highlighting the business incentives for Mexican DTOs to enter the market for illicit synthetic drugs.

According to some sources, the expansion of El Golfo into the drug business prompted Sinaloa to actively protect its routes and manufacturing centers of synthetic drugs along the Pacific (Astorga 2007: 79). Based on the 2008 Global ATS Assessment, the top five states in Mexico that produced synthetic drugs were Sinaloa, Sonora, Baja California Sur, Jalisco, and Michoacán—all under the Sinaloa DTO area of influence. Given the competition for the synthetic drug market against Sinaloa, Golfo created an armed branch for the organization that would be in charge of the security of top

personnel as well as battling the Sinaloa DTO⁶⁶. Therefore, the Zetas were originally constituted circa 1997 as a security corps that would operate under Golfo leadership with differentiated functions from those related to smuggling drugs.

In its beginning the Zetas were a group composed of military deserters who primarily came from elite forces originally trained by the army to conduct counterterrorist, hostage rescue, and counternarcotic operations. The Zetas were recruited at first in Tamaulipas where they had been deployed by the military as special forces (Osorno 2012). The original number of deserters to join the Golfo is unknown but most estimates account between 30 to 40 individuals (Astorga 1997; Ravelo 2010; Osorno 2013). The relevance of the Golfo DTO cannot be overstated. This entity changed the dynamics of organized crime in Mexico by introducing a paramilitary *modus operandi* that considerably increased the level of confrontation against state institutions and rival organizations (Astorga 1997). By having an armed branch that acquired notoriety for the types of violence it employed—hangings from pedestrian bridges and melting bodies in acid among other brutal practices—Los Zetas were able to credibly signal, and therefore construct a reputation, of their commitment to protecting their business at all costs.

⁶⁶ A different version suggests that it was the Sinaloa DTO that actively tried to obtain the Nuevo Laredo *plaza* from the Golfo DTO which increased the violence between the two organizations. The violence was exacerbated when Golfo actively tried to enter Michoacán thus disrupting decades-old *modus operandi* of organized crime (Astorga in Garay and Salcedo 2012: 234-235).

In view of the rapid growth of the market for synthetic drugs it was necessary for the Golfo DTO via its armed branch of Zetas to have access—if not control—in Michoacán that houses one the largest ports in the country: Lázaro Cárdenas. The port is connected to main highways across the country and is a direct access to a large volume of chemical precursors mostly imported from China both legally and illegally. In Mexico the other point of entry for chemical precursors is the international airport in Mexico City. However, whereas the Mexican equivalent of the Food and Drug Administration (Cofepris per its Spanish acronym) regulates the shipments that enter the country through the airport, it does not have agents in Lázaro Cárdenas thus increasing its value for manufacturers of illicit drug producers⁶⁷. In order for the Golfo DTO to remain a competitive distributor of synthetic drugs it was necessary to secure access to chemical precursors which could be done if they had access to the maritime port. As if preparing for a mission, the Zetas recruited locals from Michoacán in order to aid in their efforts of obtaining a foothold in that state.

The need to secure chemical precursors through Michoacán was further incentivized by the passage in 2007 of laws restricting the amounts allowed to be imported and produced in the country. The laws were passed as the result of one of the largest seizures of money in Mexico—\$207 million—after the Chinese-born businessman Zhenli Ye Gon through his company Unimed Pharma Chem México

⁶⁷ The absence of Cofepris agents at Lázaro Cárdenas seems to be part of bureaucratic disputes regarding roles and responsibilities among the different agencies (Government official in personal communication with the author, August 2014). That is, while Customs—which is under the Ministry of Treasury regulates trade at the port, Cofepris is under the Ministry of Health.

imported pseudoephedrine and ephedrine for the Sinaloa DTO to produce synthetic drugs. Ye Gon obtained legal permits to import chemical precursors which he then altered to import amounts in excess of his allotment. Despite Mexico's attempt to regulate these substances, the 2011 Global ATS report identified Mexico as an important manufacturing location for methamphetamine (75) and "between 2007 and 2009 seizures of methamphetamine by the US along the border with Mexico increased by 279 percent" (79).

The unwanted consequences of a decapitation strategy and the high discount rate observed in wheel networks coupled with the profitable business of synthetic drugs explains the rapid onset of this type of DTO. As the Mexican government captured top managers of DTOs and occasionally extradited them to the United States, illegal organizations had incentives to structure their operations in a way where the removal of management would decrease the short-term damage created by a decapitation strategy. Wheel-network structures were an advantageous choice insofar the cells with limited information and shared control could limit the effects of removing the managerial level.

After the weakening of Golfo's management, the Zetas decided to start a competing group due to the lack of inducements for long-term participation. Given that the Zetas were only hired for protection by the Golfo DTO and were not expected to move up the ranks of the organization, it was more profitable to break away from Golfo, start their own business, and participate in the criminal activities they chose rather than to restore Golfo's former glory days. There are different accounts related to the break

between Golfo and Zetas, however by the most reliable estimates the definitive split took place between January and March of 2010 although instability between the two groups likely began in 2007 with extradition of one of the original recruiters to the United States⁶⁸.

Through banners (known as *narcomantas* in DTO parlance) placed in the city of Matamoros in Tamaulipas, the Golfo DTO announced its split from the Zetas. On the banners Golfo stated “they did not want within their ranks kidnappers, terrorists, bank robbers, rapists, children killers, and traitors”. Whereas the Zetas denominate this period as “the uprising” the Golfo DTO called it “the betrayal” (Osorno 2013). Furthermore, the Golfo DTO sought to justify its offensive against Zetas through a song called “The Challenge” (*El Reto* in Spanish) where among other verses it says:

A call to citizens, the war is with the traitors, don't be worried, the Gulf Cartel respects your family, we take care of the territory, we are always on the lookout [...] this is not against the government, we take care of Tamaulipas, Reynosa, and its neighborhoods. The war is against the traitors, the Gulf Cartel does not kill innocent people⁶⁹.

The process of schism between the Zetas and Golfo also illustrates the lack of promotion-per-performance mechanism and absence of grooming within wheel network DTOs that transfers knowledge to lower ranking members. In particular, the Zetas did

⁶⁸ The fissure that gave way to the separation of Zetas from Golfo can be traced to the 2003 incarceration of Osiel Cárdenas and his subsequent extradition in 2007 to the United States where he was sentenced to 25 years in prison. The organization's authority structure was further debilitated when in 2010 Osiel's brother Antonio Cárdenas a.k.a 'Tony Tormenta' also a manager of the organization was killed during a battle with the Mexican military in Tamaulipas.

⁶⁹ “El Reto” Source: <https://www.youtube.com/watch?v=b427ILGsj70>
Accessed: March 17, 2015.

not focus solely on drug trafficking. Rather, they used their expertise in violence and their reputation for ruthlessness to exert territorial control that allowed them to ‘tax’ local criminals and then extort civilians. In this sense, the main business of the Zetas DTO became controlling territory rather than exporting drugs (Osorno 2012; Dudley et.al. 2013). Initially, they capitalized on the border city of Nuevo Laredo, taxing small drug dealers, smugglers, gamblers, and brothels. In five years, the Zetas went from a security corps for a DTO operating mainly in Tamaulipas to a criminal syndicate expanding across the country at unprecedented rates. (Osorno 2012: 201). Nevertheless, this explosive growth would prove to be unstable in view of the increasing expansion of the market for synthetic drugs.

Unlike semi-synthetic drugs dependent on geography, synthetic drugs can be manufactured using a variety of materials and without advanced knowledge of chemistry (Global ATS Assessment, UNODC: 2011). This is important, because whereas a split of a hierarchical organization that distributes cocaine, heroin and/or marijuana would require poaching members with know-how and attracting geographically-bound suppliers, a split within a network that produces synthetic drugs requires minimal investment and may not involve attracting members of the previous organization or suppliers tied to a particular location.

Consequently, even though the Zetas recruited and trained individuals in Michoacán in order to contribute with the Golfo’s drug trafficking activities, the new members proved to have a lack of loyalty to the Zetas and in contrast, exhibited risk-

tolerant behavior characteristic of wheel network structures. Prior to the separation of the Zetas from the Golfo DTO, La Familia Michoacana DTO broke away from the Zetas/Golfo organization. On November 22, 2006, La Familia advertised its inception by publishing a statement in Michoacán's main printed media. Through this announcement the newly formed DTO promised to donate books, distribute food staples, and build classrooms. Furthermore, it declared it would go after the producers of synthetic drugs, kidnappers, and extortionists. (Astorga in Garay and Salcedo 2012: 240).

The paid advertising was published approximately two months after the first public act of the Familia Michoacana that threw five human heads onto the dance floor of a nightclub in the city of Uruapan with the message "The Familia does not kill for money, does not kill for women, does not kill innocents, those who die must die, be aware everyone, this is divine justice" (Gómez 2012: 259, translated from Spanish by the author). The goal of La Familia DTO was to use the known brutality of the Zetas as a propaganda tool that would allow them to acquire popular support and become the local DTO. The profits to be made in the synthetic drug business were strong inducements to create another criminal enterprise that could reap the benefits of the business model used by the Zetas (Grillo 2011; Astorga 2012; Gómez 2012).

Three members of the organization are generally recognized as the founders: Nazario Moreno a.k.a 'el más loco' (the craziest) a.k.a 'el chayo', Servando Gómez a.k.a 'La Tuta', and José de Jesús Méndez a.k.a. 'el chango' (the monkey). In order to acquire popular support, La Familia introduced a religious rhetoric not observed before in other

DTOs. In particular, Nazario Moreno plagiarized the work of the popular American evangelical preacher John Eldredge founder of the Ransomed Heart ministry who proposes, among other things, a form of Christianity where so called real men become warriors. The message on Ransomed Heart website states:

God gave you a warrior heart because you were born into a world at war [...] it's time to quit asking "Why is life so hard?" and take the hardness as the call to fight, to rise up, face it down [...] you are a warrior, and your destiny is to join the Great Warrior in his battle against evil [...] Christianity does not ask men to become altar boys; it calls them up as warriors⁷⁰.

Moreno's book *Pensamientos* (Thoughts in English) became a fundamental part of the training of newly recruited members who were expected to follow the principles set out by the founding members. The message found fertile ground in Michoacán that is historically among one of the most religious areas in the country; the rebellion of the *Cristeros* against the secular reforms of then-President Lázaro Cárdenas in the 1930s also had roots there. Rather than discussing La Familia as another DTO, its depiction in *Pensamientos* is closer to a "movement" (Grillo 2011: 198). Accordingly, Moreno wrote "We are beginning an arduous, but very interesting task: the building of consciousness. Today, we need to prepare to defend our ideals so that our struggle will bear fruit and organize so as to go down the best path, perhaps not the easiest, but the one that can offer the best results" (Moreno in Grillo 2011: 198-199).

⁷⁰ "Becoming a Warrior"

Source: <http://www.ransomedheart.com/story/real-men/becoming-warrior>.
Accessed: May 4, 2016.

The instability and lack of long-term incentives within wheel network DTOs is furthered evidenced by the fragmentation within the Familia Michoacana DTO. Despite the attempts at indoctrination and the cohesiveness it could bring, the profits to be made were strong inducements to create yet another criminal enterprise that could reap the benefits of the business model introduced by the Zetas and bolstered by the Familia Michoacana. In March 2011, less than five years after the onset of the Familia DTO, and the official split of the Zetas from Golfo, the Caballeros Templarios (Knights Templar in English) splintered from the Familia DTO. As discussed by crime analysts, “the group takes its name from a medieval military-religious order charged with defending pilgrims on their journey to the Holy Land, whose members were known both for their piety and for their fearlessness on the battlefield⁷¹”.

Similar to its predecessor it attempted to gain popular support by accusing other DTOs of violence and the local police of being corrupt. The strategy was familiar to them insofar one of the founders of La Familia DTO was also the founder of the Caballeros Templarios: Servando Gómez a.k.a ‘la Tuta’ who prior to joining organized crime was an elementary school teacher in the municipality of Arteaga in the state of Michoacán. In the early stages of its activities, the DTO distributed a pamphlet in the capital city of Morelia explaining the 53 principles guiding the activities of the group “in order to protect the inhabitants of the free, sovereign, and secular state of Michoacán”.

⁷¹ Knights Templar Profile

Source: <http://www.insightcrime.org/mexico-organized-crime-news/knights-templar-profile>
Accessed: 15 February 2015.

The Caballeros Templarios also use a quasi-religious rhetoric to indoctrinate its members. However, rather than spreading a religious message among the population they target for its criminal activities, the Caballeros Templarios appear to use symbols and rituals within the organization thus providing a separate and selective incentive for its members. Furthermore, prior to his arrest in February 2015, Servando Gómez, ‘la Tuta’ sent several videos to the media and the federal government. In one of these videos sent to the federal government, Gómez asserts that they are armed in order to defend the people from the Zetas and the Nueva Generación DTO. He also assures that if the government takes on the responsibility of reestablishing order they will lay down their arms⁷².

The tendency for fragmentation exhibited by the wheel network DTOs examined in this research is incentivized by the short-term incentives and risk-tolerant behavior present in that structure. Whereas there is a degree of variation among the DTOs, wheel network DTOs generally operate in four stages originally introduced by the Zetas (Osorno 2012):

- 1) Hit men also known as *ventanas* (windows in Spanish) arrive to cities and towns where they are commissioned with finding safe houses, areas for training camps, and supplies, as well as corrupt authorities and find potential business for the organization.
- 2) The second step involves establishing a network of informants who are denominated *halcones* or *águilas* (hawks or eagles) that may be local gang members, taxi drivers, or highway patrol agents who inform *ventanas* of what is

⁷² Source: “El Profe del Narco, líder de los Caballeros Templarios”
<http://www.losangelespress.org/el-profe-del-narco-lider-de-los-caballeros-templarios/>
Date accessed: April 3, 2016.

going on in the territory they operate in.

- 3) Once the network of informants is established, *estacas* (posts) arrive to the cities. *Estacas* are the elite hit men of the DTO, analogous to snipers in the military, who are in charge of executions of opposing DTOs' members as well as conducting operations in order to have full control of the *plazas*.
- 4) When steps 1-3 are fulfilled, members of the organization known as *metros* (meter or rule) arrive to the locations where they manage the different illegal businesses of the organization.

Operating in stages and creating teams for each locality resembles a wheel network structure rather than a hierarchical one. This is because each group in charge of achieving the goals set for each stage is independent from the other groups within the organization. Consequently, while the heads of each group may meet in order to discuss issues with the operation, the contact they have is sparse and generally through intermediaries in contrast to frequent interactions under direct supervision that take place in hierarchies. This creates important barriers to learning what strategies work and which ones fail thus preventing the organization from learning from previous mistakes and improving the likelihood of survival.

Further evidence on the wheel network structure of Zetas, the Familia Michoacana, and Caballeros Templarios includes the lack of associates in production centers of semi-synthetic drugs. Data from OFAC since 2002 (the oldest publically available data) show that whereas the Sinaloa DTO has active partnerships with associates in cocaine production centers, none of the wheel network DTOs do. Of the available data, OFAC only shows one connection (August 2013) for the Zetas in

Guatemala. This does not mean that wheel networks only traffic synthetic drugs. In turn, it shows that wheel network DTOs tend to purchase cocaine in Central American countries where free-lancers operate. That is, individuals who purchase cocaine in production centers will sell it to DTOs in Central America. However, unlike hierarchies, this type of transaction does not demonstrate an established business relationship with producers. It only shows that wheel networks will sell semi-synthetic drugs when they can secure a shipment of the drugs which is complicated to do when operating through free-lancers⁷³.

The 2011 video interview (published by Mexican law enforcement) of a founder member of the Zetas supports the information by the US Treasury Department. According to Jesus Enrique Rejón Aguilar a.k.a ‘Mamito’ the cocaine business is managed through Guatemala and Panama because “Colombians are not trustworthy”⁷⁴. During fieldwork in Mexico, this video was pointed out by a policy expert as a clear example of the lack of knowledge that the Zetas have of the cocaine trade. In the informant’s view, Rejón’s testimony that the Zetas purchase cocaine in Guatemala and Panama is a preposterous answer because the cocaine trade that takes place in Central

⁷³ Free-lancing transactions of cocaine in Central American countries are an established practice. Using free-lancers for transportation is an attractive option because “this saves them [DTOs] the hassle of owning so many ships or airplanes and cuts down the number of their own people close to the product” (Grillo 2011: 231). However, producers generally shy away from this type of trade due to the high risk it entails to deal with unknown entities. In fact, successful operations by the DEA have taken place in Panama with agents posing as free-lancers.

⁷⁴ “Entrevista al Mamito, presunto fundador de los Zetas”
Source: <https://www.youtube.com/watch?v=HacDTEn2TDs>. Accessed: November 15, 2015.

America is still closely linked to production centers in Colombia and Peru (Policy expert in discussion with the author, July 2014).

5.3 Punishing Shirkers in Hierarchical DTOs

Of all the hypotheses advanced in this research understanding how DTOs punish shirkers would arguably benefit the most from access to data from primary sources. Knowing how DTOs punish shirkers—individuals who pursue outcomes that everyone in the organization recognize as deficient (Miller 1992: 3)—is one of the hardest areas to investigate given the significant discrepancies among journalistic and academic accounts and the general lack of attention by law enforcement towards violence employed within criminal organizations. At least during the early stages of the war on crime in Mexico, there was a general perception reinforced by the government that criminals killing each other was not an entirely negative outcome and President Calderón “repeatedly asserted that 90 percent of the people killed in drug-related violence [were] members of criminal groups” (HRW 2011: 10). On average, therefore, it is reasonable to assume that criminal activities within the DTO were investigated at a lower rate compared to crime affecting civilians. Despite the limitations in the existing data, however, there is suggestive evidence that the structure of each organized criminal group affects how they choose to punish shirkers.

In the case of the Sinaloa DTO historical evidence indicates a general benevolent treatment towards the population in which they operate. This was not derived out of altruistic motives but long-term considerations for the DTO. For example, in the early

days of the drug trafficking business when a shipment was successfully delivered across the border, traffickers organized and financed parties at least for members of their community. Absent displays of generosity, the community could classify the individuals as ordinary murderers or crooks rather than by the reputable moniker of ‘the boss’ (Osorno 2010).

According to the son of one former top manager, and confirmed by public authorities, the largest library in the state of Sinaloa was partially financed by the DTO (Osorno 2010: 229). Accounts from a known lawyer for members of the Sinaloa crime syndicate also indicate the organization financially assisted public hospitals in the state and kept pharmacies where legal drugs were provided for free to the general population. The DTO also supported higher education. Felix Gallardo was the sponsor for the law and political science graduating class of 1989 from the Autonomous University of Sinaloa and received an award from the graduating class “for being a great benefactor of their *alma mater*”; a recognition he received four months after he had been charged for his role in drug trafficking (Osorno 2010: 229). Furthermore, he also built housing for students near the university who lived there rent-free as long as they were enrolled in classes (Osorno 2010: 245).

The double need of hiring locals for cultivating marijuana and opium, coupled with their complicity, i.e. lack of cooperation with law enforcement, partially explains the generous behavior towards the population in which they operate. However, investing in social causes is also indicative of a tendency to use extreme violence as a second-rate

strategy to conduct business. According to the criminal complaint 15-CR-61, after law enforcement in the United States seized \$1 million from a broker, DTO members confiscated his property—houses and cars—until he paid them off (71). On a separate incident, also cited in the aforementioned criminal complaint, a female courier with Mexican citizenship was stopped in Chicago attempting to deliver money to a known launderer. After the courier was stopped for a traffic violation she agreed to go to the sheriff's office. Before the interview began, she informed officers that she knew she had a right not to speak to them and the right to consult with an attorney. During the questioning, she refused to provide information on who had given her the money and who was she delivering it to, although she stated it was not hers and she was willing to give it up. When the agents asked if relinquishing the money would create safety concerns upon her return to Mexico, she stated \$59,452 was not a significant amount of money. More importantly, she requested a receipt that showed it was law enforcement that had seized the money (246).

The actions of the courier strongly suggest the DTO has procedures in place for dealing with contingencies such as the interdiction of shipments, and that these procedures are not violent by default. Not only was the courier, who is not a US citizen, prepared for an interaction with law enforcement by discussing her Miranda rights, she also requested paperwork—in the most basic bureaucratic form—that would prove to her superiors she had not pocketed the money but had an unfortunate encounter with the police. Her case was not unique, on a different incident where another courier was

stopped and searched by traffic police, the DTO also requested a scanned copy of the ticket in order to verify the account given to them.

These examples stand in stark contrast to the common portrayal of DTOs as violent individuals who only resort to coercion, specially when their money is lost. In turn, these events show that despite the loss of money they have standard operating procedures to deal with the incidents. Furthermore, even when the loss is not minimal, rather than killing individuals allegedly to “set examples” to other employees, they confiscate property until the debt is re-paid. Confiscating properties can be a violent venture but it remains a better business alternative than using forms of extreme violence. This is because if the DTO executed the broker who lost money, not only do they lose the financial assets, they also need to replace the money launderer with someone they can trust. By confiscating property, the DTO can ensure payment by keeping the individual working without incurring additional costs for finding agents to sanitize the proceeds of crime.

Detractors of this view would generally offer two examples to show how the Sinaloa DTO has a first-order preference for violence: the conflict with the Beltrán Leyva DTO and the father’s disappearance of US informants Pedro and Margarito Flores. Although there are a variety of versions regarding the alleged conflicts and alliances in the drug trafficking world, there is a consensus when it comes to acknowledging the clash between Sinaloa and the Beltrán Leyva DTO. The violence between the warring organizations escalated to such a level that one of ‘Chapo’

Guzmán's sons—not involved with the business—was murdered outside a shopping mall in Sinaloa's state capital Culiacán⁷⁵. His assassination was particularly vicious. Rather than killing him execution style with a single bullet, he was gunned down while standing next to his car. By some accounts, 'Chapo' Guzmán sent fifty thousand roses to his son's grave; a fact also depicted in the song with the name "Fifty Thousand Roses" written in honor of Guzmán's son. One description captures how violence between the two groups escalated:

The rival capos hit back and forth across the urban area as if were a game of toy soldiers. Gunmen for Chapo Guzmán would attack a Beltrán Leyva safe house with grenades and firebombs. Beltrán Leyva would strike back the next day, dumping cut-up bodies of Chapo employees in a car trunk. Chapo gunmen would shoot up a bar where the Beard's men (Beltrán Leyva) drank. Beltrán Leyva killers would go into a car chop shop owned by a Chapo affiliate and massacre everybody inside⁷⁶.

The conflict between Beltrán Leyva and Guzmán including killing family members who are not active employees of the DTO, may show, contrary to the argument advanced in this research, that DTOs regardless of the structure use extreme forms of violence. However, there are several issues in using this war as conclusive evidence of the types of violence used for punishing shirkers.

First, despite the consensus on the conflict between Guzmán and Beltrán Leyva, reasons for the bloodshed remain unclear. Journalistic accounts offer different versions

⁷⁵ His lack of participation in drug trafficking is further corroborated by his absence in the indictments against his father and siblings and his full-time enrollment as a university student in Sinaloa.

⁷⁶ Grillo 2011: 121.

and every individual who was interviewed on the subject provided a unique explanation for the event. For example, one journalist provides two accounts as part of his investigation: according to the Mexican government and the DEA the seizure of 23.5 tons of cocaine led to arguments regarding who would foot the bill for the loss. Alternatively, the Sinaloa DTO, through its paid-for alliance with federal officials wanted to take over Mexico's drug trafficking and helped law enforcement arrest their rivals including one of the Beltrán Leyva siblings (Grillo 2011: 117-118). One interviewee explained that Zeta DTO members killed a relative of a top manager of the Beltran Leyva DTO. Beltrán Leyva wanted to retaliate but Sinaloa top managers disagreed and as a result there was a schism. In another account, Guzmán wanted to take over the city of Juárez in the border state of Chihuahua but Beltrán Leyva had more contacts there thus initiating the conflict. Another interviewee suggested Beltrán Leyva had control of the city of Nogales in the border state of Sonora. As income was reduced due to a lower demand for cocaine it was necessary to take him out of the game. A different report suggested a top manager of the Beltrán Leyva DTO was turned in as a preventive measure by 'Chapo' Guzmán. In the last two versions Beltrán Leyva's connections in Colombia were particularly worrisome for the Sinaloa DTO although in these accounts it is only Beltrán Leyva working for Sinaloa who has business associates in Colombia ⁷⁷ (Policy experts and Mexican government officials in personal communication with the author, July and August 2014).

⁷⁷ Two elements stand out from the plethora of versions: first, it is generally 'Chapo' Guzmán rather than the Sinaloa DTO who has some issue with the Beltrán Leyva group. However, when

Second, there are still questions regarding the membership of the Beltrán Leyva organization. In some accounts, the Beltrán Leyva DTO was part of the Juárez DTO. In other versions, the Beltrán Leyva DTO was part of the Sinaloa DTO. Within these accounts, some report it was the Beltrán Leyva siblings who initiated Guzmán in the drug trafficking business while others characterize Guzmán as the Beltrán Leyva's teacher. According to the third superseding indictment for case 09-CR-383, the Sinaloa DTO had an alliance with affiliated cartels known as the 'Federation' that included the Beltrán Leyva group. Per the indictment, in 2008 a split occurred but there is no explanation for why it happened and in turn the indictment uses vague language referring to the Guzman Loera Faction, the Zambada Garcia Faction, and the Beltrán Leyva Faction and their allies that "became engaged in a violent war in Mexico over various issues" (4). Because it is not even clear where the Beltrán Leyva organization fits in relation to the Sinaloa DTO it is not possible to determine if this is a good example to evaluate shirking in the first place. It should be mentioned, however, that in spite of the multiplicity of versions offered by the individuals interviewed on this matter all of them agreed that the conflict represents a clear anomaly among the relationships of the Sinaloa DTO. It was surprising to see the organization publically display violence and specially at the levels it reached.

the author asked interviewees if the Sinaloa DTO is more than just 'Chapo' Guzmán how would it be possible to begin a conflict without the authorization of other top managers, the individuals were not able to provide an explanation. They were resolute in providing individualistic explanations typical of kingpin narratives. Second, by accepting that only Beltrán Leyva had business associates in Colombia and this is how Sinaloa obtained cocaine why would it be in their interest to remove them? On the contrary, if the market was shrinking (data show this is not the case) then Beltrán Leyva should have initiated the conflict to try to take over the alleged shrinking profits.

The case of the Flores brothers who turned informants could also be used as a counterargument for the notion that punishment of shirkers in hierarchies does not use extreme forms of violence. Per a sentencing memorandum and motion to depart from applicable sentencing guidelines, “the Flores brothers amassed substantial evidence that directly allowed the government to build cases, which were unprecedented in this district, targeting the leadership structure of two Mexican cartels” (1). Once the Sinaloa DTO suspected the Flores twin brothers were cooperating with law enforcement in the United States, their father disappeared in Mexico. To this day, his body has not been found and it is suspected it was Sinaloa DTO members who likely killed him in retribution for snitching. The Flores brothers case, however, is not one of shirking. They were not members of the DTO but wholesale buyers in the United States. As a policy expert stated:

What are the charges against the Flores brothers? Belonging to the Sinaloa cartel? No! They are charged with buying tons of heroin and cocaine from a Mexican organization to then resell them at wholesale prices to their own customers. Where does the story come from that it is Mexican organizations that control the distribution of drugs in the United States!⁷⁸

Consequently, the treatment of the Flores’ father can be used as an example of what happens to informants but cannot be used for understanding shirking insofar the twins were not members of the DTO.

Understanding how hierarchies punish shirkers is not intended to make a case for a nonbelligerent nature in this type of structure. In contrast, the goal is to show that while they can unleash high levels of violence, they tend to be more selective on how

⁷⁸ Alejandro Hope in Torre 2013:147. Translated from Spanish by the author.

they use it. Precisely because developing human capital is costly for hierarchies, extreme forms of punishment will not be optimal choices although they always remain an alternative. In a published interview, a known woman associate of the Sinaloa DTO stated in relation to the organization “They are all a family [...] together they have power. They know that their power, their great power, lies in their unity” (Zulema Hernández in Osorno 2010: 204-205). As it will be explored in detail in chapter six, the use of violence is more selective within hierarchies because it is not part of their business model.

5.4 Punishing Shirkers in Wheel Network DTOs

Unlike hierarchical DTOs where information on the punishment of shirkers is difficult to obtain, examples of extreme violence within wheel network DTOs is more readily available. The Golfo DTO not only used the Zetas to protect routes but also as a way to enforce discipline within the organization. According to one biographical account of Golfo’s top management, the Zetas were in charge of providing intelligence from managers. Those who criticized the leadership of the organization were executed and only those who followed orders without questioning were spared (Ravelo 2010). In addition, in a widely accepted version of events one of Golfo’s top managers—Osiel Cárdenas—received the unwanted moniker of ‘friend killer’ after he had a close friend, godfather to one of his children, murdered in order to have greater control of the organization.

Perceived or real betrayals within the Zetas follow the pattern of its once parent DTO. In 2012 the government, media, and policy analysis experts began reporting on a schism within the top managers of the Zetas. During the summer, through a ‘press release’ the Zetas questioned whether recent arrests and murders within the leadership were the product of happenstance or betrayal. The authors of the *narcomantas* pointed out that after the death of a top manager his family was “destitute” while the murder of another operative was conducted on his wedding day and the arrests of other managers were arranged with the police and the navy because they were “getting in the way” of some of the leadership acquiring more control. According to the message “only the ones that had access to leadership were arrested or murdered [...] who are we safer with, Lazcano or Zeta 40?”.

In October 2012, the manager—Heriberto Lazcano—mentioned in the summer press release was murdered. Following this event, a new message by the Zetas appeared, this time signed by Lazcano’s operatives. In the message, they accused Miguel Angel Treviño a.k.a. Zeta 40, another top-level manager, of betraying the organization by providing intelligence to the Mexican government that led to the capture and murder of some of the top members including Lazcano. According to the operatives, Miguel Angel Treviño wanted to have full control of the Zetas and therefore was getting rid of managers who disagreed with this goal. The shared control, characteristic of wheel networks, was not what Treviño and his family wanted. This was also portrayed in popular culture through a song entitled “The True Story of Zeta 40” where he is characterized as the “Judas” of the Zetas.

In July 2013, Miguel Angel Treviño was captured by Mexican law-enforcement, leading some analysts to conclude that former operatives of Lazcano had provided intelligence to the Mexican government of his whereabouts in order to reclaim control of the organization. It is significant, that Treviño's capture, unlike the arrests and killings of other DTO members in Mexico, was conducted without any violence, thus signaling help from inside of Treviño's circle.

In addition to the murders and arrests linked to internal conflict, testimony from Germán Torres Jiménez a.k.a. 'Tatanka' a member of the Zetas confirms he abandoned the city (Saltillo) assigned to him because he knew members of his organization were intending to kill him due to his involvement in the kidnapping and killing of a former FBI agent turned security consultant who specialized in kidnapping negotiations. This example is interesting because even considering the magnitude of the mistake by kidnapping an American citizen—due to the pressure of the US government that creates—the Zeta member did not believe his organization would protect him. Instead, in this case of shirking, he knew the DTO would not resolve matters in any way except through using extreme violence. Furthermore, it illustrates the difficulty wheel network DTOs have in learning and exchanging knowledge on best practices. While the Sinaloa DTO has refrained from making a similar strategic mistake like the one in 1985 when they kidnapped and murdered DEA agent Enrique Camarena The Zetas have engaged in activities that would attract more attention from law-enforcement agencies in particular from the United States including the murder of ICE agent Jaime Zapata in 2011 in the state of San Luis Potosí.

Similar behavior has been exhibited within top management of La Familia Michoacana DTO. According to an interrogation video of one of the founding members, José de Jesús Méndez a.k.a ‘El Chango’, after he left the state of Michoacán due to security concerns from his rivalry with other managers he knew it was highly likely former members would try to harm him. Furthermore, he believed that a previous top manager within La Familia Michoacana and founding member of the Caballeros Templarios could order a hit on him. In fact, he said he was equally worried about Servando Gómez and the federal government⁷⁹.

Using extreme violence is further incentivized by the lack of kinship ties. Wheel network DTOs generally do not employ family members at the same rate that the Sinaloa DTO. Reasons for this are unclear, however, it can foster situations where using extreme violence is an optimal alternative. For example, had the kidnapper and murderer of the former FBI agent had shared direct family ties with other top managers it less likely the DTO would have sought his elimination as the only alternative to deal with his mistake.

Furthermore, unlike hierarchical structures that tend to act generously through the general population thus showing an inclination for selective violence, wheel network DTOs tend to create a greater divide with the communities in which they operate. For

⁷⁹ “Confesiones de un narco ‘El Chango’ Méndez, líder de La Familia (3ra y última parte). Source: https://www.youtube.com/watch?v=3_uRxYJAT6M Accessed: October 14, 2015.

example, in a letter sent by the Zetas to the media and business owners during their conflict with the Golfo DTO the Zetas expressed the following:

We do not need to ask people to support us, nor do we recruit middle school kids like they do. We are trained for combat and we do not need people who do not even know how to handle a weapon [...] We are what we are but we are aware of our actions and we think them through before conducting them. We just need to tell you to stay home if you have no reason to go out, and try to find cover should you encounter something on the streets but rest assured we are trained unlike them. With this we are not asking you to support us, just to leave us alone and let us do our work [...] We can do our job without needing the support of innocent people⁸⁰.

This message not only reveals a lack of interest in acquiring the support and compliance of the population in which they operate but also a need to showcase their military training. Therefore, rather than being members of the community who share the profits, the Zetas seek to distinguish themselves as an elite force who just want people to “leave them alone” and “seek cover” if they encounter violence on the street.

5.5.1 Risk-Averse Methods for Money Laundering: Banking

In 2012 Hongkong and Shanghai Banking Corporation (HSBC), one of the largest banks in the world, signed a deferred prosecution agreement with the Department of Justice in the United States. In this agreement HSBC agreed to pay a fine of \$1.9 billion, the largest penalty for violating the Bank Secrecy Act, due to its misconduct in banking practices. In particular, in the case of Mexico, the Assistant Attorney General stated: “HSBC is being held accountable for stunning failures of oversight—and

⁸⁰ Translated from Spanish by the author (Sic). Text in Osorno 2013: 169-170.

worse—that led the bank to permit narcotics traffickers and others to launder hundreds of millions of dollars through HSBC subsidiaries” (Office of Public Affairs, DOJ, 2012). Evidence about the HSBC case comes from the US Senate Permanent Subcommittee on Investigations hearing on US Vulnerabilities to Money Laundering, Drugs, and Terrorist Financing: HSBC Case History from July 17, 2012. Documents from HSBC are identified per their exhibit number.

In 2002 HSBC bought a Mexican bank named BITAL that became an attractive investment due to its rapid growth. At the time, HSBC identified that BITAL lacked anti-money laundering mechanisms. Exhibits 4-15 show that HSBC knew that BITAL lacked a compliance department and in its place had an internal audit department. While this audit department only had 100 employees, BITAL had 1,389 branches in Mexico as well as operations in New York and the Cayman Islands. Furthermore, in 1998 Mexican regulation required that banks compiled information about their customers. However, BITAL did not ask new customers to provide information about the source of their income, initial deposits, type of transactions they would conduct and the amount of transactions they expected to conduct with the account. This information is crucial so the bank can generate what is known as Know Your Customer (KYC). KYC allows the bank to determine what are normal transactions within an account and what is deemed as suspicious activity.

Furthermore, BITAL did not cross check third-party databases for information on individuals or entities that were on sanctions lists. HSBC also found that 28 percent

of the Cayman Island accounts lacked complete information on their customer while 17 percent lacked any information on the client. BITAL, also in violation of Mexico's Central Bank regulations, opened 2000 accounts in US dollars along the border and conducted very limited monitoring of transactions.

Due to these issues, HSBC Mexico (HBMX) determined that there was a high risk for money laundering and that the bank conducted their business with a risk management 'below standard'. In 2007, after a very high profile arrest linked to drug trafficking who banked with HSBC, HBMX decided to conduct a thorough investigation of customers who were also on watch lists from the Mexican government. During this investigation, the 'School of Low Expectations Banking' showed that HSBC had retained unacceptable risks (Exhibit 20). For the period 2004-2007 HSBC Mexico sold more than \$110 million in traveler's checks; a bigger amount than HSBC in the European Union, Hong Kong and the United States. However, in spite of these discoveries, HBMX continued with a below standard risk management. At least since 2007, HBMX laundered \$100 million dollars for the Sinaloa organization and \$1.8 million for customers identified as high risk. Furthermore, 35,000 accounts that were opened prior to BITAL's acquisition had an average monthly balance of \$400 million and between January to September 2008, HSBC transferred \$3 billion back to the United States; 36 percent of the market and double the amount of Banamex, Mexico's largest bank (Exhibit 39). Some of these transfers were made to front businesses in the United States used to purchase light aircraft generally employed to move illegal drug shipments.

Overall, between 2006 and 2010 the Sinaloa DTO and the Norte del Valle DTO (Colombia) transferred more than \$881 million through HSBC United States.

What is relevant about this example is that while HSBC had to pay the largest fine in violation of the Bank Secrecy Act, the Sinaloa DTO did not incur significant financial loss. That is, while it is costly from an operational point of view that this strategy was revealed, it was the bank and not Sinaloa who had to confront law enforcement. While HSBC's deferred prosecution agreement is an inconvenience for the DTO, it was a risk-averse strategy given that when it was caught and terminated, Sinaloa had managed to launder its proceeds without losing their money or top managers due to asset seizures by law enforcement.

5.5.2 Risk-Averse Methods for Money Laundering: Trading in Precious Metals

On February 2015, 31 individuals were arrested in the United States on charges of laundering \$98.7 million for the Sinaloa DTO⁸¹. According to a multi-year investigation (2011-2014) led by Immigration and Customs Enforcement (ICE) in cooperation with Homeland Security, the Internal Revenue Service, and the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), the individuals laundered money by purchasing scrap and fine gold at jewelry stores and businesses with proceeds from crime, reselling the gold to refineries mostly located in Florida, and then transferring the money to Mexico.

⁸¹ Specifically, the criminal complaint states the individuals collected \$101 million in narcotics proceeds of which \$98.7 were sold for gold, \$1.4 million was seized by law enforcement and approximately half a million which was transferred to a bank account (309).

The criminal complaint filed in the Northern District Court of Illinois Eastern Division, details 49 separate occasions between 2013 and 2014 in which the individuals charged collected proceeds for the laundering scheme. It should be noted that most of the data on the criminal complaint comes from an informant identified as CI-2 who was part of the scheme by picking up proceeds, sending them to the refineries, and sending the money to other members of the scheme in the United States. According to the complaint, the informant laundered approximately \$23 million prior to beginning his cooperation with law enforcement and only \$4 million after he began reporting on his activities. This is important because it is possible law enforcement magnified the role of the informant as a way to strengthen their criminal complaint and secure arrest warrants for the listed individuals. Notwithstanding this concern, the gold-for-cash scheme based in Chicago reveals how risk-averse the Sinaloa DTO is when it comes to laundering their criminal proceeds and further corroborates hierarchical structural characteristics from the DTO.

In order to spread the risk, the Sinaloa DTO had differentiated functions and roles including: money pickup operations, bulk cash smuggling operations, and operations including the purchase of gold. In a standard transaction a DTO-associated broker provided a phone number to an associate along with a code phrase to say to the individual who answers the phone. The code phrase was used to confirm both parties were executing a previously agreed upon money contract between the broker and the DTO. If the code phrase and the name did not match, the pick-up was not conducted and the purchaser contacted the broker in order to re-schedule a pick-up or cancel it entirely.

Once the courier had delivered the money, the person who received the proceeds used it to buy gold and send it to previously agreed-on refineries mostly in Florida and rarely in California. The gold was sent using pre-paid envelopes with tracking numbers that were given to the broker via e-mail. Once the gold had been sent, the broker and the sender confirmed the spot price (or the current market price) in order to estimate their payment for the services rendered usually between one and two percent of the total laundered amount (16, 18-20). The spot price was generally verified by a member of the Sinaloa DTO who either confirmed with the broker or lowered the price. On the few occasions when the DTO member disagreed with the broker on the price, it was the broker and his team who absorbed the loss.

Due to the illegal nature of the business, pickups between the money courier and the purchaser of gold (informant) were usually conducted in public locations, generally parking lots, during daytime allowing both parties to exchange the money without raising suspicion as well as to scout for potential law enforcement activity. On several occasions, money couriers revealed to the informant they had spotted law enforcement agents and requested a change of location. Because the informant knew of law enforcement presence, he generally denied seeing anyone but agreed to change locations (45). Furthermore, the recipient of the money always asked for confirmation of the amount given to him in order to verify that the courier was delivering the same amount as the one discussed with the broker. The recipient never counted the money in public and only received the package from the courier. It should be noted that packaging was discreet generally using shopping bags from common retailers or simple black bags.

These measures were not fortuitous but deliberate, as the informant said to one courier “some people want to do it very carelessly” (139). And in relation to a potential nighttime pickup “It’s too late [...] it’s not good to be moving around at night. It’s tough at night. Things can only go bad” (157).

Nevertheless, on several occasions, after law enforcement took the money from the informant and counted it (before sending it to the refinery) there were discrepancies between the amount stated by the broker and the one received by the courier⁸². The pocketing of proceeds by the courier is a first-class example on how DTO agents pursue their private economic interests some of the time. After money went missing on several instances by different couriers, the broker and the purchaser of gold discussed the possibility of renting an office space where the purchaser could count the money as a way to conduct internal audits. This idea, however, was never materialized partially out of concern that a storefront could attract unwanted attention from law enforcement.

In addition, given the ever-present possibility of interdiction, the courier did not transport vast sums. In turn, the courier dropped-off amounts usually no larger than \$100,000 using \$20 denomination bills⁸³ (63). To contextualize, \$100,000 is not a

⁸²The undercover operation was set in such a way that the informant’s participation stopped once he received the money. After the pick-ups law enforcement agents would take the money from the informant and count it. Then it was law enforcement that would buy gold and send it to the refinery using pre-labeled envelopes. Law enforcement gave all the details to the informant so he could communicate with the broker as if it was him conducting the business.

⁸³ According to the broker, larger denomination bills were used for bulk-cash smuggling to Mexico. The money was usually hidden in specially made compartments in cars. Larger bills were needed for this kind of smuggling because it would require less space to transport

considerable figure for the Sinaloa DTO. If the information on case number 09-CR-383 is correct, the wholesale price for each kilo of heroin was \$55,000. Therefore, receiving \$100,000 for laundering represented less than the sale of two kilos of heroin; a small portion considering that the US government alleges one wholesaler received between 1500 and 2000 kilos or the equivalent of \$110 million in merchandise each month. Laundering small amounts rather than larger ones is costlier for the individuals involved in the scheme because they risk contact with law enforcement more regularly compared to situations where they launder larger amounts and therefore have to deliver money less frequently. However, using smaller amounts is safer for the DTO that will only lose a limited quantity if the money gets interdicted.

According to the broker, this was also done in part to build trust with the DTO. Based on a conversation with the informant, the broker believed that efficient performance and on-time delivery of the money would increase the amounts they received for laundering in the future. Specifically, he stated “They are going to open up on their own. They will begin to trust on their own. Later they are going to tell me, ‘Look, I’m going to bring you a hundred [\$100,000] (29). On one occasion when the money was going to be delivered late, after already fixing a date with the DTO, the broker requested the informant to pick-up the money and launder it right away. In exchange he said “I’ll give you my one percent. I don’t want to profit anything; the thing that I want is not to let him down” (227). According to the broker delays were not

compared to smaller denomination bills (63). For example, smuggling \$100,000 using \$100 denomination bills requires 1,000 bills compared to 5,000 when using \$20 denomination bills.

problematic on their own right for the DTO. Issues arose, however when miscommunication occurred. In relation to the delay the broker said “Why didn’t you tell me? I committed myself. When you talk to me, you need to tell me the truth. Everything, alright? You lie to me, I relay the lies and I’m the one who gets it” (85).

Per instructions of law enforcement, the informant sometimes would ask couriers about their activities outside delivering money. The response by couriers was generally the same: they were only in charge of delivering money and their supervisors were adamant about combining their activities with other drug trafficking operations. That is, they specifically did not want individuals involved in laundering money participating in the sale and distribution of drugs because this could attract the attention of law enforcement.

After the seizure of \$110,000 by law enforcement, the DTO took measures to heighten the security related to the scheme. Data from the criminal complaint show that the brokers held a meeting with managers from the DTO in order to determine who should bear responsibility for the loss of \$110,000 during a scheduled pick-up (201). After that loss, the DTO reverted to only providing smaller amounts of money. This was done in order to try and rebuild some of the trust that was lost when the money got interdicted. Accepting smaller amounts, according to the broker, was a way of building confidence and showing that his team was not cooperating with law enforcement (210). In addition, individuals involved in the scheme changed phone numbers and devices in

case law enforcement had tapped their previous ones (205). A few months later, they also changed the codes used in their telephone and text message conversations⁸⁴ (292).

Trading in gold to launder criminal proceeds was a risk-averse strategy used by Sinaloa. Similarly to the HSBC case, once the scheme was dismantled, the DTO did not lose money, except for the \$1.4 million confiscated during the course of the investigation. The individuals who were arrested were not top managers for the DTO but brokers who worked for them as part of several money laundering schemes. In other words, they were subcontractors for the DTO. This is clear insofar they did not launder all the proceeds obtained from the wholesale business in the United States, and more specifically in Illinois.

Sending the gold purchased in Chicago to refineries in Florida was also part of a risk-averse strategy. According to 2013 estimates, the top export and import for Miami Customs District was gold and South Florida is considered a hub for bullion trading, assaying, refining, logistics and financing operations. In 2012 Miami's gold imports, including scrap gold and gold-plated jewelry totaled \$8.8 billion⁸⁵. Given the booming gold business in Florida, small shipments from Chicago could be inconspicuous and

⁸⁴ For example, digits 0-9 were coded as 62, 83, 71, 49, 57, 66, 35, 21, 18, and 96 respectively. Whereas the days of the week, Monday-Sunday, became red, yellow, green, white, blue, black, and purple. Common phrases were also coded including "make an appointment" as "let's go to the beach"; "I am on my way" as "the beers are cold"; and "it's fucked up" as "I like your sister" (292-293).

⁸⁵ "Miami Is a Magnet for Gold"

Source: <http://www.miamiherald.com/news/local/community/miami-dade/article1953491.html>
Accessed: March 21, 2016.

therefore provide a good cover for integrating money into the financial system. Furthermore, evidence from the criminal complaint also shows at least one refinery used in the process was in cahoots with the DTO. This particular refinery was used because it also had offices in Mexico which allowed transferring money to the DTO in a more direct way. In order to make the shipments and transactions as circumspect as possible, the refinery made the receipts as payments for brass rather than gold. Today, it would be nearly impossible to trace the money that was laundered using this scheme prior to the investigation of law enforcement.

Interviews conducted with high-level officials in Mexico and the United States directly involved with anti-money laundering measures provide further evidence about the low-risk appetite exhibited by Sinaloa. According to the officials interviewed, a significant element for understanding how Sinaloa launders its proceeds relates to a very sophisticated wealth management structure that not only launders but also integrates the proceeds into the financial system so future generations of relatives can use the money earned through criminal activities. Wealth management differs from other banking practices in that it is a:

[T]ype of financial planning that provides high level net worth individuals and families with private banking, estate planning, legal resources, and investment management with the goal of sustaining and expanding long-term wealth [...] the banks create separate branches, services and other benefits to retain or attract these customers who typically bring in more profit than other retail banking customers⁸⁶.

⁸⁶Tsai 2010: 972.

That is, Sinaloa generally *prefers* to use low-key schemes that will ensure their family members can use the money at a later time and therefore keep the money within the financial system⁸⁷. Consequently, the process of layering is a complex one where there are many stages involved in distancing the money from the criminal activity. This complex layering creates important barriers for obtaining proof of the illegal origin of the funds with the overall result that the individual continues to have access to his money. A recurrent example from the interviewees was that of Caro Quintero, whose family lives a comfortable life in Jalisco. While it is common knowledge that a portion of the money was not legitimately acquired, it is hard to prove today that the properties and businesses they operate were acquired with the proceeds of criminal activities⁸⁸.

Furthermore, given that Sinaloa engages in wealth management, the types of services used for laundering money are also different from other organizations. That is, they use professional services that have a proven track record for successful tax evasion. According to the sources consulted this gives Sinaloa a guarantee, to the extent that you can acquire one in this type of dealings, that the individuals conducting the operations are experts. Consequently, when family members are not directly involved in laundering

⁸⁷ Some of the wealth management banking services include “portfolio management and rebalancing, investment management and strategies, trust and estate management, private banking and financing, tax consulting, and family office structuring. Products can include stocks and stock trading, equity-linked investment, structured savings, structured investments and derivatives, foreign exchange, mutual funds and unit trusts, property management and investments and alternative investments (wine, precious metals, property)” (Tsai 2010: 973)

⁸⁸ This is particularly relevant specially given that under Mexican law the burden of proof is on the Attorney General’s office that has to show that the money comes from an illicit activity rather than the individual demonstrating that his money was obtained legally.

money, they use professional services that have a thorough understanding of financial regulations in order to avoid basic mistakes such as depositing ‘smurf’ amounts that attract the attention of law enforcement. In return for their services, these experts generally charge a commission, which can be understood as an acceptable cost to the DTO for laundering their money without attracting attention⁸⁹.

5.6 Risk-tolerant Methods for Money Laundering: Horse Racing

In September and October 2011 the LLCs 66 Land and Zule Farms (after one of the Treviño brother’s wife Zulema) were established following the creation in 2009 of Tremor Enterprises in Lexington Oklahoma⁹⁰. These LLCs were constituted by a section of Los Zetas then leadership for buying, training, breeding, selling, and racing Quarter Horses.

Gambling generally serves to launder money by showing income from wins as a legitimate source. Gambles with high odds are preferred such that a bet placed with higher odds will yield a higher payoff thus justifying a large sum won. This strategy

⁸⁹ It is important to note that the existence of professional services does not necessarily imply the existence of a market for laundering money. This is because suppliers of money laundering services are not free to offer their services to any customer. For example, if two DTOs in Mexico are battling for control over a route it is highly unlikely that they will use the same provider of money laundering services. Put differently, if I am trying to weaken your organization by killing members of your group another way to do so would be to also eliminate your money launderer which has a direct impact on your assets.

⁹⁰ A LLC is a Limited Liability Corporation where the owners are members. LLCs do not pay taxes as a business but according to their profit. Losses are paid for by each member of the LLC. Consequently, each member reports either a profit or a loss in his federal tax return. LLCs only have three requirements to be established: a name, the articles of the organization and the required license and permits for their type of business.

works because bets are generally fixed. Gambling is not an unusual method for laundering money (casinos are obligated to report transactions just as banks do to FINCen), however, the horse-racing scheme used by Zetas shows a lack of expertise at best and a willingness to tolerate high levels of risk. This is because they engaged in actions that attracted unnecessary attention to their operations.

For example, in 2010 during an auction in New Mexico, Los Zetas, using their LLC purchased 23 horses for more than \$2 million and in 2011 purchased 12 horses for half a million in Oklahoma. According to the American Quarter Horse Association, the average race-bred Quarter Horse sells for less than \$20,000 at auction with a monthly maintenance cost of \$1,800⁹¹. Tremor Enterprises, therefore, was buying elite Quarter Horses in the industry rather than average race-bred Quarter Horses. Furthermore, between 2009 and 2012 Tremor Enterprises grew at a very fast pace. In 2009, the horse ‘Tempting Dash’ won the Dash for Cash in Texas as well as the Texas Classic Futurity for an amount of approximately \$1.5 million. In 2010 the horse Mr. Piloto won the All American Futurity in New Mexico for \$1 million and Separate Fire won the Ed Burke Futurity in California for the same amount. What is important about these victories is that it put the spotlight on Tremor Enterprises.

By winning major races in all but one border state, Tremor Enterprises attracted the attention of the media and instead of shying away from the press, the leadership of Zetas appeared on publications discussing their success story as a newly formed

⁹¹ Source: <http://www.aqha.com/Racing/New-Owner-Guide/Chapter-1.aspx>

business in horse racing. Unlike members of Sinaloa whose pictures are scarce and often from arrests, the Treviño Morales family willingly appeared on popular equine publications. In addition, their choice of names also shows risk-tolerant behavior. For example, some of the horses were named ‘Number One Cartel’, ‘Corona Coronita Cartel’ and ‘Forty Force’. The last one is of special importance given that Miguel Angel Treviño’s alias was Zeta 40.

Tremor Enterprises also attempted to use the banking system, however, the way it was executed denotes a primitive understanding of how banks monitor transactions. Tremor Enterprises used circular deposits from the LLC to Bank of America and then from the bank to Tremor Enterprises with the intent to generate the appearance of legitimate income being deposited into the account. However, the deposits were always for the same amount thus making it evident that it was a circular transaction. According to one government official, circular transactions are some of the easiest to identify when looking for suspicious activity (Mexican government official in discussion with the author, August 2014). Moreover, because banks monitor all transactions over \$10,000, Tremor Enterprises made deposits from October to December 2010 for amounts just below this threshold. These ‘smurf deposits’, as they are known in the anti-money laundering industry, attracted attention precisely because it became apparent they were trying to conceal the transaction by using amounts such as \$9,900.

Unlike the HSBC case the scheme used by the Zetas resulted in significant losses for the organization. José and Zulema Treviño, who primarily managed the horse racing

business, were arrested and are currently incarcerated in the United States. In addition, the US Treasury Department confiscated 500 horses and sold them in 2013 for \$9 million⁹². Consequently, while owning a business that launders money such as Tremor Enterprises can sanitize proceeds at a swift pace, it is a risk-tolerant scheme because it attracts significant attention. Furthermore, once it was unveiled, the organization lacked any mechanisms to protect their assets—both human and monetary—from law enforcement.

Interviews conducted with high-level officials in Mexico and the United States directly involved with anti-money laundering measures provide further evidence about the high tolerance for risk and lack of sophistication exhibited by the Zetas. While the organization has an efficient accounting system in place, in particular to keep track of the money generated through extortion and kidnappings, they do not engage in wealth management practices thus highlighting the short-term incentives present in network structures discussed in chapter three. The interviews highlight that Los Zetas launder less money and when they do so, they generally prefer risk-tolerant methods, as evidenced in the lack of sophistication in the schemes employed and high discount rates.

Evidence from field research also underscores that these wheel-network organizations choose different kinds of banks to launder their proceeds based on the level of compliance and the types of products they offer to their customers. As expected, Los Zetas prefer banks with low or absent compliance mechanisms, that offer products

⁹² Tempting Dash and Mr. Piloto were sold for \$1.7 million and \$85,000 respectively. Accessed January 2015.

for an average Mexican customer, while Sinaloa favors banks who offer products for wealthy individuals and that have compliance mechanisms in place.

5.7 Risk-tolerant Methods for Money Laundering: Music Management

In 2010, four years after the irruption of La Familia Michoacana, data from Mexico's Attorney General's Office (PGR per its Spanish acronym) revealed the DTO laundered money through concerts and county fairs in Mexico and the United States. According to the report, the DTO hired music groups to play concerts in the United States. Even though these concerts had an average cost of \$50,000, groups typically signed contracts for half a million dollars. At times, concerts were held in venues owned by the DTO⁹³. Once the group traveled back to Mexico, they would bring back the proceeds in cash—after paying taxes in the US—believing that they were not raising suspicions that the money in fact included proceeds from illegal activities.

It is unclear whether the music groups participated willingly or under duress in this scheme. In one version of events groups were targeted by the DTO that forced them to participate. However, an anonymous music industry expert revealed that some groups that had yet to become popular accepted DTO money in exchange for producing records and writing songs that praised the DTO. Once the music groups became popular, they could participate in the scheme because they could go on tour. This arrangement was unstable according to the music industry expert because once a group becomes famous

⁹³ The investigation alleges La Familia DTO owned a venue in Austin, Texas named "El Centenario" and "Padrinos Night Club" in Atlanta.

and no longer needs the capital from the DTO it may seek to pursue an independent music career. However, if a group or any members of the group tried to sever ties with the DTO they were often executed⁹⁴. For example, the lead singer of the group *K-Paz de la Sierra*, Sergio Gómez, was murdered in 2007. A top manager and founder of La Familia, Nazario Moreno a.k.a “el chayo” or “the craziest”, allegedly ordered his murder. The singer’s body also showed signs of torture and severe burns in the genital area⁹⁵.

DTOs also could hire headline acts without their knowledge of who was paying. With more popular groups, the DTO could launder larger sums of money. In 2012 in Los Angeles, California a woman linked to this scheme was arrested and extradited to Mexico. According to the report, she was in charge of receiving illicit drugs that arrived to the port in Long Beach hidden in avocado crates and *guacamole* containers. Once the drugs had been sold she laundered the proceeds and sent them back to Mexico using the music group scheme.

While this method allows DTOs to transport bulk sums of cash without having to conceal the money, there are several elements that make this a risk-tolerant method for sanitizing criminal proceeds. First, once the scheme was discovered, the DTO lost human assets. Not only were people arrested (such as the woman who operated in

⁹⁴ “Descubren red de lavado a través de bandas musicales”
Source: <http://www.excelsior.com.mx/2012/07/09/nacional/846523>
Accessed: 15/08/2014

⁹⁵ “Músicos asesinados y sus presuntos nexos con el narco”
Source: <http://lasillarota.com/musicos-asesinados-y-sus-presuntos-nexos-con-el-narco#.Vz5A55MrKHo>
Date accessed: May 19, 2016.

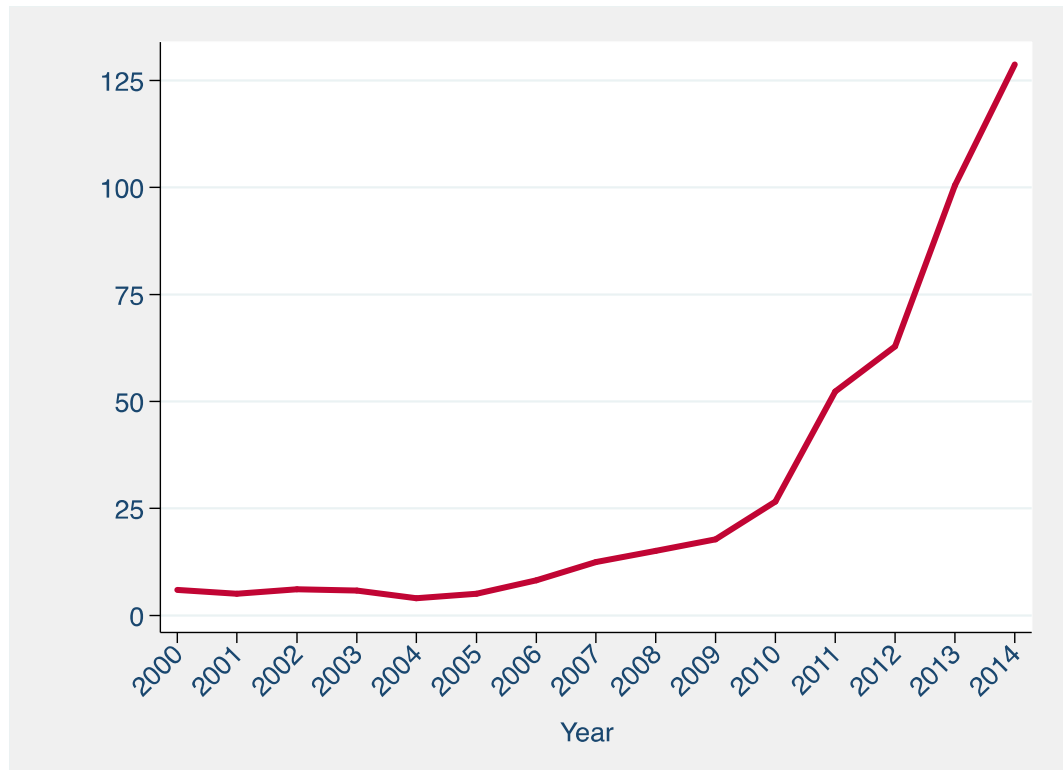
California) but also music groups became known entities as facilitators for money laundering. In some cases this did not hinder their popularity but it is likely other law-abiding venues and music promoters were hesitant to hire them after their links to the DTO were revealed. Furthermore, any revenue generated by the groups after the link was revealed was likely under significant scrutiny by the Mexican and US governments which effectively rendered them useless as assets for laundering money once they were discovered. Moreover, other Mexican musical groups came under increased scrutiny. In particular, contracts for half a million dollars were likely to attract attention, considering headline acts in Las Vegas make less money per concert than what the groups used by the DTO charged per performance. In short, the spectacle of *La Dinastía de Tuzantla* makes more money per concert than Britney Spears is likely to attract the attention of law enforcement despite the DTOs attempt to pay taxes and appear as a legitimate business venture.

5.7 Oil Contraband

Finally, wheel networks are more likely than hierarchical DTOs to engage in risk-tolerant criminal activities beyond drug trafficking particularly when it involves short-term profits. One example comes from theft data supplied by Petróleos Mexicanos (Pemex) to the Southern District Court of Texas in 2010 and 2011 for the period 2000-2014. These data show that theft from pipelines increased steadily beginning in 2007 when the open confrontation against organized crime began (see Figure 5.2) and that is strongly concentrated in states controlled by wheel-network DTOs. Therefore, while

pipeline theft is not new, it has become an important criminal activity in view of the opportunities created by the market for protection.

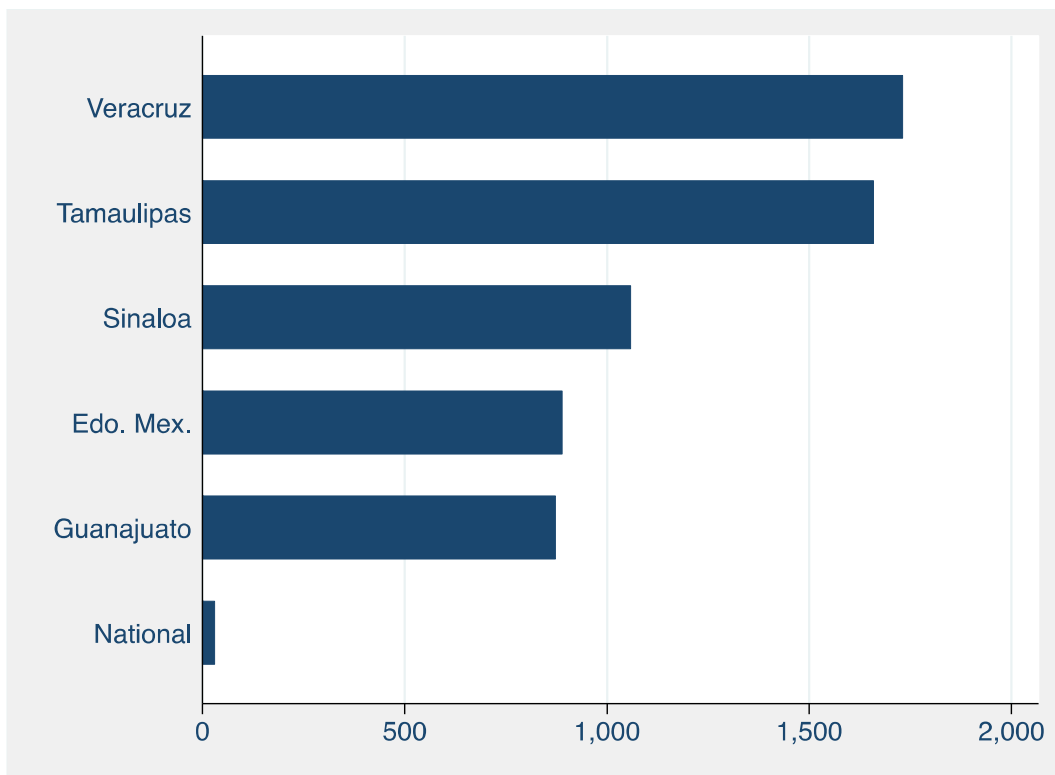
Figure 5.1 National Average of Illegal Taps on Pemex Pipelines



The data show that the average number of illegal taps in the country for the period 2000-2014 is 30 however there are considerable variations across states. The usual explanation given by investigative journalism is proximity to the Burgos Field (in the states of Coahuila, Nuevo León, and Tamaulipas) which is the country's top producer of natural gas. According to these journalistic accounts, Tamaulipas has a high level of theft (second in the country for the years 2000-2014, first for 2014) because Los Zetas DTO controls parts of the territory where the Burgos Field is located. While

proximity certainly matters, an explanation based solely on location cannot answer why if the Burgos Field has been active since 1945 it is only in recent years that theft from the field has increased considerably. If proximity alone explained the phenomenon, then theft should have increased when DTOs began operating in these states, in the 1980s. The data do not support this claim. Furthermore, Sinaloa, hub of the Sinaloa DTO and a net importer of petroleum products ranks third in theft to Pemex behind Tamaulipas. Figure 5.3 shows the top five states with illegal taps between 2000 and 2014.

Figure 5.2 Top Five States with Illegal Taps 2000-2014



The key, however, is not that both Sinaloa and Tamaulipas exhibit high levels of theft but that the stolen products are used differently by the DTOs⁹⁶. Whereas Sinaloa's scams against Pemex are used in-house to support drug production and drug smuggling, Los Zetas employ it as another profit-making business opportunity.

To understand how Sinaloa's theft is used in-house it is necessary to examine the methods used as well as the products stolen from Pemex. Corrupt former and/or present Pemex employees install tapping machines along the pipeline network that extends for over 14,000 kilometers across the country. Unlike puncturing pipelines, tapping machines allow plugging live pipelines without interrupting the service thus decreasing the likelihood that the security systems that detect a drop in pressure are activated. Pipelines, however, do not transport refined products constantly therefore employees are further colluded by notifying thieves when the pipelines will be active⁹⁷.

Stolen fuel (diesel and/or gasoline) is then either sold in the black market or through Pemex franchises. Under Mexican legislation any national can own a Pemex franchise, however due to the significant start-up costs of approximately \$40,000 plus annual maintenance fees only nationals with enough capital can actually invest in this

⁹⁶ Arguably both DTOs place illegal taps along the pipelines to steal fuel (gasoline and diesel) for the daily operations of the organizations. However, while they might share this behavior as a cost-saving strategy, theft for internal use is not relevant for understanding large-scale schemes that explain differences in their behavior.

⁹⁷ In February 2015 Pemex announced that it would no longer transport refined products through its pipelines in order to deter theft. However, as of the time of writing shortages of fuel were still reported in some states. Additionally, unrefined products transported through pipelines can be refined through rustic techniques even if it yields products of lower quality.

type of venture⁹⁸. The expected liquidity and the cash-intensive nature of the business provide a good cover for a number of criminal activities. For example, stolen fuel from pipelines might also be mixed and sold with legally obtained fuel from Pemex effectively ‘laundering’ the ill-gotten products⁹⁹. This is advantageous because rather than having to set up a bootlegged service, the DTO can just employ Pemex as a front for its operations. In addition, tinkered pumps dispatch lower amounts than the one customers pay for thus stealing from individuals who pay for gasoline or diesel they did not receive. The scam is so widespread that website and smart phone applications developed in Mexico help customers find gas stations where they can find “liters of one liter”. For example, the website “*Litros Completos*” (Full Liters per its Spanish translation) maintained by the wide-circulation newspaper *El Universal* helps readers find law-abiding gas stations. Proceeds from crime can be deposited into bank accounts linked to service stations concealing the illicit origin of the money and passing the earnings as legitimate. Again, because gas stations are a cash-intensive business, large cash deposits made into these accounts would not raise red flags under Know Your Customer (KYC) compliance regulations for banks.

⁹⁸ This was true before the energy reform was approved in 2013. Beginning January 2016, gasoline and diesel are allowed to sell in gas stations that are not necessarily Pemex franchises. Before the energy reform, fuel could only be sold through Pemex franchises.

⁹⁹ Since 2005 Pemex installed monitoring software that compares in real time legitimate purchases of owners and the volumes sold to customers at gas stations. In spite of possessing the technology to prevent crimes, audits to Pemex revealed that franchise owners can pay Pemex employees in order to ‘unplug’ from the system as often as they want. It is this during these blackouts when the stolen fuel is loaded in the gas station for sale to third parties.

The practices described are widely used by the Sinaloa DTO. OFAC has designated 18 (of a total of 19) gas stations belonging to members of the Sinaloa DTO. Generally, the DTO registers the franchise under the name of a female relative and uses the business to launder crime proceeds. Furthermore, setting up gas stations for female relatives is a common practice among Sinaloa DTO managers as a way for their kin to have easy access to cash and ‘insure’ them in the event of the incarceration or death of a male relative directly involved with drug trafficking (Pérez 2011). For example, if a drug trafficker is arrested, his wife can have access to cash right away by using the earnings of the gas station either. Consequently, while Sinaloa steals from Pemex and launders money using franchises, the crimes are committed as part of the daily in-house operation of the organization rather than diversification of their criminal portfolio. For instance, fueling the SUVs and pick-up trucks of DTO members as well as supplying farmers who work on poppy cultivation.

In contrast to Sinaloa’s in-house use of petroleum assets, Los Zetas have used the market for protection and the corruption within the state-owned company to diversify their criminal activities. Rather than laundering proceeds and insuring family members, Los Zetas sell stolen products to third parties as an additional source of revenue. For example, Los Zetas sell gasoline and diesel to buyers in Texas who then market the cheaper fuel to unsuspecting costumers (Pérez 2011). In larger schemes, companies in the US have *knowingly* purchased condensate from the DTO to sell to other middlemen or end-users. Condensate is a byproduct of natural gas extraction and it has a low level

of contaminants, which makes it easy to refine into high-value products including gasoline.

According to the 2010 and 2011 complaints filed by Pemex in the Southern District Court of Texas Houston Division, drug trafficking organizations stole condensate from the Burgos Field in several ways: robbing one of the 52 transfer and delivery systems that are connected to 150 collection stations that transport the condensate through pipelines from the then active 2827 wells¹⁰⁰. Tapping pipelines as well as building their own to facilitate collection, bribing law enforcement officials to allow free passage to hijacked tanker trucks and ‘rescuing’ tanker trucks from impound lots previously recovered by law enforcement and hijacking at gunpoint Pemex tanker trucks as well as the ones contracted by Pemex to transport condensate within Mexican territory.

The contracts of Pemex with tanker trucks are particularly important for understanding how the large-scale theft can occur. Before the energy reform of 2013, Pemex and its subsidiaries were the only entities allowed to produce, export, and sell Mexican hydrocarbons. To export hydrocarbons Pemex used transport companies that would deliver the products directly to US refineries therefore these transports were the only legal way to obtain hydrocarbons from Mexico. In the case of condensate, Pemex did not award any contracts to transport this product to the US since 2006 thus any of the product that entered the US did so illegally. Contracts awarded by Pemex are public

¹⁰⁰ As of April 2015 the Burgos Field had 3216 active wells.

information allowing potential customers to verify whether or not Pemex has sanctioned a seller.

Even though the complaints only specify how organized crime obtained condensate *outside of Pemex infrastructure* extensive investigation revealed that the DTO also corrupts Pemex employees who work at collection stations and distribution centers. Similar to other Pemex infrastructure with ample security technology, safety protocols at collection stations mandate that tanker trucks are weighed and inspected when they enter and leave the stations in order to guarantee that they are not loading excess cargo they can later sell in the black market and that they leave with the appropriate load. Internal documents from Pemex revealed that Los Zetas paid Pemex workers to forge inspection documents in order to also steal condensate directly from the collection stations rather than pipelines and tanker trucks. Consequently, tanker trucks that were supposed to transport water among collection stations in fact transported condensate that was given to Los Zetas DTO.

Internal documents also revealed that the drivers of the hijacked tankers were usually offered bribes in exchange for their cooperation. This is relevant because unlike common depictions of Los Zetas as an organization that uses violence or the threat of violence under any circumstance, specific cases show that they attempt to get individuals to cooperate in exchange for money rather than only a threat of violence. While some workers participated in the scheme in exchange for money, others reported the situation to Pemex headquarters in Mexico City.

Once Los Zetas had full possession of the condensate, they sold it to transport companies with legitimate contracts with Pemex that transferred it to tanker trucks meeting specifications to pass Mexican and US customs. As detailed in the complaints, the transport companies used forged export documents identifying the cargo as legitimate and bribed customs officials on both sides to facilitate its crossing. Consequently, rather than only stealing for Pemex for in-house operations, Los Zetas used the stolen products as another revenue stream.

CHAPTER SIX

VIOLENCE AS A BUSINESS MODEL

In this chapter I show how the military intervention against organized crime generated an unintended consequence in the form of a market for protection and how the interaction of the structure of DTOs partially explains the types and levels of violence observed across the country. The results show that while both structures are capable of using high levels of violence, hierarchical DTOs will follow a selective strategy whereas wheel networks are strongly affected by the incentives provided within a market for protection to diversify their criminal activities into predatory violence including kidnapping and extortion.

6.1 Exacerbating a Market for Protection

A market for protection is said to exist when protection becomes a coveted good in transactions where at least one party does not trust the other to comply with the rules. Notably, it is irrelevant if protection is a poor and costly substitute for trust, what matters is that there is an individual interest in purchasing protection. Protection, therefore, is sold on a private basis to individual customers with the price varying on wealth, the type of service required and the ‘whims of the seller’ (Gambetta 1993: 1-7).

A market for protection was exacerbated in some states in Mexico as an unintended consequence of the military intervention against organized crime initiated on

December 11, 2006¹⁰¹. To be sure, “[President Calderón] made the military the centerpiece of his public security strategy, which was almost entirely focused on confronting the cartels with force” (HRW 2011: 4). Notably, the first entity where the military was deployed for combatting DTOs was Michoacán, Calderón’s home state and hub of operations for wheel network DTOs. Deployment in Michoacán involved 6,500 ground troops, helicopters, and navy gunboats (Grillo 2011: 112). By one account, during the first week of February 2007, less than three months into his presidency, Calderón held several meetings in Los Pinos (Mexico’s official residence and office for the president) and ordered 27,000 troops deployed in Michoacán, Guerrero, Durango, Sinaloa, Baja California, and Chihuahua where allegedly 2,000 homicides had occurred in 2006 and violence was spiraling out of control (Torre 2013: 49).

The decision of deploying the military across the country for counternarcotic operations and law enforcement tasks marked a significant departure from previous administrations. Former presidents and their advisors made a conscious choice to keep the armed forces from participating on a regular basis in operations against organized crime. The first operation involving the military against drug trafficking dates back to 1975 nonetheless the military’s role was generally limited to destroying illegal crops. The opposition for involving the armed forces was articulated by Carlos Salinas, former president of Mexico (1988-1994). According to Salinas his government resisted the intervention of the Mexican armed forces against drug traffickers because it was

¹⁰¹ The focus on security marked a turning point from Felipe Calderón’s campaign platform that centered on creating employment.

unnecessary to vest them with responsibilities that belonged to special police forces. Most importantly, there was no guarantee that illegal organizations would refrain from corrupting members of the military (Astorga 2007: 19). If the armed forces were systematically corrupted by organized crime, then national security was effectively compromised. Even though during Vicente Fox's administration (2006-2012) members of the armed forces occupied important posts within law enforcement and judicial agencies, their appointment was intended to be temporary in order to solve corruption issues within these institutions (Sánchez-Munguía 2009: 114).

As detailed on the December 2007 report for the US Senate Committee on Foreign Relations "The Merida Initiative: Guns, Drugs, and Friends", President Calderón, dubbed the "committed friend", justified the increased use of the military given the scale of corruption in the federal police and security branches including the Attorney General's Office where in 2005 over 20 percent of officers were under investigation for criminal activity (US Senate 2007: 8). In the first year of the war on crime the executive branch and the Mexican Congress authorized close to \$3 billion and deployed 30,000 troops to combat violence¹⁰² (US Senate 2007: 3).

Nevertheless, the deployment of military personnel had the unwanted consequence of generating three conflicts: DTOs against the state, DTOs against each other, and intra-DTO fights, which sparked a violent response never observed across the country. The involvement of the military was heavily contested by DTOs that

¹⁰² Interestingly, when the report was published, future Secretary of State and President of the United States John F. Kerry and Barack Obama respectively, were members of the Committee on Foreign Relations chaired by future Vice-President Joseph R. Biden.

unsurprisingly were unwilling to abandon a profitable business. Therefore, DTOs had to defend territories and routes against unwanted state intervention, as well as from other DTOs that could capitalize on the weakening of a rival organization, and in some cases even from their own members who would try to move up the ranks during tumultuous times.

There is not a single measurement for showing the emergence or worsening of a market for protection. Rather, when analyzed comprehensively the data used in this research explain how an already weak societal trust in state institutions further eroded with the war on crime. First, by using a number of indicators compiled by international organizations I show how the level of confidence countrywide in the Mexican government and its ability to fulfill its functions severely declined in the last decade. Second, by using reports on human rights I show that Mexico's citizen security deteriorated specifically through the intervention of the armed forces against organized crime. Third, I show how despite this generalized lack of trust in the state, it was only in states with high military presence and network DTOs where a market for protection was exacerbated.

It should be noted that the argument proposed here does not seek to imply societal trust in state institutions was high before the open war on crime and decreased only as a result of the actions taken during Calderón's administration. In turn, I propose that the militarization by the state against criminals generated incentives for wheel networks to diversify their criminal activities. Deploying the military in states where wheel networks

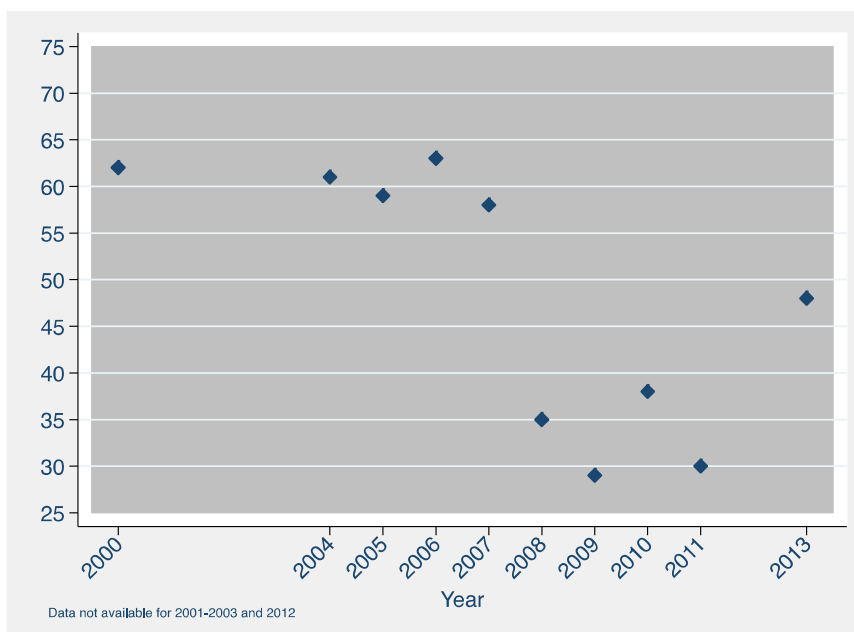
operate created favorable conditions for the development of predatory violence and diversification of criminal activities where violence became a profitable business model for DTOs.

6.2 Decreasing Confidence in the State

According to the Organization for Economic Development and Cooperation (OECD), from 2007 to 2014 confidence in the Mexican government declined nine percentage points, dropping from 42 percent in 2007 to 33 percent in 2014; well above the OECD average of a three-percentage fall (Government at a Glance, OECD 2015). Data on temporal expectations from the Economic Commission for Latin America and the Caribbean (ECLAC) show that in 2009, two years after the deployment of military personnel to combat organized crime, only 29 percent of individuals believed their children would have a better future. Whereas in 2013, the perception improved to 48 percent, it remained lower than pre-war levels of approximately 60 percent. Figure 6.1 shows the percentages for the years 2000-2013 except for the years 2001-2003 and 2012 when data are not available.

Figure 6.1

Percentage of Citizens Who Believe their Children Will Have a Better Future



Data on the perception of corruption in the public sector show that while Mexico has generally been perceived as a country with high levels of corruption, the perception deteriorated after the war on drugs was declared. This is particularly notorious given that it improved in the early two thousands likely as a result of the democratic transition after 70 years of a one party rule. Figure 6.2 shows the scores for Mexico for the years 1995-2011 in a scale from 0 to 10 with 10 being a corruption-free country. Figure 6.3 shows the scores for the years 2012-2014 in a scale from 0-100 with 100 being a corruption-free country¹⁰³.

¹⁰³ For a discussion on the different scales and the limitations in comparing data across years see chapter four.

Figure 6.2 Perception of Corruption in the Public Sector 1995-2011

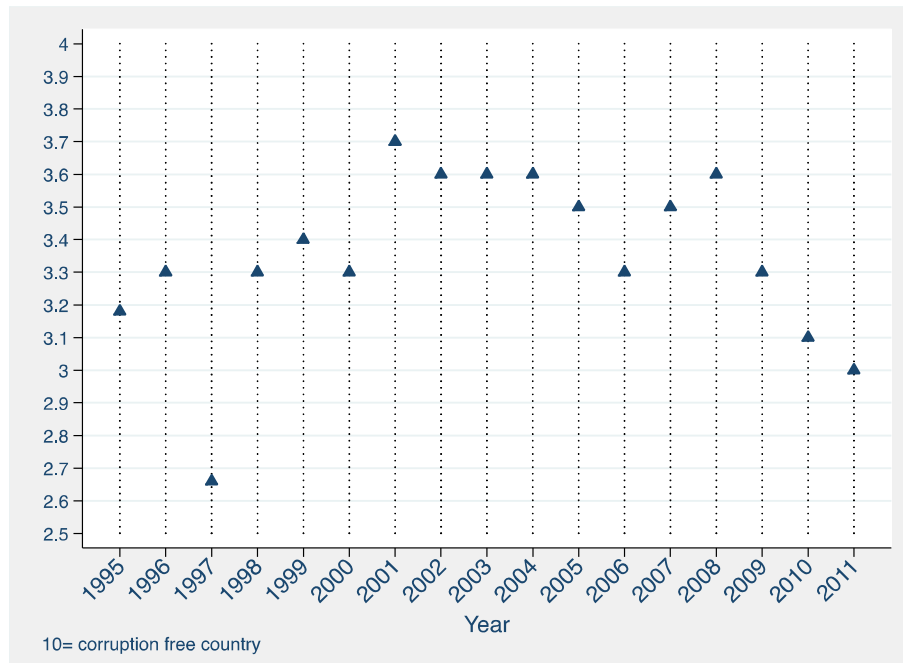
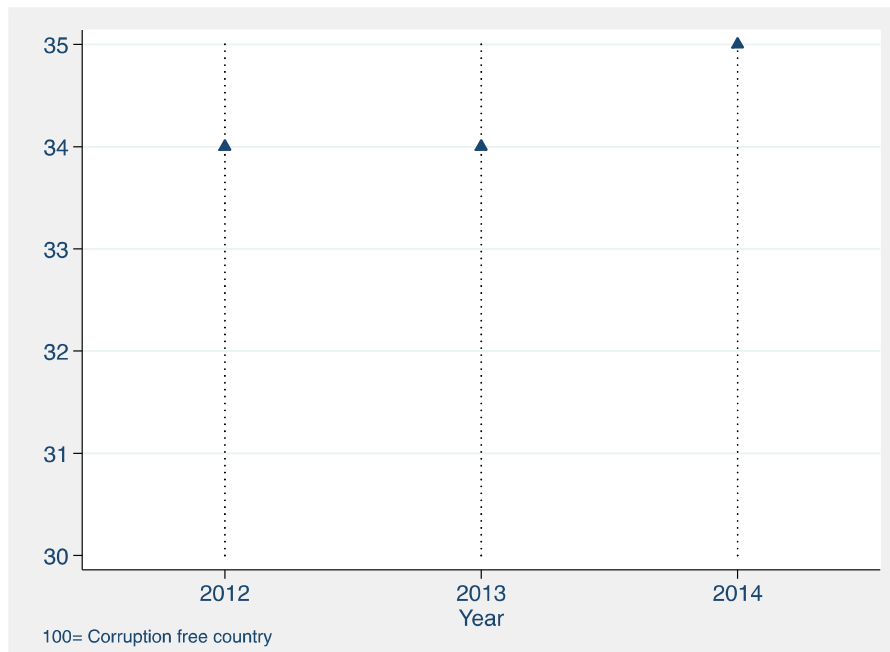


Figure 6.3 Perception of Corruption in the Public Sector 2012-2014



Data on temporal expectations on corruption from the Global Corruption Barometer also show a decline in an already low societal trust in state institutions. In 2003, 19.5 percent of respondents expected corruption to ‘increase a lot’ in the next three years. In 2011, 65.7 percent believed corruption had ‘increased a lot’ in the last three years and in 2013, 71 percent of respondents also believed corruption had ‘increased a lot’ in the last two years. Moreover, in 2006, 43 percent believed not only that the government did not fight against corruption but in fact encouraged it and in 2011, 43 percent trusted ‘nobody’ to fight corruption in the country. By 2013, 72 percent thought the government’s actions against corruption were ineffective. Overall, the perception about the corruption within the police forces is dismal. In 2006, 43 percent of respondents believed the police was ‘extremely corrupt’ only to deteriorate to 68.2 percent in 2011 and 90 percent in 2013. For 2013, 87 percent of respondents also classified public officials and civil servants as ‘extremely corrupt’.

Data from the National Survey of Crime Victimization and Perception on Public Safety (ENVIPE per the Spanish acronym) support the findings of the Global Corruption Barometer and further show the extent of the distrust towards government agencies. Contrary to the expectations of building trust through repeated interactions (Ostrom and Walker 2003), in Mexico increased contact with law enforcement agencies appears to lower trust among citizens. Unsurprisingly, therefore, citizens trust the local police less than they trust the federal police and the armed forces. Remarkably, while over half of the country believes security is a top issue in the national agenda, over 90 percent of citizens who are victims of a crime do not report it to the authorities because they do not

perceive any benefit in doing so¹⁰⁴. Table 6.1 shows the national results in percentages for selected categories covering the years 2011-2014¹⁰⁵.

Table 6.1 Perception of Public Safety in Mexico 2011-2014

	2011	2012	2013	2014
Unreported crimes	92	91.6	92.1	93.8
Security considered main issue in the national agenda	57.5	58	57.8	58.1
Trust in the state police	42.5	42.3	43.1	44.1
Trust in the federal police	54.5	55.4	55	57.7
Trust in the army	79.6	83	80.1	80.7
Trust in the navy	81	83	83.1	84.4

Evidence collected by Human Rights Watch and Amnesty International further shows that despite trusting the armed forces compared to the local and federal police, the intervention by the armed forces has markedly deteriorated citizen security in the country. In 2009, HRW reported “while engaging in law enforcement activities, Mexico’s armed forces have committed serious human rights violations, including enforced disappearances, killing, torture, rapes, and arbitrary detentions” (2). In the same year Amnesty International found “reported cases illustrate a pattern of serious human rights violations committed by members of the armed forces conducting law enforcement tasks

¹⁰⁴ According to the United States’ National Crime Victimization Survey (NCVS) in 2014, 46 percent of violent victimizations, 56 percent of serious violent victimizations, 37 percent of property victimizations, and 61 percent of robberies were reported to the police. (NCVS 2015).

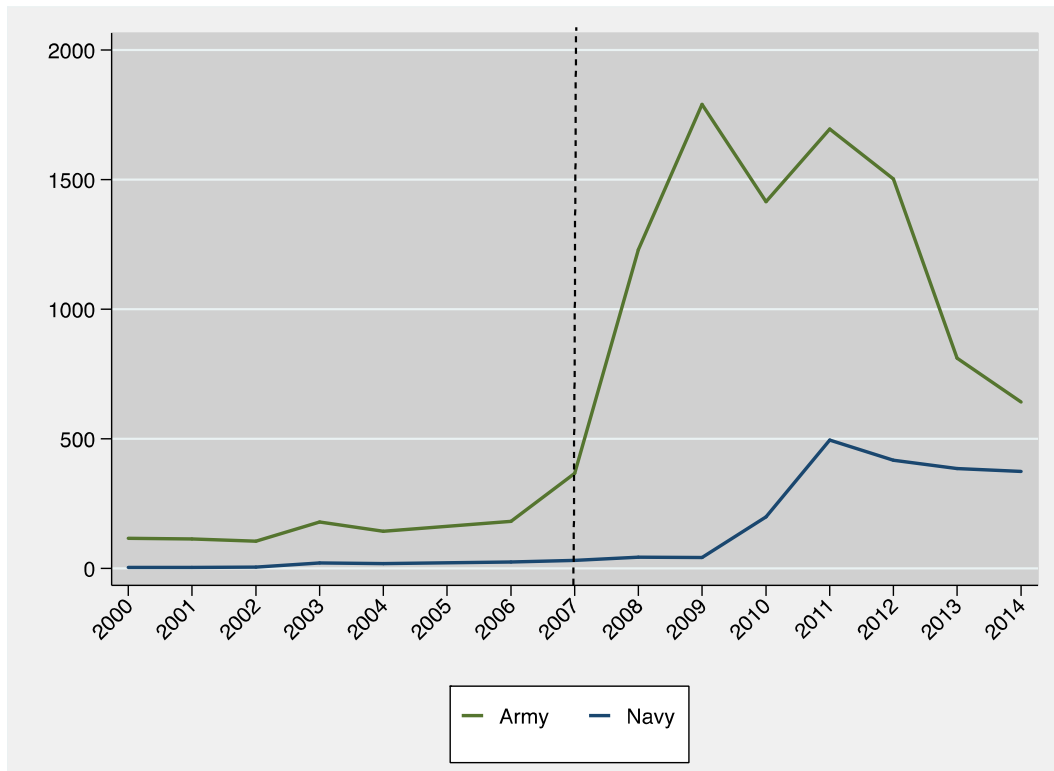
¹⁰⁵ Following INEGI’s convention on labeling the survey according to the year it was published rather than the year the data describe, I use the years the survey was published.

for civil authorities. Violations include enforced disappearances, extrajudicial killings, torture, and arbitrary detention” (22).

Two years later, HRW reported “rather than strengthening public security in Mexico, Calderón’s “war” has exacerbated a climate of violence, lawlessness, and fear in many parts of the country” (5). A year later, AI stated “Amnesty International has been expressing for years their concern regarding the complaints against torture, cruel and unusual punishment committed by members of the armed forces or by the federal, state, and municipal police forces” (3). By 2013, HRW concluded “[Calderón’s] ‘war on drugs’ produced disastrous results. Not only had it failed to rein in the country’s powerful criminal groups, but it had led to a dramatic increase in grave human rights violations committed by the security forces sent to confront them” (1).

Despite low reporting rates, complaints filed in Mexico’s Human Rights Commission against the Army and the Navy further corroborate the findings by Human Rights Watch and Amnesty International. Figure 6.4 shows how after the declaration of the war on drugs there was a distinct increase in the complaints thus providing compelling evidence of the systematic violations against human rights.

Figure 6.4 Complaints Against Army and Navy for HR Violations 2000-2014



In October 2015 two years into the Peña administration, the US Government announced it would block \$5 million initially allocated to security forces on the war on drug efforts in the framework of the Mérida Initiative. Despite previous delays in funding since 2010 due to human rights concerns, redirecting the funds to Peru showed the State Department was unable to certify that Mexico fully met the reporting criteria [on human rights] required by Congress¹⁰⁶. Even though blocking \$5 million for anti-drug efforts is not a substantial amount, symbolically it sent a strong message to the Mexican government

¹⁰⁶“US blocks some anti-drug funds for Mexico over human rights concerns”

Source: https://www.washingtonpost.com/world/the_americas/us-blocks-some-anti-drug-funds-for-mexico-over-human-rights-concerns/2015/10/18/8fa3925e-710b-11e5-ba14-318f8e87a2fc_story.html

Accessed: October 18, 2015.

about its lack of commitment towards protecting human rights “including enforcing rules against torture and prosecuting people for [en]forced disappearances”.

Lastly, data collected from interviews provide important insights regarding the declaration of the war on drugs and its unwanted consequences. In particular exacerbating a market for protection. When interviewees were asked whether or not the official narrative that President Calderón had no choice but to confront organized crime due to significant negligence during the previous administration that allowed DTOs to grow and expand was accurate, respondents confirmed that President Calderón’s *perception* was indeed one where he needed to respond immediately before violence in certain areas would surpass state capacity.

Nevertheless, current and previous government officials also knew that the intelligence they were acting on was faulty at best. This is because during the Fox administration (2000-2006) Mexico’s national security agency, CISEN per its Spanish acronym, was depleted of economic and human resources. According to the interviewees, in Fox’s view, CISEN was a PRI institution created mostly for political espionage and precluding political opposition thus it should be eliminated. Some members of his cabinet, however, disagreed with President Fox and argued in favor of keeping CISEN as a necessary institution in order to conduct the day-to-day intelligence functions required by the state (Mexico government officials in discussion with the author July, August 2014). In the end, those favoring CISEN’s existence prevailed but it came at a cost. During Fox’s administration, CISEN’s budget was barely increased for the period 2000-2006.

Unable to retain human capital, an important number of employees left; some to other law enforcement agencies, others to the private sector. As one interviewee characterized it, during the Fox years “CISEN lacked the resources to even pay for its phone bill” (Mexico government official in discussion with the author, August 2014). Consequently, despite the existence of a national security agency tasked with intelligence functions, the crippling environment in which it operated prevented the institution from operating and complying with its duties; despite the commitment of its employees.

This is important for two reasons. First, in view of the tenuous understanding of why Calderón decided to confront organized crime, what is better known is that the decision was made with information produced by an agency that lacked the economic and human assets to generate intelligence that would allow evaluating the situation along with the potential scenarios given different courses of action. That meant that the state was ill equipped both to understand and deal with the consequences of launching an all-out war against organized crime. In particular, the likely scenario where a market for protection could be expanded thus further deteriorating societal trust in state institutions regarding their ability to fulfill their functions including law enforcement and justice procurement.

Second, despite the Mérida Initiative that aimed at professionalizing Mexico’s security sector, funds for the security cooperation agreement were not released until fiscal year 2008 (October 2007-September 2008). Therefore Mexico spent approximately the first year of the war on drugs with faulty intelligence and poor equipment trying to play catch-up vis-à-vis criminal organizations that outgun the armed forces let alone the

police¹⁰⁷. It should be noted that despite the DEA's intelligence sharing and informant activities in the country that proved crucial in executing the kingpin strategy, the Mérida Initiative has not been implemented without contention. In addition to the public rift between President Calderón and then ambassador of the US to Mexico Carlos Pascual that resulted in Pascual's resignation, information from interviews revealed President Calderón was vexed by the information and accountability requests by the US government that in turn provided assistance in dribs and drabs (Government official in discussion with the author, September 2014). Therefore, despite a new narrative regarding security cooperation between the two countries and the 'shared responsibility' of the illegal drug business, cooperation has not always been smooth and at times has created additional institutional challenges further exacerbating the consequences of the war on drugs.

6.3 Violence As a Business Model

This section shows the results for the fixed effects model with Newey-West standard errors correcting for heteroskedasticity and autocorrelation¹⁰⁸. Using state level data on violence for the years 1997-2014, including intentional homicides, extortion, and

¹⁰⁷ According to a US government official, DTOs have well-established preferences for weaponry. Similarly to the argument advanced in this research regarding differences in behavioral patterns, DTOs also have divergent preferences for the type of weapons they use and it is also emblematic of the organization they belong to. For example, Zetas prefer AR-15 assault rifles whereas the Sinaloa DTO tends to favor AK-47. Both organizations, however, after purchasing weapons in the United States have contractors who convert the legally available semi-automatic weapons to fully automatic weapons (US government official in discussion with the author, January 2015).

¹⁰⁸ See the Appendix for results comparing the estimates using standard errors from the xtreg command.

kidnapping I show violence levels escalated after the war on drugs was declared. Furthermore, I show that the incentives to diversify criminal activities as the result of the expansion of the market for protection affected wheel network DTOs more strongly than hierarchical DTOs. The first three graphs show boxplots for homicides, extortions, and kidnappings. Boxplots are a useful tool for visualizing data by showing the distribution for each variable in a given year. In particular, displaying criminal rates with boxplots allows examining the range and outliers for each year showing that homicides, extortions and kidnappings increased after the war on drugs was declared, and that the escalation of these types of criminal activities varied across states.

Figure 6.5 Intentional Homicide Rate

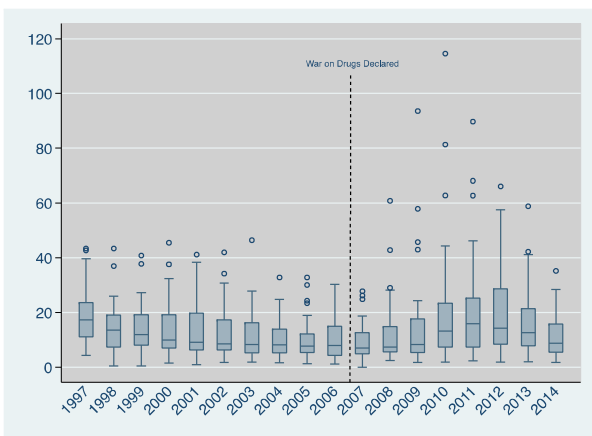


Figure 6.6 Extortion Rate

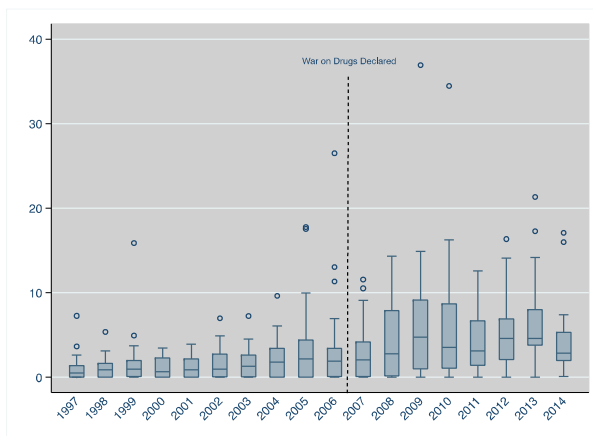


Figure 6.7 Kidnapping Rate

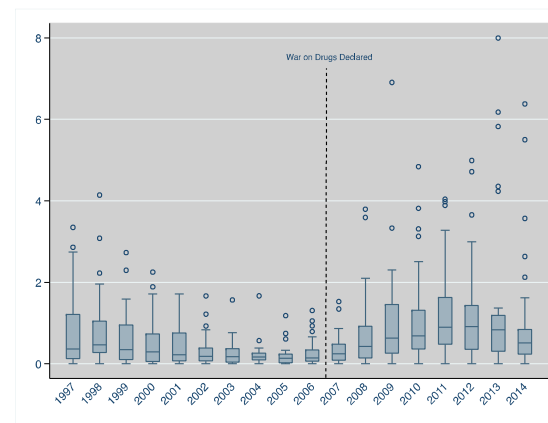


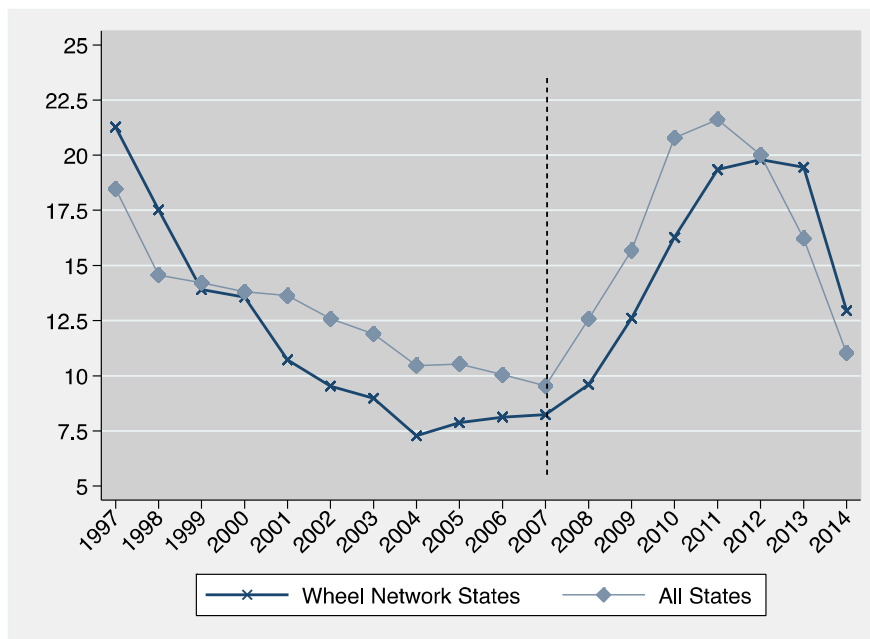
Table 6.2 Homicide Rate

	(1) Log Homicide Rate	(2) Homicide Rate
Wheel Network	-.048 (1.01)	1.77 (1.64)
War on Drugs	.404*** (.111)	8.27*** (2.60)
Wheel Network* War on Drugs	-.036 (.118)	-3.81 (2.51)
Year	-.029*** (.010)	-.375** (.154)
Constant	58.08 (19.48)	754.45 (307.95)
<i>Prob> F</i>	0.00	0.00
<i>N</i>	575	576

Newey-West standard errors reported in parentheses

* p<0.05; ** p<0.01; *** p<0.001

Figure 6.8 Intentional Homicide Rate Wheel Network DTOs vs. All States



Tables 6.2-6.4 present the results for six fixed effects models (state fixed effects are included but not shown in the tables). The dependent variable in Model one is homicide rate and in Model two is the logarithmic homicide rate. Similarly, the dependent variables for Models three and four are extortion rate and the logarithmic extortion rate. The dependent variables in Models five and six are kidnapping rate and the logarithmic kidnapping rate¹⁰⁹. All models include two dummy variables, one for the presence of wheel networks and for the declaration of the war on drugs. For wheel networks, states are coded as 1 if for that year there was presence of at least one wheel network in the state and 0 if there were no wheel networks in the state. For the war on drugs variable, years 1997-2006 are coded as 0 whereas 2007-2014 equal one. Furthermore, all models include an interaction term between having a wheel network and the war on drugs. Lastly, all models control for time trends by including a variable for year.

Consistent with the argument advanced in this research, the war on drugs had a significant and positive effect in Models one and two on the homicide rate observed across the country. This supports the notion that using the armed forces escalated the levels of violence by creating three conflicts: DTOs against the state, DTOs against each other, and intra-DTO fights. Based on Model 1, the homicide rate is expected to increase by 15 percent when there is military deployment (i.e. a war on drugs) compared to when the armed forces are not engaged in counter-narcotic operations. The time trend is

¹⁰⁹ For a discussion on the choice of logarithmic dependent variables see chapter four. For a graphical analysis showing the distribution of the violence rates against the logarithmic transformations refer to the Appendix.

statistically significant but negative in Models one and two, suggesting that homicides were decreasing prior to the declaration of the war on crime. As shown in Figure 6.8 and based on the estimates from Models one and two, homicides do not increase in states with wheel network DTO presence given the war on drugs. Consistent with the argument, this suggests all types of DTOs, irrespective of their structure, are capable of engaging in violence. However, homicides do not necessarily lead to other types of violence such as extortion and kidnapping. This is important because as characterized in this research, homicide is not a form of predatory violence insofar it does not target civilians for additional profits. For an in-depth discussion on homicide please refer to section 6.4.

Table 6.3 Extortion Rate

	(3) Log Extortion Rate	(4) Extortion Rate
Wheel Network	-.412*** (.136)	-.205 (.494)
War on Drugs	-.129 (.170)	.615 (.650)
Wheel Network* War on Drugs	.522*** (.174)	.863 (.567)
Year	.090*** (.016)	.228*** (.053)
Constant	-180.75 (32.32)	-455.55 (105.90)
<i>Prob > F</i>	0.00	0.00
<i>N</i>	458	576

Newey-West standard errors in parentheses

* p<0.05; ** p<0.01; *** p<0.001

Figure 6.9 Extortion Rate Wheel Network DTOs vs. All States

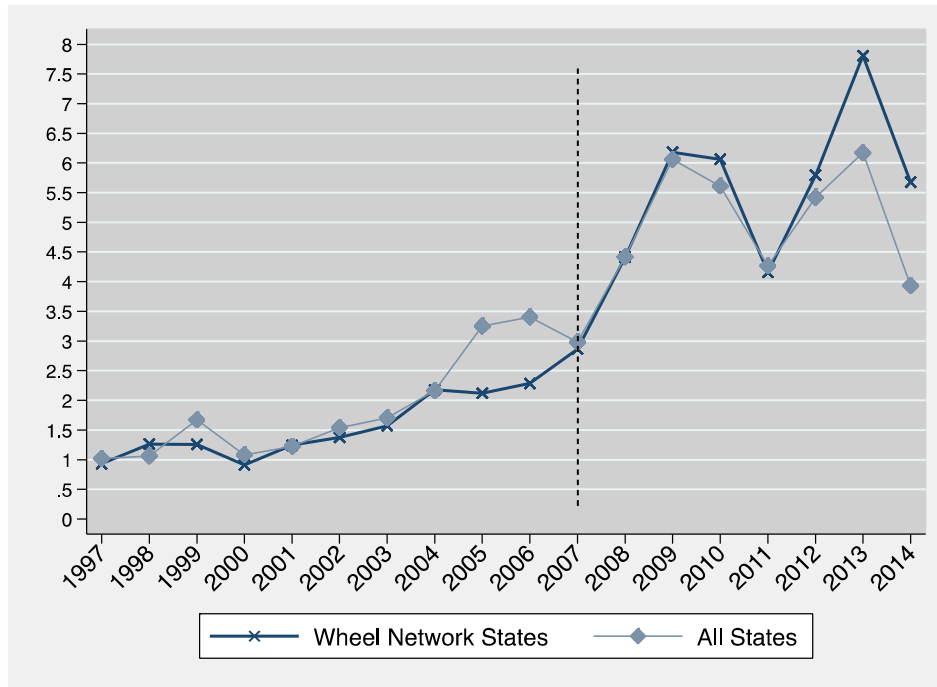


Table 6.3 shows the results for extortion rate. Consistent with the argument, wheel networks diversify their criminal activities given the incentives of an expanded market for protection. While the interaction term in Model four is positive but not statistically significant, Model three shows the war on drugs is expected to lead to an increase of 39 percent in the extortion rate in wheel network states. For details on the conditional marginal effects see Table 6.5. This effect is larger compared to the time trend of a nine percent increase in extortions for the logarithmic extortion rate and .228 without the logarithm.

Figure 6.9 shows the average extortion rate for states with wheel networks compared to the rest of the country. The graph shows a marked increase in extortions in 2007 after the declaration of the war on drugs doubling from an average of three

extortions per 100,000 inhabitants to six per 100,000 inhabitants. Notably, in 2013 states with wheel network DTOs had a higher rate of extortions compared to states without this type of DTO presence. This is important because by 2013 there were at least three large criminal organizations engaged in predatory violence: Zetas, La Familia Michoacana, and Caballeros Templarios.

Table 6.4 Kidnapping Rate

	(5) Log Kidnapping Rate	(6) Kidnapping Rate
Wheel Network	-.200 (.185)	-.196 (.272)
Military Deployment	.982*** (.236)	.066 (.593)
Wheel Network * Military Deployment	.460** (.214)	.527* (.281)
Year	-.057*** (.019)	.010 (.049)
Constant	112.26 (37.92)	-19.15 (99.16)
<i>Prob > F</i>	0.00	0.00
<i>N</i>	504	576

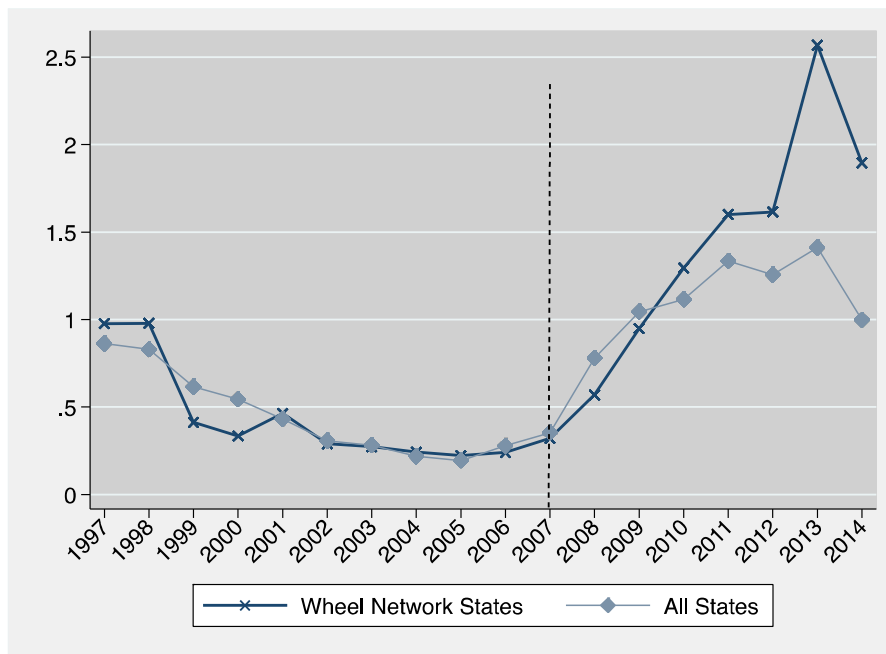
Newey-West standard errors reported in parentheses
 * p<0.05; ** p<0.01; *** p<0.001

Table 6.5 Conditional Marginal Effects

	Coefficient
Effect on extortion rate given the war on drugs in wheel network states.	.393** (.463)
Effect on kidnapping rate given the war on drugs in wheel network states	1.44*** (.213)

Standard errors reported in parentheses
 * p<0.05; ** p<0.01; *** p<0.001

Figure 6.10 Kidnapping Rate Wheel Network DTOs vs. All States*



* Two observations were removed in order to produce this graph: Tlaxcala 2006 and Tabasco 1997. The data points appear to be anomalies in the reported rates (noise) rather than accurate representations of the crime in the states. In the case of Tlaxcala, media sources for 2006 did not report a higher number of kidnappings in the state compared to other states. In fact, Tlaxcala had a higher average rate of unreported crimes than other states and in 2006 the Attorney General's Office indicated kidnappings had decreased considerably up to the point of disappearing. Similarly, to the knowledge of the author, there are not robust explanations that can account for the high kidnapping rate in Tabasco in 1997 (18 per 100,000 inhabitants) followed by 4 per 100,000 inhabitants in 1998 and 0 in subsequent years.

Table 6.4 shows the results for kidnapping rate. Consistent with the typological theory, wheel networks diversify their criminal activities given the incentives of an expanded market for protection. Notably, the effect for kidnapping is larger compared to that for extortions. In particular, while the conditional marginal effect in Model six is not statistically significant, Model five shows the war on drugs is expected to lead to an increase of 144 percent in the kidnapping rate in wheel network states. This effect is statistically significant and is considerably larger compared to the time trend that predicts a decrease in kidnappings in Model five. Figure 6.10 shows kidnapping grew sharply after the declaration of the war on drugs. Similar to extortions, 2013 has a distinctly higher average kidnapping rate in states with wheel network DTOs compared to the rest of the country. The increase in kidnappings in states with wheel network DTOs also shows how criminal organizations can operate given an expanded market for protection. That is, criminal syndicates can identify victims and set a ransom price depending on the characteristics of the victim. Table 6.5 reports the conditional marginal effects when the interaction term was statistically significant.

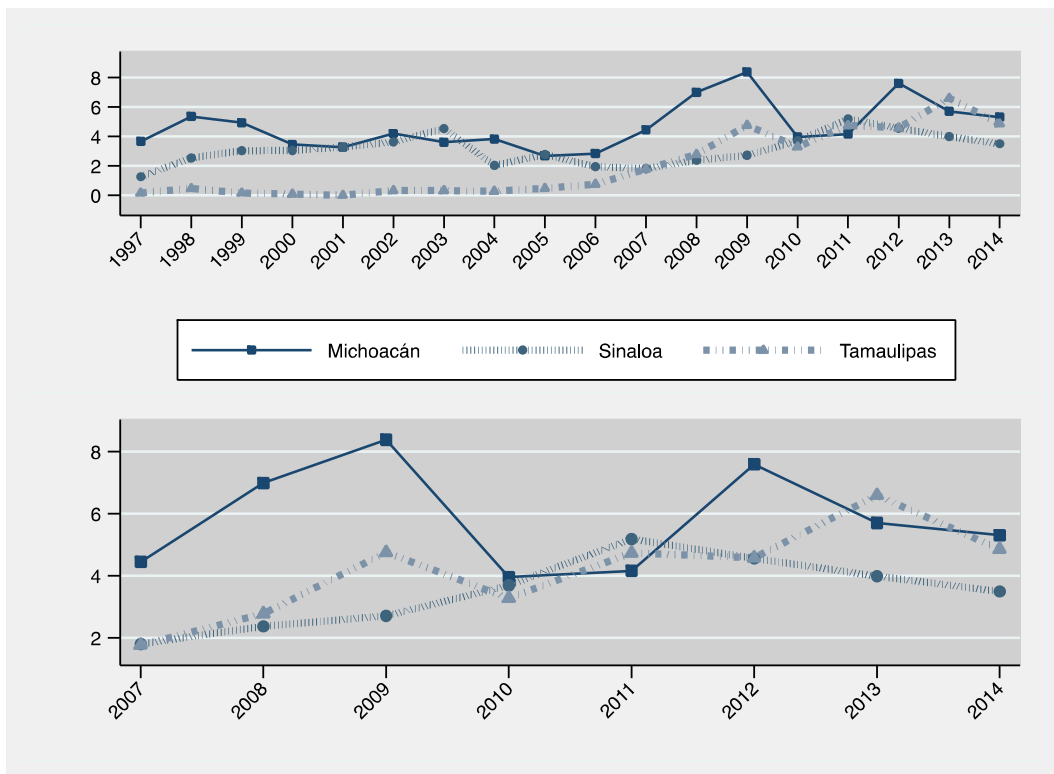
6.4 A Closer Look at DTO Hubs

Paying special attention to the hubs of operation of DTOs examined in this research provides additional evidence to show that hierarchical and wheel network DTOs follow different business models. Looking at hubs of operation specifically provides important advantages for understanding the behavioral patterns of DTOs because they

provide substantial information on how they treat the populations in which they operate. Analogous to the literature on counterinsurgency, understanding whether or not DTOs victimize, and to what extent, the local population can provide important policy insights for discerning why and when will civilians will contribute with law enforcement activities that can limit the growth and spread of criminal activities.

Figure 6.11 shows the extortion rate per 100,000 inhabitants in the states of Michoacán, Sinaloa, and Tamaulipas. The top graph shows the extortion rate for the years 1997-2014 whereas the bottom graph highlights the years after the war on drugs was declared.

6.11 Extortion Rate in Michoacán, Sinaloa, and Tamaulipas



While extortions are reported in the three hubs of operations, data from 1997 to 2014 show a greater escalation of this type of criminal activity in the states of Michoacán and Tamaulipas. Notably, the highest point for extortions in Sinaloa, approximately 5 per 100,000 inhabitants, is the lowest point for the same crime in Michoacán signaling a greater propensity for victimization of civilians under wheel network DTOs than hierarchical ones. This is further corroborated by the increase in extortions in Tamaulipas that exhibited a low sustained level prior to the deployment of the armed forces but has continued to increase after 2007. The date is not trivial. 2007 marks the beginning of the schism between the Golfo and Zetas DTOs after the extradition to the United States and death of top managers within Golfo. In contrast, after reaching a high point in 2011, extortion rates appear to be in a downward trend in the state of Sinaloa although this will only be confirmed as more data become available in the upcoming years.

Data from interviews revealed that extortion conducted by the Zetas DTO is more complex than standard characterizations of “silver or lead” often found in journalistic and popular cultural accounts. In contrast, the Zetas DTO choose extortion victims who are already engaged in illegal activities and therefore cannot turn to law enforcement agencies for help. For example, owners of Pemex franchises who do not sell “full liters” (see chapter five for a detailed explanation on this form of theft) or businesses that engage in tax evasion are preferred victims compared to law-abiding companies and individuals (Mexico government official in discussion with the author, August 2014).

Furthermore, data from interviews suggests extortion payments are not accepted in any form. For example, in one case where the interviewee knew the victim, it was explained that the Zetas members were unwilling to accept payment in kind. In particular, the person had been stopped on the way to the Laredo border crossing by a heavily armed commando. Despite the fact that the victim offered his car as a form of payment (valued at \$27,000) the Zetas refused to accept the car due to the complications it posed. The DTO member explained: if they took the car then they would have to ‘chop it’ and sell it in parts which would delay access to cash and would have made it harder to meet their weekly quota of payments to the cell manager. Therefore, the extortionist/kidnappers preferred receiving payment in cash, even if it was a lower amount compared to the value of the car, because this would reduce their transaction costs and facilitate meeting their weekly cash targets (Mexican government official in discussion with the author, July 2014).

Extortion targeting government officials may also involve a ‘courtship’ period. Rather than immediately threatening violence, members of the DTO send gifts in order to convince the public servant his or her efforts are better spent on behalf of the illegal organization. In one account members of the Zetas sent the favorite bottle of wine to the public official. When the government agent refused to participate the DTO began threatening the individual, including the delivery of wreath arrangements used in funerals and the publication of obituaries in local media. What is important about this example is that contrary to typical characterizations of violence as a first choice, even when extortion

is involved, the DTO may use cheaper tactics to corrupt and extort public servants than previously considered.

Extortion data for Michoacán also provides further evidence explaining the expansion of the market for protection and the diversification of criminal activities given the military intervention. Furthermore, it also shows extortion is not conducted in identical ways by different wheel network DTOs. Despite having the highest extortion rate of the three hubs, this crime significantly increased after 2006 coinciding with the onset of La Familia Michoacana DTO. In 2012, a similar spike occurred after the splintering of La Familia Michoacana into the Caballeros Templarios DTO. In 2013, using information from Mexican intelligence agencies, a high-circulation newspaper reported the Caballeros Templarios DTO had an estimated income of \$74.6 million per year from their criminal activities in the state of Michoacán. According to the aforementioned data, extortions to business owners produced an income of \$11.7 million annually whereas extortions to municipal government offices contributed \$13 million. Of the known income generated by ‘protection’ paid for by business owners the following industries have been affected:

Table 6.6 Estimated Income Generated from Extortion Activities

Commercial Activity	Estimated Monthly Income from Extortion in USD
Gas stations	\$24,000
Slot machines	\$60,000
Freight and packaging	\$76,000
Transportation	\$130,000
Import/Export permits	\$25,000
Bars and coffee shops	\$32,000
Butcheries	\$13,000
Sawmills	\$650,000
Workers unions	\$7,000
(Legal) Drug distributors	\$4000
Clothing	\$14,000
Total	\$1,035,000

Extortions against municipal government offices were classified as fixed quotas paid on a monthly basis and “public works”. That is, government offices had to paid fixed amounts for protection money similar to private companies but they also had to provide additional income to the DTO masked as expenses for public infrastructure. All 113 municipalities in the state were known to pay organized crime, with monthly quotas ranging between \$1,500 to approximately \$66,000.

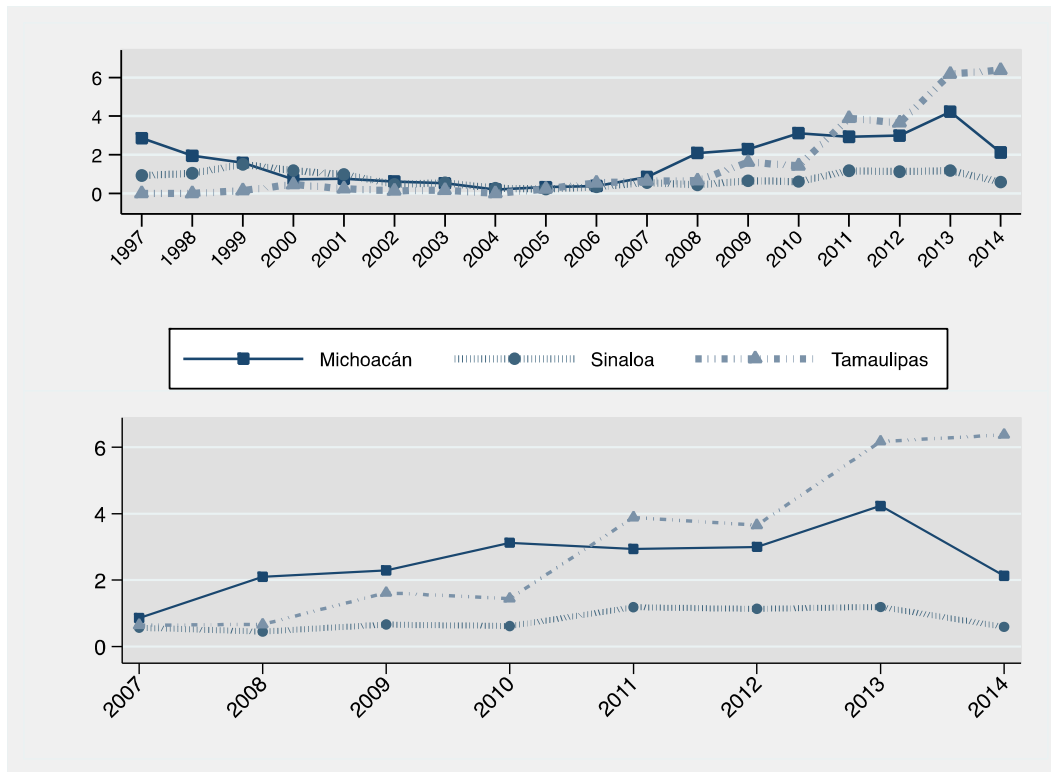
By 2014, extortion by these two groups escalated to the point of affecting international prices for two main crops from Michoacán: avocados and limes. In January 2014, the *Wall Street Journal* reported DTOs levied a \$2,200 tax for small producers whereas larger packers paid \$15,000 per month. With exports around 500,000 tons of avocado with an approximate value of \$1 billion, the Caballeros Templarios DTO had an

estimated income of \$150 million from their extortion activities towards growers and packers of avocados.

While Mexican entrepreneurs are no strangers to paying *peso*—protection money—the complaint voiced by growers and packers of avocados and limes stemmed from the ‘*double taxation*’ they were subjected to. That is, extortion in Michoacán, as shown by the data, was not a new phenomenon. However, as Gambetta (1993) points out, there cannot be competing suppliers of protection without undermining the credibility of the person or organization supplying it. The very defining characteristic of a mafioso “is the fact that he is capable of protecting himself as well as others against cheats and competitors” (19). Demands for extortion money from two DTOs prompted agricultural business to voice their complaints in ways they had not done in the past.

Figure 6.12 shows the kidnapping rate per 100,000 inhabitants in the states of Michoacán, Sinaloa, and Tamaulipas. The top graph shows data for the years 1997-2014 whereas the bottom graph highlights the years after the war on drugs was declared.

Figure 6.12 Kidnapping Rate in Michoacán, Sinaloa, and Tamaulipas



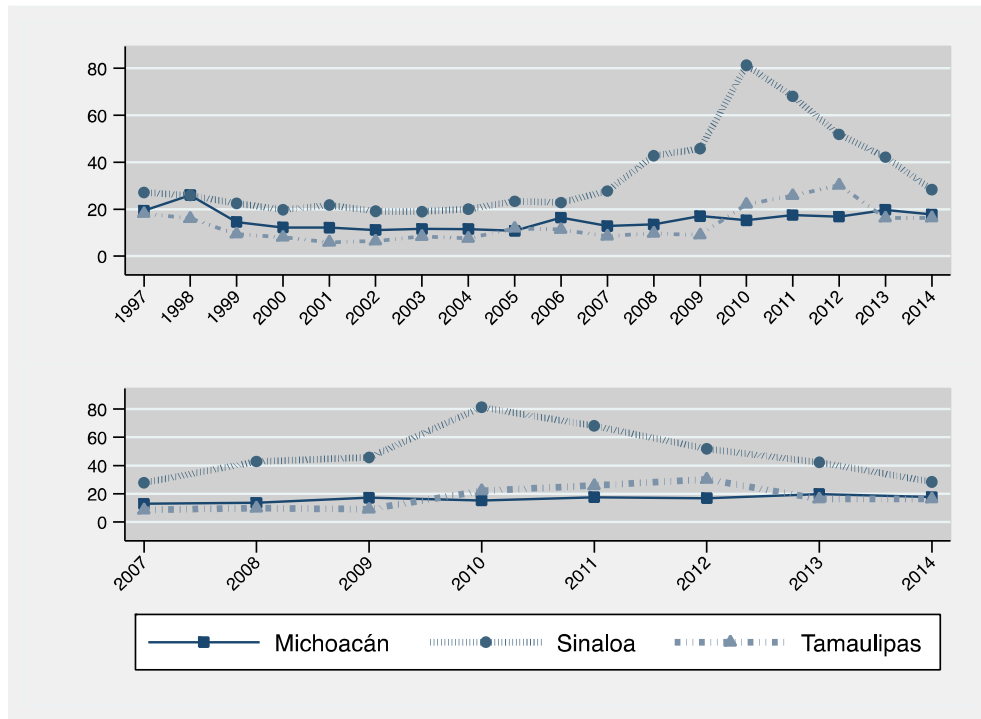
Similar to the data on extortions, the kidnapping rate in the hubs of operation increased. However, for Michoacán it has quadrupled whereas in Tamaulipas it has grown six fold. Whereas these hubs exhibited a steady low rate of kidnappings prior to the declaration of the war on drugs, this type of criminal activity spiraled at least partially due to the incentives provided with an expanded market for protection. As shown by Figure 6.12 kidnapping has become part of the business portfolio of wheel network DTOs whereas in Sinaloa it has remained approximately at a similar rate prior to the deployment of military personnel.

The data also show that while kidnappings are high in both hubs with wheel network DTOs, they are higher in Tamaulipas than in Michoacán. A plausible explanation for kidnappings occurring at higher levels in Tamaulipas is its proximity to the Burgos Basin where gas condensate is extracted. By several accounts, members of the Zetas DTO have kidnapped employees of Pemex to try and obtain more control over the theft of fuel and condensate (Osorno 2013; Pérez 2014). In contrast, by one estimate, and supported by data on reported kidnappings, the Sinaloa DTO has prohibited kidnapping in the region and punishment for violating the ban is death (Grillo 2011).

Analyzing kidnapping and extortion rates in the hubs of operation reveals two important behavioral patterns of DTOs: knowledge of local information and likelihood to pursue rent-seeking behavior. Because extortion and kidnapping victims are not chosen at random, DTOs require specific information on their victims in order to set a price. As explained in Gambetta's model (1993) a market for protection is a first-degree monopoly where prices are set for each customer. Therefore, DTOs require accurate and updated informant networks to find victims who will be able to pay and who will likely abstain from reporting the crime—even when the population distrusts the government. This does not imply, however, that the network of informants always functions in an efficient manner and DTOs find 'ideal' victims. In contrast, it suggests that in order for kidnappings and extortions to become part of the criminal portfolio a minimum level of local intelligence is needed. It should be noted, that Sinaloa likely has a similar network of information, however, rather than use it to victimize civilians, it employs it to maintain control over production of semi-synthetic drugs.

This is important, because as it was explained in chapter five, hiring local labor will increase the criminal’s costs for victimizing the population in which it operate. Therefore, regulating extortion and kidnappings is a business decision rather than altruistic behavior. Lower levels of extortion and kidnapping in Sinaloa, however, do not translate into an absence of violence. In fact, as data for intentional homicides show, the Sinaloa DTO exhibits significant higher levels of intentional homicides although this crime has also escalated in the states of Michoacán and Tamaulipas. Figure 6.13 show the intentional homicide rate per 100,000 inhabitants in the states of Michoacán, Sinaloa, and Tamaulipas. The top graph shows data for the years 1997-2014 whereas the bottom graph highlights the years after the war on drugs was declared.

Figure 6. 13 Intentional Homicide Rate in Michoacán, Sinaloa, and Tamaulipas



The increase in the intentional homicide rate in Sinaloa corresponds with the conflict between the Sinaloa DTO and the Beltrán Leyva organization. Interestingly, after reaching a high in 2010 of 80 homicides per 100,000 inhabitants, approximately four times the rate in Michoacán and Tamaulipas, intentional homicides appeared to decrease quickly in the period 2011-2014. However, similar to extortions, confirming a downward trend will only be possible as more data become available in the upcoming years. Equally important, despite the known conflict between the Sinaloa DTO and the Beltrán Leyva organization it would be too simplistic to attribute the escalation of intentional homicides solely to the conflict between the two groups.

The data also show that contrary to the official version of escalating homicides as justification for deploying the military, homicides in Michoacán, Sinaloa, and Tamaulipas in 2006 were at similar rates compared to the previous decade. Therefore, while there were public displays of violence such as throwing human heads onto a nightclub's floor that received wide media coverage, homicides in the state were not significantly worse than previous years. This is important because despite the argument that the Calderón administration had no choice but intervene due to escalating homicides, at least in the hubs of operations, existing data refute this version. Evaluating homicide data along with the results from the public safety perception survey reveals a different picture. Table 6.7 show the results for the years 2011-2014 to the question "Do you believe your state is dangerous?".

Table 6.7 Percentage of Individuals Who Perceive Their State as Dangerous

State	2011	2012	2013	2014
Tamaulipas	83	83	84	84
Michoacán	76	76	80	82
Sinaloa	81	76	78	72
<i>National</i>	70	67	72	73

As proposed by the typological theory advanced in this research, on average, individuals who live in states where wheel networks operate perceive their states to be more dangerous than individuals who live in the hub of a hierarchical DTO. Notably, with the decrease in intentional homicides inhabitants of Sinaloa have improved their perception regarding the safety of their state unlike citizens of Michoacán and Tamaulipas whose perception has consistently deteriorated despite having lower levels of intentional homicides. The fact that Sinaloa has had better perceptions of safety despite higher levels of homicides indicates hierarchical DTOs use violence selectively. That is, while citizens would prefer to live in a place with lower levels of criminality, they may also believe the DTO will only use violence against individuals who have shirked or violated an agreement or attempted to infringe upon their territory. As more data for the survey becomes available, it will be interesting to see if Sinaloa, despite its reputation as the cradle of drug traffickers in Mexico, continues to rank better than the national perception of safety as it happened in 2014.

CHAPTER SEVEN

CONCLUSION

7.1 Summary of the Argument

The research presented here challenges the notion that drug trafficking organizations—DTOs—are unitary, homogenous actors that mostly traffic illicit drugs. In turn, I propose a typological theory that identifies specific behavioral patterns of DTOs. The theory asserts that the structure of drug trafficking organizations, either a hierarchy or a wheel network, is chosen as an optimal alternative depending on whether the illicit drugs trafficked are imported or locally produced.

Hierarchical DTOs are formed to reduce transaction costs related to conducting exchanges with owners of inputs involved in the production and distribution of illegal drugs in distant production centers. Crucially, hierarchies are efficient structures for generating trusts insofar they provide information on the type of agent with whom exchanges are conducted based on repeated interactions which allows them to process information, acquire knowledge and monitor individuals to a greater degree than other organizational structures. While the presence of a manager does not eliminate agency problems, adverse selection issues are ameliorated due to direct supervision and the promotion per performance mechanism that exists within this type of structure. Furthermore, the presence of informational mechanisms influences the risk appetite of the DTO in at least two areas: punishment of shirkers and money laundering.

In hierarchies, agents who want to receive higher rewards will try to improve their performance thus increasing the time and resources invested in the organization. Similarly, managers who groom employees also invest time and resources in teaching individuals how to achieve the tasks needed for organizational efficiency. High costs for managers reduce the levels of violence used against agents when they punish shirking. Because developing human capital is costly within hierarchies, DTOs with this type of structure will utilize other cost-efficient strategies before resorting to extreme violence. This does not imply that coercion ceases to be an option, rather it calls into question the common assumption of violent behavior as a preferred alternative. Risk-aversion affects the methods chosen to launder the proceeds of crime. In particular, hierarchies will attempt to use methods that lower the probability of losing assets including financial and human capital ones. By following a risk-averse strategy, hierarchical DTOs may incur operational costs if the strategy is uncovered but will retain their assets and managers, both which are costly to obtain in hierarchies.

When illicit drugs are produced locally or purchased from a middleman it is cost-efficient for entrepreneurs to organize themselves into a network rather than incurring the costs of building a hierarchy. In a wheel shape network each cell communicates to one central element and this cell is not necessarily the decision maker for the network. Alternatively, outer nodes communicate at most with one or two outer cells in addition to the hub. Because network structures privilege expertise rather than trust or management skills learned from higher levels, local production of drugs does not require learning whether an agent is trustworthy or not, just whether he has the skill to manufacture the

illicit substances. However, because networks hired based on expertise and do not develop human capital turnover of personnel tends to be high which translates into an inability to learn and accumulate knowledge on best practices.

By privileging expertise, managers in wheel networks will be more concerned with the recruitment process than grooming agents who, by design, will not be promoted within the organization. Absent a grooming process, agents within networks will value present gains at a higher rate than future gains. This means that wheel networks will be more risk-tolerant, compared to hierarchies, when punishing shirkers and laundering the proceeds of crime. When agents shirk in a wheel network, using extreme forms of violence will be a viable option for the organization. Even though the costs are positive for finding the resource, the lack of investment in personnel development facilitates replacement of employees more easily than other organizational structures. In the same vein, wheel networks will be more likely to launder their proceeds using methods that are quick but not covert. Risk-tolerant methods, therefore, imply the loss of human and monetary assets when discovered.

Understanding the differences in structure and the effects it has on the behavior exhibited by DTOs is significant in the context of the war on drugs launched in early 2007. In particular, the military intervention in Mexico against DTOs expanded a market for protection by creating three conflicts: DTOs against the state, DTOs against each other, and intra-DTO fights. The escalation in the types and levels of violence observed

across the country and the confrontation of crime in the public sphere undermined an already weak credibility in the Mexican state to guarantee the safety of its citizens.

With a weakened societal trust in state institutions and with an existing demand for enforcement and protection, wheel network DTOs diversified their criminal portfolio to include kidnapping and extortion. The decentralized decision-making and risk-tolerant behavior in wheel networks lowers the cost of engaging in these kind of activities insofar a dismantle cell does not jeopardize the entire organization. Furthermore, the high discount rate of its members will incentivize them to engage in short-term profit making schemes. On average, wheel networks will exhibit higher levels of violence compared to hierarchies because it is a fundamental component of their business model that needs to signal victims on the nefarious consequences of non-compliance.

7.2 What's Next?

The typological theory provides a number of clear practical implications for how to exploit the organizational vulnerabilities of each DTO. While these strategies can be further developed, the results presented offer initial guidelines for decision-makers of whom, how, and when to target agents rather than mostly focusing on a strategy of capture and extradition. The goal is to move from policy approaches that tend to exaggerate the individual's role to an in-depth understanding of the behavioral patterns of DTOs.

1. Anti Money Laundering Strategies will be more effective against hierarchical DTOs.

Hierarchical DTOs offer long-term incentives for participation. Long-term expectations translate into money laundering methods that integrate criminal proceeds into the legitimate financial system in order to be used at a later time including transactions conducted by family members. In contrast, wheel network DTOs favor short-term gains which translate into money laundering methods that are quick but not covert and that tend to launder smaller amounts of proceeds.

Consequently, while dismantling money laundering schemes of wheel network DTOs will be easier due to the quick rather than covert methods employed, targeting money laundering schemes of hierarchical DTOs will have a lasting and more damaging effect on the organization due to the large amounts they seek to integrate into the legitimate financial system as part of a sophisticated wealth management operation.

2. Human security is mostly undermined by wheel network DTOs

Wheel network DTOs diversify their criminal portfolio due to the decentralized decision-making and risk-tolerant behavior incentivized in this type of structure. Given that members of these organizations will prefer present gains to future gains, they will engage in short-term profit generating schemes such as kidnapping and extortion.

By knowing which DTOs will employ violence at higher rates, the state can designate priority regions that focus on predatory criminal activities that target the general population rather than criminal activities, such as drug trafficking, that mostly

interact with other criminals. In view of limited financial and human capital resources, understanding which areas are likely to become vulnerable will help allocate assets efficiently. Additionally, understanding why particular areas suffered significant human costs produced by the war on drugs will contribute in designing security institutions that can effectively protect the integrity of citizens and their communities while addressing pressing security challenges.

3. Decapitation, at best, is only a short-term strategy.

Organizations with hierarchical structures provide incentives for long-term participation rather than defection unlike wheel network structures where members engage in rent-seeking behavior due to short-term incentives. Targeting the top leader in a hierarchical organization will not splinter and weaken the DTO due to security concerns that the captured members will reveal information in exchange for a deal with law enforcement. Alternatively, in a wheel network structure it is not possible to target a top leader because by design there is some degree of shared control and authority over different areas of operation.

Therefore, while decapitation may disrupt for a short period the operations of a DTO, hierarchical structures benefit from inherent mechanisms that can effectively cope with the loss of a manager. In fact, by targeting kingpins states incentivize the splintering of existing DTOs and the emergence of new wheel-network structures with the paradoxical and unwanted result of fostering predatory violence and deteriorating human security.

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APPENDIX

Table A.1 Homicide Rate PGR and INEGI Data

	(1)	(2)	(3)	(4)
	Log Homicide Rate	Homicide Rate	Log Homicide Rate (INEGI)	Homicide Rate (INEGI)
Wheel Network	-.048 (1.01)	1.77 (1.64)	-.109** (.054)	.191 (1.10)
War on Drugs	.404*** (.111)	8.27*** (2.60)	.627*** (.087)	14.98*** (3.20)
Wheel Network* War on Drugs	-.036 (.118)	-3.81 (2.51)	.003 (.103)	-5.27 (3.17)
Year	-.029*** (.010)	-.375** (.154)	-.031*** (.004)	-.454*** (.088)
Constant	58.08 (19.48)	754.45 (307.95)	62.80 (7.71)	908.35 (175.84)
<i>Prob> F</i>	0.00	0.00	0.00	0.00
<i>N</i>	575	576	800	800

Newey-West standard errors reported in parentheses

* p<0.05; ** p<0.01; *** p<0.001

Table A.1 shows the results for the fixed effects models with Newey-West standard errors using intentional homicide data from the Attorney General’s office (models one and two) and homicide data from INEGI (models three and four). In all four models the time trend is statistically significant but negative suggesting homicides were declining prior to the declaration of the war on crime. More importantly, in all four models the war on drugs is positive and statistically significant. Whereas data from the Attorney

General's Office estimates a 15 percent increase in the homicide rate when there is military deployment, data from INEGI estimates an 18.7 percent increase. INEGI's data provides a robustness check for the results using PGR's data showing that, on average, homicides have increased as a result of the war on drugs.

Tables A.2-A.4 show the results for the fixed effects models (state fixed effects not the table) using the xtreg command in Stata instead of Newey West standard errors for the models discussed in chapter six. The xtreg command does not correct for the degrees of freedom used in estimating the fixed effects. The standard errors from xtreg are smaller than the ones using the Newey-West specification.

Table A.2 Fixed Effects Models for Homicide Rate Using xtreg

	(5) Log Homicide Rate	(6) Homicide Rate
Wheel Network	-.048 (.080)	1.77 (1.49)
Military Deployment	.404*** (.102)	8.27*** (1.92)
Wheel Network * Military Deployment	-.036 (.096)	-3.81 (1.82)
Year	-.029*** (.008)	-.375** (.155)
Constant	59.14 (16.43)	763.64 (310.14)
<i>Prob > F</i>	0.00	0.00
<i>N</i>	575	576

Standard errors reported in parentheses

* p<0.05; ** p<0.01; *** p<0.001

Table A.3 Fixed Effects Models for Extortion Rate Using xtreg

	(3) Log Extortion Rate	(4) Extortion Rate
Wheel Network	-.412** (.132)	-.205 (.451)
War on Drugs	-.129 (.160)	.615 (.583)
Wheel Network* War on Drugs	.522*** (.150)	.863 (.550)
Year	.090*** (.013)	.228*** (.047)
Constant	-180.62 (26.18)	-455.21 (93.79)
<i>Prob > F</i>	0.00	0.00
<i>N</i>	458	576

Standard errors in parentheses

* p<0.05; ** p<0.01; *** p<0.001

Table A.4 Fixed Effects Models for Kidnapping Rate Using xtreg

	(5) Log Kidnapping Rate	(6) Kidnapping Rate
Wheel Network	-.200 (.153)	-.197 (.295)
Military Deployment	.982*** (.194)	.066 (.382)
Wheel Network * Military Deployment	.460** (.181)	.527 (.361)
Year	-.057*** (.016)	.010 (.031)
Constant	112.44 (31.16)	-18.90 (61.51)
<i>Prob > F</i>	0.00	0.060
<i>N</i>	504	576

Standard errors reported in parentheses

* p<0.05; ** p<0.01; *** p<0.001

Figure A.1 Homicide Rate with Logarithmic Transformation

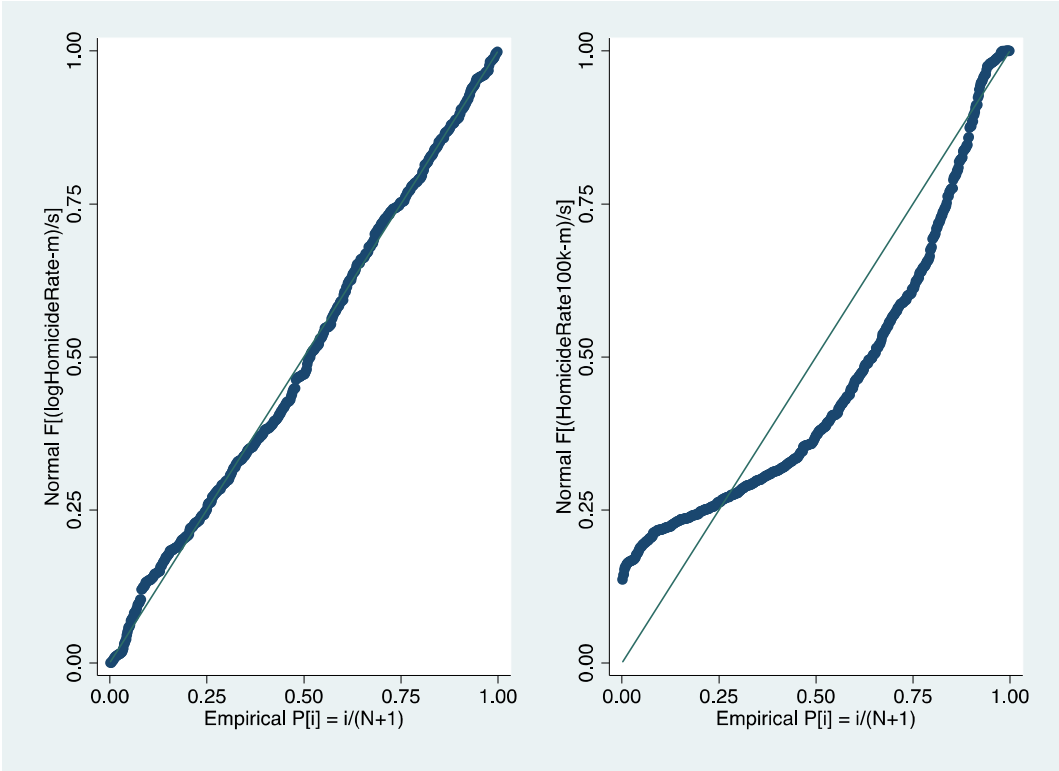


Figure A.2 Extortion Rate with Logarithmic Transformation

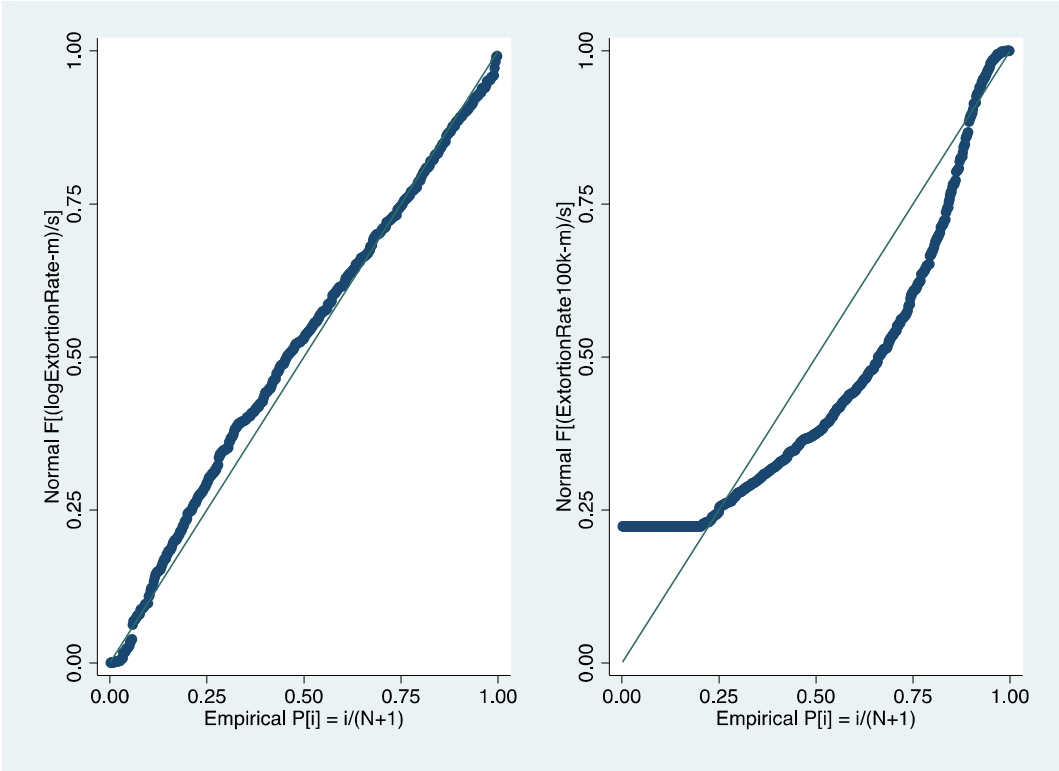
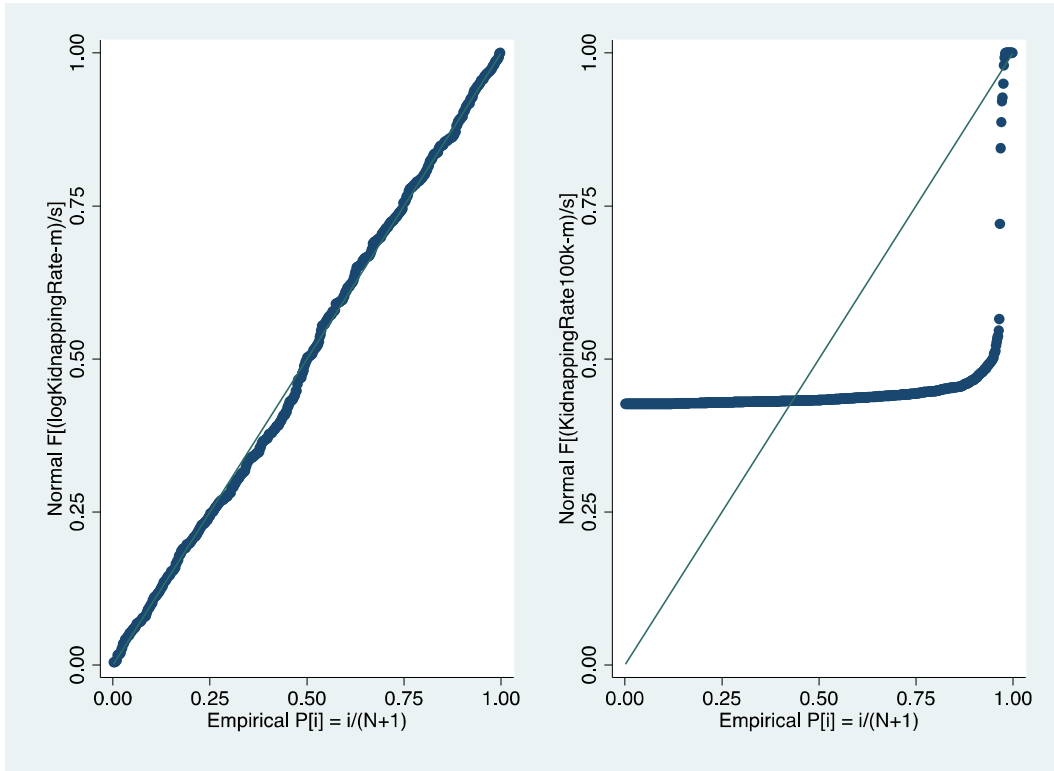
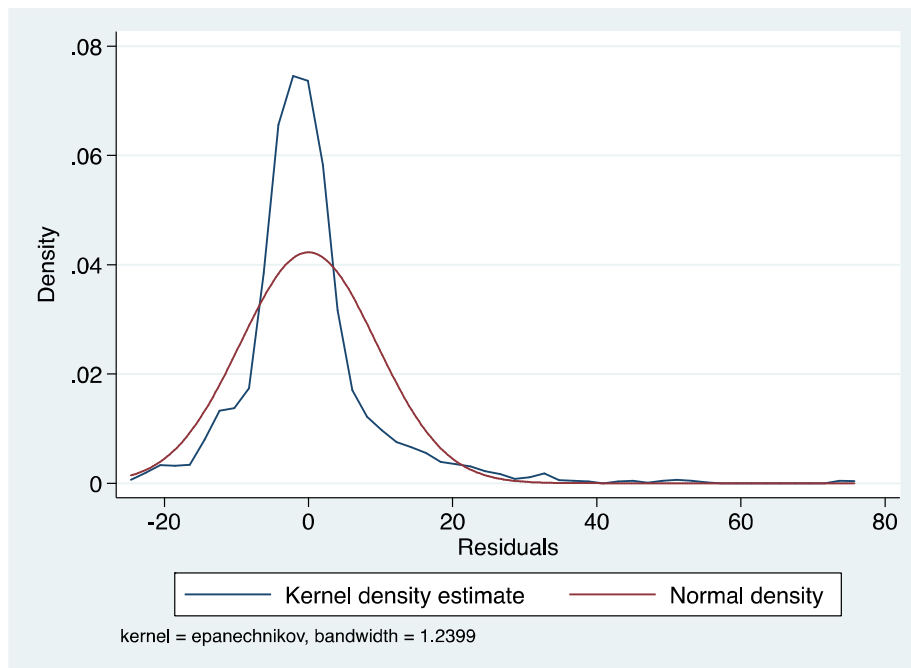
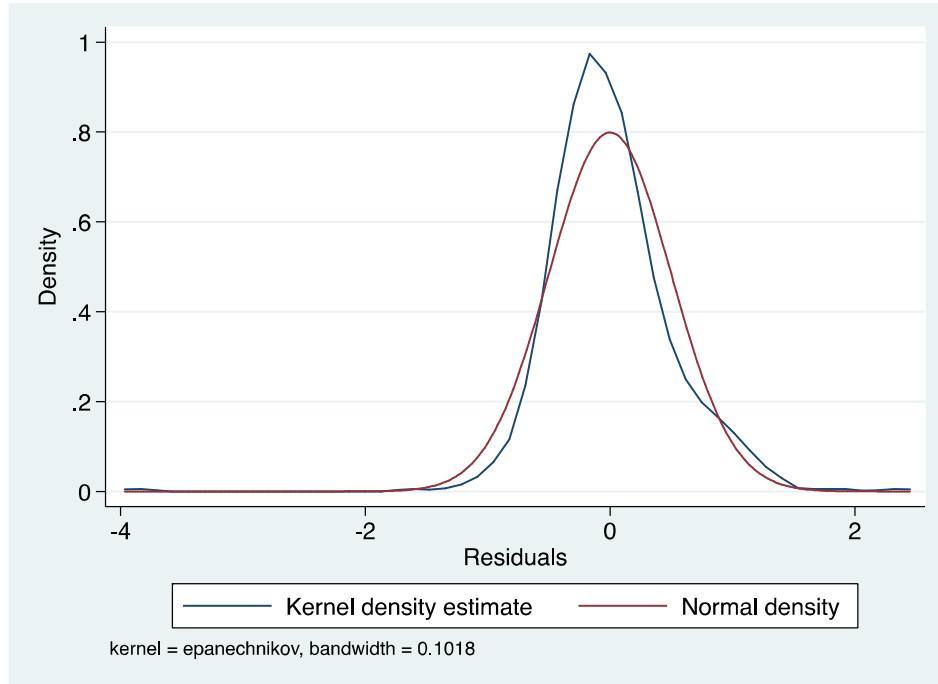


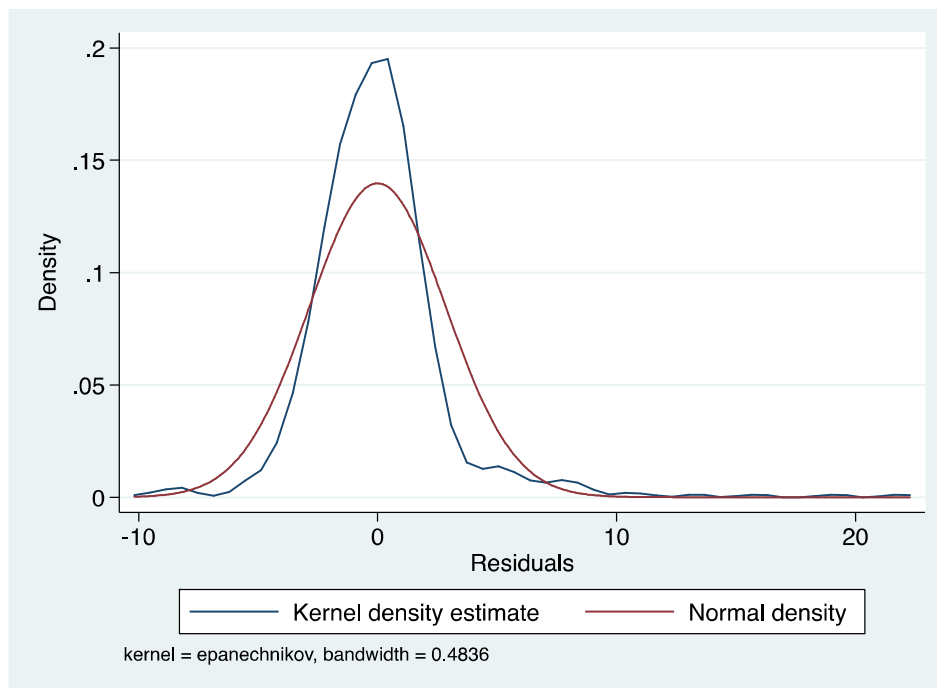
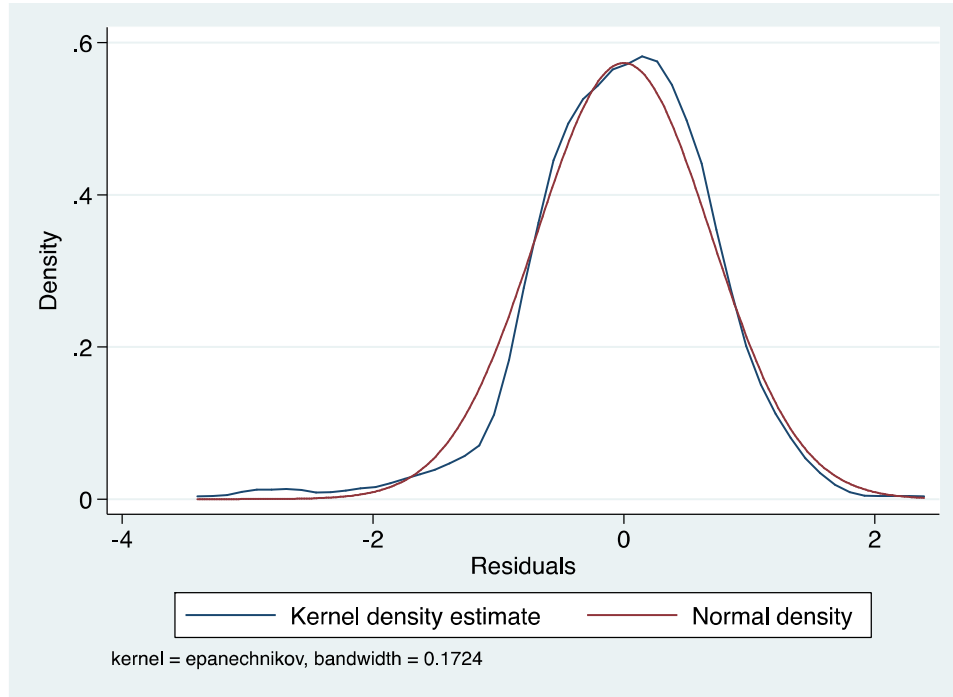
Figure A.3 Kidnapping Rate with Logarithmic Transformation



Figures A.4 and A.5 Kernel Density Plots for Residuals Models 1 and 2



Figures A.6 and A.7 Kernel Density Plots for Residuals Models 3 and 4



Figures A.6 and A.7 Kernel Density Plots for Residuals Models 5 and 6

