

Drug Markets and Organized Crime

Peter Reuter

Online Publication Date: Dec 2013

Subject: Criminology and Criminal Justice, Organized Crime
DOI: 10.1093/oxfordhb/9780199730445.013.004

[+] Abstract and Keywords

This essay examines the variation in relationships between drug market enterprises and organized crime across different levels of the market, countries, and drugs (cocaine, heroin, marijuana, and methamphetamine). For example, marijuana markets in Europe are generally characterized by small organizations with little connection to any but the broadest concept of organized crime. On the other hand, trafficking of heroin in Tajikistan is dominated by highly structured organized crime groups with strong connections to the political system. It may well be that, without central and effective corrupt government involvement, drug markets are likely to be fragmented and competitive. Organized crime dominance probably reflects more generally the failure of government rather than drug market specific factors.

Keywords: Cocaine, heroin, methamphetamine, marijuana, corruption, smuggling, career length, organized crime

Introduction

The markets for illegal drugs, mostly cocaine, heroin, and cannabis, probably generate, globally, more revenues than any other illegal market.² That same statement holds for many individual Western countries and for a small number of producer and transshipment countries. Since drug markets are so large, with some highly structured enterprises in them, it is tempting to assume that drug distribution is a major activity of organized crime, defined as broad-based and durable criminal organizations. In fact, the nature of the enterprises in drug markets varies greatly across countries, drugs, and levels of distribution in terms of their size, durability, and relationship to other criminal activities. Thus, considerable variability exists in the relationship of these criminal enterprises to organized crime. However, this depends on definition. (If, as is increasingly done in Europe, organized crime is viewed as a set of profit-making criminal activities, regardless of the solidity of the organizations involved in them, drug trafficking, at least at the wholesale level, is an almost prototypical organized crime activity (e.g., SOCA, Europol, 2013).

The focus of this essay will be on the upper end of the drug trade rather than on retailing, even though the latter generates most of the revenues, as discussed below. That is because the fortunes are made at those higher levels: refining and exporting in the producer countries, transshipment in the transit countries, and importing and high-level wholesaling in the consuming countries. There are no Walmarts or Starbucks in the cocaine, heroin, or cannabis markets. Retailing even the very expensive cocaine generates extremely low incomes³ and is undertaken by generally small and ephemeral enterprises.

This essay will deal only with cannabis, cocaine, heroin, and methamphetamine, the last probably the synthetic drug generating the greatest revenues. The essay will primarily focus on the characteristics of drug markets and enterprises in them. Only at the end will the relationship to other criminal activities and to organized crime be considered. Section 1 reviews the basic features of these markets, such as the role of international trade and the low costs of production. It shows differences across drugs. For example, whereas heroin involves a lengthy international distribution chain and commercial distribution, cannabis is increasingly dominated by short chains and domestic production. The shares of total revenues going to producers and high-level distributors are different for the two drugs. Section 2 analyzes characteristics of trafficking enterprises in three producer or transit countries: Colombia, Mexico, and Tajikistan. Again, the theme is the variability, this time related to government actions. Section 3 turns to enterprise and market characteristics of high-level cocaine enterprises as the market has evolved over time in the United States and Europe.

Section 4 analyzes drug control efforts in Colombia, Mexico, and Tajikistan; it focuses on whether the intensity or nature of enforcement can account for variations in how the market and enterprises are organized. Section 5 then turns to the question of the relationship between drug production and distribution, on the one hand, and other crime and organized crime, on the other hand. The final section summarizes.

Sources

Though the literature on drug markets is large and growing, it focuses primarily on the retail trade rather than on the upper levels⁴. This is hardly unexpected; retailing is where the bulk of participants are found, it accounts for much of the visible violence and disorder associated with drugs, and it is much easier to study. The smaller numbers of upper-level actors invest more in protecting themselves against surveillance, and they are, in any case, less visible.

Desroches (2007), in a review of the literature on North America and western Europe, asserts that scarcely a dozen original research papers have been published on high-level trafficking. Research is very unevenly distributed across nations. As is often the case in empirical criminology, the United States accounts for a disproportionately large share of the total, reflecting both the greater prominence of illegal drug markets in that country as well as the relatively generous funds available for research. In western Europe, the analytic literature appears slight, though a number of descriptive studies

have appeared since 1990. In the United Kingdom, there are two recent studies of importance: Pearson and Hobbs (2001) used interviews and investigative files to describe “middle markets” for drugs, while Matrix Knowledge Group (2007) used interviews with imprisoned drug dealers to describe distribution from international smuggling through wholesale distribution. Paoli (2000) collected data on drug distribution in Frankfurt and Milan, including the higher levels. Official reports provide some descriptive material but little use has been made of it.

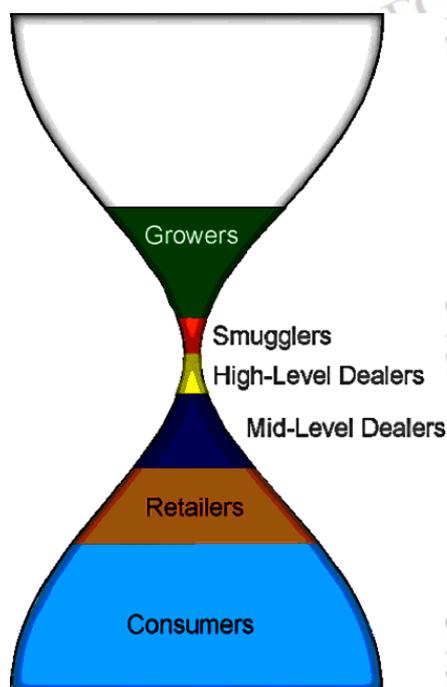
For many countries that are important in the trade, such as Iran and Tajikistan for heroin transshipment or Morocco for cannabis exports to Europe, scarcely any research has been published.⁵ This may reflect both the political sensitivity of the subject and the small size of the social science community in these countries.

I. Characteristics of Production and Distribution of Drugs

A. Production

The markets for different drugs vary in basic characteristics. Cocaine and heroin, the drugs generating the greatest harm to society, both are produced in poor countries that export the vast majority of their output. A tiny number of nations account for the vast bulk of production of coca and opium, of which heroin is a derivative. According to official estimates (e.g., US Department of State 2011; United Nations Office on Drugs and Crime 2011), Myanmar and Afghanistan have accounted for more than 80 percent of global production of opium since the mid-1980s. Since the turn of the 21st century, Afghanistan has increasingly dominated, so that in 2007 it was estimated to account for 93 percent of the total (8,200 tons out of 8,870 tons). A total of six countries account for 98 percent of world heroin production. Bolivia, Colombia, and Peru account for all of coca production. The distribution of production among them has changed over time. In the 1980s, when the illegal cocaine market in the United States first emerged, it was produced primarily in Peru, Bolivia was second, and Colombia a distant third. Since the mid-1990s, this has changed markedly, with Colombia responsible for about two-thirds of total production, probably because of decreasing government control in rural areas of Colombia as well as more aggressive policies against coca production in Bolivia and Peru. Though other nations in the Andes, particularly Ecuador, are always rumored to be about to enter the coca-growing sector, none has so far done so (US Department of State 2011).

The two drugs are distributed through long chains across many countries. For heroin going from Afghanistan to Europe, ten distinct organizations may be involved in transactions from farmer to final user; transactions between separate organizations may occur in three countries between Afghanistan and the final consumer in Amsterdam.⁶ The growing of poppy and coca plants takes place in poor developing countries because the law enforcement risks per unit of product are so high in Europe and North America that, even with risky smuggling, it is cheaper to produce in distant countries where land and labor are cheap and where the government imposes few costs through eradication or seizures (Paoli, Greenfield, and Reuter 2009, pp. 201–234).



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Figure 1 Numbers of participants in the cocaine and heroin production and distribution chains

This gives a distinctive hour-glass shape to the distribution of participants in the cocaine and heroin trades at various stages, as indicated in Figure 1. For these drugs, literally millions of individuals are involved, at least part-time, in the growing, harvesting, and early stage refinement of the drug, but perhaps only a few tens of thousands of individuals are involved in the smuggling sector. Retailing again involves many hundreds of thousands. The markets at different points will be influenced by that configuration.

The growing of the plants, whether of coca or poppy, is executed by small farmers acting independently. Evidence exists of complex financing ties to local money lenders in Afghanistan, which sometimes creates pressures to grow when it would not be in the farmer's own best interest. More recently, claims have also been raised of political pressures from rebel groups to grow more poppies (Mansfield 2011). In Colombia, gangs and guerrilla groups

may also play a coercive role, though that is surely limited by the high mobility of the farmers in many of the growing areas. In Myanmar, the United Wa State Army (UWSA) has aggressively restricted production and even moved large numbers of farmers out of poppy-growing areas in order to limit production; this is thought to be politically rather than economically motivated, since the UWSA has pledged to eliminate opium production in the areas they control (Kramer 2009).

Cannabis has quite a different structure. It is primarily produced domestically in the consuming countries. The United Nations Office on Drugs and Crime (UNODC) states, that in 2009, a total of 134 nations reported domestic cultivation of cannabis on their territory (United Nations Office on Drugs and Crime 2010). Though reports of large-scale production in Afghanistan occasionally appear, only Mexico and Morocco are regularly reported as having substantial export volumes. Bouchard, in a series of studies in the province of Quebec (population 7 million), has shown that it is likely that many tens of thousands of individuals are involved in aspects of cannabis production (e.g., Bouchard 2007). Since Quebec does export modest quantities to other parts of Canada and to the United States, it probably has a larger industry per capita than most places.

Synthetics present more complexity; some are produced in rich consuming countries (e.g., Ecstasy in the United Kingdom and the Netherlands in the 1990s) while others (e.g., amphetamine type stimulants, ATS) are produced in poor distant nations, such as Myanmar, for sale in Japan, Korea, and even western Europe. Methamphetamine, the only synthetic examined in detail in this essay, is produced both in Mexico for export to the United States and also in small domestic laboratories in the United States itself. The precursor chemicals are often imported clandestinely from India (US Department of Justice 2010).

From even these brief descriptions of the production conditions for the different drugs, it is clear that general statements about drug production markets are difficult to make. Coca and opium are agricultural crops with little evidence of advantages to industrialization; the technology remains primitive. Synthetic manufacturing, where economies of scale may be substantial, presents a very different set of opportunities for criminal entrepreneurs.

B. What Are the Revenues from Drug dealing and How Are They Distributed?

A staple of discussions on illegal drugs in recent years has centered on the claim of the UNODC that these markets generate total revenues of \$400–500 billion globally and that the international trade is worth more than \$100 billion (UNODC 2005), making it the fourth-largest international trade flow, larger, for example, than that in wine and beer. These figures seem to be substantial overstatements, and the 2011 *World Drug Report* now includes very large downward revisions of the cocaine and heroin revenues (United Nations Office on Drugs and Crime 2011).⁷ Of equal interest for this essay is the distribution of the earnings across levels of the trade.

Estimates of production of illicit crops are very uncertain. Every element of the calculation (cultivation area, yield per hectare, efficiency of processing) presents its own challenge. The United Nations and the US Department of State publish separate estimates each year; these often show disturbing differences in changes year to year. These figures cannot be used to develop global revenue estimates.

The only method for producing a global estimate of drug market revenues is to sum estimates at the national level. This reflects the fact that the prices of drugs vary a great deal across countries. In the United Kingdom, heroin retailed for the equivalent of approximately \$240,000 per kilogram in 2005; the comparable figure for the United States was approximately \$380,000. In a country like Tajikistan, the figure might have been less than one-tenth as much. Thus, it is impossible to develop a global estimate as the product of global consumption by retail price.

Demand-side estimates start with counts of the numbers of people who consume drugs with various frequencies or intensities of use (e.g., occasional and hard core, or daily, weekly, and past year) and multiply those counts by average rates of consumption for each country. One might adjust that figure upward by some factor to account for underreporting in surveys even of legal commodities (Cook 2007).

The consumption figures generated this way look strong only relative to the supply-side estimates and not in any absolute sense. There are three main concerns:

- General population surveys miss many heavy drug users who are in treatment, in jail or prison, or in an unstable housing situation, and who are hard to locate or who are unwilling to talk about their substance use.
- Respondents are not always accurate in their reports, either because of an intention to deceive or because they have trouble recalling details.
- Available evidence is limited about the amount of drugs consumed per use-day or session.

The first concern is not insurmountable as long as a good data source of information is available about hard-to-reach populations that can complement the general population survey. ONDCP (2001) and Pudney, et al. (2006) provide good examples for how this can be done with information from arrestees and treatment populations. The second concern will always be an issue—one that requires analysts to use and justify credible adjustment factors. Finally, insights about amounts consumed can be obtained with information about expenditures and information about days of use and amount used per day, but such data are rare. Paoli, Greenfield, and Reuter (2009, Appendix B) show how little research is available on heroin consumption by addicted users. Despite the large number of surveys that inquire about marijuana prevalence, information about the amount and quality of what is typically consumed is almost nonexistent. Even seemingly minor assumptions about amount consumed (e.g., the amount of marijuana in a joint) can have major impacts on total consumption estimates (Kilmer et al. 2010).

The distribution of revenues across levels of the trade for cocaine and heroin is indicated in Table 1, which shows the price of a kilogram of cocaine or heroin as it moves through the system from production in Colombia (coca) or Afghanistan (poppy) to final sale in Chicago (cocaine) or London (heroin). Production accounts for a very small share of total drug revenues, perhaps as little as 1 percent; for example, the farm gate value of the coca required for a kilogram of cocaine costs less than \$1,000, whereas the retail price for a gram is about \$100. A larger share of revenues (perhaps 10 percent) is accounted for by smuggling out of producer countries and through transshipment countries, such as Iran, Mexico, Pakistan, Tajikistan, and Turkey.⁸

Table 1 Price and Purity of Cocaine and Heroin from Production to Retail, ca. 2005

Stage	Cocaine—1 kilogram				Heroin—1 kilogram			
	Raw Price	Purity	100% Pure	Location	Raw Price	Purity	100% Pure	Location
Farm-gate	\$800	100%	\$800	Colombia	\$900	100%	\$900	Afghanistan
Export	\$2,200	91%	\$2,400	Colombia	\$3,400	73%	\$4,700	Afgn. neighbors
Import/Wholesale (Kg.)	\$14,500	76%	\$19,000	Los Angeles	\$10,000	58%	\$17,000	Turkey
Mid-level /Wholesale (Oz)	\$19,500	73%	\$27,000	Los Angeles	\$33,000	50%	\$66,000	England & Wales
Typical retail price-Country	\$78,000	64%	\$122,000	United States	\$105,000	44%	\$239,000	United Kingdom

Source: Kilmer and Reuter (2009)

What these figures also show is that 70 to 80 percent of total revenues are generated by the last two or three transactions, as the drug goes from ounce purchases by low-level wholesalers to a fraction of a gram at the retail level.⁹ No similar data are available for cannabis or methamphetamine, but it is likely that, with shorter chains from production to distribution and higher risks for the producers, a larger share goes to the cannabis grower and to the methamphetamine manufacturer.

Though most of the revenues go to low-level dealers, as noted above, the fortunes are made by those at the top of the trade. For example, in 2009 *Forbes* magazine listed a major Mexican drug trafficker, Joaquin Guzman Loera, as a billionaire (*Forbes* 2011); the basis for that judgment is questionable but, no doubt, he, like the Colombian drug traffickers of the 1980s, was extremely rich.

The high share of the retail price accounted for by low-level distributors is easily explained in the standard risk compensation model used by economists. Assume that a higher level trafficker sells 1 kilogram of cocaine and has a 1 percent probability of being imprisoned for one year as a result of the transaction; the rich trafficker values a year in prison at 100,000 euros. Assume a retailer sells 1 gram of cocaine and has only a 1 in 1,000 chance of the same imprisonment; he values a year in prison at 25,000 euros. Assuming away any risk aversion, the trafficker will charge 1 euro per gram to cover the risk, while the retailer, even though he has a lower chance of being jailed and values that less highly, needs 25 euros to cover the risk associated with 1 gram. The model is highly simplified and the figures are intended to be only illustrative but the proportions are probably reasonable. The result is that, though each gram is marked up heavily at the retail level, the volumes are so low per retailer that on average each dealer has modest earnings.

II. Trafficking in Producer and Transshipment Countries

Trafficking involves distinct organizations and, again, variation is found across drugs and nations, reflecting, in part, government strategies. This is illustrated by consideration of the smuggling market in three important countries: Mexico, Colombia, and Tajikistan.

Mexico's drug market has attracted a great deal of attention since 2006 because of the extraordinary levels of violence; an estimated 11,000 drug-related homicides occurred in 2010, roughly ten times as many as in 2000 (Rios and Shirk 2010). Mexico is the source of all the major imported drugs in the United States; it is the principal foreign producer of three of them (cannabis, heroin, and methamphetamine) and the transit country for most of the cocaine. Approximately seven "cartels" were said to be operating in 2010, locked in bitter competition for specific routes (Astorga and Shirk 2010). Some of these organizations have themselves emerged from competitive killings. For example, the Beltran Leyva organization split from the Sinaloa DTO through such homicides.

This configuration of a small number of large drug trafficking organizations (DTOs) is thought to have been a characteristic of Mexico's drug markets for some decades (Astorga and Shirk 2011). What has changed is the relationship among the groups. Whereas before 2000 the long-time ruling party, the PRI, ensured generally cooperative terms among DTOs, the election of a PAN president (Vicente Fox) led to a breakdown of agreements.¹⁰ Homicides doubled between 2000 and 2006, the end of the Fox administration. The next president, Felipe Calderón, aggressively attacked the DTOs in late 2006. A dramatic escalation in the violence ensued, now including many officials and innocent parties among the victims.

Colombia has served as the principal refiner and exporter of cocaine to the United States for 30 years, and the nation has seen a very different evolution of drug enterprises. In the 1980s, the Cali and Medellín cartels emerged as major nonstate actors with political ambitions; these groups seem to have been only loose syndicates of independent entrepreneurs who regularly collaborated but also had to compete with other, smaller Colombian smuggling enterprises (Clawson and Lee 1998). The Medellín cartel attacked the central government, seeking an agreement that it should be left alone and its leaders admitted into respectable society. Its assassination of Luis Carlos Galán, the leading presidential candidate in 1989, generated a military led crack-down against, first, the Medellín traffickers and, then, almost reflexively, against the more strategic Cali group.

After most of the leading traffickers were locked up or killed, the industry continued to operate at the same levels of throughput but in a different configuration. Since 1995, numerous smaller refining and smuggling groups have occasionally collaborated in individual shipments but no longer have political ambitions. The development of a new technology for smuggling large quantities efficiently, namely semi-submersibles,¹¹ has probably led to

increased collaboration among them. Relations with the paramilitary and left-wing guerrilla groups have varied between cooperation and conflict. For example, the most prominent trafficking gang in 2011, Los Rastrojos, fought the Revolutionary Armed Forces of Colombia (FARC) in some areas but allied with the FARC in others (Reuter, 2011)

Tajikistan, a much less well researched transshipment nation, is of interest because it presents more clearly the example of a narco-state. Paoli, Greenfield, and Reuter (2009) estimate that heroin trafficking (from Afghanistan to Russia) adds at least one-third to recorded GDP. They describe in detail the variety of organizations, large and small, that operate in the market. In the following excerpt from their analysis, I focus on the characteristics of the larger organizations that probably account for the bulk of the quantity trafficked, at least since the 1990s.

These large organized criminal groups are usually known as “criminal communities,” a term inherited by most CIS countries from the Soviet penal code (see for example, Butler 1997). The most successful ones are able to deal with more than 1 ton of heroin a month; at Russian import prices, that yielded between \$12 and \$24 million per month in 2005.¹²

Stable and usually high-level government protection has been critical to the success of these large trafficking groups. The progress in border control and law enforcement that Tajikistan has achieved since the late 1990s—thanks to the support of international agencies and foreign donors—has facilitated the large groups’ domination. By 2001, for example, a total of 12 to 13 police and custom posts could be found on the route from Khorog to Osh, a distance of only 700 to 800 kilometers. The roads from the Afghanistan border to Dushanbe are checked even more strictly. Rather than create insuperable barriers to drug transportation, this has generated large payments to border and police officials. Small-time individual smugglers are disadvantaged; apparently, there are economies of scale in corruption (Reuter, et al. 2003). This has led to some coalition of corrupted bureaucracy and drug trafficking organizations. Whereas small- to medium-sized trafficking groups rarely enjoy high-level protection, systematic collusion is the characteristic of these large enterprises.

This variation was candidly described by the Drug Control Agency of Tajikistan [DCA] (2000, pp. 17–18) in a report on the illegal drug market in Dushanbe: “The leaders of all groups have their own relations or other connections with some governmental structures or law enforcement agencies. In many cases the[se] are paid regularly definite sum[s] of money. In some large groups a leader is either a commander of military troops or law enforcement agency. In the largest groups ... leader[s] have high position[s] in some governmental structure[s].”

Some of these “criminal communities” specialize in one or two phases of the heroin business and, as in the case of smaller groups, their specialization is a function of their location. However, a few large and particularly well-connected organizations involve up to a few hundred individuals, including core members and service providers, and they operate across a broad spectrum of trafficking activities, from the importation of opiates from Afghanistan up to the wholesale and, occasionally, even retail distribution of opiates in Russia and other former Soviet states.

Most of the large trafficking organizations coincide with the private armies of former civil war commanders turned career or elected public officials. As the DCA states, “there are several large organizations in Tajikistan dealing with deliver[y] of drugs. As a matter of fact they all are subject to commanders of military formations, which were formed during Tajik Civil War ... some of these formations became parts of armed forces of the country; some are still under the subordination to their commanders and are illegal in their essence” (Drug Control Agency of Tajikistan, 2000, p. 70; see also pp. 18 and 21–22).

A. Variation

The three country vignettes suggest that considerable variation exists in the nature of smuggling enterprises and markets across different transshipment and producer countries. Surely this reflects the influence, inter alia, of the government’s role. In Tajikistan, the distinction between heroin smuggling and the government may be minimal since such smuggling is substantially the most important source of earnings for corrupt officials and the political leadership. There may indeed be coordination and power to exclude others, at least other large enterprises. Heroin smuggling may provide the core criminal enterprise for gangs that are involved in other Tajikistan criminal activities. In contrast, Mexico and Colombia, despite the deep and persistent corruption of their governments, have been able to act at times very aggressively against the major drug enterprises. Since the 1990s, Colombia’s market has involved high levels of cooperation among the principal traffickers without government assistance but no market power; the cooperation appears to be operational rather than strategic. When the Mexican government withdrew its at least tacit collusion, the drug traffickers there were unable to maintain their market-sharing agreements, and they have fought in a way that suggests that they believe domination is possible.

III. High-Level Trafficking in Consumer Countries

As suggested above, the structure and characteristics of drug markets in producer and transshipment countries may be very responsive to governmental actions and inactions (Paoli, Greenfield, and Reuter 2009, pp. 201–234). In the rich consumer countries,¹³ corruption seems to be less central to the business, an assertion that arouses considerable skepticism in producer countries. Corruption, like scientific hypotheses, presents a problem of epistemological asymmetry. Scientific hypotheses can only be disproved, not proven; corruption can be found but its existence never disproved. Nonetheless, US prosecutors pursue corrupt agents with considerable zeal when they find them; at the same time, the overlapping authority of enforcement agencies creates a situation in which any corrupt agent, no matter how well protected in her own department, has to be concerned with possible investigation by another agency. The market for corruption will shrink in such an environment.

Corruption is frequent but mostly not systemic in the United States, United Kingdom, and most western European nations.¹⁴ It very rarely involves leading political figures. A different set of factors affects the nature of enterprises involved in high-level trafficking and the structure of the markets. The remainder of this section describes different types of organizations that have functioned in the cocaine market as it has evolved in the United States over the last 35 years and, more briefly, what is known about high-level European cocaine and heroin markets.

A. The Early US Cocaine Market

Adler (1985) reported observations on 65 high-level dealers and smugglers in Southern California, whom she and her husband met through contacts while in graduate school. Adler noted considerable range in the closeness and stability of relationships among participants. Some formed close and enduring partnerships that were quite exclusive; for example, one pilot was constantly being recruited by a smuggler neighbor but refused to work for him because of his loyalty to his regular smuggler employer (p. 66). Other dealers, characterized as "less reputable," existed in a network of shifting alliances.

The organizations Adler studied were micro-enterprises. Those of cocaine dealers typically consisted of only two or three people. Marijuana, because it is bulkier, required more elaborate transportation organizations. She concluded that "this is not an arena dominated by a criminal syndicate but an illicit market populated by individuals and small groups of wheeler-dealers who operate competitively and entrepreneurially" (p. 2).

Reuter and Haaga (1989) interviewed mid- to high-level US traffickers in cocaine and marijuana in the mid-1980s; the sample was recruited from low security federal prisons. They found importers who were small, opportunistic, and niche-oriented. They noted: "All one needs is a good connection and a set of reliable customers" (p. 39). Though many of those interviewed regarded themselves as part of an organization, "[m]ost of the arrangements would be better described as small partnerships, in which each partner is also involved in trading on his own account, or as long-term, but not exclusive, supplier-customer relationships" (p. 40).

Both Adler and Reuter and Haaga were describing the cocaine market in an early stage of its development. In 1978, cocaine consumption was estimated to be approximately 100 tons; by 1988, it had grown to approximately 300 tons (Everingham and Rydell 1994). Prices had plunged, the consequence of the emergence of more efficient distribution systems. It seems plausible that the generally amateur, small-scale smuggling operations described in the two studies, often involving well-educated principals with at least modestly successful legitimate careers, had been replaced by more professional and large-scale smuggling operations (see, e.g., Decker and Chapman 2008).

B. Colombian Smuggling Organizations in the United States

Fuentes (1998) has provided the most fine-grained description of the operation of the high levels of the international drug trade since the shift to large-scale smuggling; hence, we provide more detail than for other studies. He relied on transcripts from court proceedings (including extensive wiretaps) on two major organizations and lengthy interviews with five senior traffickers who have cooperated with federal agencies. These are accounts of organizations that were detected and punished. Thus, they might be atypically weak. In fact, both organizations had lasted for at least five years, while the informants had also been successful over an even longer period.

Each trafficking organization accounted for a nontrivial share of the total cocaine market in the United States. On a monthly basis, a dozen or so customers brought in loads of hundreds of kilograms; a 250-kilogram purchase at \$20,000 per kilo involves a payment of \$5 million. A number of multi-ton shipments arrived from Colombia; during the period August 1991 and April 1992, five shipments totaling 20 tons were warehoused by one warehouse operation.¹⁵ In the context of a market delivering about 300 tons to final users, these are substantial quantities.

Fuentes described organizations that were durable, bureaucratic, violent, and strategic. For example, recruitment of new staff for US operations was highly systematized, with interviews by senior traffickers in Colombia and provision of collateral in the form of identification of family members who could be held hostage. It was noted: "References for prospective workers had to come from within the organization." Non-Colombians were considered higher-risk employees because it was more difficult to threaten them if they defected with money or drugs; providing familial details did help, though threats were harder to execute in the Dominican Republic than in Colombia. Recruitment was very selective. A strong preference was shown for relatives in leadership positions and cell managers were usually well educated, possessing college degrees.

Exit was allowed, provided the circumstances did not arouse suspicion that the agent had defected to the police. Colombians who were recruited by the organization in Colombia to work in the United States were issued visas that expired shortly after entry so as to limit their mobility.

The system was designed to move shipments very rapidly since inventory in the United States represented risk. Twenty-four hours was the goal for getting rid of a shipment once it had reached the destination city. Stockpiles were held in Colombia, where the enforcement risk was vastly smaller. The organizations had their own domestic transportation systems, drivers who would carry shipments of 100 kilos or more for prices ranging from \$300 to \$1,000 per kilo depending on the length of the trip.¹⁶

The scale of the organization was impressive. One large cell was estimated to have 300 workers in it, occupying at least six identifiable roles; it was estimated to have employed a total of 1,200 individuals during its lifetime. Most received modest salaries: \$7,000 per month for cell manager, \$2,000 for stash house sitter. Given the volume and margins for the organization, amounts still generated annual incomes totaling millions of dollars for the principals.¹⁷

Natarajan (2000) describes a similarly large organization in the New York metropolitan area. She documents one surprising phenomenon, namely that the principal US operative talked to numerous individuals; a total of 24 were identified from wiretaps, including 15 customers. This is hardly consistent with maintaining low exposure since any one of the 15 can obtain relief from lengthy prison sentences by providing information about his supplier. Perhaps what we observe here is the endgame of successful operations that become increasingly confident of their own invulnerability, which helps lead to their demise.

C. European Trafficking

Though very large seizures of cocaine and heroin continue, suggesting the existence of large traffickers, smaller trafficking entities still survive in the European market. Ruggiero and South (1995) describe opportunistic smugglers of less than a kilo of cocaine or hashish, concealing it in bicycles. Disposal of smaller quantities requires less organizational capacity; a single domestic customer may be sufficient.

It is impossible to systematically estimate what share of total European heroin imports are accounted for by large shipments, i.e., groups with the financial, organizational, and personnel capacities to assemble, purchase, ship, and distribute large quantities. Large shipments appear to account for the majority of all heroin seized, but that could reflect the higher per kilo risk associated with larger bundles.

Given that the UK cocaine market has emerged much more recently, probably around 2000, as a mass market, it is perhaps useful in this respect to also consider the study by Pearson and Hobbs (2001) of the "middle market" for cocaine in the United Kingdom as paralleling the work of Adler and Reuter and Haaga. Pearson and Hobbs also find no evidence of large and hierarchical organizations in the cocaine trade; rather, they find evidence of networks of traders.

The most recent study is by Matrix Knowledge Group (2007), which used interviews with 222 individuals imprisoned in the United Kingdom for serious drug offenses around 2005. Since it involved dealers in at least four separate drugs and at different stages of the distribution system, from importing to retailing, the study lacks depth on any specific drug or market level. The vast majority of participants were either solo operators or they worked in small to medium-sized enterprises. Price fixing, indicative of restricted competition, was rarely reported. Collusion, in relation to dividing up geographical areas or customers, was more common.

IV. Enforcement

Illegal markets are shaped by enforcement in many respects. For example, intensive enforcement (characterized by high probability of arrest and/or long sentences conditional on conviction) provides incentives for small enterprises to remain small since senior offenders will want to reduce the number of others who are potential informants against them. The many layers of the heroin and cocaine trades, from importation through retailing, represent one consequence of this configuration since it means traffickers handling large quantities of the drug will have to deal with only a small number of others; they sacrifice revenue to achieve lower risk of exposure. Cannabis dealers, facing less severe penalties, are apparently willing to work in larger groups; for example, Morselli (2001) describes a major international cannabis trafficker who at one stage of his career was working with 20 contacts.

Official estimates suggest that drug smuggling is a risky business, at least in terms of the drugs themselves. For cocaine globally, seizures¹⁸ may be as high as 40 percent of the total (UNODC 2011). For heroin, seizure rates are lower but still substantial at 20 percent in 2010 (UNODC 2011). There is, however, no estimate of the probability of arrest specifically for high-level dealers. Seigny and Caulkins (2004) show that most of those incarcerated in the United States are participants in distribution, but they cannot distinguish retailers from high-level traffickers.

Many seizures occur at the border and involve no offender other than the carrier, notwithstanding efforts in some countries to make "controlled deliveries" in which police follow the drugs to their final destination. Offenders carrying small amounts from one point to another across the border are called "mules." The term refers not merely to their physical roles; they also have minimal knowledge about who else is in the organization. When drugs are seized in container vessels, it can be very difficult to identify the responsible participants. Thus, though a high fraction of the quantity shipped is seized, risks to senior traffickers may be modest.

Studies of individual dealers or organizations give only a few hints about career lengths. Consider, for example, research by Fuentes (Fuentes 1998), which is particularly rich in detail. The two trafficking organizations had operated successfully within the United States for some years; one from 1983 to 1992 and the other from 1988 to 1992 at least. The head of the first organization had been convicted in 1975 and then again in 1979, but, after release in 1983, he survived for nine years without arrest. For only one other participant was a career length given; Harold Ackerman, a senior manager also involved in money laundering, was said to have operated in the United States for almost 10 years (p. 19). However, the description of the cells and the organizations generally suggested that they had operated in more or less the same form for at least a few years.

As in other illegal markets, interaction between enforcement agencies and drug traffickers and dealers is constant, most conspicuously around routes and modes of trafficking. A concentration of interdiction resources around South Florida in the early 1980s led to a shift in trafficking routes from the Caribbean to Mexico (Andreas 2000). In 2003, tough enforcement against cocaine smuggling from the Netherlands Antilles to the Amsterdam airport may have led to a shift to smuggling through West Africa to western Europe. Increased focus on smuggling in TIR trucks (Trans International Routier) in Europe may have led to more use of sea cargo for concealment.

Broader technological and social changes impinge on enforcement efforts. Ruggiero and South (1995) note that the growth of international personal mail has reduced the risk of sending small packages containing drugs through the regular international post; it is no longer a remarkable event for a household to receive a package from overseas. The universal availability of cell phones makes electronic surveillance more complicated, though not necessarily less successful once established. The same can be said for computers; they allow organizations to better control their own activities, but, once controlled and deciphered by enforcement agencies, they provide more varied and detailed information for investigation and prosecution.

Anti-money laundering controls are another component of drug enforcement specifically targeted at trafficking. While no systematic measures are available as to how much money is laundered by drug traffickers, there are two reasons to believe that control may have had a substantial effect at least on how drug traffickers conduct business. First, the absolute sums seized in a number of high-profile money laundering operations, occasionally more than \$250 million (Drug Enforcement Administration, 2007), constitute a nontrivial fraction of reasonable estimates of the total earnings generated by this level of trafficking. Second, there are reports that money launderers charge 5 to 10 percent for their services, a healthy tax on the revenues of high-level traffickers; given that there are many potential launderers, this may well represent a response to enforcement risk. However, an analysis by Levi and Reuter (2006) suggests that money laundering costs are such a small share of total costs of distributing drugs that even effective enforcement will not raise the retail price of drugs enough to reduce total consumption.

V. Organized Crime and Drug Trafficking

The expansion of the drug trade in the last 40 years has presented opportunities for preexisting criminal groups to build on their core capacities in other activities, particularly those involving illicit markets (gambling, prostitution, loansharking). One might also expect, symmetrically, that success in the drug business would lead new organizations to use their core capacities to enter other illegal markets and criminal activities. A shift in specialization by experienced offenders has taken place; for example, in Britain many drug traffickers were previously active in other criminal pursuits, including armed robbery (Dorn, Murji, and South 1992). Generally however that seems not to have happened at the organizational level. Most drug trafficking organizations remain specialized.

Particularly surprising was the minimal role of the Mafia in the United States when the cocaine market emerged in the late 1970s and early 1980s, at a time when the Mafia was still a moderately important criminal presence. Though apparently possessing some of the most important assets for this business and having had a major role in heroin smuggling during the period from 1935 to 1970, the Mafia was marginalized in cocaine trafficking. Cases involving senior Mafiosi were almost unheard of and the organizations themselves have not participated at all. This contrasts with the situation in Italy, where the Mafia, a very different organization from its US counterpart, played a significant role in heroin trafficking at least until quite recently (see, for example, Cantanzaro 1988 and Paoli 2003).

The American Mafia, as a national alliance of predominantly Italian gangs based in various cities, emerged primarily through bootlegging, though the exigencies of the gambling business also played a role in its development (Haller 1979). It was characterized by highly developed networks of systemic corruption in local law enforcement and, until about 1950 or 1960, in city politics as well. Both bootlegging and numbers banking required large numbers of agents, geographically dispersed. Using its connections with the Italian Mafia, the US Mafia imported heroin through New York City docks, utilizing control of the waterfront unions. The leaders were highly visible, as much reported on in the newspapers as prominent socialites. The names of the principal "families" were also well known throughout the nation; membership in one of these families provided an important asset for an ambitious young criminal seeking to intimidate others without investing in extensive violence himself. The individual organizations endured in recognizable form for more than half a century at least. Leaders were occasionally incarcerated but rarely for extended periods prior to the 1980s.

The assets of the Mafia families, then, included a reputation for control of contingent violence, both collective and individual; networks of agents; durability; access to capital; and control of corrupt police departments. It turned out that cocaine importing did not require these assets. Most essentially, the drug originated in Latin America, where other gangs had already established corruption relations with authorities. Moreover, the large Hispanic immigrant community in the United States was capable of providing the necessary networks and recruitment for operation. The Colombian organizations developed a reputation for violence that was comparable to, if not greater than, that of the Mafia; for this purpose, they built on the extreme violence that has characterized Colombia since the political troubles of the late 1940s (Palacios 2006). These organizations were willing to be less discriminating in their use of that violence, killing wives and children as well as principals.

Perhaps most importantly, high-level participants in the United States were at great risk from enforcement agencies. Many agencies developed sophisticated and broad investigative capabilities, creating substantial risk of arrest. If arrested, leaders were likely to serve very long sentences; the Mafia itself has largely broken down in the face of long sentences for other crimes, which have generated high-level informants. The return here was not to broad reputation but to discretion. Ostentatious display of wealth and power might be an asset in Colombia, where the corruption was systemic; it was a source of weakness in the United States, where police corruption was, by the 1980s, only opportunistic and where enforcement agencies had strong incentives and tools for apprehending leaders.

The Mafia, then, simply lacked useful assets for competing with Colombian and Mexican traffickers. But that may also explain why these drug trafficking groups have not expanded their activities to other criminal markets in the United States. Their assets are not usable in many sectors. Discretion requires that they restrict the dissemination of information about their capacities. Similarly, their workforce is predominantly from their own community, limiting their capacity to operate in the general marketplace. The contacts with corrupt authorities are limited to source countries, which play a minimal role in other smuggling, apart from illegal immigrants; in that market, protection in the importing country alone has value.

Mexican drug trafficking organizations may represent one instance of diversification into a variety of criminal activities. That certainly is a routine statement by scholars such as Luis Astorga and David Shirk (Astorga and Shirk 2010, p. 19), as well as by law enforcement authorities in Mexico. The other activities listed usually include human smuggling to the United States, extortion of businesses, and kidnapping. The first of these activities potentially uses organizational skills they already possess since drug smuggling is their core business. Extortion and kidnapping make efficient use of their reputational asset. Since the DTOs have well-known names, regularly reported in the Mexican media, a claim to the owner of a store that the threat is backed by a specific DTO will have high credibility.

This value of reputation is a contrast to the situation of Colombian and Mexican drug trafficking organizational behavior in the United States. The Colombian organizations have been in great flux over the last 20 years. Last year's Norte de Valle organization may morph into this year's Rastrojos organization. Reputations are much less well established so that it is not an important organizational asset. On the other hand, the Mexican drug trafficking organizations have committed few violent acts in the United States; their reputations are thus not established.

VI. Concluding Comments

Though for a long time it was assumed that illegal drug markets were typically monopolized, in fact, monopoly control is rare. Prior to 1980, it was widely believed that the American Mafia had dominated the major illegal markets such as those for bookmaking and loansharking and even for heroin importation into New York City until the late 1960s (e.g., Cressey 1969). Despite finding that some dealers within the United States have enormous incomes and traffic in large quantities, no researcher has found evidence, except on the most local basis (e.g., a few blocks), that a dealer organization

has the ability to exclude others or to set prices,¹⁹ the hallmarks of market power (Katz and Rosen 1994,).

Even at the trafficker level, market power seems elusive. The small share of the retail price accounted for by all activities up to import is strong, but not conclusive, evidence of competition at this level.²⁰ The continuing decline of prices over 30 years at all levels of the market suggests that, if market power ever existed, it has now been dissipated. Thus there is no level at which policymakers need be worried that tough enforcement will lead to price declines because a cartel is broken, a matter raised more than 40 years ago by Tom Schelling in his classic paper on organized crime (Schelling 1967). The explanation for the lack of market power may also be contained in Schelling's paper; perhaps the Mafia was collecting rents on behalf of corrupt police departments that had exclusive jurisdiction and little external scrutiny; those departments are less systemically corrupt and face substantial oversight from federal investigative agencies.

This conjecture may generalize across products and countries. It may well be that, without central and effective corrupt government involvement, drug markets are likely to be fragmented and competitive. The few instances in which there are indications of market power, as in Tajikistan and perhaps Mexico prior to 2000, it is the involvement of thoroughly corrupt governments that is critical. That may also be the circumstances in which drug trafficking is no longer a specialized activity but becomes an element of organized crime.

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Notes:

(1) School of Public Policy and Department of Criminology, University of Maryland; IZA and RAND. Doug Weiss provided helpful research assistance.

(2) Note that there are no serious global estimates for any other illegal market. Nonetheless, the statement is not a contentious one.

(3) For the United States, see e.g., Levitt and Venkatesh 2000 reporting on Chicago in the 1990s and Reuter, MacCoun, and Murphy 1990 reporting on Washington, DC, in 1988. For Norway, Bretteville-Jensen and Bion 2004, a study of heroin dealers in Oslo, also shows very low earnings per dealer.

(4) There appear to be no comprehensive reviews of the drug retailing literature for the United States or for Europe. Important studies in the United States include: Jacobs 1999; Levitt and Venkatesh 2000; and Wendel and Curtis 2000. For the United Kingdom, McSweeney, Turnbull, and Hough 2008 provides a review.

(5) Gamella and Rodrigo 2008, a description of the smuggling sector of the Moroccan hash industry provides a rare light on this sector. Raisdana and Nakhjavani 2002 describes heroin distribution in Iran.

(6) For example, much of Afghanistan's heroin transits through Iran and Turkey and then is sold by the Turkish exporters in the Balkans for smuggling to a western European destination. For a detailed description of the international heroin market, see Paoli, Greenfield, and Reuter, 2009, chapter 3.

(7) Kilmer and Pacula 2009 produce estimates for a number of countries that suggest that the earlier UNODC figures may have been as much as three times too high.

(8) The percentage varies by drug and route. For example, Kilmer and Reuter 2009 estimates that the value added between farm-gate and import price is about 15 percent of the retail price of cocaine in the United States compared to 6 percent for heroin in the United Kingdom.

(9) These are very approximate statements. Since drugs are seized at various points along the chain, a greater volume of cocaine is sold at export than at retail. However, most seizures occur very early in the system when each kilogram has a low replacement cost; thus, an adjustment for this would only slightly affect the cross-levels distribution.

(10) This claim of PRI involvement in cartel agreements is a staple of the literature. I have been unable to find any English-language documentation of direct evidence for it.

(11) These are small boats capable of carrying as much as 10 tons of cocaine with a very low profile that makes them hard to pick up on radar; the cocaine can be disposed of easily by opening the hatches. For a sample incident report see <http://colombiareports.com/colombia-news/news/14692-colombian-forces-seize-narco-semi-submersible.html>

(12) Paoli, Greenfield, and Reuter 2009 reports a kilogram price of \$15,000 to \$30,000. The above calculation assumes that shipments are 80 percent pure, which may be high.

(13) It is useful to note once again that there is a dearth of studies of the operation of retail markets in major consuming countries that are poor, such as Iran, Pakistan, and Thailand.

(14) These are time specific statements. At the time of the Knapp Commission inquiry into the New York Police Department in the early 1970s, systemic protection of heroin dealers was clearly well established (New York Knapp Commission 1973). A successor commission in the early 1990s found much less systemic corruption (Mollen, et al. 1994). More recently, in the early 1990s, massive systemic corruption was found in drug enforcement in

the New South Wales Police Department in Australia (Royal Commission into the NSW Police Service 1997).

(¹⁵) There is an ambiguity as to whether this total was for a single organization or a confederation associated with Miguel Rodriguez-Orejuela, a principal figure in the Cali Cartel.

(¹⁶) This appeared not to be so much compensation for longer time as for the number of potential police encounters.

(¹⁷) This vague statement is all that can be gleaned from either Fuentes 1998 or Natarajan 2000.

(¹⁸) It is not straightforward to calculate seizures as a share of total production because cocaine is often diluted close to the source and no nation regularly reports the purity of seizures.

(¹⁹) The best evidence is simply the ease with which new sellers enter and the speed with which they depart. There may be rents for various capacities but certainly no power to exclude.

(²⁰) If demand is inelastic with respect to price, then a seller with market power can increase revenues and decrease costs by cutting production, until reaching a level at which the demand is elastic. Though the demand for cocaine and heroin may have elasticity of greater than one with respect to final price at current levels, it is very likely that that elasticity is less than one with respect to high level prices, though there are extreme models of price mark-up from import to trafficking that would yield a different result (see Caulkins 1990).

Peter Reuter

Peter Reuter is Professor in the School of Public Policy and the Department of Criminology at the University of Maryland.

