Drug Prohibition and Violence

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This chapter reviews the literature on the relation between drugs and violence. Drugs and violence might be related because drug use causes violent behavior, because drug trafficking is inherently violent, or because prohibition creates violence by forcing the drug market underground. The report concludes that the main reason for a drugs-violence connection is the third of these three possibilities: Enforcement of drug prohibition increases violence. The policy implication is that countries can save criminal justice resources and reduce violence by scaling back attempts to enforce drug prohibition.

INTRODUCTION

Popular discussion, policy debates, and social-science research have long recognized a connection between drugs and violence. According to both common perceptions and many policy treatments, the connection occurs partially because drug use causes violent behavior and partially because drug trafficking is inherently violent.[1] Social scientists, however, have suggested a different interpretation of the link between drugs and violence; namely, that drug prohibition makes the drug industry violent by forcing it underground. According to this view, an observed link between drugs and violence does not indicate that drug use or drug trafficking causes violence.

Determining the true causal relations between drugs and violence is crucial for choosing policies that might reduce violence. If drug use or drug trafficking causes violence, then policies aimed at reducing use or trafficking might make sense. If drug prohibition generates violence, then attempts to enforce prohibition not only fail to reduce violence but actually increase it.

This chapter reviews the literature on the relation between drugs, drug trafficking, drug prohibition, and violence. The review presents two main conclusions. First, economic theory suggests that drug prohibition can generate violence by forcing the drug market underground. Second, existing evidence

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1. Paul J. Goldstein, *The Drugs/Violence Nexus: A Tripartite Conceptual Framework*, 15 J. Drug Issues 493 (1985).

indicates that the main reason for the drugs-violence link is that enforcement of drug prohibition causes violence. This suggests that policymakers can lower violence and reduce government expenditure at the same time. A reduction in drug-prohibition enforcement would decrease violence directly and fund increased expenditure on other polices to reduce violence.

The remainder of this chapter is organized as follows. Section I discusses the conditions under which drug prohibition might increase violence. Section II examines the relation between drugs, drug trafficking, and prohibition. Section III addresses policy implications.

I. DRUGS, PROHIBITIONS AND VIOLENCE: THEORETICAL CONSIDERATIONS

The popular view of the relation between drugs and violence relies on two assumptions: that drug use causes violence via its psychopharmacological effects, and that drug trafficking is inherently violent. Before addressing these hypotheses, this section examines a third hypothesis, namely, that prohibition generates the observed correlation between drugs, drug trafficking, and violence.

The hypothesis that prohibitions increase violence is based on the following reasoning. Prohibitions do not typically eliminate the market for the prohibited good. Instead, prohibitions drive markets underground.[2] In these markets, participants cannot easily resolve disputes via standard, nonviolent mechanisms. For example, black-market producers of a good cannot use the legal system to adjudicate commercial disputes such as non-payment of debts. Black-market employers risk legal penalties if they report their employees for misuse of "company" funds or property. Buyers of black-market goods cannot sue for product liability, nor can sellers use the courts to enforce payment. Along a different line, rival firms cannot compete via advertising and thus might wage violent turf battles instead. Thus, in black markets, disagreements are more likely to be resolved with violence.

This hypothesis is related to, but partially distinct from, the "crack cocaine" hypothesis advanced by Fryer, Heaton, Levitt and Murphy (FHLM).[3] FHLM suggest that the major upturn in U.S. violence in the 1980s and the subsequent decline in the 1990s resulted from crack's introduction and spread. When crack arrived in cities beginning in the early 1980s, the property rights to distribution (e.g., street corners) were not assigned, and since crack dealers could not use

2. Mark Thornton, The Economics of Prohibition (1991).

3. Roland G. Fryer, Jr. et al., *Measuring the Impact of Crack Cocaine*, 51 Econ. Inquiry 1651 (2005).

advertising or lawsuits to capture market share or property rights, they used violence instead. Over time, according to FHLM, these property rights evolved (de facto), so violence subsided.

This hypothesis is reasonable but incomplete. First, disputes arise in markets for many reasons beyond the initial assignment of property rights, and these disputes would presumably continue as long as a market operates. Second, the FHLM hypothesis does not explain fluctuations in violence outside the sample of the 1980s and early 1990s, or in other countries.

The hypothesis that prohibitions increase violence is consistent with a number of stylized facts. Numerous sources, anecdotal and otherwise, report the use of violence in the alcohol trade during U.S. Alcohol Prohibition (1920-1933), but not before or after.[4] Violence committed by pimps or johns against prostitutes is widely regarded as a feature of prostitution markets, since prostitutes cannot report violence without risking legal sanctions themselves.[5] Similarly, violence was an important feature of the gambling industry during its early years in the United States, when entry was prohibited in most places.[6] Violence in this industry has disappeared as legal gambling has mushroomed.[7]

Nevertheless, the hypothesis that prohibitions alone increase the use of violence to resolve disagreements is incomplete, since many prohibitions are associated with minimal levels of violence. For example, compulsory schooling laws are prohibitions against not attending school, yet little violence is associated with this prohibition. Minimum-wage laws are prohibitions against hiring employees at sub-minimum wages, yet at least in the United States, little violence is associated with this prohibition. More generally, a broad range of regulatory polices (environmental, OSHA, labor market) can be characterized as prohibitions yet do not appear to generate violence, nor were the pre-1920, state-level prohibitions of alcohol or the 1940s and 1950s federal prohibitions

4. Gary F. Jensen, *Prohibition, Alcohol, and Murder: Untangling Countervailing Mechanisms*, 4 Homicide Stud. 18 (2000).

5. Jody Raphael & Deborah L. Shapiro, *Violence in Indoor and Outdoor Prostitution Venues*, 10 Violence Against Women 126 (2004).

6. Roger Dunstan, Gambling in California (1997).

7. Peter Ferentzy & Nigel Turner, *Gambling and Organized Crime—A Review of the Literature*, 23 J. Gambling Issues 111 (2009).

of drugs associated with nearly the level of homicide experienced in the last several decades.[8] Western European countries have drug-prohibition laws similar to those in the United States, yet substantially lower rates of violence.[9]

Some of these prohibitions, such as compulsory education, do not generate violence because they do not interfere with a substantial number of transactions. Other prohibitions, such as minimum-wage laws, do not generate violence because they prohibit actions for which insufficient demand exists to generate large-scale black markets (since the minimum wage is sometimes not much above the wage at which the supply and demand of workers are equal in a free market). Still other prohibitions do not generate violence because they outlaw goods for which reasonable substitutes exist.

Most importantly, however, prohibitions are unlikely to create violence unless enforcement is substantial, and the amount of violence caused will increase with the degree of enforcement. This argument has two parts.

First, prohibitions are unlikely to create substantial black markets unless the degree of enforcement is significant, and the size of the black market increases with the degree of enforcement. The reason is that prohibitions generally contain exceptions that permit legal or quasi-legal production and consumption of the good, thus allowing use of standard, nonviolent mechanisms to resolve many disagreements related to the prohibited product. Increased enforcement, however, in the form of new laws that decrease the scope of the exceptions, or increased monitoring of existing exceptions, places some additional transactions outside the realm of legal-dispute resolution mechanisms.

For example, the United States did not treat the maintenance of opiate users by physicians as prescribed until several years after prohibition took effect.[10] Similarly, England allowed doctors relatively free rein in dispensing heroin for the first several decades of its drug prohibition, but since the 1960s it has imposed greater limits on heroin maintenance.[11] The gun-control systems in many countries have also become more restrictive over time.[12]

8. Jeffrey A. Miron & Jeffrey Zwiebel, *The Economic Case Against Drug Prohibition*, 9 J. Econ. Persp. 175 (1995).

9. *See, e.g.*, Global Study of Homicide, United Nations Office on Drugs and Crime (UNODC), http://www.unodc.org/gsh/en/index.html.

10. David F. Musto, The American Disease: Origins of Narcotics Control 200 (1973).

11. John Strang & Michael Gossop, *Heroin Prescribing in the British System: Historical Review*, 2 Eur. Addiction Res. 185 (1996).

12. *See, e.g.*, David B. Kopel, The Samurai, the Mountie, and the Cowboy: Should America Adopt the Gun Controls of Other Democracies? (1992); Joseph E. Olson & David B. Kopel, *All the Way Down the Slippery Slope: Gun Prohibition in England and Some Lessons for Civil Liberties in America*, 22 Hamline L. Rev. 399 (1999).

Similarly, it was legal during Alcohol Prohibition to produce small quantities of alcohol for personal use, to produce certain kinds of low-alcohol wine and beer, to put alcohol in medicines and sacramental wines, and to use alcohol in industrial products. When monitoring and enforcement were lax, these exceptions provided substantial amounts of legal alcohol and thereby kept the scope for violent dispute resolution low. In the case of drug prohibition, doctors can prescribe many otherwise prohibited drugs, and several countries operate treatment programs that provide prohibited drugs to certain consumers. Under lax enforcement, these sources of supply meet much of the market demand legally. In the case of prostitution, various escort services are legal, even though prostitution itself is illegal, so these services meet much of the demand without generating violence so long as enforcement is lax.[13] In the case of prohibitory gun laws, exceptions for collectors or existing owners are common, and government use of the prohibited firearms often remains legal.[14] With little enforcement, these exceptions supply much of the market.

The critical aspect of all these examples is that when exceptions to the prohibition law exist, at least some manufacturing, transportation, and distribution of the good is legal; thus, this activity is unlikely to generate violence. Violence might be associated with the illegal diversion of the good, but far less than if the good is prohibited entirely.

The second reason that enforcement is critical to the degree of violence under prohibition is that participants in black markets are likely to develop mechanisms for avoiding violence, but enforcement makes this more difficult. For example, rival suppliers might agree to cartelize a market, thus reducing the need for advertising. The arrest of one of these suppliers, however, can generate violence among the remaining suppliers, who attempt to capture new market share. Alternatively, black-market suppliers might create private, nonviolent mechanisms for resolving disputes, but enforcement that creates turnover among suppliers destroys reputational capital and makes such arrangements difficult to maintain. Still another mechanism is that given higher dispute-resolution costs, participants in a black market will choose production and distribution methods that minimize transactions (e.g., home production), but

13. Australia provides a good example of this phenomenon. *See* Barbara Sullivan, *When (Some) Prostitution is Legal: The Impact of Law Reform on Sex Work in Australia*, 37 J. L. & Soc'y 85 (2010).

14. *See, e.g.*, Wash. Rev. Code § 9.41.060.

heightened levels of enforcement make this difficult. Likewise, consumers of the prohibited commodity might purchase repeatedly from a reliable supplier, but enforcement that generates turnover among suppliers makes this harder, increasing the scope for disagreements.

Beyond the two effects of increased enforcement discussed above—increasing the black market's share of the prohibited commodity, and increasing the likelihood of violence for a given sized black market—several other mechanisms cause greater enforcement to increase the level of violence under a prohibition.

First, increased enforcement of a prohibition might be accompanied by a redistribution of criminal justice resources away from other violence-reducing government policies, such as crime deterrence,[15] the provision of an efficient system for protecting property rights, or suppression of other sources of violence. For example, increased enforcement of drug prohibition for a given sized police budget implies reduced enforcement of laws against homicide, robbery, assault, and the like. This issue arises, for example, when violent prisoners are released early to make room for drug offenders.[16] In places like Russia, the resources devoted to drug-prohibition enforcement might "crowd out" general enforcement of property rights, thus encouraging participants in other sectors to employ violence. In countries like Colombia or Peru, the resources devoted to drug enforcement are unavailable for fighting guerilla groups, who generate substantial violence for independent reasons.[17]

A different reason why prohibitions might generate violence is that prohibitions often raise the price of the prohibited commodity. Elevated prices constitute a negative income shock to consumers of the prohibited good, which can encourage increased income-generating crime to finance purchases of the good. This mechanism does not necessarily imply violence directly, since many income-generating crimes are nonviolent (e.g., theft, shoplifting, prostitution). Some income-generating crimes are violent, however (e.g., robbery), and violence can occur incidentally as a result of otherwise nonviolent crimes. Assuming that increased enforcement implies higher prices, increased enforcement implies more income-generating crime and related violence.

15. For a discussion of deterrence, see Daniel S. Nagin, "Deterrence," in Volume 4 of the present Report.

16. Ilyana Kuziemko & Steven D. Levitt, *An Empirical Analysis of Imprisoning Drug Offenders*, 88 J. Pub. Econ. 2043 (2004).

17. William M. LeoGrande & Kenneth E. Sharpe, *Two Wars or One? Drugs, Guerrillas, and Colombia's New 'Violencia,'* 17 World Pol'y J. 1 (2000).

The higher prices caused by prohibition might also encourage violence by increasing the rents to certain factors. One view of what occurs under prohibition is that suppliers enter the prohibited market until the total return from black-market activity equals the total return from legal activity, taking into account the risks of incarceration, injury, or death and any stigma/glamor associated with working in a black market. Assuming homogeneity in the willingness to accept the special features of black-market activity, prohibition does not imply any excess profits in the prohibited as opposed to the legal sector. If the willingness to work in the black market varies across the population, however, then those more willing to do so select into this sector, earn rents to this characteristic, and are better off under prohibition. Such persons have more to protect under prohibition and might therefore have an additional reason to engage in violence—namely, protecting these rents. The magnitude of this effect is likely increasing with enforcement, assuming prices increase with enforcement as well.

Prohibition might also encourage violence by making consumers or producers of the prohibited commodity less likely to use the official dispute-resolution system for disputes not related to the prohibited commodity. For example, a drug user or seller who has been robbed of non-drug items might not report this to the police—since this could risk penalties related to possession or sale of drugs—and instead attempt to punish the perpetrator of the robbery himself, possibly using violence. Higher enforcement is likely to increase this effect. If police routinely overlook small quantities of prohibited substances, the effect is likely to be small; if police routinely hassle anyone thought to be associated with the prohibited good, the effect is likely to be large.[18] Relatedly, prohibition encourages corruption of law enforcement and judicial personnel, which further weakens the official dispute-resolution system.[19]

The reasoning outlined above suggests that two key determinants of violence in a country are whether it prohibits drugs and whether it enforces this prohibition vigorously.

18. An effect might also operate in the other direction; locking up people who commit both drug crime and non-drug crime might lower general crime. Kuziemko & Levitt, *supra* note 16.

19. For evidence of prohibition-induced corruption in the U.S., see, for example, U.S. Gen. Accounting Office, Law Enforcement: Information on Drug-Related Police Corruption (1998); Scott Henson, Too Far Off Task: Why, after Tulia, Texas should re-think its Big Government approach to the Drug War, abolish narcotics task forces, and save $200 million this biennium (2002).

II. THE RELATION BETWEEN DRUGS, PROHIBITION, AND VIOLENCE

This section reviews evidence on the relation between drugs and violence. The discussion first summarizes the evidence on drug use and crime. The next subsection examines some basic facts about violence rates across countries. The remainder of the section then considers detailed analyses of the relation between drug trafficking, prohibition, and violence.

A. DRUG USE AND VIOLENCE

The view that drug use directly causes violence has a long history, and certain kinds of data might appear to suggest such an effect. Persons arrested for violent crimes, for example, test positive for recent drug use at a rate well above the population average.[20] Such evidence does not necessarily indicate, however, that drug use *causes* violent behavior. Some people happen to be both violent and likely to use drugs. Although cognitive biases might lead us to associate drugs with violence and infer that the former therefore causes the latter, policymakers should be careful not to assume a causal relationship in the absence of more conclusive evidence. The standard data used to link drugs and violence, moreover, are a biased sample because they are based on arrestees or people in drug treatment. This indicates something about a subset of those who use drugs, but it does not provide information about those who use drugs without running into difficulties.

Thus, the right question is not whether many people who have committed violence have also used drugs, but whether a disproportionate share of people who use drugs become violent. Even casual inspection casts doubt on this claim. Consider, as illustration, the evidence on alcohol, a widely used "legal drug" that is often associated with violence and for which data exist on all users, not just those who develop problems related to use. Everyone knows many people who consume alcohol socially and even heavily, yet never commit acts of violence; more systematic data make the same point.[21] In assessing the claim that drug use causes violence, therefore, it is critical to focus on experimental or controlled evidence.

20. Lana Harrison & Joseph Gfroerer, *The Intersection of Drug Use and Criminal Behavior: Results from the National Household Survey on Drug Abuse*, 38 Crime & Delinquency 422 (1992); Christopher J. Mumola & Jennifer C. Karberg, Bureau of Justice Statistics, U.S. Dep't of Justice, Drug Use and Dependence: State and Federal Prisoners, 2004 (2007).

21. For further discussion of this point, see Jacob Sullum, Saying Yes: In Defense of Drug Use (2004).

The medical and social-science literatures on drug use and crime consistently find little evidence that drug use causes crime. For example, Fagan concludes that "there is limited evidence that alcohol or drugs directly cause violence" and that "several reviewers have concluded that alcohol is the substance most likely to lead to psychopharmacological violence," although "there is some evidence that cocaine, barbiturates, amphetamines, phencyclidine (PCP), and steroids also have psychopharmacological properties that can motive violence."[22] He also notes that "the most consistent and predictable relationship between substances and violence is a result of trafficking in illicit drugs."[23] Duke and Gross and the U.S. Department of Justice reach similar conclusions.[24]

Given the abundance of literature that finds little or no causal link between drug use and crime, is the drugs-violence link a total myth? Is it completely wrong to conclude that some drugs make certain users more violent by impairing judgment or by reducing inhibitions? Under certain circumstances, there may be a small grain of truth to this perception. A very limited number of studies have identified a handful of substances which, if abused frequently and consumed in very large quantities, may lead to neurophysiological effects that may help give rise to violent behavior. For example, two studies suggest that, in rare cases, sustained periods of heavy amphetamine use or extremely acute doses of it can provoke a sort of "toxic psychosis" almost identical to schizophrenia.[25] Similarly, a handful of clinical studies documented rare cases of delusions, paranoia, or psychosis following extremely heavy use of phencyclidine.[26] That said, many of these studies noted that the most pronounced effects occurred among patients with prior histories of emotional instability or patients with other situational influences. More importantly, these findings represent a very small sample of medical studies conducted on this question; the vast majority of research has found no evidence that drug use overall engenders violence at the individual level.[27]

22. Jeffrey Fagan, *Interactions Among Drugs, Alcohol, and Violence*, 12 J. Health Affairs 65, 67-68 (1993).
23. *Id.* at 70.
24. Steven B. Duke & Albert C. Gross, America's Longest War: Rethinking Our Tragic Cursade Against Drugs (1993); Bureau of Justice Statistics, U.S. Dep't of Justice, Drugs, Crime, and the Justice System: A National Report (1992).
25. *See* Robert Nash Parker & Kathleen Auerhahn, *Alcohol, Drugs, and Violence*, 24 Ann. Rev. Soc. 291 (1998).
26. *Id.*
27. *Id.*

The fact that drug use does not significantly cause violence is distinct from the question of whether drug trafficking causes violence. Abundant evidence of every kind shows that violence is a common feature of illicit drug markets.[28] No reasonable theory, however, explains why drug production, distribution, or sale should be any more violent than any other industry; after all, the nature of the supply process is no different than for legal pharmaceuticals, alcohol, food, or any other commodity. The natural inference, therefore, is that prohibition increases violence in the drug industry. The next section evaluates evidence on this issue.

B. VIOLENCE RATES ACROSS COUNTRIES

Table 1 presents vital statistics data on homicide rates across countries in 2001.[29] The data show first that homicide rates differ substantially across countries. Several countries in Central and South America (Mexico, Bahamas, Brazil, Colombia, Venezuela) have homicide rates above 10 per 100,000, and a few have rates that exceed 20; Colombia has a homicide rate in excess of 60. These rates are higher than for most other countries or groups of countries. A number of former Soviet Bloc countries (Kazakhstan, Latvia, Lithuania, Moldova, Russia, Ukraine) also have elevated homicide rates. The Organization for Economic Cooperation and Development (OECD) countries generally have low homicide rates; Mexico and the United States are the exceptions, although these are still well below those in many other countries. The U.S. homicide rate is two to three times the rate in most Western-style democracies. At the same time, the U.S. homicide rate is similar to or less than the rate in many other nations. Thus, the level of homicide in the United States stands out in comparison to other rich, democratic countries, but not in comparison to the world as a whole.

These data are consistent with the hypothesis that drug prohibition generates violence. Most notably, homicide rates are high especially in Caribbean and Latin American countries, many of which are key producers of, or transit points for, illegal drugs. In many of those nations, powerful gangs and cartels are directly responsible for high rates of violence, but prohibited drug trafficking is more often than not the underlying force that motivates their killing. Violence rates are also high in former Soviet Bloc countries, which are less obviously important producers or shippers of illegal drugs. These elevated rates are nevertheless consistent with the theoretical considerations discussed above, according to which violence is high when the number of disputes is elevated

28. Peter Reuter, *Systemic Violence in Drug Markets*, 52 Crime L. & Soc. Change 275 (2009).

29. Angela Dills, Sietse Goffard & Jeffrey Miron, Dose of Reality: The Effect of State Marijuana Legalizations (Cato Inst. Pol'y Analysis No. 799, 2016).

and when the costs of nonviolent dispute resolution are high. Many formerly communist countries have poorly defined property rights and ineffective criminal justice systems, which means lots of disputes and inefficient official resolution of these disputes.

More detailed evidence further suggests a crucial role for drug prohibition in increasing violence. Goldstein and colleagues, using police reports and police evaluations, examined the causes of all homicides in a sample of New York City precincts during part of the year 1988.[30] They determined that more than half of the homicides were due to drug-related factors, but of these, almost three-quarters were due to "systemic" factors, meaning disputes over drug territory, drug debts, and other drug-trade related issues. Thus, approximately 39% of total homicides resulted from the inability of drug-market participants to settle disputes using the official dispute-resolution system; only 7.5% resulted from the psychopharmacological effects of drugs or alcohol.

Brumm and Cloninger compared homicide offense rates, homicide arrest rates, and drug-prohibition arrest rates across cities.[31] They found that drug-prohibition arrest rates were negatively associated with homicide arrest rates, and that homicide arrest rates were negatively associated with homicide offense rates, implying that higher drug-prohibition arrest rates were associated with higher homicide offense rates. They interpreted these results as suggesting that increased enforcement of drug prohibition takes resources away from deterrence of other criminal activity, such as homicide. The positive correlation between drug arrests and homicide rates might reflect reverse causation stemming from a political response of prohibition enforcement to violence, but these data nevertheless fail to suggest that prohibition reduces violence.

Rasmussen, Benson, and Sollars found that a higher drug arrest rate was positively associated with the violent-crime rate in a cross-section of Florida jurisdictions in 1989.[32] They also found that a higher drug arrest rate implied a higher violent-crime rate in neighboring jurisdictions, presumably because increased drug enforcement in one jurisdiction disrupted the market equilibrium in neighboring jurisdictions.

30. Paul J. Goldstein et al., *Crack and Homicide in New York City, 1988: A Conceptually Based Event Analysis*, 16 Contemp. Drug Probs. 651 (1989).

31. Harold J. Brumm & Dale O. Cloninger, *The Drug War and the Homicide Rate: A Direct Correlation?*, 14 Cato J. 509 (1995).

32. David W. Rasmussen, Bruce L. Benson & David L. Sollars, *Spatial Competition in Illicit Drug Markets: The Consequences of Increased Drug Law Enforcement*, 23 Rev. Regional Stud. 219 (1993).

Fajnzylber, Lederman, and Loayza regressed crime statistic measures of homicide rates for the period 1970-1994 on a broad range of variables—including GNP per capita, Gini indices (a measure of income inequality), average years of schooling, urbanization rates, deterrence measures (e.g., the death penalty), religious composition, and region—plus indicator variables for whether a country produces drugs and for the drug-possession arrest rate.[33] Across a broad range of specifications, they found that being a drug-producing country or having a high drug-possession arrest rate is positively associated with a higher homicide rate. They also considered panel regressions of five-year average homicide rates and again obtained a consistently positive relation between the drug-production or arrest variables and homicide rates. Fajnzylber, Lederman, and Loayza obtained a similar result for the drug-producer indicator variable using vital statistics data on homicide rates.[34]

In one study, I documented that increases in enforcement of drug and alcohol prohibition over the past 100 years have been associated with increases in the homicide rate, and auxiliary evidence suggests that this positive correlation reflects a causal effect of prohibition enforcement on homicide.[35] Controlling for other potential determinants of the homicide rate—the age composition of the population, the incarceration rate, economic conditions, gun availability, and the death penalty—does not alter the conclusion that drug and alcohol prohibition have substantially raised the homicide rate in the United States over much of the past century.

In another study, I used cross-sectional, country-level data to show that one measure of enforcement—seizures of illegal drugs—is positively correlated with homicide rates.[36] This evidence needs to be interpreted with caution. Some countries might choose greater enforcement of drug prohibition in response to higher levels of violence. Thus, a positive relation between drug-prohibition enforcement and violence does not establish a causal effect of enforcement on violence. Nevertheless, several factors likely contribute to differences in drug-prohibition enforcement other than the homicide rates themselves. For example, the strong degree of drug-prohibition enforcement in Latin America

33. Pablo Fajnzylber, Daniel Lederman & Norman Loazya, Determinants of Crime Rates in Latin American and the World: An Empirical Assessment (1998).

34. Pablo Fajnzylber, Daniel Lederman & Norman Loayza, *What Causes Violent Crime?*, 43 Eur. Econ. Rev. 1323 (2002).

35. Jeffrey A. Miron, *Violence and the U.S. Prohibitions of Drugs and Alcohol*, 1 Am. L. & Econ. Rev. 78 (1999); *see also* Dan Werb et al., *Effect of Drug Law Enforcement on Drug Market Violence: A Systematic Review*, 22 Int'l J. Drug Pol'y 87 (2011).

36. Jeffrey A. Miron, *Violence, Guns, and Drugs: A Cross-Country Analysis*, 44 J.L. & Econ. 615 (2001).

results in part from U.S. attempts to address its own drug or crime problems, not just from events in Latin America. Thus, although not strictly exogenous (i.e., independent from the variable in question), the differences in drug-prohibition enforcement are plausibly predetermined relative to homicide rates over the time horizons considered here, in which case a causal interpretation of the results is likely to be approximately correct.

Dills, Summers, and I reported regressions of annual U.S. homicide rates on measures of arrest rates, policing levels, incarceration rates, execution rates, guns, right-to-carry gun laws, abortion legalization, lead exposure, and drug- and alcohol-prohibition enforcement.[37] Each of these factors has received substantial attention in the recent economic literature on the determinants of crime.[38] The regressions also controlled for the age structure of the population, economic conditions, and education levels. The samples were taken from the years 1900 through 2005 and various sub-periods.

Our results provide little evidence that arrest rates, policing levels, incarceration rates, execution rates, guns, right-to-carry gun laws, abortion legalization, or lead are important determinants of violence. Enforcement of prohibition, however, is strongly associated with increased homicide. One must again exercise caution in drawing structural conclusions, but these regressions are not consistent with the view that standard deterrence variables, or other factors recently addressed in the economics of crime literature, are robust

37. Angela Dills, Jeffrey A. Miron & Garrett Summers, *What Do Economists Know About Crime?*, *in* The Economics of Crime: Lessons for and from Latin America (2010).

38. For arrest rates, see Isaac Ehrlich, *Participation in Illegitimate Activities: A Theoretical and Empirical Investigation*, 81 J. Pol. Econ. 521 (1973); and Isaac Ehrlich, *Crime, Punishment, and the Markter for Offenses*, 10 J. Econ. Persp. 43 (1996). For police, see Steven D. Levitt, *Using Electoral Cycles in Police Hiring to Estimate the Effect of Police on Crime*, 87 Am. Econ. Rev. 270 (1997); and Justin McCrary, *Using Electoral Cycles in Police Hiring to Estimate the Effect of Police on Crime: Comment*, 92 Am. Econ. Rev. 1236 (2002). For incarceration, see Steven Levitt, *The Effect of Prison Population Size on Crime Rates: Evidence from Prison Overcrowding Litigation*, 111 Q. J. Econ. 319 (1996). For the death penalty, see John J. Donohue & Justin Wolfers, *Uses and Abuses of Empirical Evidence in the Death Penalty Debate*, 58 Stan. L. Rev. 791 (2005). For right-to-carry laws, see John R. Lott, Jr. & David B. Mustard, *Crime, Deterrence, and Right-to-Carry Concealed Handguns*, 26 J. Legal Stud. 1 (1997); Ian Ayres & John J. Donohue, *Shooting Down the 'More Guns, Less Crime' Hypothesis*, 55 Stan. L. Rev. 1193 (2003); and Ian Ayres & John J. Donohue, *The Latest Misfires in Support of the 'More Guns, Less Crime' Hypothesis*, 55 Stan. L. Rev. 1371 (2003). For abortion legalization, see John J. Donohue & Steven D. Levitt, *The Impact of Legalized Abortion on Crime*, 116 Q. J. Econ. 379 (2001); and Christopher L. Foote & Christopher F. Goetz, *The Impact of Legalized Abortion on Crime: A Comment*, 123 Q. J. Econ. 407 (2008). For lead, see Jessica Wolpaw Reyes, *Environmental Policy as Social Policy? The Impact of Childhood Lead Exposure on Crime*, 7 B.E. J. Econ. Analysis & Pol'y 1 (2007).

determinants of crime. At the same time, they are consistent with the view that drug-prohibition enforcement plays an important role, especially with regards to greater homicide.

It should come as no surprise, then, that *relaxing* prohibition enforcement standards or repealing drug prohibition altogether has been associated with reduced rates of violence. Dills, Goffard, and I analyzed city-level crime data in the United States and revealed that violent-crime rates decreased slightly—or at a minimum, remained flat—in the years following the decriminalization or legalization of cannabis in various states.[39] Hughes and Stevens studied the aftermath of Portugal's decriminalization of drug use on crime and drug-trafficking arrests; they reported that after the country's loosened drug laws took effect, fewer drug-related offenses were recorded, which in turn helped alleviate overcrowding in the criminal justice system.[40] Although one should interpret these findings with caution, these studies further support the hypothesis that drug-prohibition enforcement is not just positively associated with crime and violence, but also an important cause of them.

III. POLICY IMPLICATIONS

The theory and evidence summarized above makes a consistent case that a key determinant of violence in modern societies is enforcement of drug prohibition. This reflects both the fact that resources devoted to prohibition enforcement increase violence within the drug trade and the fact that resources devoted to enforcement are not available for other violence-reducing policies.

The implication of these findings is that societies can both save criminal justice resources and reduce violence by devoting less effort to enforcing prohibition. In many countries, the amount of resources involved is substantial. The U.S., for example, expends roughly $50 billion per year on drug-prohibition enforcement. The degree of enforcement is far smaller in many countries, but in a few (e.g., Columbia, Mexico) the effort is also quite significant. In particular, the U.S. devotes a significant amount of its own resources, and pressures other countries to devote theirs, to enforcing prohibition in Afghanistan, Colombia, and other Latin American countries. Moreover, as demonstrated by Becker, Murphy, and Grossman,[41] legalizing drugs and taxing consumption is, under broad conditions, more efficient than prohibition at reducing drug use and associated ills.

39. Dills, Goffard & Miron, *supra* note 29.

40. Caitlin E. Hughes & Alex Stevens, *What Can We Learn from the Portuguese Decriminalization of Illicit Drugs*, 50 Brit. J. Criminology 999 (2010).

41. Gary S. Becker, Kevin M. Murphy & Michael Grossman, The Economic Theory of Illegal Goods: The Case of Drugs (Nat'l Bureau of Econ. Research, Working Paper No. 10976, 2004).

The best alternative use of any reduction in prohibition enforcement is likely to vary across countries. The best uses will not necessarily be policies that aim to reduce violence but instead might be increased expenditure for education, health, or simply lower taxes. Even if these freed-up resources are used for anti-violence policies, however, the best use might be expanded deterrence activities in one place; better definition of property rights in another; or anti-guerrilla activities in a third. In every case, however, these alternative expenditures would be far more productive uses of public funds than enforcement of drug prohibition.

RECOMMENDATIONS

The evidence discussed above suggests that drug prohibition is primarily responsible for the violence associated with drug markets. Based on the analysis above, this report offers the following policy recommendations:

1. **Governments should legalize the currently illegal drugs.** This applies especially at the federal level, since the combination of state legalization with federal prohibition generates several conflicts and ambiguities. Nonetheless, state-level legalizations, and/or those for only some drugs, are also likely to diminish violence.[42]
2. **Where full legalization of all drugs is not yet politically feasible, governments should scale back enforcement and liberalize their drugs laws,** via partial measures like decriminalization or medicalization of marijuana.

42. For a discussion of such efforts, see Alex Kreit, "Marijuana Legalization," in the present Volume.

Table 1: Homicides per 100,000 population, various countries (circa 2001)

United States	**7.06**				
OECD countries					
Australia	1.57	Hungary	2.43	New Zealand	1.43
Austria	0.95	Iceland	0.70	Norway	0.73
Belgium	1.74	Ireland	1.04	Poland	1.72
Canada	1.49	Italy	0.97	Portugal	1.30
Czech Republic	1.32	Japan	0.58	Slovakia	2.06
Denmark	1.26	Korea	1.59	Spain	1.03
Finland	2.97	Luxembourg	2.04	Sweden	0.97
France	0.83	Mexico	10.10	Switzerland	1.13
Germany	0.68	Netherlands	1.26	UK	0.40
Greece	1.05				
OECD average	**1.62**				
Other countries					
Albania	7.17	Croatia	1.96	Romania	3.49
Argentina	6.93	Cuba	5.38	Russian Federation	29.85
Armenia	1.76	Estonia	15.17	Serbia and Montenegro	2.92
Azerbaijan	2.59	Georgia	3.92	Singapore	0.75
Bahamas	20.79	Hong Kong	0.77	Slovenia	0.80
Barbados	10.47	Israel	5.64	Tajikistan	2.47
Belarus	11.23	Kazakhstan	15.52	Macedonia	6.44
Brazil	26.37	Kuwait	1.74	Thailand	5.65
Bulgaria	3.08	Kyrgyzstan	6.72	Trinidad and Tobago	8.52
Cayman Islands	11.51	Latvia	12.31	Turkmenistan	7.07
Chile	9.98	Lithuania	10.23	Ukraine	12.65
China	1.98	Malta	2.29	Uruguay	5.54
Colombia	62.38	Mauritius	2.78	Uzbekistan	3.13
Costa Rica	6.05	Moldova	11.21	Venezuela	26.23
Other average	**9.37**				

Source: World Health Organization (WHO). Most figures are constructed from the WHO Mortality database. Data for Mauritius and Denmark are for 2000; data for China are for 1999; data for Belgium are for 1997. Some figures are constructed from the WHO Statistical Information System (WHOSIS). These include Mexico, New Zealand (2000), Argentina, Bahamas (2000), Barbados (2000), Brazil (2000), Cayman Islands (2000), Chile, Colombia (1999), Costa Rica, Cuba, Thailand (2000), Trinidad and Tobago (1998), Turkmenistan (1998), Uruguay (2000), Uzbekistan (2000), and Venezuela (2000). No data were available for a nearby year for Turkey. Population for the Cayman Islands is from the CIA World Factbook.