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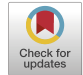
Market concentration in the international drug trade[☆]



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ABSTRACT

This paper investigates the industrial organization of the international drug trade. From the mid 1970s through the early 2000s, a few large-scale and hierarchically organized cartels dominated the market. Since 2006, dozens of smaller and more-specialized units have emerged. We notice that the prohibition efforts of federal governments (primarily Mexico and the U.S.) imposed costs asymmetrically across differently sized drug trafficking organizations (DTOs). Under president Calderon (office held from 2006–2012), efforts were arranged as "kingpin" or "decapitation" strategies and were primarily focused on arresting key leaders of the largest and most infamous operations. This asymmetric enforcement structure evoked unique strategic responses from differently sized DTOs. Larger DTOs splintered into smaller units. Smaller outfits remained small and sought more specialized roles in the more decentralized and competitive supply chain. Furthermore, we argue that subsequent changes in operating costs amidst this less concentrated environment, tended to exaggerate the asymmetric cost structure across differently sized DTOs. Larger DTOs in a more competitive illicit market cannot exploit economies of scale to maintain internal coordination and loyalty as easily as they once could with fewer rival DTOs. In result, the seemingly persistent industrial organization of the international drug trade has remained less concentrated than in previous decades.

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1. Introduction

From the mid 1970s through the early 2000s the international drug trade (primarily across Latin America and the United States) was dominated by a few, large, and hierarchically organized cartels. Since 2006, the industrial organization of this illicit market has substantially changed. Today, the international drug trade is comprised of several dozen, more-independently managed, smaller-scale, and more-specialized drug trafficking organizations (DTOs).

Two aspects of this change are puzzling. First, given the conditional factors of the international drug trade, lessened concentration stands in contrast to what standard theory would predict. The illicit and international conditions of the market coincide with high profits, high contestability, ambiguous expectations regarding enforcement risks, and relatively high operating costs. Such factors suggest suppliers would be inclined to exploit economies of scale by continuously growing larger and producing more output at lower per unit costs. We would also expect larger DTOs with more established comparative advantages in violence to both suppress competition and subsume smaller operations. Such outcomes were arguably in place during the reign of the infamous cartels dominant between the 1970s and early 2000s. But, current outcomes substantially differ.

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Second, at his inauguration in 2006, Calderón announced his War on Drugs, and between 2006 and 2012, dispatched nearly fifty thousand soldiers and around five thousand federal police officers to target Mexican DTOs (Redmond, 2016). These "kingpin" strategies were designed to proverbially "decapitate" the drug supply. Rather than enforce prohibition uniformly across different functions and stages of the drug supply chain, kingpin protocols focused investigation and prosecutorial resources more narrowly upon key leaders and bosses within the top cartels.[1] Under such a targeted enforcement regime, one would expect the market to de-concentrate and host a greater quantity of firms. When larger DTOs face risks from law enforcement above those felt by smaller operations, such costs at least partially offset the profit incentives from economies of scale. Inversely, if kingpin targeting were removed, re-concentration would be expected so long as the standard conditions of illicitness and internationality continued to hold. However, despite Calderon's departure from office in 2012 and a substantial reduction of kingpin efforts, the international drug trade remains less concentrated with a greater number of smaller, more-independently controlled, and more specialized DTOs. Comparable large-scale and hierarchically managed cartels, as dominated during the 1970s and 80s, remain absent. Smaller DTOs have refrained from exploiting economies of scale and thus refrained from expanding into larger operations. Smaller DTOs have also avoided merging into larger organizational units. This paper aims to explain these seemingly anomalous aspects of the international drug trade.

A variety of research provides insight for how we may expect the industrial operations of the international drug trade to function. Beyond standard economic models of crime and punishment,[2] recent institutional theories investigate criminal organizations such as mafias, DTOs, and other illegal enterprises. DTOs are modeled akin to profit-seeking firms (Coase, 1937; Williamson, 1985), wherein groups of rational agents unite by a common criminal purpose (Rubin, 1973). Gangs select and evolve organizational patterns and internal rules to solve collective action and principle agent problems, to maintain and increase profits, and to better strategize around the risks of prohibition. For example, wage distributions within street gangs must balance the need for enticing new members against the challenges of maintaining internal order and compliance (Levitt and Venkatesh, 2000). Similarly, the rules within criminal organizations foster profit making and cost avoidance across diverse social contexts (Leeson, 2007; Leeson and Skarbek, 2010).[3] Gambetta (1996), Skaperdas (2001), and Skarbek (2010,2011,2012) have all described organized criminal syndicates, replete with internal rules, hierarchies of command, and constitutional checks and balances. These sorts of criminal organizations and the unique governance mechanisms therein tend to emerge when traditional states do not effectively provide rights protections, conflict adjudications, and or security services effectively or optimally.[4] Hence, power vacuums tend to inspire a greater number of illicit operations.

Less research has investigated the industrial organization of illicit markets (See: Rubin, 1973; Schelling, 1984, pp. 158–194; Reuter, 1985a). Reuter (1985b) reports on New York City loansharking and concludes that enforced prohibitions impeded suppliers from exploiting economies of scale. Maintaining a low profile was preferable to the greater risks associated with larger scale and more centralized production. Thus, multiple competitors and low mafia involvement were observed. Given that evading prohibition is a substantial (if not majority) share of operating costs for illicit suppliers, Arlacchi (1988), Thornton (1991), and Tanzi (1995) all similarly argue that governments are the primary influence upon the industrial patterns of organized crime. Skarbek and Sobel (2012) empirically examine gang concentrations in U.S. cities and notice greater drug use and enhanced punishments are both correlated with smaller gangs.

It is difficult to discern generalizable insights regarding the sizes of criminal organizations, their likely patterns of vertical and or horizontal integration, or the probable levels of market concentration from the available sample of black market case studies. Production logistics and prohibition enforcements vary across illicit products, governmental regimes, and local conditions. There is no one market and no one set of market conditions that determine how different organizations or the decision-makers therein will operate across diverse circumstances (Boettke et al., 2004). Almost no research investigates the industrial organization of the specifically international drug trade (See: Naranjo, 2010 for one exception). Hence, we aim to understand what conditional factors shape the size of DTOs and the levels of market concentration within this simultaneously illicit and cross-national environment during recent decades.

Again, standard theory implies that the international drug trade would be highly concentrated, i.e. dominated by a few, large-scale, and hierarchically organized cartels. High market contestability, large economies of scale, first mover advantages obtained through anti-competitive violence, and uncertain law enforcement responsibilities; all foment opportunities for a few early cartels to grow, vertically integrate, and secure market dominance. The general histories behind the early Colombian cocaine syndicates like the Medellín and Cali Cartels are in line with these expectations. Centered out of Columbia and southern California respectively, these outfits dominated the international distribution of drugs (especially cocaine) during the 1970s and 80s.

However, in the wake of a series of targeted killings of key organizational leaders came the eventual collapse of the Medellín Cartel in the 1990s, and with it a power vacuum that allowed for the proliferation of several smaller organizations (Gootenberg, 2012; Bagley, 2012). The number of DTOs has continued to grow since, primarily through the splintering of

[1] For thorough descriptions of the kingpin enforcement strategy see: Jones (2013), Phillips (2015), Lindo and Padilla-Romo (2015), and Calderon et al. (2015).

[2] Since Becker (1968), various aspects of crime and punishment have been investigated through applied economic reasoning. Levitt (2004) and Glaser et al. (1996) investigate the determinants of crime, Anderson (1999) the social costs of crime, Levitt (1998) optimal deterrence, and DiIulio (1996) and Miron and Zwiebel (1995) policy implications.

[3] See also: Gambetta (2009).

[4] See also: Anderson (1999), Grossman (1995), and Bandiera (2003).

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