ECONOMICS 620

Allegheny College
Meadville, Pennsylvania
16335

Sinaloa DTO and Los Zetas: Organizational Structure and Violence as Profit Maximizing Strategies



Author: Jonathan Boyd
Date: 4/1/2015

Sinaloa DTO and Los Zetas Comparative Analysis: Organizational Structure and Violence as Profit Maximizing Strategies

By:

Jonathan Boyd

Submitted to The Department of Economics

Project Advisor: Simon Bilo

Second Reader: John Golden

Date: 4/1/2015

I hereby recognize and pledge to fulfill my responsibilities as defined in the Honor Code and to maintain the integrity of both myself and the College as a whole.

Your Signature

Your Name

Table of Contents

List of Figures....iv
Abstract....v

Introduction....1
1. Literature Review....3
2. Background....9
3. Theory....12
4. Theoretical Models....13
5. Market Structure....15
6. Organizational Structure....16
    6.1: Description of Organizational Structures....17
        (i). Binary Cell Structure....17
        (ii). Individually Dominated Hierarchy....17
        (iii). Cell-Dominated Hierarchy....18
    6.2: Sinaloa DTO Organization....21
    6.3: Los Zetas Organization....23
7. Violence....24
    7.1: Violence Against Law Enforcement....25
    7.2: Violence to Enforce Collusion....28
8. Conclusion....28
Bibliography....32

Figures

Figure 2.1. Map of DTO Dominant Influence in Mexico.....10

Figure 6.1. Optimal Structures.....18

Figure 6.2. Cell-Dominated Hierarchy: Equivalent Representation.....18

Abstract

This paper applies a profit maximization formula of drug trafficking organizations as well as applies research done on effective criminal organizational structures in order to determine the similarities and differences the Sinaloa and Los Zetas drug trafficking organizations. The profit maximization model by Castillo (20130 determines that the DTO with control over the most trafficking routes (plazas) earns the largest portion of aggregate profits. This paper explains how the Sinaloa DTO and the Los Zetas use their organizational structure and violence as two ways of maximizing profits, in order to maintain control of new plazas and defend already owned plazas. The Sinaloa DTO organizes in a cell-dominated hierarchical structure with multiple leaders that have full control and power over the organization, but each plaza they control is ran individually falling into the binary cell structure of organization. The Los Zetas began with an individual hierarchy structure, but have adapted as their business has expanded, to a structure that resembles the Sinaloa DTO, with only minor differences. The two organizations have different strategies when it comes to violence. The Sinaloa DTO would much rather bribe and individual the immediately resort to violence, while for the Los Zetas violence is second nature. Mexico, dominated by these two seemingly different DTOs, but their similarities is what allows them to achieve sustained success.

Introduction

Many studies have been done on the economics of organized crime, however few have linked their findings to Mexican drug trafficking organizations (DTOs). Those that have done studies directly relating to DTOs have done so in an attempt to gain a better understanding of actions and policy that can successfully prevent violence and the trafficking of illicit products and services. The goal of this paper is a comparative analysis of how two of the most prominent drug trafficking organizations use various organizational structures and violence, based on the theoretical framework that DTOs, are at their hearts, profit-maximizing organizations.

This paper focuses heavily on how the Sinaloa and the Los Zetas DTOs use plazas in order to maximize their profits. I want to define what a plaza so that it is understood exactly what a plaza is throughout the paper. A "plaza" or trafficking route " is a geographical area of influence... it can be the size of an entire Mexican state, or a group of states--or a city--or a county- seized within a state--or only a section of a city" (Moore, 2011), that a DTO has control over in order to traffic drugs or other illicit products through. When a DTO has control over a plaza, they control all illicit activity within that plaza. The importance of gaining control over and maintaining control over these plazas in order to maximize profits is explained in section 3.

An important distinction to make that is important for this papers analysis is in referring to the Sinaloa and Los Zetas as DTOs rather than cartels, “the term ‘cartel’, used colloquially to refer to DTOs, is a misnomer, as these organizations do not collude to reduce illicit drug production or to set prices” (Dell, 2012, p.5). Additionally, in an article by Mark Lacy (2009) he quotes The Congressional Research Service, that claims “The term drug cartel remains the term used colloquially and in the press, but some

experts disagree with this because ‘cartel’ often refers to price-setting groups and it is not clear that Mexican drug cartels are setting illegal drug prices’’(Lacy, 2009). Therefore, in this paper drug cartels will be referred to as DTOs (drug trafficking organizations). The only time that DTOs will be referred to as cartels is when used in a quotation from a supporting text.

The ability for DTOs to be able to operate as intelligently and as efficiently as many international corporations is their key to earning billions of dollars annually. Their ability to supply a good to their customers while maximizing profits requires an integrated business structure. Mexican DTOs may be ruthless, bloody and illegal organizations, but the men who run them have brilliant minds for business, and international expansion. Additionally, drug trafficking is just one of the many illicit activities that make up the business of a drug trafficking organization. DTOs are involved in numerous activities that directly and indirectly help produce revenues. Kurrel (2013) says that such activities include "human smuggling, which brings in upwards of $6 billion annually, or the core activity of money laundering which plans a crucial role in the overall business, by returning profits from the northern flow of illicit goods " (Kurrel, 2013, p. 2). But other activities take on a "more supportive roles, such as bribery, kidnapping, and enforcement" (Ibid, 2013, p. 2). In this paper, I will be analyzing the Sinaloa and Los Zetas drug trafficking organizations, using various studies to show how they are able to use different strategies in order to maximize their profits. The Sinaloa DTO and Los Zetas are diverse, and organized criminal organization that brings in billions of dollars in revenue every year. Using literature and previous studies of criminal organizations as profit maximizing organizations as a foundation, this paper is a

comparative analysis of the similarities and differences of two different drug trafficking organizations on organizational structure and use of violence, applied to a profit maximization framework in order to determine how they experience sustained success.

To determine what similarities and differences the Sinaloa and Los Zetas DTOs share a review of relevant literature pertaining to DTOs and criminal organizations will be in section 1, section 2 will give a background of the Sinaloa and the Los Zetas drug trafficking organizations to provide context for the analysis. Section 3 will be the theoretical framework used in the analysis of profit maximizing DTOs. Section 4 will be an analysis of the market structure that DTOs operate. Section 5 will analyze the organizational structure used by the Sinaloa and Los Zeta DTOs in order to maximize profits. Section 5 will be an analysis of how the two DTOs use violence as a profit maximizing strategy. Section 6 will be a summary of the conclusions and observations of the analysis.

1. Literature Review

Many studies on the Mexican drug trade focus on the impact of drug related violence on the Mexican economy. Such as the ongoing study being conducted by Robles, Calderon, and Magaloni (ongoing) in which they state that "Drug cartels are fundamentally organized to maximize profits from trafficking drug illegally into the United States.'El Narco' is primarily an industry, and as an industry, the production and distribution of drugs in fundamental" (Robles, Calderon, Magaloni, p. 8). The study also describes how "DTOs...have purely economic motivations...that utilize violence to compete for territorial control (town squares, or plazas, and drug trafficking routes)" (Ibid, p. 8). Mexican DTOs are often looked over when it comes to intelligent, effective

economic and business strategies due to the deviant market that they operate. Many people dismiss DTOs even though their annual revenues rival, and even surpass many of the most successful corporations and organizations.

Mexican DTOs are not just large gangs of ruthless, bloodthirsty, power-hungry, goons with guns, but organizations comprised of gifted entrepreneurs that have an understanding of how to operate complex, multinational trafficking businesses. Criminal organizations are able to determine sophisticated organizational structures that provide optimal intra-organizational efficiency. An important study done by Baccara and Bar-Isaac (2008) "How to Organize Crime" look at the tradeoffs that criminal organizations face in relation to "optimal information structure, rationalizing both 'hierarchical' structures and organization in cells" as well as "the implications of different forms of enforcement on the internal structure of the organization" (Baccara, Bar-Isaac, 2008, p.1). I will use the study done by Baccara and Bar-Isaac (2006) on the most efficient ways organized criminal organizations should organize, in section 4 and apply it to how the Sinaloa DTO and the Los Zetas are constructed organizationally that best allows them to maximize profits. They describe the tradeoffs of how information should be shared internally in the organization in order to ensure the greatest amount of productivity. They determine that the more information to entrust to members of the organization that results in a more efficient and productive organization, but "may come at the cost of leaving the organization more vulnerable to external threats such as law enforcement" (Ibid, 1). Due to this, criminal organizations must determine the best organizational structure that allows the organization to decrease the marginal cost of an individual being arrested by law enforcement, or captured by a rival criminal organization in respect to the ongoing

success of the overall organization. This might mean that a criminal organization might incorporate aspects of several organizational structures that best maximizes profits.

I will also be using concepts from Leeson and Rogers (2012) paper, "Organizing Crime", on how contestability of a criminal industry shapes how producers organize (Leeson, Rogers, 2012). How producers organize is also a reflection on the industrial structure of the market. DTOs operate in an oligopolistic where they are able to experience economies of scale as producers and traffickers. The drug trafficking industry is considered to be an oligopoly because there are a few large firms that dominate the market, with many other smaller firms that are also present. The reason that for this paper I refer to trafficking organizations as DTOs instead of cartels is because M.T Maloney (2003) describes an oligopoly as "an agreement among firms to act in concert, that is, like a team. In a perfect cartel, the firms act as if they were a single firm with multiple plants or facilities (Maloney, 2003, p. 2).

In an article put forth by Zott and Amit (2011) they define a business as “A system of interdependent activities that transcends the focal firm and spans it boundaries” (Zott, Amit, 2011, p 1024). Robert Kurrel (2013) also says how a successful business must incorporate an incredibly complex and organized system that effectively creates and captures value, while incorporating a reliable infrastructure that delivers that value back to the company in the form of profit. Earning profit from an effective and efficient business structure is "something both legitimate and illicit companies need in order to exist" (Kurrle, 2013, p. 14).

This paper focuses on how the Sinaloa DTO and the Los Zetas use organizational structure and violence as functions of profit maximization; they are also business' operating in a deviant market. A thesis paper written by Naval Post Grad student Robert Kurrle (2013) investigates the effective business strategies used by Mexican drug trafficking organizations. Kurrle provides a detailed report on the business practices that DTOs adopt, concluding that; innovative problem solving in order to overcome policies and high-level degrees of organizational resilience are the keys for Mexican DTOs to operate highly profitable businesses (Kurrle, 2013, p. 89). Kurrle's research how in order to be successful long term, DTOs must be able to adapt to an ever-changing market (Ibid, 2013, p. 14). The structure of a drug cartel, in order to maintain value in the market, includes activities such as enforcement, bribery, and extortion, along with assets such as the smuggling route, the smugglers, and their equipment (Ibid, 2013). When law enforcement clamps down on a particular supply route, makes a seizure, or an arrest, the cartel must adapt in order to figure out a way to still deliver their products to their customer. Research in this paper also provides valuable information on expenses of DTOs. Kurrel (2013) mentions expenses that include “bribed politicians, policemen, military officers, customs officers, soldiers, and intelligence officers” and later goes on to say, "DTOs also have many employees in positions similar to those seen is legitimate corporations such as purchasing agents, transportations specialists, boat captains, drivers, lawyers, and communication experts" (Ibid, 2013, p. 38-39).

Another important expense paid out by DTOs, are to the contractors along the supply chain that ensure that the maximum amount of product reaches its destination safely. DTOs hire many different contractors that work in a coordinated effort to outsmart

law enforcement all throughout the supply chain routs. Howard Campbell (2009) in the book "Drug War Zone" provides a valuable insight of how the inner workings of Mexican DTOs operate. Much of the book depicts the Mexican drug was though the eyes of people who have been directly involved. It provides interesting examples on some of the ways DTOs communicate as well as how they used coordinated efforts to traffic drugs across the United States boarder. Campbell describes how lookouts inform the smugglers which border checkpoint lane to use or when a section of the border is clear so that the drugs have the highest probability of making it across the border (Campbell, 2009, p. 110). Campbell also provides insights on how the price of drugs is determined by the amount of risk of transporting drugs, saying that price of illicit drugs is based on the risk entailed in moving the drugs to its destination. Drugs that cross the border into the United States profit margins skyrocket due to the high risk of crossing the border. The price of a kilo of cocaine increases upwards of 63 percent just by moving from a border city in Mexico, such as Juarez, to a border city in the U.S., such as El Paso (Campbell, 2009, p. 122).

Additional studies on the quantity and price of drugs, also show that the price of illicit drugs continues to increase the further into the United States travel. Studies show that 95 percent of the cocaine consumed in the United States travels across the U.S.-Mexican border. In addition the DTOs are also involved in the distribution of most other drugs consumed in the U.S., from marijuana to methamphetamine (Paul, Schaefer, & Carke, 2011, p. 2-3). The research presented by Paul, Schaefer, and Carke (2011) provides valuable insight on how the various activities of DTOs that require further investigation on the dynamics of the drug violence in Mexico (Ibid, 2011, p. 5). In order

to ensure the highest amount of revenues DTOs have access to logistical networks within the United States such as rental houses and used car dealerships, to disguise drug movement (Kurrle, 2013, p. 48). With an overwhelming amount of drugs being smuggles through Mexico DTOs often times contract out many of their smuggling jobs.

The massive amount of expenditure DTOs pay out to subcontractors helps DTOs minimize personal risk by paying others to conduct risky operations. Supply chains are crucial to the successful and efficient movement of drugs for DTOs. Because of the large amounts of drugs that are trafficked by DTOs they often higher subcontractors to help with the transportation. Andrew Dainty, Geoffrey Biscoe, and Sarah Millett's (2001) analyses of the UK construction industries subcontracting problems and provides valuable information on successful on effective supplier and subcontractor relationships. When a supplier is working with a subcontractor, the relationship can add significant value to the organization, but in order for that to happen "subcontractors and suppliers must be integrated formally into communication and reporting structures within the project organizational structure" (Dainty, Briscoe & Millett, 2001, p.846). DTOs hire subcontractors on various different scales, that very in price, from individual drug smugglers, to entire subcontracted smuggling operations, such as the Garibaldi-Lopez trafficking organization.

The two main revenue streams for DTOs are the control of plazas and the high profit margins associated with selling drugs in illicit markets. There are two pieces of literature that help explain why these two revenue streams are as profitable as they are; book by Naim (2005) and an article by Keefe (2012). Moises Naim's (2005) book is a detailed description on how criminal enterprises are shaping governments, and

economies. His book covers an important topic that relates directly to this paper. When describing the importance of DTOs control of plazas, Naim (2005), claims that, the DTO that has control over the plaza has a logistical monopoly on the control of who and what passes through its smuggling route into the U.S. (Naim, 2005, p. 75). In relation Keefe (2012) in an article discusses the control of a plaza is increasingly important to a cartel as it bottlenecks the closer they get to the United States border. The closer a drug gets to the United States border the value added to the illicit product significantly increases, providing incentive for cartels to eliminate any competition threatening the plaza at all costs (Keefe, 2012).

2. Background

2.1 Sinaloa DTO:

The Sinaloa DTO is known as the largest drug trafficking operation in the world. The Sinaloa DTO has an international network that now operates on four government continents (DeRoche, 1), which include operations in North America, South America, Europe, and Africa. Before the Sinaloa DTOs rise to power the Sinaloa DTO "was originally known as “La Alianza de Sangre” or Blood Alliance"(Krzeski, 2), run by Pedro Avilez Perez, "known as a first generation narco-trafficker"(Ibid, 2). After Pedro Alives Perez died in 1978, Joaquin Guzman, Rafael Caro Quintero, Miguel Angel Felix Gallardo and Ernesto Fonseca Carrillo took over operations of the business. These new leaders branched out into other more lucrative drug smuggling operations, which eventually brought them into contact with the Medellin family of Columbia. The Sinaloa DTO

became experts in the smuggling of massive amounts of cocaine from Columbia to Central America and Mexico via boat, plane and eventually into the United States.

The original partners then eventually split into their own operations. Joaquin Guzman and his partner Hector Luis Salazar stayed in the Sinaloa region of Mexico creating what is now known as the Sinaloa DTO. In 1993, Guzman was arrested in Guatemala and extradited back to Mexico. Due to the amount of government officials on Guzman's payroll, he was able to continue to run the Sinaloa DTO from prison, as well as maintain a rather lavish lifestyle during his stay. In 2001 Guzman escaped prison "and by 2003 Guzman was able to establish himself as Mexico's most powerful drug kingpins" (Ibid, 2). Outsourcing is also an important part of the Sinaloa DTOs profit maximizing operations. Much of the smuggling they now do it subcontracted out to smaller trafficking organizations in order to ensure that the most amount illicit goods make it to the United States.

2.2 Los Zetas:

Los Zetas DTO began in the late 1990's. The Gulf Cartel leader, Osiel Cardenas Guillen began hiring men from the Mexican army, specifically a unit known as Groupo Aeromovil de Fuerzas Especiales (GAFE). These men are an "elite airborne Special Forces who are trained for the purposes of locating and apprehending drug DTO members" (Campbell 2010, 56). They were hired specifically to protect the leader of the Gulf Cartel, "and to perform other vital fractions for the Gulf Cartel, such as 'enforcement' of drug trafficking activities" (Ibid, 56). The top recruit was Lieutenant Arturo Guzman Decena. Arturo Decena brought another 31 recruits with him, who were all "enticed by the substantially greater salaries than those paid by the Mexican

government" (Ibid, 56). The Zetas got their name from Decena's radio call sign when he was in the military which was "Z-1". The Zetas quickly gained more responsibility, taking more active roles in the Gulf Cartels organizing kidnappings, protection rackets, extortion, executions, and securing drug trafficking routes. Los Zetas gained many leadership roles in the Gulf Cartel, and after the arrest and extradition Gulf Cartel leader Osiel Guillen in 2007, Los Zetas split apart from the Golf Cartel and outnumbered them in both membership and revenue.

After the separation from the Gulf Cartel, the Los Zetas restructured and are now believed to have "taken on the functional characteristics of many types of organizations today, including insurgencies, nation-state militaries, corporations, irregular warfare units, terrorists, and organized crime" (Ibid, 56-57). The Los Zetas are now considered to be one of the most ruthless and dangerous DTO in the world.

Figure 2.1 is a map of the areas of influence by the major drug trafficking organizations currently operating in Mexico. As the figure shows, the Sinaloa DTO and the Los Zetas control the majority of Mexico. The importance of controlling the majority of the trafficking routes and territories is explained in more detail later in the paper.

Figure 2.1: Map of DTO Dominant Influence in Mexico



Source: DEA, May 2011, adapted by CRS 1

3. Theory

This paper will use a theoretical model of profit maximization for drug trafficking organizations by Castillo (2013). The model suggests that the fraction of profits a DTO receives is equal to the fraction of trafficking routes controlled by a DTO. Using Castillo's model I will explain how the Sinaloa DTO and the Los Zetas use organizational structure and violence in order to gain control of new trafficking routes and protect trafficking rotes already controlled. In order to provide a good explanation it is important to know that the drug trafficking industry is oligopolistic. DTOs are able to experience economies of scale, which allow them to maximize profits by expanding in size and territories.

A good organizational structure for a DTO has to be easily adaptable to a market that is constantly shifting. DTO members are continuously being arrested, or killed causing constant shifts in power, as well in opportunities for rival DTOs to take advantage of weakened DTOs. A strong organizational structure that lets DTOs run efficiently, as well as adapt quickly to a shift in obstacles faced by arrests or deaths. DTOs with stronger and easily adaptable organizational structures will be better suited to take control of trafficking routes or protect controlled routes barring a conflict.

DTOs are known for their violence. Because DTOs are constantly trying to maximize their profits, they are constantly battling with each other for control over trafficking routes. They also engage in violent acts with law enforcement, who are also trying to maximize to cost for DTOs to traffic drugs through Mexico. DTOs do not engage in conflict when it is avoidable. DTO expenditures paid out in violent conflicts are costly, and DTOs will avoid violent conflicts if possible, resorting to collusive

agreements with the threat of violence if cheated on. Organizational structure and violence play a larger part in profit maximization for, and are able to be explained as functions of profit maximizing drug trafficking organizations.

4. Theoretical Models

I want to establish a framework from which I will describe the similarities and differences of Mexican DTOs Mexican DTOs are complex and organized businesses that incorporate many different strategies all working in an together in an efficient manner in order to capture value and maximize profits. In this section I will give a summary of the models that I have drawn upon in an attempt to compare the similarities and differences of two Mexican DTOs. This paper develops a comparative analysis based on the theory of profit-maximization behavior of the Sinaloa and Los Zeta drug trafficking organizations.

A model set forth by Juan Camilo Castillo (2013), models DTOs as firms that will collude in order to gain control over more trafficking routes, and avoid expenditures on violent conflict in order to maximize profits. In order for the model to be able to analyze aggregate behavior Castillo makes the crucial assumption that behavior as a function of *q* has constant returns to scale (Castillo, 2013, p.13). Before stating the entire model, I want to clarify what each term represents: π_i = DTO profits, π^A = aggregate productive profit, R= trafficking routes, X= aggregate amount of drugs bought, Q= aggregate supply of drugs, p_c = price of drugs in the consumer market, p_p = price of drugs in the consumer market, q_i = drugs in consumer markets, g_i = recourses committed, g-*i*= total amount of expenditures by DTO_i, and x*i*= drugs bought. Now that the terms are defined, the

following is the equation for the aggregate productive profit that takes into account productive behavior where $x_i = R_i X$ and $q_i = R_i Q$, but does not take into account expenditures on military behavior (Ibid, p.15) is as follows:

$$\pi_i = p_c\, Q - \, p_p X$$

Using the above equation Castillo (2008) is then able to obtain a new expression that takes into account expenditures on conflicts over trafficking routes which is expressed as g_i or the recourses committed in the conflict. DTO_i buys an amount of drugs $x_i = R(g_i, g\text{-}i)\, X$ as well as sells an amount of drugs $q_i = R\,(g_i, g\text{-}i\,)\, Q$. Substituting these into the first equation, results in $\pi_i = p_c q_i - p_p x_i - g_i = (p_c Q - p_p X)\, R(g_i, g\text{-}i) - g_i$. The first equation can then be rewritten in terms of the new model for aggregate productive profit:

$$\pi_i = R(g_i, g - i) - g_i$$

In summary DTOs fight over aggregate productive profit, and spend recourses in order to obtain a larger share of the prize and after the conflict DTO end up receiving a fraction π^A (aggregate profit) equal to the fraction of routes they control (Ibid, p.15).

In addition to using Castillo's (2008) profit maximization, I will be using Baccara and Bar-Isaac (2008) research on the most efficient criminal organizational structures. I assume that Sinaloa DTO and the Los Zetas differences and similarities in organizational structure, and use of violence can be described as functions of profit maximizing behaviors.

I predict that the models explained above can explain the organizational structure and the use of violence used by the Sinaloa DTO and the Los Zetas as profit maximizing behaviors. The organizational structure plays an important role in the ability for DTOs to be able to supply the optimal amount of illicit goods to the consumers in North America.

Managing a volatile supply chain up through Mexico takes a sophisticated amount of communication and organization, because of the constant threat of rival DTO and law enforcement interference. The Sinaloa DTO and the Los Zetas adapt their organizational styles that allow them to be able to adapt to a market where members of the organization are in constant danger of being arrested or killed. This means that the organizational structures have to be easily adaptable to an ever changing market. DTOs have to structure in a way that will allow the continued success and protection of the overall organization barring the capture or death of an important member of the organization. The ability for the Sinaloa DTO and the Los Zetas to structurally organize in a manner that allows the continued function of the organization after the loss of a key member allows them to maximize profits.

5. The Market Structure

DTOs operate in a oligopolistic market. In this section, I be using characteristics of an oligopolistic market and show how the Sinaloa DTO and the Los Zetas fall into this market. If a firm is operating in an oligopolistic market, the market is dominated by only a few large firms that capture a majority of the market share. Even though the market is dominated by a few large firms the market can also have many smaller firms that are also in the market. In a oligopolistic market the barriers of entry are often high or too costly for new firms to enter the market. In the case of drug trafficking one of the barriers of entry might include the access to crucial supply chains (plazas) that allow DTOs to efficiently maximize profits by trafficking drugs along the route that minimizes the risk of seizures by law enforcement and rival DTOs that are also operating in the market. A superior knowledge of the market, gives the larger DTOs better sources of production as

well as an understanding of the consumers that they are trying to get their product to. A superior knowledge of the market The reason that the drug trafficking market is that anyone can decide that they want to traffic drugs with a relatively low amount of startup costs but in order to become a major firm in the market they must go up against well established firms, that experience economies of scale. The Sinaloa DTO and the Zetas operate with and endless supply of capital as well as well established supply chains, and access to large scale production facilities. The Sinaloa DTO and the Los Zetas are the two most dominant organizations in the market, hence why this paper compares how these two firms are able to maximize their profits to dominate a market that is highly volatile.

6. Organizational Structure

In order for a company to be successful long term they must be able to adapt to an ever changing market. Just as with legitimate companies, Mexican DTOs must provide a product or service that customers value and have an infrastructure in place that can deliver that value. This chapter will compare the two organizational styles of the Sinaloa trafficking organization and Los Zetas. I will apply the model of organizational structures by Mariagiofanna Baccara and Heski Bar-Isaac (2006), and use ideas from Peter T. Leeson and Douglas B. Rogers paper Organizing Crime (2012), on how contestability of a criminal industry shapes how producers organize (Leeson, Rogers, 2012) in order to explain why the Sinaloa DTO and the Zetas organize to maximize profits. Also, I will determine how both DTOs fit into the profit maximization model of Castillo (2013) based on how each DTO decides to organize. Using research gathered from these studies, I will explain the different types of orgnaizational structures, then

explain the the similarities and differences the Sinaloa DTO and the Los Zetas that allow them to maximize profits. The three organizational structures that I will be the basis for my analysis will be: binary cell, individual dominated hierarchy, and cell-dominated hierarchy.

6.1) Description of Organizational Structures

(i) Binary Cell Structure

In this structure, all agents are organized into pairs of agents that are linked to each other but no others in the organization. An illustration of this can be seen in panel A of figure 6.1, where each letter represents a separate individual, and each line represents a connection between each individual with the directionality of information sharing is represented by an arrow. As you can see in panel A of figure 6.1 each cell runs independently of one another, with no information shared among members of separate cells. This does not mean that each cell does not communicate with one another in order to coordinate business, or to aid allied cells in times of violence, but crucial information regarding the operations of that cell is rarely disclosed to members of a separate cell. This structure provides optimal security for the members of the organization because it limits the amount of information any one individual has on the organization as a whole. This structure also provides the most difficulties in communication for efficient movements of illicit products. Each cell has little to no knowledge of the overall operations of another cell and they primarily communicate through radios or disposable cell phones. This structure is the safest for the members of the organization, but has the most obstacles in terms of cell-to-cell communication and efficiency.

(ii) Individually Dominated Hierarchy: Vertical

This is a centralized structure of organization. Consisting of no more than one individual who has full knowledge and control over the entire operation.

A representation of an individually dominated hierarchy is shown in panel B of figure 6.1. Letter A represents the main leader of the organization, with letters B, C, and D representing individual cells or persons in charge of cells that only inform the leader (A) of the organization of all of the operations being conducted, shown by lines connecting the individuals, with the arrows representing the flown of information. The extreme importance of the leader of the organization, because they are the only individual with full information of the organization they are often shielded from law enforcement by having little involvement in the actual day to day operations of criminal activities being performed. Individually dominated hierarchy organizational structure differs from a cell-dominated hierarchy in that in an individually dominated hierarchy the leader is the sole individual with full power over the organization. The leader does not share any power with anyone else in the organization and is the only person information over all aspects and activities conducted by that particular organization. This is the most dangerous organizational structure for criminal organizations because if the leader is killed or arrested by law enforcement the organization as a whole will be continue to maintain due to the little knowledge the rest of the members had about the organization.

(iii) Cell-Dominated Hierarchy: Combination of Horizontal and Vertical

This structure resembles aspects of both individually dominated hierarchy and binary cell structures of the binary cell structure. In this structure, a several leading agents hold the information and enforcement power in a centralized “home base”. Similar to how an individually dominated hierarchy operates, where individuals or cells report to an

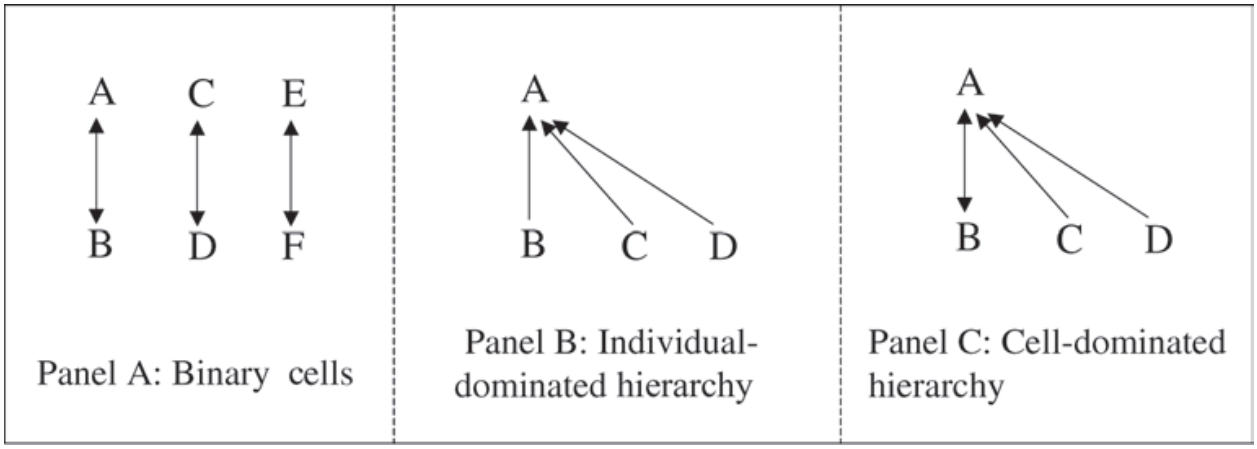
individual who is the leader of the organization, but a cell-dominated hierarchy has more than one leader that has full power over the operations of the organization.

Panel C of figure 6.1 shows an illustration of a cell-dominated hierarchy Individuals A and B share information between each other, shown by the line connecting them with arrows representing information flow going both ways. Letters C and D represent cells or individuals in charge of cells that share information with one of the leaders. Leader A then in turns shares that shares that information with other leaders in the organization. Shown in figure 6.1 by individuals C and D share information with leader A who in turn shares this information with other leaders in the organization, represented by letter B in the figure. Panel C in figure 6.1 can also be represented in several different ways. Figure 5.2 shows equivalent representations of panel C in figure 6.1. Numbers 1 and 2 represent letters A and B, and numbers 7 and 8 represent letters C and D from panel C in figure 6.1. In other words, individuals or cells can share information with any of the leaders of the organization that share full knowledge of the organization with each other. The cells are independent of one another with little knowledge of each other's operations.

The top leaders in this structure share full transparency information and enforcement power with one another, meaning that if one leader makes a decision, all other top-level leaders will have knowledge of it. In addition, when an individual cell reports to a top-level leader, the leader that was informed will share this information with the rest of his leading counterparts. Alternatively, an individual cell may be responsible for sharing information with each of the top-level leaders independently, instead of just reporting to one leader who in turns informs the others. The main difference between

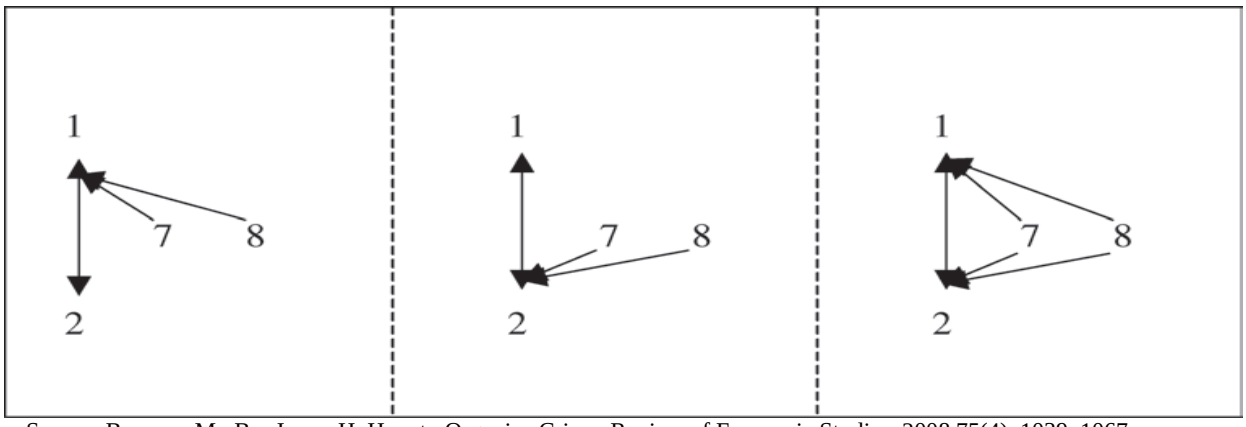
cell-dominated and individually dominated hierarchy structures is the number of individuals that share full power over the entire organization. An individually ran hierarchy only has one individual with full knowledge and information of the activities of the activities, while cell-dominated hierarchy has multiple individuals that act as a sort of board of directors that have full knowledge and information.

Figure6.1: Optimal Structures 1



Source: Baccara, M., BarIsaac, H. (2008).How to Organize Crime, Review of Economic Studies,2008,75(4),1039–1067.

Figure5.2: Cell-dominated hierarchy: equivalent representations



Source: Baccara, M., Bar-Isaac, H. How to Organize Crime, Review of Economic Studies, 2008,75(4), 1039–1067.

Baccara and Bar-Isaac (2008) make an important note that it is possible to have combination of characteristics from all three organizational structures. An illustration of the structures can be seen in figures 6.1 and 5.2. I will show how the Sinaloa DTO and the Los Zetas set themselves up structurally in order to maximize profits. The ability for these two DTOs to adapt their organizational structures quickly and efficiently to continuously changing market is integral when trying to increase the financial and geographical scope of their profit maximizing operations.

6.2 Sinaloa DTO Organization:

The Sinaloa organization incorporates a characteristics of both binary-cell and cell-dominated hierarchical structure. Joaquin Guzman is considered to be the leader of Sinaloa DTO there are at least four leaders or drug lords that operate at the top of the chain of command at any time, as a sort of board of directors. The top-level agents of the Sinaloa Federation consist of Joaquin Guzman, Ismael Zambada Garcia, and Ignacio Coronel Villareal. Guzman is considered the leader of the Sinaloa DTO because he has

been in the organization since its origins. Each top-level member has knowledge of the entire workings of the organization, which is a characteristic of the cell-dominated hierarchy. The leaders are able to come together in order to make key business decisions regarding assassinations, conflicts with rival DTOs, pricing of dugs in certain regions, and transportation methods. The level of trust and communication of the top-level leaders allows the organization to make quick decisions in order to capture opportunities that increased their market share and maximizing profits.

While these top level leaders of the Sinaloa Federation fit into the cell-dominated hierarchical structure, the plazas or cells, (drug trafficking municipalities in Mexico along the trafficking routes up to the U.S.) ,used by the Sinaloa Federation, are ran independent of each other, and usually ran by a plaza boss or lieutenant. Plazas fall into the binary-cell structure. In order to maximize profits Sinaloa DTO gives full control of a plaza to a lieutenant, whose sole task it to protect the plaza from rival trafficking organizations and law enforcement, and traffic illicit goods through the plaza when told. The boss of each plaza only takes orders of the top level leaders of the organization. The bosses of each plaza have no control over the operations of the activities being performed in other cells of the organization. The reason Sinaloa Federation adopts the binary-cell structure with plazas is to minimize the cost of transporting drugs up to the United States entry points, as well as decreasing the marginal risk of the organization if the plaza is shut down by law enforcement or taken control of by a rival DTO. By having a cell-dominated hierarchy the leaders attempt to maximize profit in two ways: minimize the risk of seizures by law enforcement, and determine the most efficient rout to take in order to ensure the maximum amount of product reaches the consumer. In addition if a plaza is

shut down or taken by law enforcement the individual members of the plaza are not able to give information about the larger organization due to pure lack of knowledge of the organization as a whole.

Finally, I would argue that the trafficking routes that are owned by the Sinaloa DTO are structured as binary cell in order to protect upper level leaders from being protected from detection from law enforcement, as well as to prevent capture or assassination from rival DTOs. Castillo's (2008) DTO model of profit maximization determines that whatever DTO has control over the most trafficking routes (i.e. plazas) will earn a larger aggregate profit since the model determines that the fraction of aggregate profit a DTO receives is equal to the fraction of routes they control. For this reason DTOs are constantly battling over plazas in order to maximize aggregate profits.

6.3 Los Zetas Organization:

The Los Zetas originally began with a clear individually dominated hierarchy organizational structure. Because of their military history, they were already accustomed to having a clear chain of command. A clear chain of command allowed the Zetas to effectively operate over many different areas and markets. Now the Zetas have more similarities than differences with the Sinaloa DTO regarding organizational structure. The Zetas have transitioned to combination of a cell-dominated hierarchy and binary cells structure. The original Zetas (Zeta Viejos), which consisted of, now form the top level within the organization" (Brands, 2009). This characteristic is what makes their structure part of the cell-dominated hierarchy structure. Similarly to the Sinaloa DTO, the top level leaders have a complete transparent knowledge of the entire organization. They have intimate knowledge and power of the major trafficking routes that the organization uses.

However, the Zetas have a significantly less hierarchical structure than that of Sinaloa. Members of the central command control each individual cell, and each cell has little to no knowledge of how the other cells operate. In order to ensure that cells are operating smoothly, the leaders of the Zeta DTO hold "quarterly meetings, business ledgers, even votes on key assassinations" according to a blog by a member of the Boarder Narcotics Intelligence (2014). The reason for this being different from the Sinaloa DTO is that each cell or plaza for the Sinaloa DTO has a boss or lieutenant that has control over the operations of the cell and reports to the central leadership. The Zetas structure their cells slightly differently in that each cell has a clear flatly organized division of labor. Each member of the central leadership is in charge of individual cells, differing from the Sinaloa DTO that puts lieutenants in command of individual cells.

The cell or plaza structure of the Zetas is the only real difference in the overall structure of their organization. Instead of having a boss or lieutenant in charge of each cell that relays commands from the top- level leaders, the Zetas organize their cells into smaller subgroups that operate according to a clear division of labor that includes jobs such as, "operatives involved in money laundering, smuggling and distribution, enforcement, arms procurement, intelligence gathering, and other activities. At the bottom of the organization are common criminals who perform a variety of unglamorous but essential tasks" (Brands, 2009). . Each cell subgroup has a distinct job, that when combined creates more of a flatly organized cell, instead of the slightly more hierarchical organized cells that the Sinaloa DTO uses with a boss leading each independently run cell.

Each cell operating independently of one another is a characteristic of a binary cell structure. This is once again beneficial from a profit maximization standpoint. Flatly organizing the cells allows the Zetas to adapt depending on market situations, such as arrests, assassinations, and seizures. When one cell is compromised then the central command is able to determine an alternate trafficking route that ensures the delivery of maximum about of product to the consumer, maximizing profits.

7. Violence

Drug trafficking organizations are known for their extreme violence and brutality. But these violent acts are often times play a larger role in the profit-maximizing behaviors of DTOs. In this section I will compare the ways in which the Sinaloa DTO and the Los Zetas use violence as a profit maximizing strategy. Note that I am describing the violent acts that directly relate to profit maximization; whereas not all acts of violence done by DTOs are relevant to profit maximization. In this section I will describe the reasons that DTOs engage in violence with law enforcement, violence as a way to shape policy, and violence in order to maintain control of and gain new control over trafficking routes.

7.1 Violence Against Law Enforcement

DTOs do not meaninglessly engage in violence with law enforcement. DTOs behaviors then can once again be explained due to profit-maximization. The Sinaloa and Los Zeta DTOs have different views of using violence against law enforcement and the federal government. Both organizations are involved in violent confrontations constantly with law enforcement. The Sinaloa DTO seeks connections between their organization

and the government officials rather than separation from it (Krzeski, 2013). Alternatively, the Los Zetas uses horrific acts of violence as a first resort. The Sinaloa DTO recognizes the potential benefits from a relationship with the local state and federal governments of Mexico. The Sinaloa DTO gives local law enforcement and state and federal officials the option of "plato o plomo", this translates to "silver or lead". Government officials "are offered bribes; if they chose to refuse, they and their families are likely to face threats of violence" (Krzeski, 2013, p. 48). In a journal article published by Sylvia and John Longmire provide an accurate statement on why DTOs engage in violent conflicts with law enforcement when they say,

> Mexican DTOs do not wish to remove the Mexican Government and replace it with one of their own. They are not religious zealots wishing to convert the Mexican people or the rest of the world. They simply want to maximize their profits and keep government and law enforcement out of their business. (Longmire and Longmire, p. 47)

The constant fight among the United States and Mexican governments and DTOs has been the source much of the violence in Mexico. The Sinaloa DTO and the Los Zetas main objective are to traffic the maximum amount of illicit products to the consumer as possible. The objective of law enforcement is to seize as much product as possible before it reaches its destination. Also, we can once again use Castillo's (2008) drug trafficking profit-maximization model and apply it to why the Sinaloa DTO and Los Zetas use violence against law enforcement in an attempt to maximize their profits.

The profit-maximization model used for this paper shows that the more plazas (cells, trafficking routes, or trafficking municipalities) an organization controls the more

of the aggregate productive profit they receive. In an attempt to reduce the supply of drugs to the consumer markets, governments attempt to seize control of the plazas. As profit maximizers, the Sinaloa DTO and the Los Zetas want to maintain control of as many of these plazas as possible, either with bribing local and state officials, or in most cases violence.

DTO violence with law enforcement is a manifestation of DTOs attempts to shape government policy. Shawn Teresa Flanigan (2012) suggests, “Mexican drug cartels may target state actors and attempt to influence government decisions…but this is done only for the utilitarian purpose of maximizing profits” (Flanigan, 2012, p. 286). Bribed government officials in high-level government positions can have an impact on certain policy decisions that would affect the cost of the transportation of drugs through Mexico. The cost of bribing an official in order to have an impact on policy is an expense that DTOs are willing to make, as the resulting impact on policy would have a positive impact on the DTOs profits.

The alternative to bribing an official is the use of violence. Melisa Dell (2012) shows that “drug trade violence in a municipality increases substantially after the close election of a PAN Mayor” (Dell, 2012, p.30). PAN officials are members of the conservative National Action Party in Mexico. One of the objectives of mayors that are aligned with the PAN is to instill anti-trafficking policies in the municipality they are elected to, “The government’s objective is to maximize the total cost that traffickers incur” (Ibid, 2012, p. 28). Neither Sinaloa nor the Zetas benefit from local officials attempting to increase the total cost of transporting illicit products through these municipalities. The Los Zetas assassinated “the police chief in Nuevo Laredo in 2005 just

hours after he pledged not to be intimidated by Zeta threats" (Brands, 2005). Alejandro Dominguez "vowed to clamp down on organized crime" (Eaton, 2013), which would have risen the cost of trafficking for the Los Zetas who had control over the crucial border city of Nuevo Loredo. There has been many more assassination similar to this throughout Mexico by the Sinaloa DTO that would have increased the cost of trafficking in the municipalities that officials threatened take a stronger stance on drug traffickers. As a profit maximizing organizations the Sinaloa and Los Zetas DTOs use violence to keep shape policy in order to maintain control of as many municipalities as possible in order to maximize their profits. Fiorentini (1999) points out that "There is an unavoidable conflict between the objectives of the government in passing legislation and those of the economic agents who strive to minimize costs" (as cited in Smith, 1976 , p. 442).

7.2 Violence to Enforce Collusion

Collusive agreements are often used in traditional cartel agreements in order to fix output and prices. Drug trafficking organizations use collusion for profit maximization but not in the same way that traditional cartels use collusion. DTOs like the Sinaloa DTO and the Los Zetas use collusion as a way to "prevent competitive pressures from eroding returns" as well as prevent new producers from entering the market" (Leeson, Rogers, 2012, p.95)

Unlike in legal markets, illegal criminal organizations are able to use violence in order to enforce collusive agreements. In a market where there is no tangible third party enforcer violence becomes the only way to protect collusive agreements against cheaters. In the market of illicit drug trafficking collusive agreements are often between a large

DTO and a smaller one in order to gain more of the market share or ownership of a larger quantity of trafficking municipalities. The incentive for DTOs to collude is based on the evidence of the profit maximization model used for this study. DTOs maximize profits by gaining control of the largest amount of plazas; collusion provides an opportunity for DTOs to expand their areas of influence. In a deviant market this can create new challenges of a effective way of enforcing collusive agreements. With no legally binding contracts, violence becomes the only option to prevent cheating.

8.Conclusion

Both the Sinaloa and the Los Zetas are violent brutal organizations that instill fear into people around the world. But all of the violence and brutality is all apart of two complex and well organized organizations that bring in annual profits in the billions. Every move they make are not random decisions made by ruthless killers with guns, but rather organizations operating in a lucrative market. In order to maximize profits in the trafficking market the DTO with control over the most trafficking routes saw a larger amount of profits, therefore in order to maximize profits DTOs are constantly in competition with one another for, and law enforcement over control of these routes or plazas.

The Sinaloa and the Los Zetas operate in an oligopolistic market. Because an oligopolistic market is defined by having a few large firms that dominate the market, while many smaller firms are able to be present as well, that is exactly where the Sinaloa DTO and the Zetas are apart. In an oligopolistic market firms are also able to experience economies of scale. The larger DTOs are able to operate much more cost effectively

based on the size and strength of their operations. The Sinaloa DTO and the Los Zetas are the two largest firms in a trafficking market. Because there are also many smaller trafficking organizations the larger DTOs often contract smaller orgnaizations to move larger quantities of drugs up through Mexico.

Based on the study done by Baccara and Bar-Isaac on efficient organizational structures, both of the DTOs studied in this paper are strategically organized in a way that allows them to maximize their profits. The Sinaloa DTO uses both a binary cell as well as a cell-dominated structure. They combine the two different organizational structures in order to better maximize profits. They are able to maintain a clear top tier level of leadership, a sort of board of directors, that all share equal information about how the entire organization works as a whole, allowing them to quickly and efficiently give orders to any cell or subcontractor under the ownership of the Sinaloa DTO. However, each individual cell in independently run from one another with little to no knowledge of the other cells dealings. This ensures a lower marginal cost of a cell or plaza being shut down by law enforcement or taken over by a rival DTO. If a plaza is taken then they can give little to no information regarding the workings with the top leaders of neither the organization nor the other plazas.

The Los Zetas started out with a different organizational structure at the beginning because they were at first only a hired group hired by the Gulf Cartel in order to provide security. Once the Zetas became stronger and the leader of the Gulf Cartel was arrested the Zetas took over operations and adapted to a organizational structure that resembled that of the Sinaloa DTO. Now the Zetas operate under a combination of a cell-dominated

hierarchy while each cell is operated under the binary cell structure. The Zetas however, have a binary cell structure because instead of each leader having control over the entire organization each leader is mainly in charge of a singular trafficking route. However, the structure plays the same profit maximizing roles as the Sinaloa DTO.

Drug trafficking organizations are brutal and ruthless killers, but that brutality and ruthlessness is not for no reason. Violence plays a larger role in profit maximizing for these DTOs rather than senseless acts of terror. The Sinaloa DTO and the Los Zetas use violence in different ways as profit maximizing strategies.

As the theoretical model put forth by Castillo (2008) suggests, the fraction of the profits seen by a trafficking organization is equal to the fraction of trafficking routed controlled by the organization. Therefore, the Sinaloa DTO as well as the Zetas are in constant battles in order to retain as many trafficking routes as possible in order to retain a larger amount of the profits. They are not only fighting each other for control over plazas, but with law enforcement as well.

Violence against law enforcement comes from the government's constant battle in order to reduce the supply of drugs that are trafficked up to the U.S border. The main difference is the mindset of the use of violence in order to maximize profits. The Sinaloa DTO would much rather bribe an individual rather than use violence in order to achieve their goals, whereas the Zetas view violence as a way to build up brand recognition and see violence as the only option mindset. The overall conclusion of is that the Sinaloa DTO and the Los Zetas have more similarities than differences when it comes to their uses of organizational structures and violence in order to maximize profits in. They have

few differences in all of these categories but the similarities are what enable them to be the two drug trafficking organizations that dominate the market.

Bibliography

Mariagiovanna, B., Bar-Isaac, H. (2008). How to Organize Crime. Review of Economic Studies,75:4,1039–1067.

Campbell, H. (2009). Drug War Zone: Frontline Dispatches from the Streets of El Paso and Juarez. Austin: University of Texas Press.

Campbell, J. L. (2010). Los Zetas: Operational Assessment. Small Wars & Insurgencies, 21:1, 55-80.

Castillo, C. C. (2013). Should Drug Policy be Aimed at Cartel Leaders? Breaking Down a Peaceful Equilibrium (Masters Thesis). Universidad de los Andes. Print.

Dainty, R. A., Briscoe H. G., & Millett, J. S. (2001). Subcontractor Prospective on Supply Chain Alliances. Construction Management and Economics, 19:8: 841–842. http://dx.doi.org/10.1080/01446190110089727

Dell, M. (2012). Trafficking Networks and the Mexican Drug War.

Jones, G., Wadhwani, R. D. (2006). Entrepreneurship and Business History: Renewing the Research Agenda, working paper for Harvard Business School, 3.

Keefe, R. P. (2012). Cocaine Incorporated. *New York Times*, June 15, http://www.nytimes.com.

Kurrle, Robert W. (2013). The Effective Business Practices of Mexican Drug Trafficking Organizations (DTO's) (Masters Thesis). Naval Postgraduate School. Print

Krzeski, P. (2013). The Sinaloa Cartel as a Form of External Regulation on the Free-Market Structure of Ciudad Juarez, Mexico. Xavier Journal of Politics, 4:1, 43-53.

Lacy, M. (2009). When a 'Cartel' Really Isn't. The New York Times. Retrieved from: http://economix.blogs.nytimes.com/2009/09/21/drug-wars-when-a-cartel-really-isnt/?_r=0

Leeson, T. P., Rogers, B. D. (2012). Organizing Crime. University of Chicago. Print.

Longmire, M. S., Longmire, P. J. (2008). Redefining Terrorism: Why Mexican Drug Trafficking is More Than Just Organized Crime. Journal of Strategic Security, 1:1, 35-52.

Maloney, M. T. (2003). Oligopoly & Cartels. Clemson Economics.

Moises N. (2005). Illicit: How Smugglers, Traffickers, And Copycats are Hijacking the Global
Economy. 75.

Paul, C. Schaefer, G. A., & Carke, P. C. (2011). The Challenge of Violent Drug-Trafficking Organizations: An Assessment of Mexican Security Based on Existing RAND Research on Urban Unrest, Insurgency, and Defense-Sector Reform. *RAND*.

Robles, C., Calderon, G., & Magaloni, B. (working paper). The Economic Cost of Drug-Trafficking Violence in Mexico. Stanford University CDDRL. Print

Zott, Christoph, Raphael Amit, and Lorenzo Massa. (2011). The Business Model: Recent Developments and Future Research. Journal of Management, 34, 1019-1042.