

## Reducing the Harms of Drug Policy: An Economic Perspective

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### ABSTRACT

Economics is the study of choice among alternatives under conditions of scarcity. Drug policy is manifestly an "economic" problem in the sense that these policies are developed under conditions of scarcity: there are not enough police, treatment facilities, and social services to solve the drug problem, however it is defined. This paper argues that a harms reduction approach to drug policy can be characterized as pragmatic cost-effective drug control which attempts to achieve efficient drug policy. Economic aspects of drug enforcement are discussed which reveal that these policies do not necessarily reduce drug problems and can generate unintended consequences. Enforcement remains the dominant drug policy in the United States despite evidence that it is overused, in part because both federal and state asset forfeiture laws and budget processes offer police agencies incentives to focus on enforcement rather than other policy alternatives. An efficiency-based harms reduction approach may be one way to effectively advocate a rational approach to drug issues in the often strident and ideological drug policy debates. [Translations are provided in the International Abstracts Section of this issue.]

*Key words.* Harm reduction; Economics; Cost-effectiveness; Enforcement

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The rest of this paper is organized as follows. Section II gives an overview of the basic economic principles that show why drug enforcement is not likely to yield very many benefits in terms of lowering drug use. Section III shows that higher drug enforcement reduces rather than enhances public safety, and an economic explanation of the institutional bias toward an enforcement-oriented policy is provided in Section IV. Concluding comments are presented in the last section.

## II. WHY DRUG WARS DO NOT WORK

Drug enforcement policies are based on the proposition that buyers and sellers in drug markets respond to incentives. Greater enforcement against suppliers presumably will reduce the amount of drugs supplied at any given price; efforts against drug users similarly are expected to lower the net benefits of drug use so the quantity of drugs purchased at any price will be lower. Furthermore, evidence suggests that drug offenders do in fact respond to incentives. Kim et al. (1993) studied recidivism among incarcerated drug offenders in Florida. After controlling for individual and socioeconomic factors, they found that an increase in the number of police in a jurisdiction reduces the probability of recidivating, consistent with the hypothesis that an increase in the probability of arrest reduces drug crime. Furthermore, drug criminals sentenced to probation are more likely to recidivate than drug criminals sentenced to prison. Assuming that prison is a more severe punishment than probation, this result also suggests that drug criminals respond to the severity of punishment. However, given a prison sentence, an increase in the length of that sentence does not effect the likelihood of recidivating. The results are strikingly consistent with the much larger empirical literature on nondrug crime deterrence: the probability of arrest and punishment are relatively more effective deterrents than more severe punishments.

A strong enforcement effort should reduce the consumption of drugs if drug market participants respond to incentives. An apparent contradiction is the fact that the United States "drug problem" did not get demonstrably smaller as a result of the rapid increase in drug arrests made during the 1984-89 drug war. It is not the expectation that individual drug users respond to incentives that is flawed, however. The mistaken assumption in drug policy is the belief that the only way people can respond to increasing enforcement is to curtail the sale and use of illicit substances.

The desire for short-term pleasure and profit are so powerful that drug market participants react to the constraints imposed by drug laws and enforcement efforts in many ways that allow them to continue their illegal activities. Rather than passively accepting the effects of increasing enforcement as inevitable, drug entrepreneurs attempt to "beat" the police by adopting new production techniques, offering new products, and developing innovative marketing strategies. Similarly,

users change their buying habits and use different drugs to maintain their pleasures in the face of rising police interference. The reactions of buyers and sellers of drugs which reduce the effectiveness of enforcement efforts are the focus of this section.

### "The Drug Market" Is a Misnomer

Law enforcement efforts may be relatively more effective against some drugs compared to others. For example, marijuana is much bulkier and harder to conceal than cocaine and heroin, so it is more difficult to smuggle and distribute. Furthermore, even frequent users of marijuana are probably more responsive to changes in the risk posed by law enforcement than regular users of cocaine or heroin. Thus, it is actually inappropriate to speak of "the drug market." Instead, there are several distinct but interrelated markets for illicit drugs which may be differentially affected by drug enforcement and/or education efforts. These markets are interrelated on the supply side because drug entrepreneurs often can supply more than one drug and substitute among them depending on availability. They are interrelated on the demand side to the degree that consumers find different drugs to be substitutes or complements. Let us briefly consider the evidence regarding changes in two large illicit United States drug markets, marijuana and cocaine.

#### Marijuana

Increasing drug enforcement can affect the demand for drugs in two ways. First, the added risk of arrest and punishment for possessing drugs directly discourages consumption. Second, if prices rise as a result of efforts to limit drug supply, the amount of illicit substances consumed will fall. In the case of marijuana these two effects have at times worked together to reduce consumption. The price of marijuana rose continuously from 1974 to 1984, for instance, although a simultaneous eightfold increase in potency (THC content) may have actually caused price per unit of THC to fall over this period (see Note 2). Then during the 1984-89 war on drugs marijuana prices rose even more sharply with relatively small changes in potency (see Note 3). These data, coupled with Reuter's (1991) estimate that the severity of punishment per marijuana transaction rose between 1979 and 1988, suggest that the war on drugs may have played a significant role in reducing the demand for and supply of marijuana, with the net effect being higher prices. But there were other effects as well. For instance, the relative success drug enforcers had against marijuana appears to have exacerbated rather than ameliorated problems associated with other drug markets, including the cocaine market.

#### Cocaine

The story for cocaine is quite different. The story of this drug started rising in 1988, the onset of rising enforcement. The consequence of enforcement, at least in the short run, was a 50% reduction in cocaine use (1990; Thornton, 1991). In fact, by 1991, cocaine use was less than half their 1979 level. Nonetheless, the increase in cocaine use and perhaps sales in some states, admittedly rough estimates, led some researchers (1991) to speculate that the risk of arrest and 1988, while the change in cocaine use was small. Even though total arrests rose, the increase in users, and perhaps sales. Furthermore, surveys of high-achieving students showed a shift from marijuana to cocaine. While perception surveys of schoolers was virtually unchanged, saying it was "fairly easy" or "difficult" to obtain (Jamieson and Flanagan, 1989). The war on drugs to reduce cocaine supply. Some of the effects of the drug war on these two illegal drugs are shown in Table 1. On the mental level the relatively successful war on marijuana and users of this drug to enter the market. That supply increased faster than demand, the harms are more severe than marijuana. Marijuana does not appear con-

##### 1. Input Substitution

Drug suppliers react to increased enforcement by changing their activity. By changing their activity they can mitigate the effects of law enforcement on drug supply. Production and distribution of drugs require several inputs, each of which must be supplied.

The price that owners of inputs pay depends on the risks involved. Risky inputs are more expensive. Punishment of a particular input raises its price. Profit-seeking suppliers substitute inputs for relatively high-priced inputs. This substitution ameliorates the impact of enforcement. Punishment of an input makes punishment of other

## Cocaine

The story for cocaine is quite different from that of marijuana. Estimated use of this drug started rising in 1979, and growth of consumption accelerated after the onset of rising enforcement efforts in 1984. Cocaine prices did not rise as a consequence of enforcement, and there was no discernable trend in purity (Moore, 1990; Thornton, 1991). In fact, 1989 cocaine prices, unadjusted for inflation, were less than half their 1979 level. Nor did enforcement increase effective punishment for cocaine use and perhaps sales. Despite changes in sentencing policy in many states, admittedly rough estimates of the user and seller populations led Reuter (1991) to speculate that the risk of arrest for cocaine users declined between 1979 and 1988, while the change in expected punishment of sellers was less certain. Even though total arrests rose sharply, they were rising at a slower rate than the increase in users, and perhaps sellers as well, so the probability of arrest fell. Furthermore, surveys of high-school seniors indicate an increase in their access to cocaine. While perceptions of the availability of marijuana among high schoolers was virtually unchanged from 1984 to 1988, the proportion of students saying it was "fairly easy" or "very easy" to get cocaine increased by about 12% (Jamieson and Flanagan, 1989; Table 2.78). It appears that the drug war did not reduce cocaine supply. Some of the reasons for the differing consequences of the drug war on these two illegal drugs are discussed below, but at the most fundamental level the relatively successful fight against marijuana encouraged suppliers and users of this drug to enter the cocaine market, and falling cocaine prices imply that supply increased faster than demand. Thus, to the degree that cocaine-related harms are more severe than marijuana-related harms, a successful war against marijuana does not appear consistent with harm reduction.

### *1. Input Substitution*

Drug suppliers react to increased drug enforcement in order to reduce its impact on their activity. By changing combinations of inputs, these entrepreneurs can mitigate the effects of law enforcement on their profits and the supply of drugs. Production and distribution of a drug may require the combination of several inputs, each of which must be rewarded with an acceptable return.

The price that owners of inputs require to supply their inputs partially depends on the risks involved. Rising law enforcement efforts, and/or more severe punishment of a particular input supplier, makes supplying that input more risky and raises its price. Profit-seeking drug suppliers will substitute lower-priced inputs for relatively high-priced inputs whenever possible, and in the process ameliorate the impact of enforcement. For instance, if a change in enforcement policy makes punishment of adult dealers more severe while leaving punishment

of juvenile dealers unchanged, then adult dealers will want higher compensation, and juvenile dealers may be substituted for adults.

Drug entrepreneurs diffuse the risks they face by employing others to make street sales, and the relative wages that must be paid to potential employees determines the makeup of the sales force. As the risk of arrest increases, the entrepreneur has incentives to lengthen the distribution chain, thereby personally dealing directly with a smaller number of individuals. Thus, drug entrepreneurs may be willing to pay relatively more for a few intermediary brokers who in turn set up their own network of contacts, rather than dealing directly with a large number of users. Therefore, some aspects of enforcement policy may actually make production of drug distribution more labor intensive and encourage the use of juvenile pushers who face relatively less risk, at least in terms of the severity of punishment. In fact, even if drug enforcement pushes the price of drugs up and the quantity traded falls, the number of people involved on the supply side of the drug trade could rise. This suggests that increased enforcement can cause one measure of the drug problem, the pool of drug suppliers to be arrested, to rise even as another measure, the quantity sold, falls. Indeed, as Moore (1990:137-138) emphasized,

there is no scarcity of human capital prepared to enter the [drug] business. . . . The supply is not limited to those with prior criminal records or with a taste for violence and corruption. Laborers and specialists are easily recruited.

Other substitution effects are also likely. As drug-enforcement efforts become effective in one geographic area, drug shipments will be sent to other destinations where the risks are lower. Similarly, one way to avoid the risks of shipping a drug across national borders is to increase domestic production. The success of interdiction efforts with regard to marijuana has created strong incentives to develop domestic supplies, for instance, and as a result it is now estimated that marijuana is the largest cash crop in California, which is the largest agricultural state in the United States in terms of the value of output. Substantial marijuana crops are grown in many other parts of the country as well. The increase in domestic sources may not have completely offset the impact of interdicted international supplies, given the price trends already noted, but it did reduce the effectiveness of law-enforcement efforts by diversifying the sources of supply. A long history of drug-enforcement efforts suggests that elimination of supplies coming from one area will soon lead to increased cultivation elsewhere (Rasmussen and Benson, 1994:80) (see Note 4). The fact is that the total United States demand for drugs can be supplied by crops grown on a very small amount of the total world acreage that is suitable for growing opium poppies, coca shrubs, and marijuana plants (Reuter and Kleiman, 1986:306-315).

California's effort to thwart how the industry can respond to cultivation increased, growers that are particularly well suited to concealed hydroponics are used to conceal high energy use, and they might be detected by infrared detection techniques are placed in or are more potent than the strain costs of production, it was estimated generate \$75 million in profits  *Economist*, December 15, 1990

## 2. *Output Substitution: Increased Effective Control of Another*

Much of the law enforcement efforts which were considered cocaine and heroin. For instance its efforts to intercept drugs in the supply of marijuana. The reduction of cocaine smuggling because its supply of cocaine increased, while the supply of one drug decreased the most important explanation may be the relative success of (Thornton, 1991; Nadelmann, much as a third of the marijuana was being intercepted (Kleiman

Another reason to expect an increase in demand as consumption price and profits up in the success of interdiction efforts considerably higher in the United States (Kleiman, 1986). Thus, a substitution and created incentives to develop in the absence of any change in the market

Another drug that is being substituted DiNardo and Lemieux (1992, 1991, 1993) have confirmed price substitutes. DiNardo and Lem

California's effort to thwart marijuana growers with aerial surveillance shows how the industry can respond to changing constraints. As the risks of outdoor cultivation increased, growers started indoor cultivation using marijuana strains that are particularly well suited for high performance under artificial light. Automated hydroponics are used to feed plants, diesel generators are required to conceal high energy use, and thick concrete walls mask the heat buildup that might be detected by infrared sensors on aircraft. The capital-intensive production techniques are placed in ordinary houses and produce four crops a year that are more potent than the strains previously grown outdoors. Despite the higher costs of production, it was estimated in 1990 that a \$1 million investment could generate \$75 million in profits when the wholesale price is \$3,000 per pound (*The Economist*, December 15, 1990:24).

2. *Output Substitution: Increasing the Supply of One Drug in the Face of Effective Control of Another*

Much of the law enforcement success against marijuana was due to interdiction efforts which were considerably more successful than similar efforts against cocaine and heroin. For instance, in 1984 a drug task force dramatically increased its efforts to intercept drugs in the Miami area and virtually eliminated the incoming supply of marijuana. The marijuana smugglers responded by converting to cocaine smuggling because it was much more difficult to detect; so the local supply of cocaine increased, pushing the price down (Thornton, 1991:109). Thus, while the supply of one drug declined, the supply of another increased. Indeed, the most important explanation of the increasing availability and use of cocaine may be the relative success that law enforcement has had against marijuana (Thornton, 1991; Nadelmann, 1993:45). After all, it has been estimated that as much as a third of the marijuana shipped into the United States in the early 1980s was being intercepted (Kleiman, 1985: Chapter 3).

Another reason to expect an increase in the supply of a drug is the potential increase in demand as consumers substitute among drugs, which tends to push price *and* profits up in the short run. This induces entry of new suppliers. The success of interdiction efforts with regard to marijuana means that its price is considerably higher in the United States than in source countries (Reuter and Kleiman, 1986). Thus, a substitution effect led to increases in demand for cocaine and created incentives to develop more sources of cocaine supply even in the absence of any change in the relative costs of producing cocaine.

Another drug that is being substituted for marijuana is alcohol. Studies by DiNardo and Lemieux (1992), Chaloupka and Laixuthai (1994), and Model (1991, 1993) have confirmed previous perceptions that alcohol and marijuana are substitutes. DiNardo and Lemieux (1992) found that a higher drinking age led

to reduced alcohol consumption among high-school seniors between 1980 and 1989, but it led to an almost one-for-one increase in marijuana consumption. Model examined the effect of marijuana decriminalization on hospital emergency room episodes (1993) and violent crime (1991), finding that decriminalization reduced episodes related to alcohol and other illicit drugs and reduced violent crime, and noting that a higher percentage of violent crime is alcohol-related. Chaloupka and Laixuthai (1994) found that either lower money prices of marijuana or reduced legal sanctions against marijuana possession and use led to a substitution of marijuana for alcohol and to a significant reduction in nonfatal and fatal accidents from driving under the influence among youths. Similarly, higher prices of beer and increased drinking age led to more marijuana consumption and a reduction in traffic accidents associated with driving under the influence. Apparently one unintended consequence of marijuana illegality is a greater level of alcohol consumption by youths, along with greater levels of traffic accidents and fatalities.

### 3. *Increasing Supply: Technological Change*

Entrepreneurs always face strong incentives to find ways to produce or distribute existing products at lower costs and to offer new products which will attract consumer demand. The results of such developments are broadly described as technological change, and virtually all legal markets regularly exhibit at least some technological advances. Drug entrepreneurs have even stronger incentives to look for technological change than entrepreneurs in legal markets because they have an added cost to consider and try to avoid: the arrest and punishment cost associated with illegal activity. If a drug entrepreneur can find a way to lower either production or distribution costs or to lower the probability of arrest, the business will be more profitable. Since reduced costs, including reduced risks of arrest and punishment, lead to an increase in output for a firm, a technological advance on any front will lead to an increase in market supply.

Perhaps the most dramatic change in recent years was the introduction of crack cocaine, which allowed drug suppliers to produce and sell cocaine at a much lower price than before the innovation (see Note 5). Since the crack technology can be adopted easily by new entrants into the cocaine market, the profitability of crack (due both to falling costs and perhaps to increasing demand, for reasons suggested above) apparently has attracted new sources of supply. Introduction of this innovation was also partially motivated by law enforcement successes against marijuana. Producers had incentives to provide a new drug at the low price end of the drug trade, and crack served that purpose.

Other important innovations in supply are improved methods of transporting and marketing cocaine. These innovations could easily swamp all the increased law enforcement efforts against cocaine. Increasing availability and fall-

ing prices of cocaine when law enforcement increasing provide strong evidence as pliers.

### 4. *Increasing Potency: Technological and Producer Substitution Effects*

Drug statutes generally consist of products declared to be illegal are described in terms of weight. For example, a product containing any amount of a drug is illegal. Second, given that a product is defined by its weight, penalties are generally based on weight, not potency. Different penalties are set for products of different weights, not potency. Smugglers can avoid stiffer penalties, for example, by using smaller quantities of the commodity possessed, sold, or transported. Thus, the cost of dealing in high-potency drugs is also likely to be a function of the quantity of the drug held to conceal. This law enforcement strategy of holding heavy bundles of a drug, rather than small quantities, increases the potency of illicit drugs.

For consumers, punishment based on weight rather than potency means that more potent drug variants relative to less potent variants are sold in smaller quantities of a high-potency drug, and because it should be expected that consumers will purchase lower potency variants, implying that the total quantity of the high-potency drug as well as the number of dealers, pliers and drug smugglers. Thus, the total costs of dealing in high-potency drugs are likely to be higher than for low-potency drugs.

Reliable data on cocaine and marijuana is some evidence that the retail price of cocaine in the 1980s (Nadelmann, 1993:45), and the fact that this drug was made available in smaller quantities than marijuana has been measured and reported (see Note 4) provides evidence of a statistical relationship between increased potency and increased content of marijuana and law-enforcement efforts. There is another piece of supporting evidence for the "increased potency" hypothesis: during the 1980s, when 0.5% alcohol was illegal, and it is well known that prohibition is effective at suppressing the drink industry, prohibition did more than simply



ing prices of cocaine when law enforcement efforts to combat this drug are increasing provide strong evidence as to the entrepreneurial abilities of drug suppliers.

4. *Increasing Potency: Technological Change Arising Because of Consumer and Producer Substitution Effects*

Drug statutes generally consist of three parts. First, the commodities which are declared to be illegal are described in terms of minimum potency levels. For example, a product containing any detectable amount of heroin is generally illegal. Second, given that a product contains at least the minimum statutorily defined potency, penalties are generally levied on the basis of weight. Third, different penalties are set for production, distribution, and possession, all based on weight, not potency. Smugglers caught with relatively heavy shipments face stiffer penalties, for example. Thus, punishment is clearly a function of the weight of the commodity possessed, sold, or transported. The probability of being caught is also likely to be a function of the physical volume that an individual is trying to conceal. This law enforcement focus on weight creates incentives to avoid holding heavy bundles of a drug, but it also creates incentives to increase the potency of illicit drugs.

For consumers, punishment based on weight leads to greater demand for a more potent drug variant relative to demand for a less potent variant, because smaller quantities of a high-potency drug variant is required to achieve desired effects, and because it should be easier to conceal than the larger quantities of lower potency variants, implying that the probabilities of arrest could be lower for the high-potency drug as well. An analogous argument applies to drug suppliers and drug smugglers. Thus, the pattern of punishments lowers the expected costs of dealing in high-potency drugs relative to the cost of dealing in low-potency drugs.

Reliable data on cocaine and heroin potency are not available, although there is some evidence that the retail purity of both drugs has increased during the 1980s (Nadelmann, 1993:45), and the introduction of highly potent crack cocaine suggests that this drug was made available at a lower price per dose. THC in marijuana has been measured annually, however, and Thornton (1991:Chapter 4) provides evidence of a statistically significant relationship between the THC content of marijuana and law-enforcement efforts against drugs. Furthermore, there is another piece of supporting evidence for the "law enforcement causes increased potency" hypothesis: during Prohibition a product containing more than 0.5% alcohol was illegal, and it is a "well-known fact that Prohibition [was] more effective at suppressing the drinking of beer than of whiskey" (Fisher, 1927:29). Prohibition did more than simply create incentives to shift from low-potency beer

to high-potency spirits, however. The spirits available also increased in average potency (see Note 6).

The evidence about increasing THC in marijuana and the consequences of liquor prohibition, coupled with the fact that most increases in potency simply involve implementation of known technology, led Thornton (1991:110) to conclude that the availability of increasingly potent illicit drugs is primarily the result of their illegality and increasing law enforcement efforts rather than the discovery of new technology. Supporting this interpretation is the fact that trends in potency are in the opposite direction in legal markets, where consumers do not have incentives to demand increased potency: tar and nicotine content of cigarettes, the caffeine content of coffee and soft drinks, and the alcohol content of liquor consumed since the repeal of Prohibition have all tended to decline over time. Increasing drug potency is clearly a result of law enforcement efforts and entrepreneurial adjustments to avoid their consequences.

It should not be surprising to find that the overall results of drug enforcement policy are far different from results policymakers expect. These expectations are formed in a political environment and are based on a less than complete understanding of the consequences of enforcement on the incentives affecting individual choice and entrepreneurial behavior. Unanticipated consequences of drug enforcement policy also spill over into other criminal activities, further undermining the effectiveness of the criminal justice system.

### III. THE HARMS OF DRUG ENFORCEMENT: RISING CRIME

In this section we focus on the unintended consequences of the 1984-89 drug war that emanate from changes in the allocation of criminal justice resources. There are other important consequences of rising drug enforcement during the 1980s which, in the minds of some observers, may be more important than those examined here. These involve constitutional issues relating to the relaxation of the standards for reasonable search and seizure and invasions of individual privacy. Legal scholars, who have a comparative advantage in examining these issues, have done so in detail. The importance they attach to the drug war's intrusion in these areas is captured in the titles of their articles: for example, "The Incredible Shrinking Fourth Amendment" (Wassertrom, 1983); "Another Victim of Illegal Narcotics: The Fourth Amendment" (Saltzburg, 1986); and "Crack-down: The Emerging 'Drug Exception' to the Bill of Rights" (Wisotsky, 1987). While these are important issues, we focus on other issues to which the tools of economics can be fruitfully applied. However, there are important areas of overlap between these constitutional issues and the allocation of criminal justice resources, notable examples being provisions for asset forfeiture and issues of excessive punishment (Rasmussen and Benson, 1994: Chapters 6 and 7). Broader

constitutional issues, which are subject to legal scholars.

Reallocating police resources to a number of nondrug crimes in two ways: the arrest of drug users is a subset of that of property, the arrest of a drug offender from the street. A substantial association between drug use and property crime (Chaiken and Chaiken, 1990; Nivens, 1994:39-66). For instance, a study by Johnson et al. (1995) concluded that the substantially increased nondrug crime was engaged in prostitution.

Second, drug enforcement can be scarce. For example, their resources among competing uses such as traffic control to the solution of crime when police resources are used for drug enforcement. Several studies have examined how drug enforcement efforts; it appears that a relatively small increase in police jurisdiction (or in one police jurisdiction) induces a disproportionate increase in other criminal activity (or to crime) (see Mehay (1977), Furlong and Mazerolle et al. (1994).

### Drug Enforcement and Property Crime

Increasing efforts against drug crime, of course, but in most jurisdictions, partly come from a reallocation of resources. It is noted that

much of the increase in local crime is at the expense of other law enforcement efforts. The kinds of property crimes are affected by the prosecution.

Empirical studies using Florida data show the inevitable tradeoff: increasing drug enforcement against Index I crime results in a decrease in Index I crime but an increase in Index II crimes (Benson et al., 1988, 1992). The increase in drug enforcement in Florida relates to

constitutional issues, which are summarized in Wisotsky (1992), are left to legal scholars.

Reallocating police resources toward drug enforcement may affect the number of nondrug crimes in two ways. First, if as popularly believed, the population of drug users is a subset of the people who commit crimes against people and property, the arrest of a drug offender simultaneously removes a nondrug offender from the street. A substantial research literature suggests that there is no reliable association between drug use and crimes against property, however (Chaiken and Chaiken, 1990; Nurco et al., 1991; Rasmussen and Benson, 1994:39-66). For instance, a study of the crack epidemic in New York City (Johnson et al., 1995) concluded that the advent of crack did not appear to have substantially increased nondrug criminality, with the exception of women engaged in prostitution.

Second, drug enforcement can also affect other crime rates because law enforcement resources are scarce. For instance, police departments must allocate their resources among competing uses, ranging from "Officer Friendly" programs and traffic control to the solution of robberies and murders. One thing is clear: when police resources are used for one purpose, they are not available for another. Several studies have examined how offenders respond to changes in enforcement efforts; it appears that a relatively strong policing effort against one crime type (or in one police jurisdiction) induces some existing criminals to shift to a different criminal activity (or to commit crimes in another jurisdiction). For example, see Mehay (1977), Furlong and Mehay (1981), Hakim et al. (1984), and Sollars et al. (1994).

### **Drug Enforcement and Property Crime**

Increasing efforts against drugs can be accomplished by new police resources, of course, but in most jurisdictions some of the required resources at least partly come from a reallocation of existing police resources. Kleiman (1992:153) noted that

much of the increase in local drug enforcement during the 1980s came at the expense of other law enforcement efforts. . . . As a result, certain kinds of property crimes are treated as unworthy of investigation or prosecution.

Empirical studies using Florida data during the 1984-89 drug war revealed the inevitable tradeoff: increasing police effort against drug crimes relative to the effort against Index I crime results in a lower probability of arrest for property crimes (Benson et al., 1988, 1992). One estimate suggests that a 1% increase in drug enforcement in Florida relative to Index I enforcement, as measured by

arrests, leads to an approximately 0.20 to 0.34% decrease in the probability of arrest for property crime. Shifting police resources to drug enforcement results in more property crime for two reasons: 1) the lower probability of arrest means that active property criminals will commit more offenses before being apprehended; and 2) the lower probability of arrest is a decline in deterrence which may stimulate property crime among individuals who were not previously engaged in this activity. This reduced probability of arrest contributed to changing property crime rates in Florida, which rose from 6,892.4 offenses per 100,000 population in 1983 to 8,019.1 offenses per 100,000 population in 1989, a 16.3 percent increase.

### Drug Enforcement and Violent Crime

Increasing violence is often cited as a direct consequence of increasing drug enforcement (Goldstein, 1989; Reuter, 1991; Miron 1992). Kleiman (1992:20) argued that enforcement takes its greatest toll on relatively benign drug dealers, leaving the trade with better armed and more violent organizations. Independent of this potential selective enforcement effect on violence, viewing drug market competition in its geographic context suggests that the drug war may generate unintended consequences with respect to violent crime just as these effects have been shown for property crime. In particular, drug dealers relocate some of their operations in response to differential policing. For instance, the Tampa, Florida, Police Department, like many large city departments, formed a special drug task force to shut down street dealing locations. The result, according to Kennedy (1993:4), was as follows:

The task force would typically shut down one spot, only to find the same dealers in business around the corner shortly afterward or dispersed to several new locations. . . . "It was all short term," [Police Captain] Sollazzo says, "the problem in fact escalated and spread throughout the community." The task force apparently made things hot enough in predominantly Black neighborhoods that dealers, for the first time, moved heavily into more affluent White parts of town.

But not all of the movement was into previously untapped markets. Tampa also experienced "violent battles over turf" (Kennedy, 1993:8) (see Note 7). Such results are commonplace. Indeed, along with "pushing the drug problem from one neighborhood to another" and producing violent confrontations among drug dealers, these battles also increase the number of dead and wounded police officers (Stutmann and Esposito, 1992:70).

Relocation, and the resulting entry into an established market in a neighboring area, disrupts the local drug market. In order to establish a niche in this geo-

graphic area, the new entrants must outcompete existing dealers. As competition intensifies a market share, the probability of arrest (Goldstein et al., 1993). Therefore, violent crime is a consequence of more intense drug enforcement.

Consumers also face a higher risk of theft that is getting tougher on drug dealers. Drug dealers at locations with relatively less demand in nearby areas that reinvigorate the size of the drug market in the jurisdiction. Resources to drug enforcement are stretched thin. Dealers experience a relatively high rate of theft. Dealers are carrying either cash or drugs and report the theft to the police (Goldstein et al., 1993). Participants are attractive targets for robbery. Statistics are available only if they involve serious injury. In which case the incident will probably be reported. Thus, a growing drug market is a consequence of that caused by competition.

### IV. WHY THERE IS A PROBLEM

Why do law enforcement agencies implement policies that generate significant inducement to wage a drug war? Law enforcement agencies at a level that has turned police into entrepreneurs. Asset seizures to expand their budgets. He has argued that asset forfeiture is a crime (US Department of Justice, 1995). The effect of taking away ill-gotten gains of the proceeds into the law enforcement budget (Mast et al. (in press) suggests a very different interpretation of their priorities because of the impact of asset seizure laws, resulting in a decline in public safety.

A section of the Comprehensive Crime Control Act of 1986 whereby any local police bureau or authority in a drug investigation

graphic area, the new entrants must necessarily tread on the turf of existing sellers. As competition intensifies and predatory practices are employed to establish market share, the probability of violent confrontations increases (Rasmussen et al., 1993). Therefore, violent crime will increase in one police jurisdiction as a consequence of more intense drug enforcement in neighboring jurisdictions.

Consumers also face a higher risk of arrest and conviction in the jurisdiction that is getting tougher on drugs. They have an incentive to buy their drugs in locations with relatively less diligent enforcement. The result is an increase in demand in nearby areas that reinforces the rising supply of drugs, increasing the size of the drug market in the jurisdiction which allocates relatively few police resources to drug enforcement. Neighborhoods in which drugs are marketed experience a relatively high rate of violent robbery because drug users and sellers are carrying either cash or drugs, and when victimized they are not prone to report the theft to the police (Goldstein, 1989:35). This makes drug market participants attractive targets for robbery. These robberies are likely to become crime statistics only if they involve sufficient violence to require medical treatment, in which case the incident will probably be characterized as an assault (see Note 8). Thus, a growing drug market is likely to generate an increase in violent crime independent of that caused by competitors fighting over market shares.

#### IV. WHY THERE IS A POLICY BIAS FOR WAR OVER HARM REDUCTION

Why do law enforcement policymakers pursue relatively ineffective drug policies that generate significant harms in terms of reduced public safety? One inducement to wage a drug war traces to taxpayers' reluctance to fund law enforcement agencies at a level that allows them to pursue all types of crimes. This has turned police into entrepreneurial agencies as they focus on the pursuit of asset seizures to expand their budgets. In this regard, the US Attorney General has argued that asset forfeiture is a valuable "double-barreled weapon" against crime (US Department of Justice, 1992:22). One barrel presumably is the deterrence effect of taking away ill-gotten gains while the second is the "reinvestment" of the proceeds into the law enforcement effort. Research reported in Benson et al. (1995), Mast et al. (in press), and Rasmussen and Benson (1994:Chapter 6) suggests a very different interpretation, however. Police agencies have changed their priorities because of the incentives created by federal and state changes in asset seizure laws, resulting in increased drug enforcement with a possible decline in public safety.

A section of the Comprehensive Crime Act of 1984 established a system whereby any local police bureau which cooperated with federal drug enforcement authorities in a drug investigation would share in the money and/or property

confiscated as part of that investigation. As a result, police in many states whose own laws or constitutions limited confiscation possibilities began to circumvent state laws by having federal authorities "adopt" their seizures. Thus, under the 1984 federal statute, a substantial percentage of these seized assets went back to the agency which made them, even if the state's laws mandated that confiscations go someplace other than to law enforcement. Benson et al. (1995) contended that this legislation was the primary stimulus for the nationwide upsurge in drug control effort that began in 1984.

Since there is significant variation in drug enforcement activity across states and cities, as well as through time, it follows that if this argument actually provides a strong explanation of drug-enforcement policy, it should help explain cross-sectional variation in enforcement policy as well as time series variation. Federally "adopted" seizures are only partially turned back to the local police (the federal authorities extract a 20% handling charge), so police in states whose own laws allow them to retain seized assets are able to obtain even greater benefits from seizures than police who must involve federal authorities in the process. Mast et al. (in press) explored this issue using a statistical model of the demand for and supply of drug enforcement in United States cities. After controlling for a variety of socioeconomic, demographic, and criminal justice factors, they found that a state law that allows the police to keep any portion of seized assets raises the drug-arrests/total-arrests ratio by about 20%. Allowing police to profit from the confiscation of assets from alleged drug offenders apparently provides a powerful incentive to law enforcement agencies which, as expected, changes agency behavior. As police agencies seek revenues via confiscations, they reallocate their effort toward drug crimes relative to other crimes, and the impacts described in Section III above are the inevitable consequence.

The preceding discussion of the impact of asset seizure laws on the allocation of police resources is clearly only part of the explanation of the bias that exists in the system, of course. There are many other factors that also influence incentives of public police and prosecutors to create a bias toward drug enforcement [see Rasmussen and Benson (1994: Chapters 4, 6, and 7) for detailed analysis]. For instance, another way that police agencies benefit from drug enforcement arises in the context of the local budget allocating process itself. As Sherman (1983) explained, two of the primary bargaining chips in the police budget process are arrests and crime rates. Crime rates show the need for police services while arrests are a measure of output. Therefore, Milakovich and Weis (1975:10) noted that police have a vested interest in keeping reported crime rates relatively high, and "like all bureaucracies, criminal justice agencies can hardly be expected to implement policies that diminish their importance." In this context, Benson et al. (1992) used the simultaneous equation model that is customary in the crime deterrence literature to explore the consequences of relative drug-enforcement

effort on property crime across Florida (Benson et al. in press, where newly employed). They find that using a greater number of police officers to combat drugs results in a lower probability of arrest. In turn, a higher arrest rate in turn produces a higher rate of property crime, which is in turn positively correlated with the rate of police activity for policing equation. Thus, relative to property crime rates showing a negative relationship with drug crimes (as in the result. Police are not necessarily meant to intentionally divert resources into drug enforcement budgets, but that their incentives to do so are strong. Wintrobe (1982:152) explained,

One need not assume Machiavellian behavior on the part of bureaucrats, because their primary interest will be, as it is for every other public employee, dedication and altruism.

## V. CC

Economics is the study of choice under conditions of scarcity. Put another way, there is a need for something that is not produced under conditions of scarcity: there are not enough prisons to hold all the criminals who are common for treatment facilities and social services.

"Zero tolerance" in a drug war is a policy that requires surrender and is the antithesis of economic rationality. From this perspective effectively preventing drug use is not considered by a drug warrior as a more effective increase effectiveness: moving resources to drug enforcement is not considered by a drug warrior as a more effective increase effectiveness. Indeed, persistent substance misuse is a more effective increase effectiveness for more enforcement rather than being a more effective increase effectiveness of using police resources.

A harm-reduction perspective is a more effective increase effectiveness of drug policy because it rejects the all-or-nothing approach and in contrast to legalization advocates a more incremental approach to be incremental. In the rhetorical battle between the two approaches, the incremental approach is resisted by "drug warrior" rhetoric, which is potentially leading to legalization, but

effort on property crime across Florida jurisdictions (similar results are found in Benson et al. in press, where newly developing panel statistical techniques are employed). They find that using a greater proportion of police resources to combat drugs results in a lower probability of arrest for property crime. This lower arrest rate in turn produces a higher property crime rate, and the property crime rate is in turn positively correlated with the size of the police budget in a demand for policing equation. Thus, relatively large efforts to combat drug offenses raise property crime rates showing a need for more police, and produce arrests (for drug crimes) showing that police are productive. Police budgets tend to rise as a result. Police are not necessarily malevolent, of course. The point is not that they intentionally divert resources into less productive uses in order to increase their budgets, but that their incentives are biased in that direction. As Breton and Wintrobe (1982:152) explained,

One need not assume Machiavellian behavior, deceit, or dishonesty on the part of bureaucrats, because in all likelihood the pursuit of their own interest will be, as it is for everyone else, veiled in a self-perception of dedication and altruism.

## V. CONCLUSIONS

Economics is the study of choice among alternatives under conditions of scarcity. Put another way, there is an "economic problem" whenever a choice is required because everything is not possible. Drug policy is manifestly developed under conditions of scarcity: there are not enough police to arrest all drug users, there are not enough prisons to hold all convicted drug offenders, waiting lists are common for treatment facilities, and addicts do not have access to needed social services.

"Zero tolerance" in a drug war is the military equivalent to unconditional surrender and is the antithesis of economic reasoning. Approaching drug policy from this perspective effectively precludes making marginal policy changes that increase effectiveness: moving resources away from enforcement into treatment is not considered by a drug warrior who believes that any drug use is unacceptable. Indeed, persistent substance misuse in this context provides the clarion call for more enforcement rather than being interpreted as a possible signal about the ineffectiveness of using police resources to combat illicit drugs.

A harm-reduction perspective is consistent with an economic approach to drug policy because it rejects the all-or-nothing perspectives of "drug warriors," and in contrast to legalization advocates it recognizes that policy changes tend to be incremental. In the rhetorical battles over drug policy, the harm-reduction approach is resisted by "drug warriors" because such reforms are interpreted as potentially leading to legalization, but harm-reduction policies actually involve

a search for "cost-effective enforcement," striving for the most efficient allocation of drug policy resources. Whether this will lead to legalization is not clear, but a substantial literature provides support for the idea that reducing enforcement in favor of treatment, benign neglect, and other harms-reduction efforts will lead to a more cost-effective drug policy. The popular case for harms-reduction policies may best be described in cost-benefit terms because these strategies are rooted in the fundamental economic idea that enforcement should be curtailed when these resources can be more productively used in another way.

### NOTES

1. MacCoun et al. (1996) argue that more research is required before making significant policy changes because they believe that we simply do not know enough about the magnitude of harms from drug use and the consequences of policy changes to carefully assess policy options. Rasmussen and Benson (1996) argue that while our knowledge may not allow us to predict the best drug policy, it is certainly sufficient to reform current policy in the direction of more cost-effective policies.
2. Estimates of money prices are found in Moore (1990) and potency in Thornton (1991). Price data for illegal drugs are at best impressionistic, however, so these conclusions must be viewed with caution.
3. *Narcotics Control Digest* (May 10, 1989); and Drug Enforcement Administration, *Illegal Drug Price/Purity Report, United States 1987-1990*, March 1991.
4. Kleiman (1992:284) suggests that some marijuana growing shifted from Northern California to the mountains of Kentucky as a result of increasing enforcement. An unintended consequence of this change was to involve people whose cultural roots include moonshining and a history of violence, making the trade rougher than it had been before.
5. Note that crack is not a new technology in the sense of being a new discovery. The knowledge necessary for producing crack has existed for some time. Indeed, virtually all of the technological changes that occur in drug markets involve the implementation of existing technology rather than new technology (Thornton, 1991).
6. See Thornton (1991:100-105) for a detailed analysis of the effect of law enforcement on liquor potency during the prohibition era. Also see Warburton (1932:148-166) and Fisher (1927).
7. These and other unintended consequences of the Tampa Drug Task Force approach led to considerable dissatisfaction on the part of both citizens and police and ultimately to a new experimental program that changed the focus of policing in the city.
8. Goldstein (1989) discusses three sources of "systemic" violence in drug markets: 1) that resulting from competition among sellers; 2) that committed during robberies of drug market participants; and 3) violent acts between drug users, resulting from disputes over drugs. The latter is not likely to be affected by changes in the spatial distribution of drug markets so long as drug users do not change their place of residence as a result of changing drug prices. Goldstein is skeptical of the notion that much violence is spawned by the pharmacological effects of drugs. He also reports that there is little research evidence supporting the proposition that some drug users are compelled by economic necessity to engage in violence-prone property crime (i.e., robbery).

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