ESCALATING THE WAR ON DRUGS: CAUSES AND UNINTENDED CONSEQUENCES

Bruce L. Benson*

I. INTRODUCTION

Involvement in markets for some types of drugs has been illegal for over a century in the United States, and marijuana was added to the illicit drug category over seven decades ago. Police efforts to control drug production, sales, and consumption have never been as intensive as they are now, however, as the last two-plus decades have witnessed an unprecedented expansion in the level of criminal justice resources allocated to drug enforcement efforts. Figure 1 illustrates this, using estimated total drug arrests in the United States as an indicator. Total drug arrests fell in the early 1980s (and late 1970s),[1] but the overall trend since the mid-1980s clearly is upward. Total drug arrests in 1989 reached a level almost two and a half times the total eight years earlier. While drug arrests fell for two years after 1989, arrests begin rising rapidly again in 1992, surpassing the 1989 peak in 1995. Drug arrests fluctuated some from year to year through 2002 before yet another rapid increase set in again in 2003, an escalation that continued through 2006 (the latest data available). Drug arrests in 2006 were 3.25 times what they were in 1980.

The following presentation addresses two questions about the roughly two and a half decades of virtually continuous escalation in drug enforcement: (1) what caused the escalation to start in the 1980s and why has it continued, and (2) what are the consequences of this escalation on the level of non-drug crime? The answer to question (1) above is explained and supported in Part II. The escalation in the drug war resulted from incentives created for police to increase drug enforcement so they can seize and retain assets that are alleged to be used

* Chair, Department of Economics. DeVoe Moore and Distinguished Research Professor. Courtesy Professor of Law. Florida State University, Tallahassee, FL 32306. (850) 644-7094. bbenson@fsu.edu.

1. Overall, drug arrests displayed a modest upward trend through most of the 1970s, before modest declines at the end of the decade.

in or result from drug market activities. These incentives expanded dramatically as a result of a 1984 federal statute, and they have become stronger through subsequent federal and state legislation. These statutory changes allow policing agencies to keep the proceeds from civil asset seizures made in the course of drug investigations.

Question (2) is answered in Part III. There are many undesirable, and perhaps unintended, consequences of the escalating drug war, including serious threats to civil liberties, as well as the devastating levels of violence and corruption in Mexico and other parts of Latin America. One consequence has attracted little attention outside of economics, however: escalating drug enforcement leads to higher rates of property and violent crime. The third column in Table 1, which shows the increasing number of drug arrests as a portion of total arrests (the second column lists the total arrest numbers that underlie Figure 1), suggests the reason for this result. Criminal justice resources like police (and prison space) are scarce. Increasing drug enforcement requires more resources, which can be obtained by transferring from other law enforcement activities, or by increasing law enforcement budgets, either through increased taxation or reduced spending on other government activities. Since the drug-arrest/total-arrest ratio from Table 1 for 2006 is 2.36 times what it was in 1980, the rapid escalation in drug arrests has been achieved, at least in part, by a reallocation of policing resources away from alternative uses.[2] This means that as scarce criminal justice resources are shifted into drug-law enforcement, fewer resources are available for the control of non-drug crimes, and these crimes are less effectively deterred. Empirical studies using data from Florida, New York, and Portugal, as well as multi-state and multi-national data, consistently show that as drug enforcement has escalated, both property and violent crime rates have increased relative to what they would have been. Drug enforcement causes property and violent crimes.

The answers to these questions are not new, at least for economists engaged in drug policy research. The fact is that while these answers were first proposed in the economics literature over a decade and a half ago, the answer to the first question is generally dismissed by drug-war advocates and policy makers, while the answer to the second is not even recognized. [3] Yet, a large

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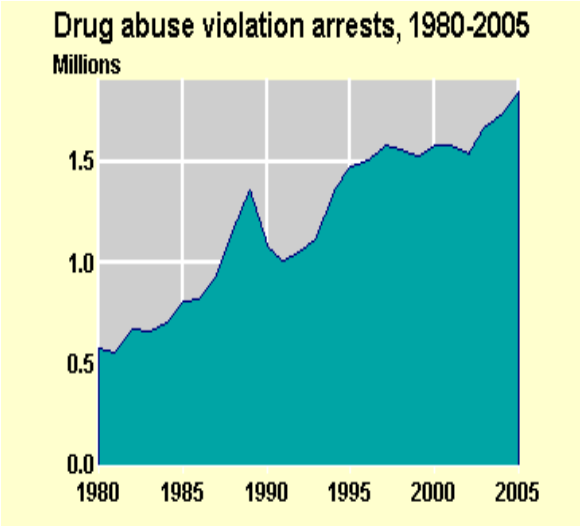
2. Law enforcement resources certainly have increased over these two-and-a-half decades (this is true for both police and prison resources, as demonstrated in Part III below), but they have not increased as fast as drug enforcement.

3. The answer to question (1) has also been widely proposed outside of the economics literature. SCOTT EHLER, THE DRUG POLICY FOUNDATION, DRUG POLICY FOUNDATION POLICY BRIEF: ASSET FORFEITURE 11 (1999); HENRY HYDE, FORFEITING OUR PROPERTY RIGHTS: IS YOUR PROPERTY SAFE FROM SEIZURE 83 (1995); LEONARD W. LEVY, A LICENSE TO STEAL: THE FORFEITURE OF PROPERTY (1996). However, the economics literature also provides empirical support for the proposal. *See, e.g.*, Katherine Baicker & Mirrelle Jacobson, *Finders Keepers: Forfeiture Laws, Police Incentives, and Local Budgets*, 91 J. PUB.

and growing empirical literature supports both answers. Therefore, the following presentation attempts to place these two interdependent answers into the policy arena. The level of empirical support that exists is stressed in order to at least try to force drug-warriors to acknowledge their potential relevance.

FIGURE 1: Drug abuse violation arrests, 1980-2005[4]



ECON. 169 (2007); Brent D. Mast, et al., *Entrepreneurial Police and Drug Enforcement Policy*, 104 PUB. CHOICE 285 (2000). The answer to (2) has only recently found its way into non-economic academic journals. *See, e.g.*, Silvia M. Mendes, *Property Crime and Drug Enforcement in Portugal*, 11 CRIM. J. POL. R. 195 (2000). But economists have authored most of these studies, too. *See, e.g.*, Bruce L. Benson et al., *The Impact of Drug Enforcement on Crime: An Investigation of the Opportunity Costs of Police Resources*, 31 J. DRUG ISSUES 989 (2001); Edward M. Shepard & Paul R. Blackley, *Drug Enforcement and Crime: Recent Evidence from New York State*, 86 SOC. SC. Q. 323 (2005); Edward M. Shepard & Paul R. Blackley, *The Impact of Marijuana Law Enforcement in an Economics of Crime*, 37 J. DRUG ISSUES 403 (2007).

4. BUREAU OF JUSTICE STATISTICS, DRUGS AND CRIME FACTS, *available at* http://www.ojp.usdoj.gov/bjs/dcf/enforce.htm.

TABLE 1: Estimated drug arrests in the United States, 1980-2006[5]

Year	Estimated Total Drug Arrests	Estimated Drug Arrests as a Percentage of Estimated Total Arrests
1980	580,900	5.56%
1981	559,900	5.17%
1982	676,000	5.47%
1983	661,400	5.67%
1984	708,400	6.13%
1985	811,400	6.79%
1986	824,100	6.60%
1987	937,400	7.37%
1988	1,155,200	8.36%
1989	1,361,700	9.56%
1990	1,089,500	7.60%
1991	1,010,000	7.11%
1992	1,066,400	7.57%
1993	1,126,300	8.02%
1994	1,351,400	9.23%
1995	1,476,100	9.76%
1996	1,506,200	9.93%
1997	1,583,600	10.36%
1998	1,559,100	10.73%
1999	1,532,200	10.67%
2000	1,579,600	11.30%
2001	1,586,900	11.56%
2002	1,538,800	11.20%
2003	1,678,200	12.30%
2004	1,745,712	12.52%
2100	1,846,400	13.10%
2006	1,889,810	13.14%

5. U.S. DEP'T OF JUSTICE, FED. BUREAU OF INVESTIGATION, UNIFORM CRIME REPORTS, CRIME IN THE UNITED STATES (annual), *available at* http://www.fbi.gov/ucr/ucr.htm.

II. EXPLAINING THE ESCALATION IN DRUG ENFORCEMENT[6]

President Reagan sounded a new battle cry in the war on drugs in October 1982.[7] The federal criminal justice apparatus quickly responded to this call, but the bulk of such an offensive has to be waged by state and local "troops," and the fact is that U.S. state and local law enforcement agencies generally did not begin increasing their efforts against drugs until late 1984 or early 1985.[8] There are a number of alleged explanations for the state and local upsurge in drug en-

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6. Portions of this Part draw from Bruce L. Benson & David W. Rasmussen, *Predatory Public Finance and the Origins of the War on Drugs, 1984-1989*, 1 IND. REV. 161 (1996); and David W. Rasmussen & Bruce L. Benson, *Rational Drug Enforcement Under Federalism*, 30 FLA. ST. U. L. REV. 679 (2003).

7. Steven Wisotsky, *Zero Tolerance/Zero Freedom*, Seventh Annual DeVoe Moore Critical Issues Symposium, Fla. St. U. (1991).

8. DAVID W. RASMUSSEN & BRUCE L. BENSON, THE ECONOMIC ANATOMY OF A DRUG WAR: CRIMINAL JUSTICE IN THE COMMONS 119 (1994). This is suggested by Figure 1 and Table 1, but perhaps a more revealing statistic is the total-drug-arrest/total-arrests-for-reported crimes. Reported crimes are the so-called Index 1 violent and property crimes (homicide, rape, assault, robbery, burglary, larceny, auto-theft) that are the basis for the crime rate statistics reported annually by the FBI in the *Uniform Crime Report* (the total arrest data in Table 1 includes these arrests plus so-called Index 2 arrests (arrests for offenses that are not typically reported, including drug offenses, prostitution, some traffic violations, and a large number of other crimes)). This ratio which reflects the allocation of policing resources to drug control relative to control of violent and property crimes remained relatively constant at around one to four, with only small year-to-year fluctuations, from 1970 to 1984. Then it begins rising, reaching 1:2.2 in 1989, roughly a 45% increase. Similar trends can be seen in imprisonment for drug offences, as suggested below. Ratios such as drug arrests over total arrests, or drug arrests over Index 1 arrests, illustrate more than just increases in drug enforcement. Policing resources are scarce or limited relative to the demands placed on them, so police chiefs and sheriffs must decide how to allocate scarce resources. Political demands place additional constraints on police decision makers. Anyone who may want to direct scarce police resources to a particular use has incentives to compete to influence allocation decisions (and other local bureaucracies will also compete for limited city budgets with the support of the interest groups they serve). Business groups apply political pressure in an effort to obtain more police presence in commercial areas, residential organizations demand patrols to deter burglaries or gang activities, parents apply pressure to get police protection for their children in schools, and as suggested below, various federal law enforcement agencies want local police to direct more effort at the control of drug markets. While these constraints limit the discretion of police decision makers, monitoring costs are significant for city commissions and councils, and for interest groups, so these decision makers have some discretion. Bruce L. Benson, *Understanding Bureaucratic Behavior: Implications from the Public Choice Literature*, 8 J. PUB. FIN. PUB. CHOICE 89 (1995) (reviewing the substantial literature on bureaucratic decision making, and providing a number of references to studies illustrating this). The increases in the drug-arrest/total-arrests and drug-arrest/total-Index-1-arrests ratios indicate that decisions have been made to reallocate scarce policing resources into drug enforcement. Allocating officers for one purpose, drug enforcement, means that some alternative use must be sacrificed or forgone. Fewer police may be involved in traffic control or perhaps in the investigations of burglary, robbery, and/or other property or violent crime control. Part III explores the consequences of this reallocation.

forcement that ultimately did occur. Many law enforcement personnel point to the introduction of crack cocaine and its consequences as the factor that motivated their increased efforts against drugs, for instance. However, according to Johnson, crack cocaine was not introduced into the U.S. until October or November of 1985, and then only in Miami, New York, and Los Angeles.[9] As an alternative explanation, perhaps many local elected officials, representing median voter preferences across the nation, simultaneously demanded that their police departments escalate the War on Drugs. There are strong indications that this explanation does not hold, however. For example, in 1985, "public opinion" surveys suggested that drug use was not considered to be an especially significant problem. In fact, there actually is some evidence that changes in public opinion about the seriousness of the "drug problem" follow changes in enforcement efforts rather than leading to changes in enforcement.[10] In this context, for example, former head of the New York office of the Drug Enforcement Agency, Robert Stutmann, explains how he manipulated the media to create the impression that there was a crack crisis (shortly after crack began to appear in New York),[11] beginning with media campaign in late November, 1985.[12] The first media publication resulting from this campaign was a *New York Times* article on November 29, 1985, and by August 1986, Stutmann had a 199-page bound volume containing New York-area newspaper articles about crack (the national media also picked up the story, with a *Newsweek* article in June, 1986).

Yet another explanation is that powerful interest groups demanded the es-

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9. ELAINE M. JOHNSON, COCAINE: THE AMERICAN EXPERIENCE IN THE COCAINE CRISIS 36 (David F. Allen ed. 1987). Crack may actually have been introduced when it was because of early federal successes in the escalating drug war. As federal interdiction efforts increased, they were initially quite successful against marijuana, which is bulky and hard to hide. Some estimates suggest that as much as a third of the marijuana shipped to the U.S. was being seized in 1984, according to MARK A. R. KLEIMAN, MARIJUANA: COSTS OF ABUSE, COSTS OF CONTROL Ch. 5 (1985). Interdiction efforts were much less successful against heroin and cocaine. Therefore, smugglers had incentives to shift into these drugs. Furthermore, there were incentives to look for a substitute for marijuana at the low priced end of the drug trade and the crack technology was already available (crack was being used in the Bahamas), so smugglers turned to cocaine and dealers introduced crack to replace the marijuana that was being interdicted.

10. RASMUSSEN & BENSON, *supra* note 8, at 122-27.

11. JOHNSON, *supra* note 9, at 36.

12. ROBERT M. STUTMANN & RICHARD ESPOSITO, DEAD ON DELIVERY: INSIDE THE DRUG WAR, STRAIGHT FROM THE STREETS 211-226 (1992). Michael Massing, *What Ever Happened to the 'War on Drugs'?* NEW YORK REV. ON BOOKS 42, 44 (1992), notes that Stutmann is actually referred to as "Video Bob" by the members of the press covering crime and drug activities at the time, illustrating how much he seems to enjoy interacting with the media and, through them, the public. This was not his first experience with media manipulation. He also points to his successful campaign to create concern over marijuana use on college campuses in 1966, *id.* at 65-73.

calation in the drug war. It would, in fact, be surprising if this were not the case, since as Rhodes points out, "as far as crime policy and legislation are concerned, public opinion and attitudes are generally irrelevant. The same is not true, however, of specifically interested criminal justice publics."[13] Additional research implies similar conclusions, but also makes it clear that one of the most important "specifically interested criminal justice publics" consists of law enforcement bureaucracies and their employees.[14] As explained below, law

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13. ROBERT RHODES, THE INSOLUBLE PROBLEMS OF CRIME 13 (1977). There clearly are violent and property offenses that are not illegal simply because of interest group pressures. Rhodes is referring to legislation that declares other activities (e.g., drug use) to be illegal, as well as legislation dealing with things like the severity of punishment, criminal justice system budgets, and so on. The role of interest groups in shaping such criminal justice policy has been recognized for a long time. *See, e.g.*, RICHARD BERK ET AL., A MEASURE OF JUSTICE: AN EMPIRICAL STUDY OF CHANGES IN THE CALIFORNIA PENAL CODE, 1955-1971 (1977); WILLIAM CHAMBLISS & ROBERT SEIDMAN, LAW, ORDER, AND POWER (1971). For more recent evidence, see MARK THORNTON, THE ECONOMICS OF PROHIBITION (1991); George G. Brunk & Laura Ann Wilson, *Interest Groups and Criminal Behavior*, 28 J. RESEARCH IN CRIME & DELINQUENCY 157 (1991); RASMUSSEN & BENSON, *supra* note 8; Benson & Rasmussen, *supra* note 6; Benson, *supra* note 8; Bruce L. Benson, et al., *Police Bureaucracies, Their Incentives, and the War on Drugs*, 83 PUB. CHOICE 21 (1995); RICHARD QUINNEY, BEARING WITNESS TO CRIME AND SOCIAL JUSTICE (2000); Lisa L. Miller, *Rethinking Bureaucrats in the Policy Process: Criminal Justice Agents and the National Crime Agenda*, 32 POL'Y STUD. J. 569 (2004); CHARLES H. MCCAGHY, ET AL., DEVIANT BEHAVIOR: CRIME, CONFLICT AND INTEREST GROUPS (2005); and Naomi Murakawa, The Prison and the Gallows: The Politics of Mass Incarceration in America*;* Locked Out: Felon Disenfranchisement and American Democracy*; and* Punishment and Inequality in America, 5 PERSP. ON POL. 629 (2007). There also is a large literature on the interest group demands leading to the criminalization of drugs. *See e.g.*, RASMUSSEN & BENSON, *supra* note 8; THORNTON, *supra*; Rasmussen & Benson, *supra* note 6.

14. *See, e.g.*, BRUCE L. BENSON, THE ENTERPRISE OF LAW: JUSTICE WITHOUT THE STATE 105-126 (1990); BERK ET AL., *supra* note 13; RASMUSSEN & BENSON, *supra* note 8, at 119-173. Bureaucrats often try to influence the demand side of the political process. *See* BERK ET AL., *supra* note 13, at 10; ALBERT BRETON & RONALD WINTROBE, THE LOGIC OF BUREAUCRATIC CONDUCT 109-12 (1982); Benson, *supra* note 8, at 109-112. They have incentives to "educate" the sponsor regarding interest-group demands which complement their own and to "propagate" their own agenda. Furthermore, they may have a relative advantage in the lobbying process because they have ready access to the sponsor with whom they are often informally networked, s*ee* BRETON & WINTROBE, *supra*, at 41-42, and they are naturally called upon, due to their expertise. This is clearly the case with law enforcement bureaucracies. *See* DANIEL GLASER, CRIME IN OUR CHANGING SOCIETY 22 (1978). In the context of this presentation, there is widespread recognition that policing agencies are a major source of demand for much of the relevant legislation. Alfred Lindesmith contends that the nation's program for handling the "drug problem" is one "which, to all intents and purposes, was established by the decisions of administrative officials of the Treasury Department." ALFRED LINDESMITH, THE ADDICT AND THE LAW 3 (1965). At the federal level, the Harrison Act establishes federal taxes on narcotics, and, importantly, creates the Federal Bureau of Narcotics within the Treasury Department for enforcement. For several years after its passage in 1914, the Harrison Act remained a rather unimportant source of taxes and regulatory measures. *See* Craig Reinarman *Constraint, Autonomy, and State Policy: Notes Toward a Theory of Controls on*

enforcement groups are the source of demands for the legislation creating incentives for the significant reallocation of policing resources suggested by the third column in Table 1. The key piece of legislation in this regard is a section of the Comprehensive Crime Act of 1984, which requires the Justice Department to share federal drug-related property seizures with state and local agencies participating in the investigations.[15]

A. *Asset Seizure Allocations and Police Behavior*

Government seizure of property used in criminal activity is actually a long-standing practice. It was one stimulus for the King's involvement in law en-

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Consciousness Alteration, 13 J. DRUG ISSUES 9 (1983). But once a bureaucracy is created, incentives arise to insure its existence (make bureaucrats' jobs secure) by expanding its size and scope. Benson, *supra* note 8. Criminalization of opiate use at the federal level actually follows from the Federal Bureau of Narcotics' instigation of raids on morphine treatment clinics in 1919. *See* LINDESMITH, *supra*, at 5-11; Rufus King, *Narcotic Drug Laws and Enforcement Policy*, 22 LAW & CONTEMP. PROBS. 113 (1957) at 120-23; Dorie Klein, *Ill and Against the Law: The Social and Medical Control of Heroin Users*, 13 J. DRUG ISSUES 13, 32 (1983). *See also*, King, *supra*, at 122 (explaining that "the Narcotics Division launched a reign of terror. Doctors were bullied and threatened, and those who were adamant [about treating addicts] went to prison."). Efforts by the Narcotics Bureau lead to a number of court cases which changed the interpretation of the Harrison Act and became the pretext for criminalization of drug use. *See* Reinarman, *supra*, at 21. Because of pressure from the same bureau, the Marijuana Tax Act was passed in 1937. *See* HOWARD BECKER, OUTSIDERS: STUDIES IN SOCIOLOGICAL DEVIANCE 138-44 (1963); STUART HILL, CRIME, POWER AND MORALITY: THE CRIMINAL LAW PROCESS IN THE UNITED STATES 69-70 (1971); LINDESMITH, *supra*, at 228; Daniel Dickson, *Bureaucracy and Morality: An Organizational perspective on a Moral Crusade*, 16 SOC. PROB. 142, 155 (1968). The Bureau was in need of a new *raison d'etre* for continued funding in 1937, for instance, and it faced stiff competition from the FBI for the attention of the public and of congress, so bureaucratic survival is certainly a probable motivation. The likelihood of self-interest motivations are also supported by the fact that the campaign leading to this legislation "included remarkable distortions of the evidence of harm caused by marijuana, ignoring the findings of empirical inquiries." DAVID A. J. RICHARDS, SEX, DRUGS, DEATH, AND THE LAW: AN ESSAY ON HUMAN RIGHTS AND OVERCRIMINALIZATION 164 (1982); *see also* JOHN KAPLAN, MARIJUANA: THE NEW PROHIBITION 88-140 (1970). These studies are dated, but they examine determinants of legislation that also occurred some time ago. For additional discussion of the role of law-enforcement bureaucrats as demanders of more recent drug policy legislation, see *infra* notes 18 to 24 and accompanying text.

15. This is not the first Congressional action dealing with drug-related civil asset forfeiture. The forfeiture provision of the Comprehensive Drug Abuse Prevention and Control Act of 1970 authorizes the government to seize and forfeit illicit drugs, manufacturing, and storage equipment, and conveyances used to transport drugs. The Psychotropic Substances Act of 1978 followed, and then the 1980s produce several more changes, all of which expanded government power to seize property. In addition to the Comprehensive Crime Act in 1984, Congress passed the Comprehensive Forfeiture Act of 1984, the Anti-Drug Abuse Act of 1986, the Money Laundering Control Act of 1986, and the Anti-Drug Abuse Act of 1988; all contain sections dealing with asset seizures expanding the power of criminal justice officials to seize assets.

forcement, perhaps as early as the ninth century,[16] for instance, and was first used in the United States to combat smugglers avoiding import duties in the early 19th century. More recently, federal policing agencies are using property seizures as a tool for combating drug market activity. The federal government confiscated over $100 million in 1983, for instance. This figure is small relative to federal seizures since 1984. Federal forfeitures reached $285 million in 1989, fluctuated between $281 million and $597 million from 1990 to 2005, and then jumped to over $703 million in 2006.[17]

The 1984 Comprehensive Crime Act change in the federal asset forfeiture law relating to drug investigations was a bureaucratically-demanded legislative action allegedly "justified" as a means to expand inter-bureau cooperation. As an indication of this, note that during hearings before the Subcommittee on Crime of the Committee on the Judiciary of the U.S. House of Representatives, held June 23 and October 14, 1983, much of the testimony focused exclusively on the seizure and forfeiture issues.[18] Among the organizations and bureaucracies presenting testimony in support of the forfeitures-sharing arrangement were the U.S. Customs Service, various police departments and sheriffs, the U.S. Attorney's Office from the Southern District of Florida, and the U.S. Drug Enforcement Administration. There was no representation of local government oversight authorities (mayors, city councils, or county commissions) who approve police budgets, either supporting or opposing such legislation, nor were there any corrections groups or victim organizations that often have a substantial impact on crime legislation.[19] When the change was first introduced, it appears that most non-law enforcement interests did not anticipate its implications, probably due to the poor "quality" of information selectively released by law enforcement bureaucracies and their congressional supporters. The only group suggesting problems with the legislation in the hearing was the Criminal Justice Section of the American Bar Association. Two drug-therapy organizations (the Therapy Committees of America, and the Alcohol and Drug Problems Association) also advocated forfeitures sharing, but proposed that a share also go to therapy programs. Law enforcement lobbies prevailed, as the statute mandates that shared assets go directly to law enforcement agencies rather than into general funds, education funds, or other depositories that various state laws

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16. BENSON, *supra* note 14, at 29 (citing SIR FREDERICK POLLOCK & FREDERICK W. MAITLAND, HISTORY OF ENGLISH LAW 48 (vol. 1, 1959)).

17. There is an outlier at $199 million in 2001 due to the Civil Asset Forfeiture Act in 2000, which added a number of procedural requirements that delayed recording of seizures in the following year. *See* SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS ONLINE, tbl.4.45.2006, http://www.albany.edu/sourcebook/pdf/t4452006.pdf.

18. *Hearing on the Comprehensive Drug Penalty Act, Before the Subcomm. on Crime of the H. Comm. on the Judiciary*, 98th Cong. (1985).

19. BRUCE L. BENSON, TO SERVE AND PROTECT: PRIVATIZATION AND COMMUNITY IN CRIMINAL JUSTICE 265-66, 272-74 (1998); BENSON, *supra* note 14, at 152-53, 353.

mandated at the time.

Forfeiture has an obvious potential deterrent value in that it raises the costs associated with drug offenses. Seizures are also justified as a source of revenue that can help pay for crime control, of course. Indeed, drugs allegedly cause crime (an issue addressed below), so in addition to stimulating inter-agency cooperation, dedication of forfeitures to law enforcement is justified as a means of recouping the costs of enforcing drug-induced crime. This practical aspect of asset seizures—treating the proceeds as something akin to a crime-fighting "user fee"—is emphasized in a manual designed to help local jurisdictions develop a forfeiture capability.[20] While suggesting that less tangible law enforcement effects (such as deterrence) should be counted as benefits, the manual emphasizes that the determining factor for pursuit of forfeitures is "the *jurisdiction's* best interest."[21] This interest is viewed from the perspective of law enforcement agencies, a view that is likely to put somewhat more weight on benefits for bureaucrats and somewhat less weight on community wide (and uncertain) deterrence effects. After all, as Stumpf notes, we must "look past the external political and social determinants of criminal justice procedures and policies to understand the system in operation. The process is staffed by professionals and quasi-professionals who have their own agenda . . . [and] largely internal imperatives may be of even greater importance in explaining their outcomes."[22] If forfeitures are in the "public interest" because of their deterrent impacts, and if police are exclusively motivated by a desire to serve the public interest, then policing agencies should willingly cooperate in seizure efforts no matter what government agency's budget is enhanced by these seizures. The fact is that the revenues from drug-related seizures create the potential for police chiefs and sheriffs to expand their discretionary budgets,[23] thereby enhancing their own well being directly and indirectly by rewarding supporters with various benefits and privileges.[24]

While not mandated by the 1984 legislation, the Department of Justice (DOJ) offered, in 1986, to treat seizures by state or local agencies "as if" they involved a cooperating federal agency by "adopting" such seizures and then passing them back to the state or local agency, minus a 20% handling charge

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20. See NAT'L CRIM. JUSTICE ASS'N, ASSET SEIZURE AND FORFEITURE: DEVELOPING AND MAINTAINING A STATE CAPABILITY 40 (1988).

21. *Id.* at 40.

22. HARRY P. STUMPF, AMERICAN JUDICIAL POLITICS 316 (1988); *see also* ABRAHAM BLUMBERG, CRIMINAL JUSTICE: ISSUES AND IRONIES 183-85 (1979) at 183-185; RASMUSSEN & BENSON, *supra* note 8, at 127-39; BENSON, *supra* note 14, at 109-12, 127-46; 151-64; Miller, *supra* note 13, at 569-88**.** Also, see discussion and references, *supra* note 14 in this regard.

23. Benson et al., *supra* note 13, at 38.

24. BRETON & WINTROBE, *supra* note 14, at 137.

(later lowered to 10%), thereby allowing the agency to circumvent state laws requiring that some or all of the seizure proceeds go to some specific use (e.g., education) or into general revenues.[25] For example, North Carolina law requires that all proceeds from the sale of confiscated assets go to the County School Fund. Law enforcement agencies in North Carolina routinely use the 1984 federal legislation and 1986 DOJ adoption program to circumvent the restrictions so the seized assets can be repatriated to law enforcement agencies rather than going to schools. The same occurs in many other states.[26] Adoptions can be at-

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25. *See* EHLER, *supra* note 3, at 11; HYDE, *supra* note 3, at 83. State and local law enforcement agencies can ask the DOJ to "adopt" an asset seizure if the conduct giving rise to the seizure is in violation of federal law and the property is forfeitable under one of the federal forfeiture provisions the DOJ enforces. This is the case with drug offenses. As explained, *infra* note 28 and accompanying text, a civil burden of proof is required under federal law, not a criminal burden of proof. The DEA provides an outline of seizure and forfeiture procedures for local police applying for adoption through the agency at http://www.cass.net/~w-dogs/lfed.htm. A much more detailed specification of the GENERAL ADOPTION POLICY AND PROCEDURE is available in the UNITED STATES ATTORNEYS' MANUAL, Ch. 9-116, which can be found at http://www.usdoj.gov/usao/ eousa/foia_reading_room/usam/title9/116mcrm.htm#9-116.100. To apply for adoption through the DEA a local law enforcement agent must: 1) obtain probable cause to seize; 2) notify superiors; 3) contact the DEA as soon as possible, after which, the seizure can take place under federal rather than state law, and addition liens against the property such as attorney fees or the IRS are prevented; 4) notify those whose property is seized in order to meet due process requirements; 5) turn the seizure over to the DEA (money is turned over as a cashier's check to the U.S. Marshal), along with investigative supporting reports; and then 6) file an "Application for Transfer of Federally Forfeited Property" form, DAG 71, within ten days. (The federal agency has thirty days to get the money to the DOJ forfeiture fund, and provide the DOJ with DAG 71 along with the "Decision Form for Transfer of Federally Forfeited Property," DAG 72.). The DEA applies certain conditions when considering the acceptance of a seizure for adoption. There must be a valid prosecutorial purpose in requesting the adoption of a seizure for forfeiture. An example of a valid prosecutorial purpose might be that the state's forfeiture laws require a more stringent standard of proof than the federal law (*see infra* note 27 and accompanying text), and the police cannot obtain sufficient evidence to meet the state standard. In addition, the property referred for adoption should not be appraised below specified minimum monetary values which vary according to the nature of the property. After the property is delivered to the DOJ, the DOJ can transfer back 90% (previously 80%) to the law enforcement agency responsible for the seizure. Forfeited property can either be credited directly to the budget of the requesting law enforcement agency or may be "passed through" an otherwise ineligible entity such as a district attorney's office to be used for a law enforcement purpose. The local agency can request return of the forfeited property or the proceeds from its sale.

26. DEE EDGEWORTH, ASSET FORFEITURE: PRACTICE AND PROCEDURE IN STATE AND FEDERAL COURTS 175-83 (2004) (providing state-law requirements for the distribution of seizure forfeitures). Many state laws have changed since 1984, using the federal statute "as a template . . . in drafting their own civil narcotic forfeiture statutes." *Id.* at 28 (revealing that considerable incentives for law enforcement agencies to circumvent state distributional requirements remain). North Carolina, Missouri, and Utah continue to direct proceeds to education. Wisconsin allows the law enforcement agency to keep 50% of the proceeds from non-monetary property seizers to cover administrative costs, with the remainder going to

education, and all seizures of money going to education. Oregon allows up to 25% of forfeitures to go to the political subdivision to cover storage and litigation costs, with the remainder going to drug treatment. Indiana requires the proceeds to be deposited in the general fund of the government unit employing the police making the seizure, but law enforcement is only supposed to get reimbursed for the costs of the investigation, with the remainder going to education. Colorado directs 10% of the forfeitures to the district attorney to cover litigation costs, 1% to cover court costs, 50% to the general fund of the governing board (e.g., city, county), and 39% to alcohol and drug treatment. Presumably, the local law enforcement agency can bargain with the governing board to get some or all of the 50% back as an increase in their budget allocation (consider, however, the discussion below regarding the incentives that government decision makers have to reduce regular budgets when significant seizures are made). Sixteen states allocate a defined portion of forfeitures to law enforcement while also allocating various portions to various other purposes. California mandates that 65% goes to the law enforcement agency (but 15% must be used for drug education and gang prevention), 10% is allocated to the prosecutor, 24% is deposited in the state general fund, and 1% goes to a statewide asset forfeiture training program. Similarly, Illinois allows the law enforcement agency to retain 65% while directing 12.5% to the county's state attorney, 12.5% to the state attorney general, and 10% to state police. Five states allocate a portion of the seizure proceeds to the prosecutor with the remainder going to the seizing agency without mandates for education or prevention activities. For example, Kansas allocates 15% to the county district attorney if the forfeiture is not contested, and 20% if it is, with the remainder going to the law enforcement agency. Five states allocate a portion of the seizure proceeds to the prosecutor with the remainder going to the seizing agency without mandates for education or prevention activities. For example, Kansas allocates 15% to the county district attorney if the forfeiture is not contested, and 20% if it is, with the remainder going to the law enforcement agency. Other states direct forfeitures to law enforcement but require that some portion be used for specified purposes. Florida, for instance, requires that any forfeiture to a state policing agency (or shares from joint investigations) to be deposited in the state general fund, but local law enforcement agencies get the proceeds from seizures they make. If, however, the agency has forfeitures greater than $15,000 in a year, then 15% must be spent on drug education and crime prevention programs. (Local law enforcement may produce these education and prevention activities.) Ohio is somewhat similar in that 10% of the first $100,000 and 20% of the amount exceeding $100,000 seized by an agency is to be used for prevention education programs like DARE. (In addition, 10% of a juvenile court forfeiture is to be diverted to alcohol or drug addiction programs.) Twelve states direct all seizure proceeds to the agencies that make them without specifying that some be used for education or prevention programs. Some of these states actually mandate that the proceeds be deposited in the state or local general fund while requiring that they be spent on law enforcement, but others allow the agency to retain the seizures. Three states, Delaware, South Dakota, and Virginia, direct all proceeds into a state fund for law enforcement (although South Dakota's state fund is exclusively for drug control). Virginia's then allocates the funds in the same way that the DOJ handles adoptions: 90% of the funds go to the jurisdiction that makes a seizure and 10% is retained by the state to cover administrative costs. North Dakota, New Mexico, Vermont, Oklahoma, and Texas all deposit such proceeds in state or local general (or revolving) funds, although law enforcement agencies presumably can bargain to get all or some of these funds added to their budgets. In fact, Texas and Oklahoma make this explicit as Texas allows agreements between the state and local law enforcement agencies to transfer the funds into the local treasury for law enforcement purposes (10% can be diverted into drug prevention and education, although presumably the law enforcement agency can provide this too, through DARE or some similar program). District attorneys can make similar agreements in Oklahoma (where seizures by state agencies go to the agencies' revolving funds). Several states divide funds and allocate them for a variety of purposes.

tractive for other reasons, too. Several states do not allow seizures of real property under some circumstances that are allowed under federal law.[27] The adoption program can be used to make such seizures. Perhaps more importantly, the burden of proof required to make seizures under some states' laws are stricter than under federal law. The burden of proof for a federal seizure, and therefore for an adopted seizure, is "probable cause" during much of the period of increasing drug enforcement. Both circumstantial and hearsay evidence is allowed to establish probable cause.[28] State laws, on the other hand, vary from probable cause requirements through preponderance of evidence to clear and convincing evidence and even beyond a reasonable doubt.[29] Only eight states allow seizures by probable cause, however, so all of the other states have burden of proof standards that are more difficult to meet, and when the state standard is stricter than the federal requirement, police have relatively strong incentives to use the federal procedures.[30] The opportunity to process seizures under federal law clearly offers a number of reasons for seizures associated with drug investigations to be more attractive than they are under many state seizure laws, and as a result, the federal program increases the incentives for many policing agencies to allocate more effort to drug enforcement.[31] Total drug arrests, as well as drug arrests as a portion of total arrests, increased after the federal law was passed and particularly after the adoption process was established (see Figure 1 and Table 1).

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27. This was true for more states in 1986 than it is today, but five states still do not have any statutory authority to seize real property used or intended to be used to facilitate a crime: Alaska, Nebraska, New Mexico, North Carolina, and Vermont. All states do allow seizures of real property if that property is obtained as part of the proceeds from the illegal activity. The burden of proof required to make real property seizures may be stricter than it is for other seizures, and stricter than it is for federal seizures. *See supra* note 25 and accompanying text for discussion. Similarly, many states accept more defenses in the case of real property seizures than they do for other seizures. EDGEWORTH, *supra* note 26, at 187-98.

28. The federal standard changed in 2000 with passage of the Civil Asset Forfeiture Reform Act. While this act "substantially enhanced the property subject to forfeiture under the federal system," *id*. at 25, it also changed the burden-of-proof requirement from probable cause to "preponderance of evidence." *Id*. at 113.

29. *Id*. at 113-18.

30. The majority of the states have a preponderance of evidence standard, although nine states require clear and convincing-evidence for all seizures and four more have this standard for some types of seizures. Tennessee requires a preponderance of evidence for most seizures, for instance, while beyond a reasonable doubt is required for seizures of real property. On the other hand, California mandates proof beyond a reasonable result for seizures of currency instruments less than $25,000 in value, but clear and convincing evidence for seizures of greater value. New York has different requirements based on the status of the person claiming ownership (whether the person is a criminal defendant or not) and the status of any related criminal case (pre- or post-conviction).

31. There are many other differences between state and federal seizure laws that can influence police incentives. *See* CCIM INSTITUTE, CIVIL ASSET FORFEITURE (2006); EDGEWORTH, *supra* note 26.

As education bureaucrats and others affected by the diversion of revenues to law enforcement recognized what was going on, they began to advocate a change in the federal law. They were successful, at least initially: the Anti-Drug Abuse Act (passed on November 18, 1988) changed the asset forfeitures provisions that had been established in 1984. Section 6077 of the 1988 Statute states that the attorney general must assure that any seized asset transferred to a state or local law enforcement agency "is not so transferred to circumvent any requirement of state law that prohibits forfeiture or limits the use or disposition of property forfeited to state or local agencies." This provision went into effect on October 1, 1989.[32] State and local law enforcement officials immediately responded with demands for repeal of Section 6077, however. For example, testimony advocating repeal before the Subcommittee on Crime heard on April 24, 1989, was provided by such groups as the International Association of Chiefs of Police, the Florida Department of Law Enforcement, the North Carolina Department of Crime Control and Public Safety, and the U.S. Attorney General's Office. Perhaps the most impassioned plea was made by Joseph W. Dean of the North Carolina Department of Crime Control and Public Safety,[33] who both admitted that law enforcement bureaucracies were using the federal law to circumvent the state's constitution and that without the benefits of confiscations going to those bureaus, substantially less effort would be made to control drugs:

> Currently the United States Attorney General, by policy, requires that all shared property be used by the transferee for law enforcement purposes. The conflict between state and federal law [given Section 6077 of the 1988 Act] would prevent the federal government from adopting seizures by state and local agencies . . . .
>
> [T]his provision would have a devastating impact on joint efforts by federal, state and local law enforcement agencies not only in North Carolina but also in the other affected states . . . .
>
> Education is any state's biggest business. The education lobby is the most powerful in the state and has taken a position against law enforcement being able to share in seized assets. The irony is that if local and state law enforcement agencies cannot share, the assets will in all likelihood not be seized and forfeited. Thus no one wins but the drug trafficker . . . .
>
> If this financial sharing stops, we will kill the goose that laid the golden egg.[34]

This statement clearly suggests that law enforcement agencies focused more resources on drug control because of the financial gains for the agencies arising from forfeitures. In fact, a statement by the U.S. Attorney for the East-

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32. *Hearing on Federal Drug Forfeiture Activities Before the Subcomm. on Crime of the H. Comm. on the Judiciary*, 101st Congress, 166 (1990).

33. *Id*. at 18-28.

34. *Id.* at 21-28.

ern District of North Carolina actually implies that law enforcement agencies focus on confiscations as opposed to criminal convictions: "Drug agents would have much less incentive to follow through on the assets potentially held by drug traffickers, since there would be no reward for such efforts and would concentrate their time and resources on the criminal prosecution."[35] The police lobbies won the battle over federal legislation, as Section 6077 of the Anti-Drug Abuse Act of 1988 never went into effect. Its repeal, hidden in the 1990 Defense Appropriations bill, applies retroactively to October 1, 1989.

Many law enforcement agencies actively pursue asset seizure. Over 90% of the police departments with jurisdictions containing populations of 50,000 or more and over 90% of the sheriffs' departments serving populations of 250,000 or more obtained money or goods from drug asset forfeiture programs in 1990, for instance.[36] The DOJ is an important conduit for many of these seizures. From the beginning of the DOJ adoption program in 1986 through 1998, $1.9 billion have been distributed to state and local law enforcement.[37] The Treasury Department also instituted its own forfeiture fund in 1993 so law enforcement agencies supervised by Treasury can facilitate the seizure-forfeiture process. This fund dispersed more than $282.7 million in cash and proceeds through 1998.[38]

Civil forfeitures can be successful from the police's perspective even if arrest and prosecution is not. Forfeiture laws are supposedly designed to protect lien holders and owners whose property is used without their knowledge or consent, but property owners must bring their claims in civil forfeiture hearings. Generally, owners whose property is alleged to have been used in a drug offense or purchased with the proceeds from drug trafficking have the burden of establishing that they merit relief from the forfeiture proceeding.[39] Not only must the owners prove that they are innocent of the alleged crime, but that they lack both knowledge of and control over any unlawful use of the property.

Proceeds from asset forfeiture do not necessarily represent a net gain to the local police even when the monies are given directly to the law enforcement agencies, because pressure from other local bureaucrats who are competitors for scarce budgetary resources may cause administrators and politicians with whom bureaucrats bargain to view the flow of money from asset seizures as a substitute for regular appropriations. One alleged purpose of asset forfeitures is to make drug enforcement efforts to a degree self-financing, and as Becker and Lindsay demonstrate, government can "free ride" by reducing budget alloca-

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35. *Id*. at 26.

36. BRIAN A. REAVES, BUREAU OF JUSTICE STATISTICS: SPECIAL REPORT, DRUG ENFORCEMENT BY POLICE AND SHERIFFS' DEPARTMENTS 1990, at 1 (1992).

37. EHLERS, *supra* note 3, at 7.

38. *Id.*

39. NAT'L CRIM. JUSTICE ASS'N, *supra* note 20, at 41.

tions when an agency obtains funding from some other source.[40] Police agencies that obtain substantial forfeitures may see budget allocations reduced to offset expected confiscations. Counteracting the incentive to reduce police budgets by the full amount of forfeitures is the fact that these seizures are visible indicators of law enforcement output. Large seizures are "media events" that may benefit both police and budget sponsors. If police are not allowed to retain some benefits from the production of this output, their incentives to do so are reduced, suggesting a hypothesis that police will be allowed to retain some portion of the increase in budget that their seizure efforts produce.

B. *Do Local Governments Reduce Police Budgets to Offset Seizures?*

The extent to which police agencies can increase their budgets through forfeiture activity is explored by Benson, Rasmussen, and Sollars, and by Baicker and Jacobson.[41] Using data from Florida's local policing jurisdictions, Benson, et al. find that confiscations have a positive and significant impact on police agencies' budgets after accounting for demand and local government budget constraint factors.[42] Their estimates imply that a 1% increase in confiscations in one year leads to an average of .04% increase in non-capital expenditures across all jurisdictions and .07% increase for large jurisdictions.[43] This seemingly modest elasticity belies the potentially large impact of asset forfeitures on decision making, since only a small fraction of non-capital expenditures are likely to be discretionary. The relationship between discretionary spending and confiscations can be approximated as the estimates reported above divided by the proportion of all non-capital expenditures that are discretionary. Thus, for instance, if 10% of non-capital expenditures are discretionary, the relevant percentage increases in these expenditures are 0.4 and 0.7 for a 1% increase in

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40. Elizabeth Becker & Cotton M. Lindsay, *Does Government Free Ride?* 37 J.L. & ECON. 277 (1994).

41. Baicker & Jacobson, *supra* note 3; Benson, et al., *supra* note 13.

42. Benson, et al., *supra* note 13, at 36-38.

43. These estimates reflect the estimated "elasticity" of non-capital expenditures with respect to confiscations. Elasticity means responsiveness, but it has an even more precise meaning in economics. When a change in one variable, X (e.g., price), is predicted to cause a change in another variable, Y (e.g., quantity demanded), then the elasticity is calculated as the "percentage-change-in-Y/percentage-change-in-X." The resulting value can range from negative infinity to positive infinity. A positive value implies that an increase in X causes an increase in Y, while a negative value indicates that an increase in X causes a decrease in Y (and visa versa). A value that is less than one but greater than zero (greater than negative one but less than zero) implies that the percentage change in Y is smaller in absolute value than the percentage change in X, while an absolute value greater than one means that the percentage change in Y is larger (larger in absolute value) than the percentage change in X. The elasticity values interpreted above are .04 when the sample includes all jurisdictions and .07 with a sample of just large jurisdictions.

confiscations. Since the portion of budgets that is committed to specific uses is probably larger than assumed here, these figures represent a significant under estimate of the impact confiscated assets can have on the discretionary budget.

Baicker and Jacobson obtain county level data from parts of California, Pennsylvania, Arizona, Florida, and New York to test the same hypothesis. They include a number of additional control variables that were unavailable for Benson, et al. and they suggest that the budget impact of forfeitures in one year is likely to reduce budget in the following year.[44] Their empirical results imply that counties reduce police budgets by an average of eighty-two cents for each dollar seized during the previous year, so police retain about eighteen cents per dollar of seizures. These two studies make it clear that local governments do react to successful seizures by their police, but they do not reduce budgets by the full value of the seizures. Local police increase their discretionary budgets by pursuing seizures.

Given the lag in budget reductions found by Baicker and Jacobson,[45] police could actually have incentives to pursue seizures even if local governments reduce budgets by the full amount of the seizures. If police agencies seize assets one year and do not fully anticipate the reduced budget that will follow, they may pursue more seizures the next year in order to make up for that year's budget shortfall. As this cycle of increased seizures followed by budget reductions repeats, the local government decision makers may begin to assume that seizures will continue and permanently reallocate a portion of what would be police budgets in the absence of seizures to other uses. As a result, the police become dependent on seizures just to maintain their expenditure levels. This is consistent with Worrall's findings.[46] His survey of a large number of city and county law enforcement executives indicates that many, including almost 40% of the large agencies, claim dependence on forfeitures as budgetary supplements. Pursuit of forfeitures becomes an imperative in such cases, so, as Worrall succinctly states in the abstract which leads his article, "the primary implication tied to these findings is that a conflict of interest between effective crime control and creative fiscal management will persist so long as law enforcement agencies remain dependent on civil asset forfeitures."[47] The contention that law enforcement is less effective because of these incentives is supported in Section III below. Combined with the evidence of more intense drug enforcement activity after 1984, this supports the hypothesis that police responded to the Comprehensive Crime Act of 1984.

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44. Baicker & Jacobson, *supra* note 3, at 2119.

45. *Id.* at 2124.

46. John L. Worrall, *Addicted to the Drug War: The Role of Civil Asset Forfeiture as a Budgetary Necessity in Contemporary Law Enforcement*, 29 J. CRIM. JUST. 171 (2001).

47. *Id.* at 171.

II.3. *Testing the Hypothesis that Police Respond to Incentives.*

The asset forfeiture provisions of the 1984 federal statute and the 1986 inception of the DOJ adoption program represent exogenous changes in state and local law enforcement agencies' bureaucratic benefit-cost calculus, and these changes are hypothesized to have induced these agencies to join in the federally declared war on drugs. The observed changes in drug enforcement since 1984 are generally consistent with this hypothesis, but unfortunately, the hypothesis cannot be supported by direct statistical tests since the 1984 crime bill and 1986 adoption option are one-time changes in incentives, and other factors were also changed at around the same time that might be hypothesized to influence drug enforcement decisions (e.g., the spread of crack cocaine from New York, Miami and Los Angeles to much of the rest of the country; expanding marijuana production within the U.S. in light of successful interdiction of substantial amounts of foreign-grown marijuana). Therefore, an indirect means of testing this hypothesis is developed by Mast, Benson and Rasmussen.[48] This test relies on the fact is that the increased effort against drugs has been far from the same everywhere, as demonstrated in Table 2. Some states actually reduce their relative efforts against drugs as most states increase their efforts, and by 1989 drug arrest rates range from 1,060/100,000 population in California to 88/100,000 population in West Virginia.

In this context, recall that state seizure laws vary considerably, and in fact, they have been changing over time as states have recognized the financial benefits arising because of the federal law.[49] In several states, law enforcement agencies get to keep assets they seize under state law so they do not have to call upon the DOJ to adopt their seizures. Since the DOJ charges to handle adoptions (20% initially, but now 10%), at the margin at least, police in a state with a law that allocates seizures to the law enforcement should have even stronger incentives to pursue drug enforcement.[50] In addition, the DOJ is only willing to

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48. Mast et al., *supra* note 3.

49. EDGEWORTH, *supra* note 26, at 28; Baicker and Jacobson, *supra* note 3, at 2114-15. *See also supra* text accompanying notes 26, 27, and 30.

50. Many state laws now allow seizures of property arising from investigations of non-drug crimes (federal law does too), but drug enforcement is virtually always the most lucrative source of seizures because of the huge amount of cash involved in the market, along with many transportation, storage, and production assets that are attractive targets for property seizures (e.g., cars, boats, airplanes, land used to grow marijuana). Most other crimes also do not generate as many opportunities for seizures. Proceeds from property crimes that are recovered can be claimed by the victims, for instance, and most violent crimes do not involve valuable assets or cash. Some non-drug criminal activity does provide opportunities for large seizures, of course (e.g., organized crime, money laundering, financial market crimes), but many local police departments do not have the expertise needed to pursue these crimes, and they are also more difficult and time consuming to investigate. Drug markets are virtually ubiquitous, and seizures through drug enforcement efforts are rel-

adopt relatively large seizures. For instance, real property must be worth $10,000 and a boat must be worth $5,000 before the DOJ will adopt the seizure. This means that the state law rules for small seizures, and importantly, a large portion of seizures are small. In California, for instance, local prosecutors conducted over 6,000 forfeiture cases in 1992, and over 94% involved seizures of $5,000 or less.

TABLE 2: Drug Arrests per 100,000 Population, by State, 1984 and 1989[51]

State	**Rank**	**1989**	**1984**	**% Change**
Alabama	21	392	190	106.3%
Alaska	44	162	120	35.0%
Arizona	11	519	380	36.6%
Arkansas	30	311	230	35.2%
California	1	1,060	590	79.7%
Colorado	33	279	230	21.3%
Connecticut	8	647	270	139.6%
Delaware	28	329	230	43.0%
Florida	6	675	360	87.5%
Georgia	7	661	344	92.1%
Hawaii	25	355	420	-15.5%
Idaho	39	221	140	57.9%
Illinois	14	446	120	271.7%
Indiana	41	189	130	45.4%
Iowa	46	119	90	32.2%
Kansas	37	233	140	66.4%
Kentucky	9	528	300	76.0%
Louisiana	10	526	270	94.8%
Maine	38	229	130	76.1%
Maryland	4	776	420	84.8%
Mass.	5	689	310	122.3%
Michigan	23	374	170	120.0%
Minnesota	45	161	130	23.8%
Mississippi	22	375	190	97.4%
Missouri	18	422	240	75.8%
Montana	27	332	130	155.4%
Nebraska	32	283	150	88.7%
Nevada	42	170	110	54.5%
New Hampshire	35	265	138	92.0%

atively easy to make.

51. U.S. DEP'T OF JUSTICE, BUREAU OF JUSTICE STATISTICS, CRIME IN THE UNITED STATES (1984 and 1989).

New Jersey	2	895	460	94.6%
New Mexico	13	454	300	51.3%
New York	3	799	510	56.7%
North Carolina	20	411	261	57.5%
North Dakota	49	107	160	-33.1%
Ohio	17	426	190	124.2%
Oklahoma	29	327	270	21.1%
Oregon	15	438	240	82.5%
Pennsylvania	34	274	130	110.8%
Rhode Island	19	422	380	11.1%
South Carolina	12	470	300	56.7%
South Dakota	47	118	190	-37.9%
Tennessee	36	263	160	64.4%
Texas	16	433	360	20.3%
Utah	31	291	320	-9.1%
Vermont	48	109	n.a.	n.a
Virginia	26	341	200	70.5%
Washington	24	369	170	117.1%
West Virginia	50	88	100	-12.0%
Wisconsin	40	207	200	3.5%
Wyoming	43	169	180	-6.1%
United States		538	312	72.4%

Some states allow police to retain seizure proceeds, while others mandate that they be used for specific non-law-enforcement purposes, such as education. Many states allow police agencies to keep only a portion of the proceeds.[52] If an agency cannot retain any forfeitures under state law its decision makers have strong incentives to use the federal adoption program, and to forgo small seizures that the DOJ will not adopt. On the other hand, police in states that allow the agency to retain all seizures without relying on and therefore losing a percentage of the forfeitures to the DOJ, do not have incentives to use the DOJ adoption option (unless other factors such as burden of proof requirements under state law reduce the potential for successful seizures), and they have incentives to pursue small seizures that the DOJ will not adopt. States where police keep seizures under state law should be engaged in greater drug enforcement efforts than states where police cannot keep seizures unless they use the DOJ adoption process. Not surprisingly, drug arrests per 100,000 population in states with significant limits on police retention of forfeitures averaged 363 during 1989, while states where police keep seizure proceeds under state law averaged 606 drug arrests per 100,000 during the same year. This dramatic dif-

52. *See* discussion *supra* note 26.

ference appears to support the hypothesis that police increase drug enforcement when they can keep seizures, and therefore, at least indirectly, it appears to support the proposition that the 1984 federal law and the adoption program that follow in 1986 stimulated an increase in drug enforcement by many, but not all, state and local police agencies. Other factors, such as the level of drug use and/or property crime may explain these interstate differences in drug enforcement, so strong support for the hypothesis requires an empirical analysis that controls for other factors affecting the level of drug enforcement.

Mast et al. model local drug enforcement efforts and provide an empirical test of the hypothesis that enforcement is higher when police can keep assets seized under state law.[53] Two different samples of cities are employed to test the model. The use of two samples is motivated by the fact that one determinant of drug enforcement may be the level of drug market activity, so fully specifying the model is not possible for a large sample because there are no reliable estimates of the prevalence of drug market activity within most political jurisdictions. However, annual jurisdiction level data on drug use for a limited sample of 24 cities is provided by the National Institute of Justice's Drug Use Forecasting (DUF) program.[54] Use of this sample carries a high price in terms of degrees of freedom in the statistical analysis, but the ability to control for drug use makes it very attractive, particularly when supplemented by an analysis of a larger sample of cities that does not have a direct measure of drug use.

Mast et al. also control for the level of police resources available in a community, for alternative demands on those police resources by controlling for property and violent crime rates, and for various socio-economic characteristics of the community that might influence community demands for drug enforcement. Their results with regard to the impact of asset seizure laws are robust across model specification and the alternative samples of cities: police focus relatively more effort on drug control when they can enhance their budgets by retaining seized assets under state laws. State Legislation permitting police to keep a portion of seized assets raised drug arrests as a portion of total arrests by between 12.59% and 19.24% and drug arrest per capita by about 17.62%.[55] This provides evidence that local police respond to incentives created by state laws, and indirect support for the contention that the upsurge in drug enforcement that started in 1984-86 was a result of the incentives created

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53. Mast et al., *supra* note 3.

54. *Id*. at 290. To obtain the measure of drug use in each of the twenty-four cities, urine samples are collected from individuals who are arrested. This provides good measure of drug use within the arrestee population, so it is not a measure of the entire drug market in a city. It does indicate the level of drug use among that part of the population that police deal with, however, and therefore, presumably the population that is likely to influence police decision-makers' perception of the magnitude of the "drug problem."

55. *Id*. at 297 tbl.3, 299 tbl.4, 302 tbl.5.

by federal legislation and administrative decisions that alter incentives for state and local police, particularly in states where state law does not allow police to keep forfeitures.[56]

II.4. *Implications.*

The conclusion that state and local police respond to the incentives created by asset seizure laws implies that the federal law did what it was intended to do. It increased state and local drug control efforts. Given the widely held belief that drug use causes non-drug crime, this increase in drug enforcement should reduce property and violent crime to. An added advantage presumably is that through asset seizures, criminals are forced to help pay for law enforcement. These allegedly beneficial results of allowing police to keep the forfeitures they seize are considered next. First, do civil forfeitures mean that criminals are paying for law enforcement?

Recall that the burden of proof required to make a civil seizure is virtually always less demanding than the burden of proof required for a criminal conviction.[57] The burden of proof for a federal seizure, and therefore, for an adopted seizure was "probable cause" from 1984 to 2000, when it was increased to a preponderance of evidence. Both circumstantial and hearsay evidence are allowed to establish probable cause. Seizures under some state laws also can be made by meeting probable-cause requirements, although a substantial number of states require a preponderance of evidence, and some require clear and convincing evidence. Only a few states have set the beyond-a-reasonable-doubt standard required for a criminal conviction, and then, only for a limited set of seizures.[58] Civil seizures also can be made without filing criminal charges against or arresting the person from whom property is seized, let alone convicting the person of a crime. These facts mean that there really is no way to know

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56. Baicker & Jacobson, *supra* note 3, at 2130, reach similar conclusions, finding that a 1% increase in the "sharing rate" (a variable that combines information on the sharing percentages going to police as established by state law and a measure of the extent to which counties reduce budgets following seizures) results in approximately a 0.1% increase in total drug arrests. They find a larger impact on possession arrests than on sales arrests, and on opiate and cocaine arrests than marijuana arrests (in fact, their marijuana arrest coefficient is not significant). *Id*. at 2133. However, some of these estimates may be problematic because of their use of their constructed sharing rate. This variable implies an assumption that police fully anticipate the reductions in budget by the budgeting authority, but perhaps more importantly, it rules out the dependency implications of seizures suggested by Worrall's, *supra* note 46, at 183, findings that forfeitures are a "necessary budget supplement" for almost 40% of the large policing agencies in his 1998 sample. The fact that budgets are reduced with a lag may actually imply that the entire amount of the seizure is important for police, either as a net gain or to cover reductions in budget allocations.

57. *See* discussion *supra* at notes 28 and 30.

58. EDGEWORTH, *supra* note 26, at 113-118.

with any degree of confidence that criminals are providing this source of law enforcement revenues.

The drug squad created by the Volusia County, Florida, Sheriff seized over $8 million (an average of $5,000 per day) from motorists on Interstate 95 during a forty-one-month period between 1989 and 1992.[59] These seizures were "justified" as part of the war on drugs. Most Volusia County seizures involved southbound rather than northbound travelers, suggesting that the drug squad was more interested in seizing money than in stopping the flow of drugs. No criminal charges are filed in over 75% of the county's seizure cases. Responses by victims of many of these seizures also suggest that a substantial amount of money was apparently seized from innocent victims. Three-fourths (199) of Volusia County's seizures were contested. Money was not returned even when the seizure is challenged, no proof of wrongdoing or criminal record could be found, and the victim presented proof that the money was legitimately earned.

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59. See the Pulitzer Prize winning series of ORLANDO SENTINEL articles during June, 1992, by Jeff Brazil and Steve Berry, which describe, in vivid detail, the asset seizure program in Volusia County, Florida, that netted over $8 million in four years. The series started on June 14, 1992, with four articles. Jeff Brazil & Steve Berry, *Tainted Cash or Easy Money? Volusia Deputies Have Seized $8 Million from I-95 Motorists. The Trap is for Drug Dealers, but Money is the Object. Three of four Drivers Were Never Charged*, ORLANDO SENTINEL, June 14, 1992, at A1; Jeff Brazil & Steve Berry, *Seizing Cash is No Sweat for Deputies* ORLANDO SENTINEL, June 14, 1992, at A17; Jeff Brazil & Steve Berry, *Deputies Take $19,000 and Leave a Woman in Despair; A Hidden Microphone Records the Words of a Woman as Deputies Search Her Car: 'The Lord Is My Shepherd . . .'* ORLANDO SENTINEL, June 14, 1992, at A16; Jeff Brazil & Steve Berry, *How Could they say they Treated me Fairly?*, ORLANDO SENTINEL, June 14, 1992, at A17. June 15 followed with four more. Jeff Brazil & Steve Berry, *Blacks, Hispanics Big Losers in Cash Seizures. A Review of Volusia Sheriff's Records Show That Minorities Are the Targets in 90 Percent of Cash Seizures Without Arrests*, ORLANDO SENTINEL, June 15, 1992, at A1; Jeff Brazil & Steve Berry, *You May Be Drug Free but Is Your Money? Cocaine Is found on the Cash of 8 Non-Users. The Test Suggests that a Drug Dog Would Detect Cocaine on Almost Anyone's Money*, ORLANDO SENTINEL, June 15, 1992, at A6; Jeff Brazil & Steve Berry, *"I Could Win the Battle but Lose the War" After 6 Months of Trying to Reclaim His Savings of $39,932, Edwin Johnson Quit Fighting and Agreed to a Settlement*, ORLANDO SENTINEL, June 15, 1992, at A6; Jeff Brazil & Steve Berry, *Good Record Couldn't Save Man's Money—Hersel Lawson Jr. Says Calling Him a Drug Trafficker is a "Joke." But Deputies Weren't Laughing When They Took His $31,000*, ORLANDO SENTINEL, June 14, 1992, at A6 The series continued on June 16 with three more articles. Jeff Brazil & Steve Berry, *Sheriff's Drug Squad Gets the Bad Guys . . .* , ORLANDO SENTINEL, June 16, 1992, at A4; Jeff Brazil & Steve Berry, *But Sometimes Bad Guys Get off Easy*, ORLANDO SENTINEL, June 16, 1992, at A4; and *Lottery Winner's Luck Runs Out with Deputy's $37,970 Haul—Lottery Officials Confirmed Earl Field's Winnings, but the Sheriff's Office Said it Had His Number—And His Money*, ORLANDO SENTINEL, June 16, 1992, at A4. For other examples of apparent misuse of seizure laws, see Dennis Cauchon and Gary Fields' series of articles on *Abusing Forfeiture Law* in USA Today (May 1992). *E.g.*, Dennis Cauchon, *'Too Injured to Be Angry' over Years-Long Vindication*, USA TODAY, May 18, 1992, at 6A; Jim Henderson, *Big Numbers Don't Add up to Success in Texas War on Drugs*, HOUSTON CHRONICLE December 24, 2000, at State 1; *Turning Drug Busts into a Profit Center*, WASH. POST WEEKLY EDITION, April 19, 1991.

Instead, the sheriff's forfeiture attorney handled settlement negotiations. Victims of seizures had to hire attorneys to represent them in the negotiations. Only four people obtained all of their money, and presumably, part of the returned funds was paid to lawyers. The rest settled for 50% to 90% of their money after promising not to sue the sheriff's department.[60]

Since the allocation of forfeitures to police increase incentives for police to pursue drug enforcement and drugs presumably cause non-drug crime, the increase in drug enforcement should reduce violent and property crime. Again, not necessarily.. While a substantial portion of property and violent criminals do consume drugs, this does not imply that it is the drug use that causes the crime. Studies of the temporal sequencing of drug abuse and crime actually suggest that criminal activities often precede drug use. A Bureau of Justice Statistics survey of prison inmates reports that approximately half of the inmates who have ever used a major drug, and roughly three-fifths of those who use a major drug regularly, did not do so until after their first arrest for some non-drug crime; that is, "after their criminal career had begun."[61] Similarly, a large scale survey of jail inmates finds that more than half who report regular drug use say that their first arrest for a crime occurred an average of two years before their first use of drugs.[62] Once an individual decides to turn to crime as a source of income, he or she may discover that drugs are more easily obtained within the criminal subculture and perhaps that the risks posed by the criminal justice system are not as great as initially anticipated, so crime can lead to drug use. Chen et al. conclude that delinquency is not caused by drug abuse, but rather, "the varieties of delinquency tend to change to those most functional for drug use; the total amount of delinquency is independent of the drug use."[63] Similarly, Chaiken and Chaiken review much of the relevant research and con-

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60. A twenty-one-year-old naval reservist suffered a $3,989 seizure in 1990, for instance, and even though he produced Navy pay stubs to show the source of the money, he ultimately settled for the return of $2,989, with 25% of that going to his lawyer. In similar cases the sheriff's department kept $4,750 out of $19,000 (the lawyer got another $1,000); $3,750 out of $31,000 (the attorney got about 33% of the $27,250 returned); $4,000 of $19,000 ($1,000 to the attorney); $6,000 out of $36,990 (the attorney's fee was 25% of the rest); and $10,000 out of $38,923 (the attorney got one-third of the recovery). Note that the fact that 25% of the seizures were not challenged does not mean that they were "legitimate." The cost of making a challenge may be too high for it to be worthwhile. Police in one Louisiana county sheriff recognized this, for instance, and focused seizure actions on out-of-state cars, recognizing that these drivers were less likely to challenge that state residents. *Dateline* (NBC television broadcast Jan. 3, 1997).

61. Christopher A. Innes, *Drug Use and Crime*, *in* BUREAU OF JUSTICE STATISTICS: SPECIAL REPORT 1-2 (1988).

62. Caroline Wolf Harlow, *Drugs and Jail Inmates*, in BUREAU OF JUSTICE STATISTICS: SPECIAL REPORT 7 (1991).

63. ISADOR CHEN, ET AL., THE ROAD TO H: NARCOTICS, DELINQUENCY AND SOCIAL POLICY 64-65(1965).

clude that "[t]here appears to be no simple general relation between high rates of drug use and high rates of crime."[64] Successful property crime certainly generates income that can buy drugs, just as it does for all other goods that previously were not considered to be affordable (Air-Jordon shoes, flat screen TVs, MP3 players, cars, etc.). If the individual later becomes addicted, his or her preferences may change, and at that point, the "drugs-cause-crime" relationship might come into play. In this context, however, Rasmussen and Benson examine a unique data set provided by the Florida Department of Law Enforcement, the arrest history of persons having at least one misdemeanor or felony drug arrest in Florida, and find evidence of only a modest potential relationship between drugs and other crime.[65]

Consider drug possession arrestees first, and their history of violent crime. The 45,906 persons arrested at least once for drug possession in 1987 had a history of 19,436 violent crime arrests, an average of 0.42 violent crimes per arrestee. But the average is very misleading. Of these 45,906 persons, 76% had no prior arrest for a violent crime. A relatively small portion of the remaining 24% actually had a very high share of the violent crime arrests: 2.3% of those with possession arrests (the portion that is two standard deviations from the mean) accounted for 34.4% of all of the violent-crime arrests. There were 1,066 individuals in this 2.3% and they averaged 6.27 violent-crime arrests in their past. Table 3 allows comparisons of these relationships with those for non-violent felonies and for arrestees charged with various supply-side drug offenses.

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64. JAN M. CHAIKEN & MARCIA R. CHAIKEN, DRUGS AND PREDATORY CRIME DRUGS AND CRIME 10 (Michael Tonry & James Q. Wilson, eds. 1990).

65. RASMUSSEN & BENSON, *supra* note 6, at 60-62. The raw data appear in KENNETH TRAGER & MICHAEL CLARK, FLORIDA DRUG OFFENDER PROFILE (1989). But Rasmussen and Benson use the data to calculate and interpret the relationships discussed below.

TABLE 3: Drug Offenders and Non-Drug Crime: 1987 Arrest History of Florida Drug Arrestees[66]

Drug Offense	Number of Offenders	Percentage of Offenders With No Violent Felony Arrest	Concentration Index (% of Arrests Accounted for by 2.3% of Offenders)[67]	Percentage of Offenders with Zero or One Non-Violent Felony Arrest[68]	Concentration Index (% of Arrests Accounted for by 2.3% of Offenders)
Possession	45,906	76.0	34.4	42.2	34.1
Sales	8,472	65.5	26.2	27.8	18.0
Smuggling	384	69.5	29.6	40.4	19.8
Production	452	86.5	41.9	63.3	23.7
Trafficking	3,308	82.6	40.3	53.3	22.0
Delivery/ Distribution	1,997	69.4	28.5	31.9	20.4
Possession Drug Equipment	6,256	68.2	30.1	31.0	18.8

The proportions of possession arrestees with no non-violent felony arrest history, beyond the felony drug arrest that put them in the sample, are also substantial. Many of their non-violent felony arrests were for drug offenses, of course. Persons arrested for possession, for example, had a history of 84,588 previous non-violent arrests, but roughly 75,500 of these arrests are misdemeanor or felony arrests for possession, and almost 6,800 are for drug supply activities. The portion of possession arrestees with no prior property crime arrests was about 70.9%.[69] Note that this figure may appear to be in conflict with Ta-

66. RASMUSSEN & BENSON, *supra* note 6, at 61; these results are calculated from data in TRAGER AND CLARK, *supra* note 65.

67. Two and three tenths percent of the population is the portion that exceeds the mean by two standard deviations.

68. Most of the individuals were arrested for a drug felony, the exception being a few arrested for a drug misdemeanor, so this column shows the percentage of drug arrestees with the minimum number of possible non-violent felony arrests including drug arrests (zero or one).

69. RASMUSSEN & BENSON, *supra* note 6, at 60 (using data from TRAGER AND CLARK, *supra* note 65). This percentage is amazingly similar to other evidence of the arrested drug users who commit property crime. For instance, consider the 1989 Bureau of Justice Statistics survey of 395,554 jail inmates from 3,312 city and county jails, Harlow, *supra* note 62, at 6. 24.7% of the prisoners who consumed drugs sometime in the last month, and 29.4% of those who consumed drugs on a daily basis over the previous month reported that at least part of their income came from illegal activities. It also should be noted that a substantial portion of these individuals may have earned income from illegal activities other than property crime (e.g., drug supply activities, prostitution). Rasmussen and Benson's calculations

ble 3, but the value in the table includes all non-violent felony arrests, including drug arrests. Most of the individuals had been arrested for at least one drug felony (the exception being a few arrested for a drug misdemeanor), the one that puts them in the sample, so this column shows the percentage of drug arrestees with the minimum number of possible non-violent felony arrests including drug arrests (zero if the drug arrest is a misdemeanor or one). Rasmussen and Benson also report a small portion of these possession arrestees accounted for a very large portion of the non-violent felony crimes: 34.1% of the prior non-violent felony arrests are concentrated in 2.3% of this population.[70]

Persons engaged in the supply side of drug markets apparently are more inclined to property crime than persons arrested for possession: only 61.9% of the 198 arrestees for drug supply activities had no previous arrest for a property crime.[71] Property-crime arrests also are less concentrated for suppliers than they are for users (the 2.3% concentration indexes for different categories of supply-side arrestees are reported in Table 3). This may be surprising given popular and political perceptions that drug consumers commit a large number of property crimes to finance their drug use. Instead, a relatively large portion of the people willing to engage in drug-supply activities in order to obtain income apparently are also relatively likely to engage in property crime to obtain income. Economic motivations (e.g., poverty) appear to lead to both drug sales and property crime, not drug use.

Among the six supply side categories, the portion of the arrestees with no history of arrest for violent crime varied from 65.5% for sale to 86.5% for production.[72] The concentrations indices for violent crimes among drug suppliers were all substantially higher than they are for property crime, as 2.3% of the arrestees account for between 26.2% (sales) to 41.9% (production) of the prior violent crime arrests (see Table 3). Nonetheless, among the drug supplying population, a substantial majority apparently did not actively engage in non-drug crime.

Figure 2, below, illustrates Rasmussen and Benson's conclusion that the drug-crime relationship is best understood by considering two sets of people, one consisting of drug-market participants, and one consisting of non-drug criminals.[73] The two sets overlap, but the relative size of the overlap suggests that no causality relationship between the two is evident. The three areas in the

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imply the percentage of drug-possession arrestees with a prior property crime arrest varies by crime type. RASMUSSEN & BENSON, *supra* note 68, at 62. Approximately 19.6% had at least one prior burglary arrest, about 10.1% had at least one larceny arrest, about 7.7% had an arrest for auto theft, and 1.8% had a stolen property possession arrest (these percentages are calculated from the results reported in Table 3.3, *id.* at 62).

70. *Id.* at 60.

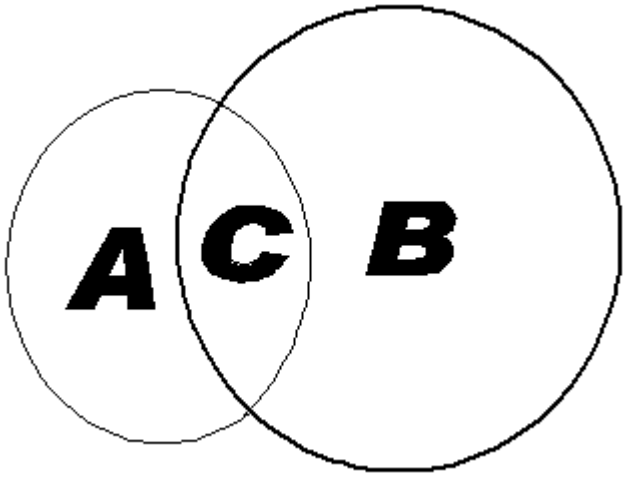
71. *Id.* at 62.

72. *Id.* at 60.

73. *Id.* at 62.

diagram represent criminals who do not engage in drug market activities (area A), drug-market participants who do not commit non-drug crimes (area B), and criminals who engage in both drug market activities and non-drug crimes (area C). Areas A + C include all individuals who commit non-drug (e.g., property, violent) crimes and areas B + C include all individuals who engage in drug market activities.

FIGURE 2



The actual or relative size of these various areas is not known, but rough estimates of relative size can be made based upon available information, including some discussed above. The areas vary according to the non-drug crime being considered (e.g., violent crimes, property crimes, or some subset of either type of crime such as burglary, larceny, auto theft, homicide, sexual offenses, assault, or robbery), and the nature of the drug market activity (e.g., hard drugs or marijuana, possession or consumption, the nature of the supply-side activity—sales, production, smuggling—and so on). For instance, arrest data considered by Rasmussen and Benson indicates that about 24% of drug consumers also commit violent crimes.[74] That is, area B is about three times the size of area C for violent crimes and drug consumers. Similarly, about 29.1% of drug consumers commit property crime so area B is about 2.4 times area C in this case.

Rough comparison of the size of areas A and C requires estimates of the portion of non-drug criminals who are drug users. The 1989 Bureau of Justice Statistics survey of jail inmates mentioned above finds that 24.9% of violent offenders admit to being under the influence of an illicit drug at the time of the offense, as

74. *Id.* at 66.

do 31% of the property offenders.[75] This suggests that area A is about three times the size of area C for property crimes and about 2.2 times larger for violent crime. Of course, individuals who are not under the influence at the time of an offense may still be drug users, so these ratios are probably lower bound estimates of the relative size of areas A and C. This survey also finds that 29.4% of those who consumed drugs on a daily basis over the previous month (i.e., individuals who are relatively likely to have been under the influence at the time of their arrest) reported that at least part of their income comes from illegal activities, while 24.7% who consumed sometime in the last month but not daily (users who may be relatively less likely than daily users to have been under the influence at the time of the arrest) also reported income from illegal activities. This implies a potential upper bound estimate of about 54.1% (adding the two percentages) for income-generating crime, although much of this crime actually is not likely to be property crime, as activities like drug supply (production, sales, smuggling, etc.) and prostitution also generate income for drug users. The upper bound for property crime is likely to be much lower than 50%, so A is virtually certain to be larger than C.[76]

A statistical study of recidivism by drug offenders reinforces the implications of the Rasmussen-Benson examination of arrest history data. Using data provided by the Florida Department of Corrections, Kim et al. create a large sample of individuals incarcerated in Florida prisons between 1983 and April 2, 1990 for drug offenses.[77] A subset of 4,398 observations from this sample who

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75. Harlow, *supra* note 62, at 10.

76. The estimates suggested above may be surprising given the typical figures often reported to justify a drug war. For instance, during 1988, 72.2% of male arrestees in twenty U.S. cities tested positive in a urinalysis for the use of an illicit drug, NAT'L CRIM. JUSTICE ASS'N, *supra* note 20. Similarly, a Bureau of Justice survey of 12,000 inmates indicates that over 75% used drugs, 56% used drugs in the month prior to their incarceration, and one-third admitted to being under the influence of drugs at the time of their offense. H. G. WEXLER ET AL., OUTCOME EVALUATION OF A PRISON THERAPEUTIC COMMUNITY FOR SUBSTANCE-ABUSE TREATMENT (1989). The survey of jail inmates mentioned above also finds that 77.7% of the inmates admitted using some illicit drug, Harlow, *supra* note 62, at 4, but 23% of this jail-inmate population was charged is a drug offense. These offenders probably accounted for a large portion of those under the influence when charged. This point applies to all the data on drug use by populations of arrestees and inmates: inferences that drugs cause non-drug crime based on such reports are misleading.

77. Iljoong Kim et al., *An Economic Analysis of Recidivism Among Drug Offenders* 60 S. ECON. J. 169, 176 (1993). In this context, Benson and Rasmussen performed a large scale study of drug policy, and a second on alternative sentencing, for the Florida legislature in the late 1980s and early 1990s. Because they were working for the legislature, they were given access to a great deal of data that is not typically available from state agencies such as Florida departments of law enforcement and corrections. As a result, many of the earliest empirical studies discussed in this Part and in Part III are coauthored by Benson and Rasmussen, often with others, and they use Florida data. These studies include Kim et al., *supra*, as well as Bruce L. Benson, et al., *Is Property Crime Caused by Drug Use or Drug En-*

were released before May 29, 1989 is extracted from the larger sample. About 50.7% of the sample were returnees to Department of Corrections control after an initial release, and many were released more than once, so the actual number of releases in the sample is 7,161. Kim, et al. use this sample in a duration model, controlling for a number of socio-economic and law enforcement factors that might influence the probability of recidivating. The data includes information about the crimes that leads to readmission to prison so analysis also considers the crime for which an initial drug offender is readmitted. They use three dummy variables to identify three types of drug offense convictions: possession, sale of drugs, and other drug offenses. Recidivism rates for these three types of convictions are statistically compared to the "other" category of convictions: the convicted offenders whose most recent primary offense was a non-drug crime. The results suggest that persons convicted for drug possession were less likely to recidivate than those convicted of drug sales, and both groups were significantly less likely to recidivate than were persons convicted of other drug crimes (trafficking, smuggling, production, delivery and distribution), and non-drug crimes in the sample: "These results suggest that drug offenders who have no record of non-drug criminal activity are different from the population of drug offenders who have also committed crimes against persons and property…. There are drug offenders who commit other crimes, but they can be statistically distinguished from the majority of drug offenders whose criminal activities appear to be restricted to participation in the drug market,"[78] as suggested by Figure 2.

Martin, et al. provide a statistical test that further undermines the drugs-cause-crime argument. First, they consider the apparent correlations between both violent and property crime rates and both alcohol and cocaine use, using data from the 24 DUF cities over the 1989-98 period. Recall that these data provide a measure of drug use within these cities.[79] In fact, the data includes measures of the use of specific kinds of drugs, including cocaine and heroin. Martin, et al. note that using simple correlation statistics indicates that the relationship between alcohol and crime appears to be stronger than any relationship between cocaine

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forcement Policy?, 24 APP. ECON. 679 (1992) [hereinafter Benson, et al., *Property Crime*]; Bruce L. Benson, et al., *Deterrence and Public Policy: Tradeoffs in the Allocation of Police Resources*, 18 INT'L REV. LAW & ECON. 77 (1998) [hereinafter Benson et al., *Deterrence and Public Policy*]; Bruce L. Benson & David W. Rasmussen, *The Relationship Between Illicit Drug Enforcement Policy and Property Crimes*, 9 CONT. POL. ISSUES 106 (1991); David W. Rasmussen et al., *Spatial Competition in Illicit Drug Markets: The Consequences of Increased Drug Enforcement*, 23 REV. REG. STUD. 219 (1993); Rasmussen & Benson, *supra* note 6; David L. Sollars et al., *Drug Enforcement and Deterrence of Property Crime Among Local Jurisdictions*, 22 PUB. FIN. Q. 22 (1994).

78. Kim et al., *supra* note 77, at 179-181.

79. Martin et al., *Trends in Alcohol Use, Cocaine Use, and Crime: 1989-1998*, 34 J. DRUG ISSUES 333 (2004). *See also* U.S. DEP'T OF JUSTICE, *supra* note 51.

and crime.[80] Then they put both variables into multivariate regressions to explain both violent crime and property crime, along with the DUF measure of heroin use and a control variable for socio-economic conditions (a weighted index of four factors dealing with family makeup, unemployment, and education for the "urban underclass"). The regressions indicate that alcohol use is significantly and positively related to violent crime rates, but not property crime rates. More importantly, the coefficients for both cocaine and heroin were actually negative in both regressions, although none of the coefficients were significantly different from zero.

Supporters of the drug war and of forfeitures being allocated to law enforcement also ignore the fact that criminal justice resources are scarce. When these resources are reallocated in order to focus more on drug crime, deterrence of at least some other crimes may be reduced, leading to increases in those crimes. The nature and magnitude of this tradeoff is examined in detail in Part III, but the scarcity of criminal justice resources also provides an explanation of the temporary de-escalation of drug enforcement in the early 1990s.[81]

II.5. *Scarcity and The Temporary Downturn in Drug Arrests*

As a result of the rapid increase in drug arrests, many states faced significant increases in prison crowding by the late 1980s. Florida built prisons during the 1980s, for example, but criminals being sentenced to imprisonment increased much faster than prison capacity was expanded. The explosion in the numbers of drug convictions accounted for a substantial portion of the escalating inflow. During fiscal year (FY) 1983-84 there were only 1,620 admissions to Florida's prisons for drug offenses, accounting for 12.9% of the 12,516 total admissions. Drug admissions increased by 875% over the next six years, reaching 15,802 in FY 1989-90, when drug admissions are 36.4%of the 43,387 totaled (non-drug admissions increased, too, but by a comparatively small 153%, from 10,896 to 27,585).[82] At the same time, the legislature passed an array of longer minimum mandatory sentences for drug criminals.[83] It turns out that getting tough on drug offenders by sentencing many more of them to longer prison terms resulted in leniency for others, as the expected punishment for committing crimes in Florida fell dramatically. Florida had to implement an "administrative gain time program" in February of 1987, for instance. The consequences were dramatic. Prior to 1987, prisoners in Florida typically served 50% of their

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80. *Id.* at 339.

81. *See* Table 1 and Figure 1, *supra*.

82. Rasmussen & Benson, *supra* note 6, at 22-23 (calculated from FLA. DEP'T OF CORRECTIONS, ANNUAL REPORT, 1985, 1991).

83. Frank Stephenson, *War Crime: Legacy of a Lost Cause*, 5 RES. REV. 6, 11 (1994).

sentences or more; by the end of 1989 the average prisoner served only 33% of his or her sentence. Some prisoners could not be released early due to mandatory sentence laws, habitual offender laws, and other factors, however, so many prisoners not subject to these kinds of laws served even less than 33% of their sentences; in fact, about 37% of the prisoners released in December 1989 served less than 25% of their sentences, and some served less than 15%. Some prisoners with short sentences actually began processing for early release the day after they arrived. There are even examples of individuals accused of crimes who plea bargained to be convicted for relatively more severe crimes in order to get a prison sentence, rather than a less serious crime that warrants a sentence to serve time in local jails, or even probation.[84] They recognized that they actually served less time with a longer prison sentence than with a shorter jail sentence.

This early-release program means that Florida citizens were exposed to more and more convicted criminals who are being released earlier and earlier. Similar problems occurred in many other states during the same period. Some states, like North Carolina and Oklahoma, were releasing criminals who, on average, served even smaller portions of their sentences than those in Florida. A series of highly publicized crimes by violent criminals released early around the country helped produce a backlash against the practice. Again consider Florida as an example. One of the most notorious instances occurred in November, 1988. Charles Street, who had a long history of criminal activity, was released from Florida's Marion Correctional Institute on November 18, after serving about seven years of a fifteen-year sentence for attempted murder. As Stephenson explains:

> Florida's beleaguered Depart of Corrections had no choice: somebody had to go. In the Byzantine way such things are done, Charlie Street's number finally rolled up. Metro-Dade officers Richard Allan Boles, 41 and father of two, along with his 34-year old partner, David H. Strzalkowski, with a wife two-months pregnant, had less than 10 days to live.[85]

On November 28, Street killed both officers. Stephenson goes on to explain that

> The nation's prisons are stuffed to the rafters with drug offenders—mostly addicts, casual users, small time dealers, couriers and bag men. The druggie glut forces the release of violent criminals well before their time's up. And a

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84. Harry Shorstein, state attorney in Florida's 4th judicial circuit in Jacksonville since 1991, pointed this out in a 1992 meeting with Bruce Benson and David Rasmussen. In addition, Shortein's predecessor as state attorney, Ed Austin, reportedly made the same observation, explaining that "'[a] felon with a two-year sentence could well serve only four months or so . . . . Now what bad guy in his right mind is going to bargain for two years' probation when he can be all done with it in 120 days?" Andrew H. Malcolm, *Florida's Jammed Prisons: More In Means More Out,* N.Y. TIMES, May July 3, 1989, at New York 1.

85. Stephenson, *supra* note 83, at 9.

> system of criminal justice that once served the public passably well has become the bloodless, shellshocked victim of yet another well-intended government program apparently gone haywire. [86]

Frank Potts was also released from the Florida prison system in 1988, after serving six years of a fifteen-year sentence for molesting an eleven-year-old girl, despite the report of a parole examiner who noted that Potts had a very high probability of repeating his crime if released. In the early 1990s Potts was again arrested on charges of molesting another eleven-year-old girl, but in addition, an intense investigation was underway regarding allegations that he killed as many as thirteen people in several states. A Florida Department of Corrections spokesperson justified the early release by noting that "the agency is bound by mandates from the courts and the legislature. In the mid-1980s, the prison system was inundated with inmates carrying minimum-mandatory sentences during the country's initial skirmishes in the war on drugs."[87]

Criticisms of early release programs mounted as others like Charlie Street and Frank Potts were released from prison early due to prison crowding in many states.[88] In addition, there was growing recognition that early release reduced deterrence and weakened the incentives of drug users and other criminals to stay clean after diversion programs such as treatment. Ed Austin, the state prosecutor in Jacksonville, Florida from 1972 to 1991, explains that

> [the government is] losing the war on crime in the streets at the local level because the justice system is unraveling and we haven't made a fundamental commitment as a society. We have all the good diversion and help programs you can imagine to save people who get in trouble. We even drop some charges if they agree to get their high school diploma. But none of this is going to work without the credible threat of real and certain punishment. And we don't have that.[89]

Austin points out that during the first six months in 1988, his office prosecuted 1,167 people sentenced to prison with sentences of a year or more, but over half of them, 712, "had been released early from the overcrowded prisons, many

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86. *Id.* at 11.

87. Associated Press, *Probe: Potts Granted Early Release*, TALLAHASSEE DEMOCRAT, May 10, 1994, at 5B.

88. Criticisms of drug policy also began to appear in the press. For example, the Tallahassee Democrat picks up a number of stories from other newspapers and news services with themes such as those in the following sampling: Aaron Epstein, *Tide of Opinion Turns Against Harsh Sentencing for Drug Offenders*, KNIGHT RIDDER, May 7, 1993, at 4A; Michael White, *Cases Indicate the War on Drugs May be Overdoing It*, ASSOCIATED PRESS, Nov. 2, 1992, at 3A,; Jon Margolis, *Punishment Should Fit Drug Crime*, CHICAGO TRIBUNE, July 5, 1991, at 15A; Ronnie Greene, *Skip Town, Judge Tells Drug Suspect*, MIAMI HERALD, Oct. 8, 1992, at 4C. Furthermore, significant negative coverage arose in regard to asset seizure policies. S*ee supra* note 59. Law enforcement interests lobby against changes in drug policy and asset seizure laws, while joining other groups in the demand for more prisons.

89. Malcolm, *supra* note 84.

having been sent directly to work-release programs without spending a day in a cell."[90] Three hundred and fifty-nine of those 712 were arrested again by mid-March of 1989, and charged with new felonies.

This illustrates that an important source of criticism for the early release program is law enforcement. Police, prosecutor, and correctional organizations join with other interests to demand expansion of the prison system in order to accommodate criminals for much larger portions of their sentences, as Jacksonville's experience is a statewide phenomenon. Dilulio reports a 1993 Florida Department of Corrections finding that between January 1, 1987, and October 10, 1991, Florida released 127,486 prisoners, and that around 15,000 violent and property crimes were committed by these released prisoners following their release but before they would have been released if they had served 85% of their sentences.[91] Three hundred and forty-six of these crimes were murders and 185 were sex offenses.

On top of the increasing political backlash against early release, the Florida legislature was forced to hold a special session in 1993 in order to deal with the "gridlock" in the prison system. Despite adding 15,000 prison beds after the early release program was instituted, some 90,000 people were expected to be sentenced into a prison system that only had 52,000 beds,[92] and it was filled to capacity. In addition, predictions suggested that by October of that year no criminals eligible for early release would remain in the system. The legislature actually repealed twenty-three mandatory minimum sentence laws during the session, reportedly becoming the first state to repeal such a law.[93] The legislature also allocated additional funding for prison construction. Law enforcement interests pushed for prison construction rather than reduced mandatory sentences, and the 1994 legislature responded by allocating funds to expand the state's prison system by an additional 27%. Again, Florida's experience was not unique. As of October 1987, forty-five states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and an undetermined number of county and city governments were under federal court order to remedy prison or jail conditions.[94] Prison crowding was the cause of most of the conditions leading to the court orders. Thirty-four states are under explicit orders to reduce crowding, for instance, while the rest are ordered to improve specific conditions, such

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90. *Id*.

91. JOHN J. DILULIO, CRIMINALS AND GETTING TRUTH-IN-SENTENCING LAWS, Heritage Foundation Backgrounder No. 1020 (1995). This is not unique to Florida, as Bureau of Justice Statistics data show that about half of all parolees are spending "well under half of their sentenced time in confinement" before they are released. *Id*.

92. Stephenson, *supra* note 83, at 11.

93. *Id.* at 34.

94. Douglas C. McDonald, *The Cost of Corrections: In Search of the Bottom Line*, RES. CORRECTIONS, Feb. 1989, at 2.

as medical care, primarily because the prison population exceeds the capacity of the prison medical (or other) facilities to provide adequate care.[95] Many states (including Florida) are allocating more funds for prison construction as they institute early release policies. Indeed, several states apparently started accelerating the rate of increase in prison expenditures and construction in the mid-1980s, as suggested in Table 4.

A political backlash does not necessarily have to affect policing practices, of course, but as illustrated in Table 1 and Figure 1, drug arrests clearly declined by a substantial amount in the early 1990s. Part of the reason may be illustrated by the Volusia County Sheriff's strategy, discussed above, of simply focusing on seizures without making arrests. Police executives increased their discretionary budgets through seizures, giving them incentives to allocate more resources to drug enforcement.

Rank-and-file police officers actually make most arrests, of course, and they do not necessarily capture the benefits of assets they seiz. These officers also witness the consequences of prison crowding and early release. They see violent criminals (as well as property criminals and drug-law violators) that they recently arrested and gathered evidence to help convict, back in their neighborhoods after serving only a small portion of their sentences. Personal interviews with several police officers in Florida during the early 1990s revealed a significant level of frustration on the part of the rank-and-file. They asked themselves something like, "Why spend the time to make arrests and do the paperwork, and why put ourselves in dangerous situations, if the criminals are back on the streets within a few months?"[96] While the police apparently reduced drug-enforcement efforts during the early 1990s, at least as indicated by drug arrests, they also added their voice (political pressures) to the growing demand to avoid early release, of course, but the solution to the problem is not, from the police perspective, a long-term reduction in drug enforcement. Instead, it is a demand for more prisons to accommodate the increasing flow of convicted criminals for longer periods.

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95. *See e.g.*, Sandra G. Boodman, *Prison Medical Crisis: Overcrowding Created by the War on Drugs Poses a Public Health Threat*, WASH. POST, July7, 1992, at 5.

96. In a discussion at a 1994 meeting of the Florida Task Force for the Review of the Criminal Justice and Corrections Systems, where one of the legislature-supported studies by Benson and Rasmussen listed and discussed in note 77 was presented, two high-ranking officers from a North Florida county sheriff's department were asked a question along the lines of: "If you had to choose between focusing on an investigation, one of which is likely to produce a number of arrests of drug users and low-level drug sellers, while the second is likely to produce a substantial seizure of assets, would you be more likely to focus on the second?" They immediately answered, "No." About an hour later, however, they initiated a second conversation, by saying something like "after our earlier discussion we sat and talked about the question you asked. We realized that you were probably right. We would pursue the confiscation opportunity."

TABLE 4: Direct Expenditures for State Government Correctional Activities, 1980 – 2004[97]

		Institutions			
				Capital Outlays	
Fiscal Year	Total Expenditures	Total	Direct Current	Construction	Other
1980	4,257,509	3,410,933	2,869,492	482,652	58,789
1981	4,843,857	3,886,234	3,276,441	533,419	76,374
1982	5,559,792	4,480,490	3,848,893	544,300	87,297
1983	6,323,240	5,135,550	4,488,027	557,237	90,286
1984	7,178,011	5,913,323	5,114,702	695,198	103,423
1985	8,336,040	6,927,619	5,932,686	858,856	136,077
1986	9,877,577	8,246,279	6,708,440	1,342,807	195,032
1987	10,732,880	8,843,089	7,587,706	1,077,207	178,176
1988	12,403,648	10,364,051	8,648,292	1,486,461	229,298
1989	13,854,499	11,617,138	9,661,969	1,724.02	231,148
1990	15,842,063	13,321,228	11,145,405	1,921,846	253,977
1991	17,789,540	14,995,912	12,497,915	2,235,632	262,365
1992	18,750,826	15,657,098	13,599,703	1,813,405	243,990
1993	19,091,342	15,965,881	14,239,710	1,479,871	246,300
1994	21,266,053	17,741,937	15,776,174	1,695,718	270,045
1995	24,091,069	20,095,376	17,674,884	2,080,678	339,814
1996	25,294,111	20,893,235	19,035,102	1,524,590	333,543
1997	27,116,873	22,289,014	20,614,214	1,336,567	338,233
1998	28,678,929	23,603,913	21,533,991	1,513,967	555,955
1999	30,769,786	25,243,574	23,014,267	1,755,025	474,282
2000	33,039,925	26,758,605	24,642,499	1,761,633	354,473
2001	35,810,946	29,197,575	27,299,513	1,574,245	323,817
2002	36,471,670	29,485,744	27,840,203	1,367,175	278,366
2003	36,937,901	30,150,005	28,764,117	1,113,775	272,113

The backlash against early release programs clearly influenced legislatures, as suggested above, as prison construction accelerated. The new construction is sufficient to reduce early releases some, as the portion of sentences served begins to increase. See Table 5 in this regard. Note that the portion of sentences served increased for all crimes between 1990 and 1999, although the average portion served was still less than 50% in 1999. This is because, while the por-

97. U.S. DEP'T OF JUSTICE, BUREAU OF JUSTICE STATISTICS, SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS: ONLINE, tbl.1.9.2005, *available at* http://www.albany.edu/sourcebook/-pdf/t192005.pdf.

tion of sentences served for all violent crimes was over 50% (note that none are in 1990), virtually all property and drug criminals still served less than half their sentences, on average. Also note that there are two reasons for the increase in the portion of sentences served. One was an increase in average time spent in prison for all crimes, including drug crimes, but the other was a reduction in the length of sentences in every crime category except drug trafficking and manslaughter.

TABLE 5: Portion of Sentences Served in State Prisons, 1990 and 1999[98]

	Mean Sentence (in months)		**Mean Months Served**		**Percentage of Sentenced Served**	
	1990	**1999**	**1990**	**1999**	**1990**	**1999**
All offenses	69	65	28	34	38.0%	48.7%
Violent Off.	99	87	46	51	43.8%	55.0%
Murder	209	192	92	106	43.1%	53.1%
Manslaughter	88	102	37	56	41.0%	52.5%
Rape	128	124	62	79	45.5%	58.3%
Other sexual	77	76	36	47	43.8%	57.0%
Robbery	104	97	48	55	42.8%	51.6%
Assault	64	62	30	39	43.9%	58.7%
Property Off.	65	58	24	29	34.4%	45.6%
Burglary	79	73	29	36	33.9%	44.3%
Larceny/theft	52	45	20	24	35.5%	46.9%
Vehicle theft	56	44	20	25	33.1%	52.5%
Fraud	56	49	20	23	33.2%	41.7%
Drug Off.	57	59	20	27	32.9%	42.8%
Possession	61	56	18	25	29.0%	42.4%
Trafficking	60	64	22	29	34.8%	42.0%

98. U.S. DEP'T OF JUSTICE, BUREAU OF JUSTICE STATISTICS, SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS: ONLINE, tbl.6.44, *available at* http://www.albany.edu/sourcebook/pdf/t644.pdf (noting that the sentences for murder exclude sentences of life, life without parole, life plus additional years, and death).

99. *See* Bruce L. Benson, *The War on Drugs: A Public Bad* (Fla. State Univ. Working Paper, 2008), for a more extensive discussion of the empirical literature examined in this Part.

III. TRADEOFFS IN LAW ENFORCEMENT: DRUG CONTROL VERSUS ENFORCEMENT OF NON-DRUG CRIME[99]

The increase in drug enforcement in the face of the scarcity of criminal justice resources has impacts beyond the onset of prison crowding, the resulting political backlash against early release, and the political reaction in the form of rapid increases in prison construction and expenditures.[100] With the growing emphasis on drug enforcement, relatively fewer criminal justice resources are available to control other kinds of crime. Apparently, the first published suggestion of a potential tradeoff between drug enforcement and the control of other crimes appeared in 1991.[101] Since then, the actual tradeoff hypothesis for police resources is tested in a substantial number of empirical studies using different data sets, different data periods, and different empirical techniques. Support for the hypothesis that *drug enforcement causes property crime* is robust across these studies. In addition, the hypothesis extends to include violent crime, with similar findings: it appears that *drug enforcement also causes violent crime*. Finally, a recent study provides a preliminary test of the tradeoff hypothesis for prison resources. This study suggests that the use of scarce prison space to punish drug offenders also may lead to more non-drug crime. This empirical literature is discussed below.

III.1. *Reallocation of Police Resources to Drug Enforcement and Increased Property Crime.*

The first study of the determinants of property crime that directly tests the tradeoff hypothesis is a 1992 publication by Benson et al.[102] The model in this study will be presented in some detail so that subsequent studies can be summarized with reference to this first model. This study employs 1986 and 1987 data from Florida's sixty-seven counties in a three-equation "simultaneous equations" model typical of the "economics of crime" literature at the time. A crime rate equation is typically used to test the deterrence hypothesis. The in-

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100. Since state government budgets are also limited, another implication not examined here is that expenditures available for some other state programs are relatively low when states allocate more spending to prisons.

101. Benson & Rasmussen, *supra* note 77, presents an empirical model of the probability of arrest for property crimes that includes controls for the relative drug enforcement effort, and concludes that as drug enforcement increases, the probability of arrest for property crime decreases. See Equation (2) below for a representation of the model. If expected punishment (probability of arrest and punishment times expected sentence) serves as a deterrent, property crime should increase.

102. Benson et al., *Property Crime*, *supra* note 77 (discussing the use of Florida data from the 1980s in this and some of the other early studies discussed in this Subpart).

dependent variable, in this case the property crime rate, C, in each jurisdiction, j, is assumed to be dependent on measures of a number of different factors. To simplify, the following discussion employs a single letter to represent measures for various categories of determinates, so several of these letters actually represent vectors of variables used to control for the category of determinates. Expected punishment, E, is typically measured by the probability of arrest (and perhaps other jurisdiction level factors such as the probability of conviction—both are used in this empirical model but for simplicity, the following discussion just focuses on arrests). Other jurisdiction level factors also are expected to influence the decision to commit crimes, of course. The expected benefit (income) from property crime, I, in the community should be a factor (measured by variables like the income or wealth in the community), but so should the opportunity to engage in attractive alternative legal activities, L (high unemployment rates suggest that legal opportunities are limited, for instance). Various other socio-economic factors, S, characterizing the jurisdiction (such as measures of the age distribution, racial characteristics) are also included as control variables.

This study departs from the existing literature at the time by also including a measure of the level of drug market activity, D, as a control variable (this may be a test the drugs-cause-crime hypothesis, but statistically, this hypothesis cannot be distinguished from an alternative hypothesis, that some portion of drug market participants also engage in property crime, as suggested in Figure 2 and related discussion). This regression model is represented by Equation (1), where α^1 represents the "intercept" value estimated in the regression model, β_1 through β_5 represent the estimated coefficients for explanatory variables (each variable in the vectors will have coefficient estimates), and μ^1 is the error term:

$$C_j = \alpha^1 + \beta_1 E_j + \beta_2 I_j + \beta_3 L_j + \beta_4 S_j + \beta_5 D_j + \mu^1 (1)$$

It is hypothesized that β_1 will be negative (a higher expected punishment should reduce the crime rate), β_2 should be positive (if property crime generates relatively high income more crimes should arise), β_3 should be negative (if legal opportunities to earn income increase, perhaps as unemployment falls, crime should fall), the various β_4 coefficients depend on the particular community characteristics that are controlled for, and β_5 is predicted to be positive (if drugs cause crime, or if some portion of drug market participants are also engaged in crime, then as the size of the drug market rises, crime should increase).

The probability of arrest for property crime, E in Equation (1), is not actually an independent variable because it should depend on the level of police resources, and community demand for police resources is, in turn, likely to depend on the crime rate. Two more equations are required if this is the case. The

second equation explains E in a jurisdiction as a function of the number of police in the jurisdiction, P, other crime rates, R (property crime, violent crime), that may draw police attention away from property crime control, and similarly, the level of effort made by police to control drug markets, M. Other attributes of the community, A, also might influence the probability of arrest in the jurisdiction. In Equation (2), α^2 denotes the intercept estimate model, β_6 through β_9 are estimated coefficients, and μ^2 is the error term:

$$E_j = \alpha^2 + \beta_6 P_j + \beta_7 R_j + \beta_8 M_j + \beta_9 A_j + \mu^2 (2)$$

If more police resources are available in the community, the probability of arrest might be expected to rise, so β_6 would be positive, but if other crime rates are higher more police resources may be used to control those crimes and the probability of arrest for property crime could fall (β_7 should be negative). Similarly, if more effort is directed against drug markets, then as Benson and Rasmussen contend,[103] fewer police will be available to deal with property crime and the probability of arrest for property crime should fall: β_8 should be negative. Finally, the sign of the various β_9 coefficients will vary depending on the control variables used.

Finally, the number of police officers (i.e., the county demand for police services), P, is expected to be a function of both property, C, and violent, R, crime rates in the county, drug market size, D, county wealth, I, and other relevant community characteristics, Z:

$$P_j = \alpha^3 + \beta_{10} C_j + \beta_{11} R_j + \beta_{12} D_j + \beta_{13} I_j + \beta_{14} Z_j + \mu^3 (3)$$

where, α^3 is the estimated intercept, β_{10} through β_{14} are estimated coefficients, and μ^3 is the error term. If crime rates are high and/or the drug market is large, demand for police may be strong, so β_{10}, β_{11} and β_{12} are expected to be positive, while β_{14} varies depending on the control variables. If policing is a normal (inferior) good then as income rises demand increases (declines) and β_{13} will be positive (negative).

Simultaneous estimation procedures are used to test this three-equation model. This essentially means that the observed P_j in Equation (2) is replaced by the estimated P_j from Equation (3), and the observed E_j in Equation (1) is replaced by the estimated E_j from Equation (2) to deal with the fact that C, P, and E are simultaneously determined. If the tradeoff hypothesis holds, property crime should be negatively related to the probability of arrest for property crime, and this probability of arrest should be negatively related to drug en-

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103. *Id.*

forcement effort, controlling for other relevant factors. These two negative relationships in turn imply that as drug enforcement increases the probability of arrest for property crime falls, so the level of property crime rises.

Naturally, various proxies are employed for several of the variables. The two of most interest here probably are the proxies for drug enforcement efforts, and the size of the local drug market, since the other variables are those typically used in economics of crime models. Drug arrests divided by total arrests is used to control for drug enforcement effort. The proxy for the size of the drug market is determined using recidivism data in a "catch-and-release" model similar to the method used to estimate wildlife populations.[104]

The estimates of coefficients β_8 and β_1 in Benson, et al. imply that a 1% increase in drug enforcement's share of total enforcement results in a .199% reduction in the probability of arrest for property crime, and a 1% reduction in the probability of property crime arrest in turn causes a .826% reduction in property crime.[105] Together, these coefficient estimates suggest that a 1% increase in drug enforcement relative to total enforcement increases property crime by .164%.[106] The tradeoff hypothesis is supported: increasing drug control efforts causes property crime rates to rise.[107]

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104. The wildlife management literature estimates wildlife populations by tagging and releasing a sample of the population in one time period and then capturing a second sample in the next time period. *See* SCHEAFFER, ET AL, ELEMENTARY SURVEY SAMPLING (1979). The portion of the second sample which was tagged in the previous period is assumed to provide an estimate of the probability of capture, so an estimate of the total population is the number captured in the second period divided by the fraction that was previously tagged. Benson et al., *Property Crime*, *supra* note 77, at 685, analogously estimated the population of drug market participants using the number of drug offense convictions from a jurisdiction in a period and the portion of those convictions that are recidivists from a previous period. While this is a crude estimate, it may provide a reasonable estimate at least of that segment of the drug population that local citizens are aware of and the criminal justice system tends to focus on.

105. Benson et al., *Property Crime*, *supra* note 77, at 687. When dependent and independent variables are logged, estimated coefficients can be interpreted as elasticities. *See also*, discussion, *supra* note 43.

106. *Id.* at 689. The tradeoff hypothesis is further supported by findings of a significant negative relationship between non-property crime offenses and the probability of arrest for property crime, suggesting that as more resources are allocated to control of non-property crimes property crime increases. A 1% increase in the crime rate for non-property offenses leads to an increase in property crime by .573% (-0.693 x -0.826 from Table 3 at 687). Steven D. Levitt, *Why Do Increased Arrest Rates Appear to Reduce Crime: Deterrence, Incapacitation, or Measurement Error?* 36 ECON. INQUIRY 353 (1998) (finding that an increase in the portion of arrests for one type of crime increases other crime rates, although he does not consider the impact of drug enforcement).

107. Drug market size has two impacts on the level of property crimes in Benson et al., *Property Crime*, *supra* note 77. First, the direct effect estimated by β_5 implies that a 1% increase drug market size results in a .183% increase in property crime. In addition to the direct effect, the estimate of β_{12} implies that an increase in drug market size leads to an in-

Following Benson et al., a substantial number of other studies have tested the tradeoff hypothesis. Several of them are briefly discussed, focusing on the different approaches taken and the findings. Virtually all of the models can be seen as variants of the equation system described above, but the wide variety of empirical approaches and data sets demonstrates how robust the results are. While they may surprise drug policy makers, they are becoming well established in the economics literature. Table 6, included as an Appendix, summarizes key aspects and conclusions of all of the studies, but some points are also discussed below.

Sollars et al. replicate the 1992 Benson et al. study with a cross-section study using 1987 data from 296 local policing jurisdictions in Florida, rather than the sixty-seven counties.[108] They are not able to employ a measure of drug market size,[109] but the estimated impacts of drug enforcement on property crime are very similar in the two studies, suggesting that the lack of a drug market control does not dramatically affect the tradeoff results.[110] Together, the

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crease in the number of police officers in the jurisdiction, and β_6 indicates that an increase in the size of the police force increases the probability of arrest for property crimes. These estimates, combined with the estimated impact of the probability of arrest for property crime, β_1, imply that a 1% increase in the size of the drug market reduces the level of property crime by .049%. Therefore the estimated total impact is that a 1% increase in drug market size increases property crime by .134%. *Id.* These estimates appear to support the drug-cause-crime hypothesis, but as noted above, initially on page 292, again on 321, and finally, with the introduction to this Section, there also is an alternative hypothesis that can explain the relationship: the tradeoff hypothesis due to the scarcity of criminal justice resources; the focus of Section III. *Id.* at 689. Note that this result is consistent with the calculations provided in Rasmussen & Benson, *supra* note 6, at 60-62, using Florida data from TRAGER & CLARK, *supra* note 65, which implies that somewhere between 15% and 25% of the persons arrested for drug offenses in 1987 had a history of property arrests: "That is, this parameter estimate supports the hypothesis that there are two distinct groups of drug users: those who commit other crimes and those who do not." *Id.* at 689 (citation omitted). The estimates cannot distinguish between these two hypotheses (indeed, both may be relevant, although the results in Martin et al., *supra* note 79, suggest that the drugs-cause-crime hypothesis is not like to hold, at least for cocaine).

108. Sollars et al., *supra* note 77.

109. In order to proxy drug market size in their 1992 study, Benson et al., *Property* Crime, *supra* note 77, use the recidivism data from Kim et al., *supra* note 77, but that data only provides the county from which convicted criminals come, not the local jurisdiction within the county. Recall the discussion, *supra* note 77, regarding the uniqueness of much of the data employed in these early studies.

110. Since both Benson et al.'s 1992 study, *Property Crimes*, *supra* note 77, and Sollars et al., *supra* note 77, use Florida data for similar time periods but aggregated for different political entities (counties in Benson et al. and policing jurisdictions in Sollars et al.), comparison of the coefficients in the two studies may be appropriate. Doing so implies that the lack of control for drug market size biases the tradeoff estimate downward. If this is a valid inference, it has implications for all of the studies discussed below except Andrew J. Resignato, *Violent Crime: A Function of Drug Use or Drug Enforcement* 32 APPLIED ECON. 681 (2000), as Resignato is the only one that uses independent controls for drug market size: the tradeoff relationships revealed in the studies are smaller than they would be if controls

coefficient estimates of β_8 and β_1 imply that a 1% increase in relative drug enforcement results in an increase in property crime by .1094%.[111] Mendes expands upon and replicates Sollars et al. using 1996 data from 274 municipalities in Portugal.[112] Her estimate of β_8 implies that a 1% increase in drug enforcement reduces the probability of arrest for property crime by .107%, similar to Benson et al. and Sollars et al. She assumes that criminals consider the previous year's arrests, however (C_j in her model is data from one year later than the estimate is for a different relationship than the one estimated in the earlier studies). Her estimates suggest that a 1% increase in the lagged probability of arrest reduces the property crime rate by .144%, so a 1% increase in drug enforcement in one year leads to a .015% increase in property crime the next year.[113]

Another important development in the literature is recognition that the previous studies could suffer from missing variable bias. One way to alleviate such bias is to use a cross-section time-series pool of data and control for fixed effects by either using a change-form model (model the change in crime rates to depend on changes in the relevant variables) or by using jurisdiction and time dummies to control for fixed effects. Benson et al.'s 1998 study estimate both for one-year and five-year models with changes in the total Index I crime rate in Florida counties as the dependent variables, using data from 1983 through 1987.[114] The models control for socio-economic and criminal justice factors along with drug-enforcement, as in the simultaneous-equations models, but they also control for unmeasured factors that are fixed in each jurisdiction.[115] The coefficient estimates suggest that the reallocating the resources needed to make one more drug arrests a year results in about 0.7 more Index I crimes per year.[116]

Caulkins et al. react to the growing evidence of a tradeoff between drug

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for drug market activity could be included.

111. Sollars et al., *supra* note 77, at 37-39. The tradeoff hypothesis is also supported by findings of a significant negative relationship between violent crime offenses and the probability of arrest for property crime. A 1% increase in the crime rate for violent offenses reduces the probability of arrest for property crime by .140%, so combining that with the relationship between the probability of arrest and property crime suggests that a 1% increase in non-drug crime leads to a reallocation of police resources and a 1.6% increase in property crime. *Id.*

112. Mendes, *supra* note 3.

113. *Id*. at 210-11.

114. Benson et al., *Deterrence and Public Policy*, *supra* note 77.

115. A theoretical model, provided in Benson et al., *Deterrence and Public Policy*, *supra* note 77, demonstrates that a change-form fixed-effects model also alleviates the simultaneity problem, allowing a single equation to be estimated using year-to year or multi-year changes in the dependant (C_j) and independent variables. The theoretical model implies that changes in several of the independent variables in Equation (2), including M_j, should be included in that single regression.

116. *Id*. at 96.

control and non-drug crime, including the studies discussed above and others mentioned below, by noting that police perform many functions so they do not necessarily have to sacrifice control of property crimes (or other Index I crimes) to increase drug enforcement.[117] They suggest that the findings may not generalize across jurisdictions or over time. This is clearly true.[118] The exact nature of the tradeoff requires empirical analysis, and the empirical studies cited above support the hypothesis for Florida and Portugal (and perhaps violent crime, an issue addressed below).[119] Caulkins et al. also note that legislatures can choose to raise taxes or sacrifice other unrelated programs in order to increase police funding and maintain efforts against property crime. Rasmussen and Benson address this point, however, noting that in theory, an increase in drug enforcement can be achieved by either increasing police resources or reallocating existing police resources, but that political reality (i.e., politicians also face tradeoffs and must make choices) suggests that both some increase in police resources and some reallocation occurs.[120] In this regard, Table 7 provides data on state and local police employment. There clearly is an increase in state and local police employment over the period that the studies cited above (and those discussed below) examine. Note, however, that total state and local police employment increased by about 44.2% between 1980 and 2003, while drug arrests from Table 1 increased by approximately 189% over that period. While this does not prove that police resources are not increased by enough to retain the same level of property crime enforcement and simultaneously increase drug arrests (i.e., perhaps an increase of 44.2% in police employment is sufficient to increase drug arrests by 189% without any reallocation of other resources[121]), it

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117. J. P. Caulkins, et al., *Price Raising Drug Enforcement and Property Crime: A Dynamic Model*, 71 J. ECON. 227 (2000).

118. Actually, Benson and Rasmussen make this point when they find that as police in Illinois increase drug enforcement during the 1984-1989 period, there is a dramatic reduction in traffic control in the state and a sharp increase in traffic fatalities. BRUCE L. BENSON & DAVID W. RASMUSSEN, ILLINOIS' WAR ON DRUGS: SOME UNINTENDED CONSEQUENCES, HEARTLAND POLICY STUDY NO. 48, at 12-13 (1992). They do not perform statistical analysis of the tradeoff hypothesis, either for property crime or traffic enforcement, however, so this observation is only suggestive.

119. Benson et al.'s 2001 study, *supra* note 3, considers the Caulkins et al., *supra* note 117, point about generalization over time by revisiting the empirical relationship between drug enforcement and Index I crimes using 1994-1997 data from sixty-seven Florida counties, with dummy variables controlling for county level fixed effects. By controlling for fixed effects and other determinants of property crime, the statistical model once again reveals a tradeoff. A 1% increase in drug arrests relative to total arrests is associated with a .18% increase in Index 1 crimes. Even though crime rates are falling over the period, the statistical analysis suggests that crime rates would have fallen further if drug enforcement had been reduced. *Id.* at 997.

120. RASMUSSEN & BENSON, *supra* note 8, at 18.

121. A small portion of drug arrests are also made by federal police, and there is increasing police employment at the federal level, but adding this employment to the state and

certainly suggests that this may be the case.

Caulkins et al. also suggest that research using Florida data from the 1980s may not generalize to other times or places, and they present aggregate national data that does not appear to reveal a tradeoff.[122] It is true that a simple comparison of trends in drug arrests and crime rates makes it appear that there is an inverse relationship between drug control and both property and violent crime rates. Consider Figure 1 and compare it to Figures 3 and 4 below. This simple comparison is not sufficient to support the Caulkins et al. claim because they fail to control for other factors that change.

Several recent studies use non-Florida data. Shepard and Blackley use 1996-2000 data from sixty-two counties in New York in their 2005 study to estimate fixed-effect models evaluating the effect of drug arrests on rates of assault, robbery, burglary, and larceny.[123] They control for drug enforcement with

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local numbers really does not change the implications very much. For instance, there were 1,941 DEA agents in 1980 and this number increased by 149.4% to 4841 in 2003. SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS ONLINE, 2007, tbl.1.76.2007, http://www.albany.edu/sourcebook/pdf/t1252003.pdf. But this is still a very small number relative to state and local police.

122. Caulkins et al., *supra* note 117, at 231.

123. Shepard & Blackley, *supra* note 3. Three studies do not set out to test the tradeoff hypothesis but their results support it. Hope Corman & Naci H. Mocan, *A Time Series Analysis of Crime, Deterrence, and Drug Abuse in New York City* 90 AMER. ECON. REV. 584 (2000), use a twenty-six-year time-series of monthly data from New York City to develop five high-frequency time-series models of different types of crime (murder, assault, robbery, burglary, and motor vehicle theft), and include what they consider to be a drug-use proxy in the model: the number of deaths in New York City due to drug poisoning (they also considered the number of releases from New York City hospitals where the reason for admission was drug dependency or drug poisoning, and felony drug arrests, but report that all three variables perform similarly in separate model estimations). The authors recognize that drug arrests may be a problematic measure of drug use because it is "a potential policy variable, where police decide on the level of drug arrests. In addition, one may expect that increased drug arrests cause a decrease in non-drug arrests, holding police constant." *Id.* at 587.. This is highly likely, but the same is true for their other measures. As drug enforcement increases particularly over long time periods as in this study, the potency of drugs increases. *See* RASMUSSEN & BENSON, *supra* note 8, at, 83-88; Thornton, *supra* note 13, at 89-110. This can lead to more overdoses even if the size of the market declines, in turn increasing both deaths and hospital admissions. Similarly, as enforcement efforts increase, markets are disrupted, Rasmussen et al., *supra* note 77, so users may be compelled to turn to unknown suppliers, resulting in an increasing chance of consuming drugs of unknown potency, and/or cut with toxic adulterants. *See* Mark H. Moore, *Policies to Achieve Discrimination on the Effective Price of Heroin*, 63 AM. ECON. REV. 270, 270 (1973). *See also* H. Entorf & P. Winker, *Investigating the Drug-Crime Channel in Economics of Crime Models*, 28 INT'L REV. LAW & ECON. 8 (2008) (employing a 1976-1995 panel of annual data from ten German Laender (states)). Furthermore, Entorf and Winker contend that "the numbers on direct drug offences reported by the German Federal Criminal Police Office (Bundeskriminalamt) appear to be a more sensible proxy as a proxy for the overall development of drug abuse. . . . While this measure shares the drawback to depend on the effort of the police spent on persecuting these crimes, it appears to be the most suitable proxy for monitoring the impact of drug abuse on overall crime rates." *Id.* at 10. This measure also reflects, to a substantial degree, police resource allocation decisions (note that the measure is drug crimes

four different drug arrest per capita variables: total drug arrests, as well as arrests for hard drug sales, hard drug possession, and marijuana sales. Given the number of different models estimated, their findings are detailed in four columns of Table 6. Shepard and Blackley conclude that the "consistency of results is striking—there is no model in which drug arrests are found to have a significant negative relationship with crime. . . . The empirical findings raise serious questions about the effectiveness of drug enforcement as a control."[124]

reported "by" police, not to police), a contention supported by the fact that omitting the variable results in a substantially larger coefficient on the variable used to control for police resources: total expenditures on policing. *Id.* at 18. PABLO FAJNZYLBER, ET AL., DETERMINANTS OF CRIME RATES IN LATIN AMERICA AND THE WORLD: AN EMPIRICAL ASSESSMENT (1998), do not set out to test the tradeoff hypothesis, but end up providing support for it. They develop models of intentional homicide and robbery using 1970-94 international country-level data, controlling for several potential determinants of violence, including per-capita drug-possession arrests, which they assume is a measure of the drug market. They consider a broad ranges of specifications, including numerous single-equation ordinary least squares models (OLS), panel models with the lagged crime rate as an explanatory variable, and fixed-effect models with dummies to control for unobservables in countries and years. OLS models suffer from simultaneity bias as well as missing variable bias, so these results must be considered with caution. Including a lagged crime rate in a panel model helps alleviate simultaneity bias, and fixed-effects dummies help alleviate missing variable bias. The results of these three studies are presented in Table 6, as they support the tradeoff hypothesis.

124. Shepard & Blackley, *supra* note 3, at 323.

FIGURE 3[125]

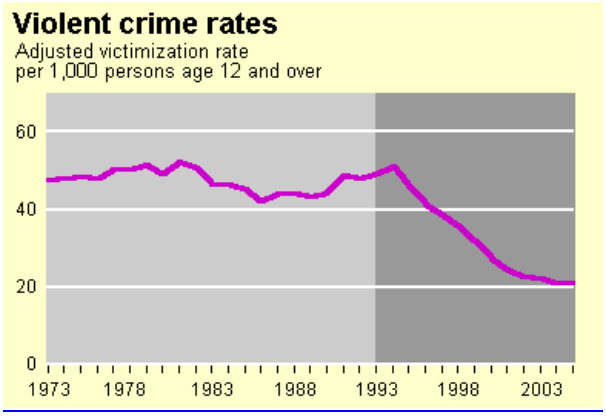
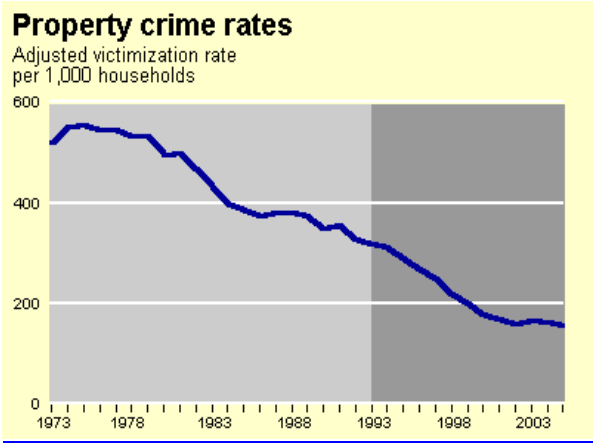


FIGURE 4[126]



125. U.S. DEP'T OF JUSTICE, BUREAU OF JUSTICE STATISTICS, KEY CRIME & JUSTICE FACTS AT A GLANCE, http://www.ojp.usdoj.gov/bjs/glance.htm.

126. *Id.*

TABLE 7: State and Local Sworn Police Full-Time Equivalent Employment, 1980-2003[127]

One-Month Payroll Period	Total State & Local Sworn Police Employees	State	Local		
			Total	County	Municipal
1980	461,810	50,672	411,138	94,533	316,605
1981	464,141	51,177	412,964	96,326	316,638
1982	470,909	49,865	421,044	97,829	323,215
1983	472,459	50,965	421,494	98,695	322,799
1984	475,124	51,155	423,969	99,045	324,924
1985	481,146	51,761	429,385	100,916	328,469
1986	491,276	52,754	438,522	104,643	333,879
1987	501,440	53,542	447,898	107,811	340,087
1988	509,619	54,978	454,641	111,306	343,335
1989	513,242	56,084	457,158	113,479	343,679
1990	525,075	56,729	468,346	116,836	351,510
1991	531,706	56,294	475,412	119,383	356,029
1992	538,510	55,104	483,406	123,851	359,555
1993	546,047	54,283	491,764	127,234	364,530
1994	560,509	56,981	507,783	138,817	373,221
1995	584,925	54,704	530,221	139,078	391,143
1997	602,718	56,023	546,695	142,330	404,365
1998	616,377	55,224	561,153	145,472	415,681
1999	638,066	58,917	578,909	153,075	425,834
2000	651,618	61,282	590,336	154,951	435,385
2002	661,137	63,391	597,746	157,812	439,934
2003	665,826	62,934	602,892	160,374	442,518

Shepard and Blackley also develop a model to test the tradeoff hypothesis, in their 2007 study, using a national cross-section time-series pool of data from over 1300 counties in the U.S. over the 1994-2001 time period.[128] They focus on marijuana enforcement. While the upsurge in drug enforcement during the 1980s focused on cocaine and opiates, police have increasingly turned their attention to marijuana markets in order to keep accelerating enforcement since

127. U.S. DEP'T OF JUSTICE, BUREAU OF JUSTICE STATISTICS, SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS ONLINE, tbl.1.25.2003, http://www.albany.edu/sourcebook/-pdf/t1252003.pdf.

128. Shepard & Blackley, *supra* note 3.

1991. See Figure 5 and Table 8 in this regard.[129] Shepard and Blackley's fixed-effects models examine the impact of marijuana arrests per capita for both sales and possession, on four crime rates: burglary, larceny, motor vehicle theft, and homicide. They conclude that an increase in arrests for marijuana possession significantly increases larceny and motor vehicle theft rates, while an increase in arrests for marijuana sales significantly increases burglary and homicide rates (see Table 6 for specific results), concluding that "these results raise significant questions about the merits of policies that focus on criminal justice approaches to marijuana control."[130]

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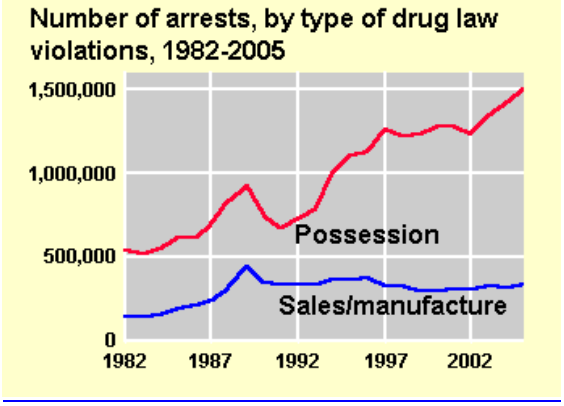
129. Most of the upsurge also has been directed at drug possession, as illustrated by the following Figure, although the distinction between possession and trafficking is problematic because it often is based on the weight of the drugs that a person possesses. Actual trafficking (sale or efforts to sell) does not have to be proven.



U.S. DEP'T OF JUSTICE, BUREAU OF JUSTICE STATISTICS, DRUGS AND CRIME FACTS, http://www.ojp.usdoj.gov/bjs/dcf/enforce.htm.

130. *Id.* at 403. Shepard and Blackley also find that a one-year lag in marijuana sales arrests is positively associated with arrests for hard drug possession, suggesting that as marijuana enforcement increases relative to enforcement of hard drug markets, buyers and/or sellers of marijuana to substitute hard drugs, a troubling implication for those who argue that marijuana is a "gateway" drug. It appears that marijuana enforcement leads to consumption of harder drugs.

FIGURE 5[131]

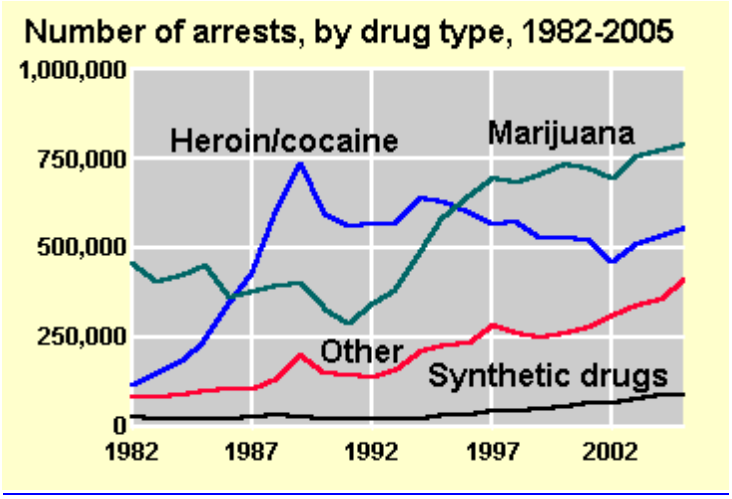


TABLE 8: Number of Arrests, by Drug Type, 1982-2004[132]

Year	Heroin / Cocaine	Marijuana	Synthetic Drugs	Other
1982	112,900	455,600	24,800	82,900
1983	149,500	406,900	22,300	82,700
1984	181,800	419,400	19,000	88,300
1985	239,400	451,100	19,500	101,400
1986	336,200	361,800	21,400	105,500
1987	427,500	378,700	25,300	105,900
1988	599,500	391,600	31,200	131,700
1989	732,600	399,000	28,600	200,200
1990	591,600	326,900	22,900	148,200
1991	558,500	287,900	22,200	142,400
1992	565,200	342,300	20,300	139,700
1993	566,500	380,700	20,300	158,800
1994	636,500	481,100	23,000	210,800
1995	627,300	589,000	32,500	228,800
1996	599,500	641,600	30,100	235,000
1997	565,300	695,200	41,200	283,500
1998	570,600	682,900	45,200	260,400
1999	528,600	704,800	47,500	251,300

131. *Id.*
132. *Id.*

2000	529,200	734,500	52,100	262,200
2001	520,500	723,600	65,100	277,700
2002	463,200	697,100	67,700	307,800
2003	508,500	755,200	77,200	339,000
2004	530,700	771,600	89,000	356,100

II.2. *Reallocation of Police Resources to Drug Enforcement and Increased Violent Crime.*

Shepard and Blackley consider one violent crime rate (assault or homicide) in each of their studies and find positive relationships between these crime rates and at least one measure of drug enforcement.[133] This is not surprising since there are several potential reasons to expect a positive relationship, as well as substantial additional empirical support for the expectation. In this context, it is appropriate to begin with Goldstein's widely cited work with various coauthors.[134] He attempts separate the causes of so-called "drug-related" homicides into three categories using data from New York. One hypothesized cause is a psychopharmacologic affect of drug use. It may be that drug use leads to violent behavior. Another possibility is economic compulsion wherein violence occurs when "drug users engage in economically oriented violent crime, e.g. robbery, in order to support costly drug use."[135] A third category involves "systemic factors." These factors arise because of the fact that drug prohibition means that drugs are bought and sold in so-called "black markets".[136] Rasmussen and Benson explain that, just as in legal markets, drug dealers must attempt to enforce contracts.[137] They also must secure property rights to the exchange goods (drugs) and to the residuals produced by their businesses. In legal markets, governments may help enforce contracts and protect property rights, disputes can be settled by public courts or professional arbitrators, and these adjudication decisions can be enforced by governmental authorities. Market participants themselves must perform these functions in illegal markets, often

133. Assault is examined in the 2005 study, *supra* note 3, at 329, and murder is considered in the DOJ statistics, *supra* note 129, at 410.

134. *See, e.g.*, PAUL J. GOLDSTEIN AND HENRY H. BROWNSTEIN, DRUG-RELATED CRIME ANALYSIS—HOMICIDE: A REPORT TO THE NATIONAL INSTITUTE OF JUSTICE (1987); Paul J. Goldstein, *Drugs and Violent Crime*, *in* PATHWAYS TO CRIMINAL VIOLENCE 16 (Neil A. Weiner & Marvin E. Wolfgang, eds. 1989) [hereinafter Goldstein 1989]; Paul J. Goldstein, *The Drug Violence Nexus: A Tripartite Conceptual Framework*, 14 J. DRUG ISSUES 493 (1985); Paul J. Goldstein et al., *Drug-Related Homicide in New York: 1984 and 1988*, 38 CRIME & DELINQ. 459 (1992).

135. Goldstein & Brownstein, *id*. at 15.

136. *See also* Jeffrey A. Miron, *Violence and the U.S. Prohibition of Drugs and Alcohol*, 1 AM. L. & ECON. REV. 78, 79 (1999).

137. RASMUSSEN & BENSON, *supra* note 8, at 101-02.

through the threat and/or use of violence. Protection of property rights is particularly important because drug users and dealers are relatively attractive targets for robbery: they are likely to be carrying drugs and/or cash, and they are not likely to report being victimized since their activities and property rights are illegal.[138] Goldstein points to assaults and homicides committed within dealing hierarchies as a means of enforcing normative codes, violent retaliation for robbing dealers, elimination of informers, disputes over drugs and/or drug paraphernalia, punishments for selling adulterated or phony drugs, and punishment for failing to pay debts.[139] To perform these enforcement and protection activities, drug market participants invest in tools that enhance their ability to use violence, including guns. Goldstein's also notes that competition with rival drug dealers often involves violence (e.g., turf wars).[140] While victims of systemic violence often are drug users or dealers, spillovers can claim non-participating victims such as law enforcement officers and bystanders.

Goldstein and Brownstein use 1984 police reports to categorize drug-related homicides in New York, noting that the New York City data is "less detailed and less focused on drug issues" than the data from outside the City.[141] Therefore, subsequent discussion of findings often focuses on the data from outside the city, along with results from a second study using improved 1988 New York City data.[142] About 41.7% of the 1984 homicides in the non-New-York-City data (129 of 347) are classified as drug-related, while 52.7% of the 1988 New York City homicides (218 of 414) are drug-related. Only 3% of the 1984 sample and 4% of the 1988 sample are classified as economic-compulsive.[143] The two sample produce different implications for systemic and psychopharmacological relationships, however: 59% of the 1984 sample are classified as psychopharmacological compared to only 14% in the 1988 data, while 21% of the 1984 sample and 74% of the 1988 data are systemic (of the remaining 18% in 1984, 14% are multidimensional—i.e., involve more than one of the three relationships—while some other relationship apparently holds for 4%; the remaining 8% in 1988 are multidimensional).[144] Importantly, however, the "drug" used in 79% of the psychopharmacological cases in 1984 is alcohol, another 11% involve a combination of alcohol and marijuana, and 7% involve multiple drugs, some of which were alcohol.[145] Similarly, in the 1988 sample, 68% of the psychopharmacological relationships arise from alcohol use

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138. *Id.* at 104-05.
139. Goldstein 1989, *supra* note 134, at 34.
140. Goldstein & Brownstein, *supra* note 134, at 19.
141. Goldstein, et al., *supra* note 134, at 463.
142. *Id.* at 463-64.
143. *Id.* at 466.
144. *Id.* at 466.
145. *Id.* at 467.

and 9% involve alcohol and another drug.[146] Therefore, the vast majority of all psychopharmacological relationships involved alcohol rather than an illicit drug, and alcohol use is combined with another drug for most of the remainder. If alcohol-related homicides were not included in reports of drug-related homicides, a substantial majority of all drug-related homicides would be systemic.

Miron points out that "prohibitions are unlikely to create violence unless there is substantial enforcement, and the amount of violence caused will increase with the degree of enforcement."[147] Systemic factors can become more prevalent with increases in enforcement, in part at least, because drug markets are disrupted. This can have at least two impacts that produce increases in violence.[148] First, it can induce sellers to move to other locations where enforcement is less active, resulting in turf wars as they attempt to establish themselves in these new locations. In addition, as sellers move, buyers may lose their regular, trusted sources of drugs, inducing them to search for new suppliers in other locations (or the intensity of enforcement may generate a local deterrence effect for buyers, leading them to search elsewhere for drugs). As they search in unfamiliar locations and try to establish contact with unfamiliar sellers, they are even more vulnerable to attack by robbers. Rasmussen et al. offer an empirical test of this hypothesis.[149] They develop a model of violent crime using a cross section sample of 279 police jurisdictions in Florida. This violent crime model consists of an ordinary-least-squares (OLS) version of Equation (1) above but with one addition explanatory variable: the level of enforcement in adjacent jurisdictions (this model also does not have a control for drug use). They find that the violent crime rate in one jurisdiction is positively and significantly related to the drug arrest rate in adjacent jurisdictions. Furthermore, the responsiveness of violent crime to these enforcement differentials is much larger than the spillovers commonly reported in studies of inter-jurisdictional effects on property crime.[150]

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146. *Id.* at 467.

147. Jeffrey A. Miron, *Violence, Guns, and Drugs: A Cross-Country Analysis*, 64 J. L. & ECON. 615, 619 (2001).

148. *Id.* at 619.

149. Rasmussen et al, *supra* note 77.

150. *Id.* at 228. They also find that violent crime in a community is positively related to the drug arrest rate in that community, supporting a direct tradeoff hypothesis as well as a spillover hypothesis. *Id.* at 230. This relationship is probably due, at least in part, to the tradeoff arising as more police resources are diverted to drug market control. Miron, *supra* note 147, at 621, explains, in this regard, that the relationship between the intensity of drug enforcement and violence arises for two primary reasons: systemic violence, and the scarcity of law enforcement resources are scarce so as more resources are focused towards drug crime there are fewer resources available to control other types of crime, including violent crime. The coefficient on the direct drug arrest rate is quite high compared to other studies. This may reflect the use of OLS rather than simultaneous equations estimates (although it may also reflect the fact that other studies have not considered spillover effects so their results are

Brumm and Cloninger cite the 1992 Benson et al. study to motivate the direct tradeoff hypothesis and then test the hypothesis for homicide rates using 1985 data from fifty-nine cities in thirty-two states.[151] They employ a simultaneous equations model like the one outlined above to estimate the impact of drug arrests divided by total arrests on the homicide arrest rate, and in turn, the homicide arrest rate (controlling for other factors) on the homicide offense rate. The tradeoff hypothesis is supported, as coefficients β_1 and β_8 imply that a 1% increase in drug arrests over total arrests causes a 0.105% (in a three-stage least squares model) to 0.17% (in a three-stage model) increase in the homicide rate.[152] Similar findings arise in Miron's study using 1993-96 international cross-country data to test a model of homicide rates.[153] The degree of drug enforcement is proxied by data on nine categories of seizures of illegal drugs. Separate models are run for each of the nine along with a common set of control variables. Six of the nine regressions produce positive and at least marginally significant coefficients on the drug seizure measure (Cannabis herb, Cocaine base, Cannabis, Coca, Pills, and Opium plants), while two of the others (Heroin and Opiates) do not produce significant relationships, probably because only very small quantities of seizures occurred (the ninth category, Cannabis plants, involves large seizures, however). He concludes that "[a]lthough the results are subject to several caveats, they are consistent with other evidence that suggests an important role for drug prohibition in increasing the level of violence."[154]

Resignato provides what may be the most important study of the drugs and violence hypotheses. He employees data from the twenty-four Drug Use Forecasting (DUF) cities over the 1987-95 period to build a model of violent crime using two different dependent variables, the total violent crime rate and the murder rate.[155] These data allow him to control for drug use as well as drug enforcement effort. He can test the systemic-factors and/or tradeoff hypotheses (although he cannot separate the two) since they imply a positive association with drug enforcement efforts, and he can also consider the psychopharmacological and/or economic-compulsive hypotheses (again, he cannot separate the

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biased due to a missing variable). Rasmussen et al., *supra* note 77, are most interested in the spillover impact, however, and since it is not likely to be simultaneously determined with the within-jurisdiction level of police resources and probability of arrest for violent crime, they do not expect that coefficient to suffer from simultaneity bias. Nonetheless, the magnitude of the community drug arrest rate variable should be considered with caution.

151. Harold J. Brumm & Dale O. Cloninger, *The Drug War and the Homicide Rate: A Direct Correlation*, 14 CATO J. 509 (1995) (citing Benson et al., *supra* note 77).

152. *Id.* at 516.

153. Miron, *supra* note 136, at 629. See also discussion of FAJNZYLBER ET AL., *supra* note 123, another study using international country-level data.

154. Miron, *supra* note 136, at 629.

155. Resignato, *supra* note 110. Recall the discussion of these data, *supra* note 54, as Mast et al., *supra* note 3, also use DUF data.

two) because they both imply a positive relationship between the level of drug use and violence. Both OLS of Equation (1) and fixed-effect models are estimated,[156] controlling for several other determinants of violent crime. The drug enforcement proxy variable, the ratio of drug arrests to total arrests, is positive and significant in all regressions, supporting the expectation that violence is caused by systemic factors and/or tradeoff effects (see Table 6 for specific relationships). The drug use variable is significantly positive in one: the fixed-effect model for murder. This may suggest that there is some psychopharmacological and/or economic compulsive effect of drug use on murder, but not on violent crime in general.[157]

III.3. *Tradeoffs due to the Reallocation of Prison Resources.*

The discussion of Florida's experience with prison crowding and early release suggests that tradeoffs also apply for prison resources. Kuziemko and Levitt provide what appears to be the only empirical test of a tradeoff in the allocation of prison resources.[158] They suggest that there are three possible relationships between imprisonment for drug offenses and non-drug crime rates. One depends on the degree to which the populations of drug market participants and non-drug criminals overlap: if a sufficient portion of drug criminals who are sent to prison are also non-drug criminals, then the incapacitation effect of prison will prevent those individuals from committing more crimes for the time of their incarceration.[159] A second relationship involves the tradeoff hypothesis: if prisons are not built fast enough to accommodate the inflow of drug convictions, some violent and property criminals may be "crowded out" of the prison, leading to higher crime rates (presumably due to reductions in both

156. DUF data are attractive because it includes a measure of drug use, but with only twenty-four cities, it also limits the number of variables and interrelationships that can be considered (as more years are added to the data set, it becomes more attractive, however, so it is likely to be used in the future). Simultaneous equations (2) and (3) cannot be tested, so OLS results are likely to suffer from simultaneity bias. Fixed effects controls reduce this problem as well as the missing variables problem, as noted above.

157. Further doubt on potential psychopharmacological and/or economic compulsive effect of drug use on crime is provided, at least for cocaine, by Martin et al., *supra* note 79.

158. Ilyana Kuziemko & Steven D. Levitt, *An Empirical Analysis of Imprisoning Drug Offenders*, 88 J. PUB. ECON. 2043 (2004).

159. The fact that some drug criminals also commit non-drug crimes may be of psychopharmacological and/or economic-compulsive effects of drug use, as Goldstein, *supra* note 134, and Resignato, *supra* note 110, demonstrate. It also may be because the personal characteristics of some individuals, such as risk preferences, stimulate both drug use and non-drug crime. Recall that the Florida arrest data, discussed *supra* notes 65 to 74 and accompanying text, the recidivism study reported by Kim et al., *supra* note 77, and the empirical results in the 1992 study by Benson et al., *Property Crime*, *supra* note 77, all suggest an overlap between the two groups.

deterrence and incapacitation effects). Finally, they suggest that punishing drug offenders could change their incentives to engage in non-drug crimes (a deterrence or reduced recidivism impact).[160]

Kuziemko and Levitt examine the crowding effect of drug crime imprisonment by estimating the impact of the drug crime share of the prison population on the median percentage of time served for various types of crime. They find that the degree of crowding varies by crime type. No impact on time served for murder and forcible rape is detected (although using a different dependant variable, the actual median time served rather than the percentage of the maximum sentence served, does suggest a crowding effect arises for murder). The point estimates for assault, robbery and fraud are about -.35 (a -1 implies a one-for-one crowding out), however, and the point estimates for property crimes and drug crimes vary from -0.53 to -0.93. The implication is that, "on average, for every two new drug prisoners sent to prison, one represents a real increase in the prison population and the other displaces an existing prisoner who is released early."[161] The authors note, "If an increase in new commit-

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160. Kim et al., *supra* note 77, do find that the likelihood of drug offenders recidivating is lower when they are sentenced to prison rather than probation, but their results also suggest that the length of the prison sentence has no impact on recidivism among this population. They also find, *id.* at 78 tbl.II, that drug users are less likely to recidivate than drug sellers, and that both groups are significantly less likely to recidivate than people convicted of other drug crimes (trafficking, smuggling, production, delivery, and distribution), as well as individuals with convictions for non-drug crimes (note that the sample includes only people with drug convictions, so those with non-drug convictions also have a drug conviction, and are in the overlapping set).

161. Kuziemko and Levitt, *supra* note 158, at 2060. These authors' first models estimate the impact of incapacitating drug offenders, violent offenders, property offenders, and other offenders on crime rates without controlling for crowding. The estimates are very questionable due to correlations between the four types of crime convictions, and to simultaneity bias, but the authors still conclude that the incapacitation of drug offenders would be associated with a 2% to 5% reduction in violent and property crime. Tests suggest that the coefficients on the drug variable are not statistically different from the coefficients on the violent and property variables, implying that the impact on violent (property) crime of incapacitating drug offenders is essentially equivalent to the impact of incapacitating a property or a violent offender on violent (property) crime. These results appear to be highly suspect unless they are simply picking up a general deterrent effect of the size of the prison population, no matter what kind of prisoner are incapacitated. Also, Steven D. Levitt, *The Effect of Prison Population Size on Crime Rates: Evidence from Prison Overcrowding Legislation*, 111 Q. J. ECON. 319, 319 (1996), uses total prison population as a general deterrent/incapacitation variable in crime models, noting that "[s]imultaneity between prison populations and crime rates makes it difficult to isolate the causal effects of prison population on crime." He employs an instrumental variable to break the simultaneity, but the estimates in Kuziemko and Levitt, *supra* note 158, presumably suffer from the same simultaneity bias (along with multicollinearity problems between the measures of the portion of the prison population in the different crime types) and they are not alleviated with instrumental variables. The coefficients in Levitt, *supra*, rose substantially after treating for simultaneity, so that clearly could happen in this case, too, although it may be that violent and property crime coefficients rise

ments for drugs causes fewer new commitments for other crimes (for instance, due to congestion in courts or policing), then [these] estimates understate the total degree of crowd out."[162] Since a large number of studies have found evidence of a significant crowding effect arising from the increased focus of policing resources on drug control, the "if" can be dropped and "then" can be replaced by "so."

IV. CONCLUSIONS

There are many reasons to question the intensity of enforcement efforts against illicit drugs, and even the criminalization of drugs in the first place. Loss of civil and economic liberties are undeniably significant, for instance.[163] This presentation focuses on consequences of the drug war that lend themselves to economic analysis. The economic approach to criminal justice policy (or any other issue) considers the incentives and constraints arising because of scarcity and the resulting behavior of criminals (including drug users and drug suppliers) as well as decision makers in the criminal justice system. Economics also stresses the interdependence of many decisions, which implies that public interventions that affect incentives and constraints can have unintended consequences that potentially or totally offset their intended purposes.

The standard economic justification for a government intervention into private affairs requires that these private activities produce externalities:[164] from an economic perspective, public policy may intervene only if private-sector actions have adverse impacts on some people.[165] In this context, drug prohibition

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but the drug crime coefficient does not. Given these issues, their deterrence/incapacitation estimates must be treated with considerable caution. They compare these estimates to their findings about crowding, however, and conclude that the crowding effect roughly halves the incapacitation impact, so the net effect of incapacitation of drug offenders and crowding is a reduction in property and violent crime by 1% to 3%. These findings are very tentative, however, for the reasons noted above. Even if the estimates are accurate, Kuziemko and Levitt, *supra* note 158, at 2043, conclude that "it is unlikely that the dramatic increase in drug imprisonment was cost-effective."

162. Kuziemko and Levitt, *supra* note 158, at 2060.

163. There is a large literature addressing this issue. *See e.g.*, see DOUGLAS N. HUSAK, DRUGS AND RIGHTS (1992).

164. An externality is a cost (or a benefit) that is imposed on (or captured by) someone other than the decision maker, so it is not taken into account by that decision maker, and too much (too little) of the activity occurs. This so-called "market failure" does not necessarily justify public intervention, however, because government may also fail. Intervention can make the situation even worse if it also generate externalities (e.g., as a result of unintended consequences) not considered by the decision maker, or if the cost of the government policy exceeds the cost of the market failure it is intended to alleviate. These economic (or efficiency) issues may not be the only factors that should or do influence policy decisions, of course, but they certainly deserve consideration.

165. There are economists who adopt a more paternalistic approach to policy. The field of "behavioral economics" questions the assumption of rational behavior that underlies all of

and resulting enforcement are often claimed to produce positive externalities. It is alleged to be an effective crime-fighting weapon because drug users allegedly commit most of the property crimes in order to support their habits, and/or because some psychopharmacological (or economic compulsive) effect of drug use leads to increased violence. The fact that many criminals convicted for property and violent offenses are also drug users is well documented, and this fact has contributed to the claim that drug use is a primary cause of crime.[166] Despite drug use among persons arrested for other criminal activity, however, drug policy reform advocates stress that: (1) most research testing the drugs-cause-crimes argument actually implies that there is only a loose connection between drug use and criminal activity,[167] if there is one at all;[168] and (2) substantial research also demonstrates that much (most) of the so-called drug-related violence actually results from the systemic factors arising because of

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traditional economics, for instance. "Rational behavior," as used by mainstream economists, means that individuals respond to incentives and constraints in predictable ways, but in the mathematical models of behavior used by many mainstream economists, this assumption involves an additional assumption of stable time and risk preferences. If these preferences are not stable, then individuals are likely to make decisions at one point in time that they regret later. *See e.g.*, George A. Akerlof, *Social Distance and Social Decisions*, 65 ECONOMETRICA 1005 (1997); Shane Frederick et al. *Time Discounting and Time Preference: A Critical Review*, 40 J. ECON. LIT. 351 (2002); Edward L. Glaeser et al., *Crime and Social Interactions*, 111 Q. J. ECON. 507 (1996);; Chris Starmer, *Developments in Non-Expected Utility Theory: The Hunt for a Descriptive Theory of Choice Under Risk*, 38 J. ECON. LIT. 32 (2000);. Limited knowledge and imperfect cognitive ability generate similar implications of regret. This leads many behavioral economists to advocate policy that constrains certain individuals' (e.g., young people) ability to make their own decisions: some individuals must be saved from themselves. In the context of drug policy, it might be contended that some and perhaps many individuals are likely to use drugs and later regret this decision. This perspective can be used to argue that drug policy should discourage consumption even if drug use does not generate any negative externalities, but it provides little insight into how drug policy should be implemented. Implementing a drug policy requires the use of scarce resources, so even if criminalization does save some people from their own irrationality, it imposes costs on other people. Tradeoffs even arise within the drug-using population, as criminal drug enforcement may "save" some people by discouraging drug use, but at the same time, the opportunities for those who are not discouraged and then are arrested and prosecuted can be destroyed by this policy. Given the tremendous costs that the criminal justice system imposes on drug users who are arrested and convicted (and on society as a whole), this paternalistic approach appears to suggest advocating that drug abuse not be discouraged through criminalization. Perhaps treating drugs as a public health issue rather than a criminal issue might be considered from this perspective.

166. *See e.g.*, BERNARD A. GROPPER, U.S. DEP'T OF JUSTICE, RESEARCH IN BRIEF, PROBING THE LINK BETWEEN DRUGS AND CRIME, 2 (1985); BRUCE D. JOHNSON, TAKING CARE OF BUSINESS: THE ECONOMICS OF CRIME BY HEROIN ABUSERS (1985); John C. Ball et al., *The Day-to-Day Criminality of Heroin Addicts in Baltimore—A Study in the Continuity of Offence Rates*, 12 DRUG AND ALCOHOL DEPENDENCE 119 (1983).

167. For instance, see Chaiken and Chaiken, *supra* note 64, and Rasmussen and Benson, *supra* note 6.

168. Martin, et al., *supra* note 79.

drug prohibition, not from drug use itself.[169]

This presentation has gone beyond these widely used anti-war arguments, emphasizing that there is growing (and now, perhaps substantial) evidence that drug enforcement actually causes property and violent crime as scarce criminal justice resources that could be used to deter or solve these crimes are being diverted into drug market control. Drug prohibition and enforcement causes the same kinds of negative externalities that drug warriors claim drug-use causes (despite considerable evidence contradicting the claim). These external costs are borne by the victims of the additional property and violent crimes that arise due to criminal justice resources being reallocated to drug enforcement, and they are not being taken into account by drug policy decision makers.[170] These significant unintended externalities from drug enforcement imply that America's war on crime has been inappropriately diverted into a war on drugs

A similar conclusion applies to the Congressional decision in 1984 to mandate that the Department of Justice share the proceeds from asset seizures during drug market investigations with the state and/or local law enforcement agencies that cooperated in the investigations (as well as the DOJ decision to broaden this law by "adopting" seizures when a state's law does not allow law enforcement to keep seizures), and the state legislatures that have mandated that law enforcement agencies get a share of such seizures. One result of these laws has been the dramatic increase in drug enforcement detailed in Part II above, producing increasing external costs that follow, in the form of relatively high property and violent crime. Another externality arises when police take advantage of civil seizure laws to confiscate property from innocent individuals by simply claiming that the person used or obtained the property through drug market activity.

The implications of this analysis are straightforward. From an economic perspective, law enforcement agencies should not be allowed to retain the assets they seize, and the enforcement of drug prohibitions should be dramatically reduced if not eliminated entirely, unless other externalities from drug use can be shown to exceed the tremendous costs of the drug war. It is time for the drug warriors to recognize that drug prohibition does not achieve its alleged goals, just as many of the advocates of alcohol prohibition did after they observed the massive external costs arising from enforcement of the Eighteenth Amendment. The costs of the drug war are probably much greater than the costs that the

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169. *See e.g.*, Goldstein, et al., *supra* note 134; Resignato, *supra* note 110.

170. There are many other external costs as well, including impacts on civil liberties and property rights, for instance, as well as reduced budgets for education and other state and local government services as more funds are directed into prison construction. Corruption of domestic and foreign police, and indeed, of substantial segments of several foreign governments, also could be cited. The horrendous levels of violence in drug producing and drug transporting countries also result from the U.S. drug war. And so on.

country endured before the Eighteenth Amendment was repealed. They may not be as dramatically obvious on an annual basis, but drug prohibition has continued for many decades. It has to be clear by now that the drug war is unwinnable, but it also should be clear that the drug war has huge costs beyond the budgets spent by federal, state, local, and foreign governments. Serious consideration of alternative policy approaches to drug abuse is warranted.

APPENDIX

TABLE 6: Empirical Evidence of the Tradeoff Hypothesis

For methodology: CS represents cross section; SE denotes simultaneous equation; OLS is ordinary least squares; PL means panel regressions with the lagged-crime-rate explanatory variable; FECF is fixed-effects-change-form panel model; FED indicates a fixed-effect panel model with dummy variables; and TS implies time series analysis.

Several models estimate elasticity values which can be interpreted as meaning that a 1% increase in the drug enforcement measure resulting in a percentage increase in the crime measure equal to the elasticity value. Others report consequences of a one standard deviation (S.D.) increase in, or a 10% change in the mean of, the enforcement measure.

Entorf & Winker, *supra* note 123, report results from a large number of alternative models. The relationships reported here are from their Tables 4 and 5 where estimates from dynamic models are presented. Table 4 controls for state fixed effects, while Table 5 employs two-way fixed effects.

Authors	**Data Period and Area**	**Dependent Variable (Method)**	**Drug Enforcement Measure**	**Findings**
1. Benson, et al. (1992)	1986-87 Florida Counties	Property Crime Rate (CS, SE)	Drug-Arrests / Total Arrests	1% increase in (Drug-arrests/Total-arrests) leads to a .164% increase in the property crime rate
2. Sollars, et al., (1993)	1987 Florida Jurisdictions	Property Crime Rate (CS, SE)	Drug Arrests / Total Arrests	1% increase in (Drug-arrests/Total-arrests) leads to a .104% increase in the property crime rate
3. Rasmussen, et al. (1993)	1987 Florida Jurisdictions	Violent Crime Rate (OLS)	Drug Arrests / Total Arrests Drug Arrests / Total Arrests in Adjacent Jurisdictions	1% increase in (Drug-arrests/Total-arrests) leads to a .566% increase in the violent crime rate 1% increase in (Drug-arrests/Total-arrests) in adjacent jurisdictions leads to a .369% increase in the violent crime rate
4. Brumm & Cloninger (1995)	1985 59 Cities from 32 States	Homicide Rate (CS, SE)	Drug Arrests/ Total Arrests	1% increase in (Drug-arrests/Total-arrests) leads to an increase in the homicide rate of between .105% and .170%

Authors	**Data Period and Area**	**Dependent Variable (Method)**	**Drug Enforcement Measure**	**Findings**
6. Fajnzylber, et al. (1998)	1970-94 Country Level International Data	Intentional Homicide Rate (CS, OLS, PL, FED) Robbery Crime Rate (CS, OLS, PL, FED)	Drug Possession Arrests per capita	An increase in drug possession arrests per capita leads to a statistically significant increase homicide rates in 2 of 16 CS OLS regressions, in 4 of 5 PL models and in 1 of 2 FED models; An increase in drug possession arrests per capita leads to a statistically significant increase robbery crime rates in 7 of 16 CS OLS models and 2 of 2 FED models
7. Mendes (2000)	1994 Portuguese Municipalities	Property Crime Rate (CS, SE)	Lagged Drug Arrests / Total Arrests	1% increase in the lagged (Drug-arrests/Total-arrests) leads to a .015% increase in the property crime rate
8. Resignato (2000)	1989-95 24 U.S. Cities	Violent Crime Rate (OLS, FED) Homicide Rate (OLS, FED)	Drug Arrests/ Total Arrests	1% increase in (Drug-arrests/Total-arrests) leads to an increase in the violent crime rate of between .169% and .219% 1% increase in (Drug-arrests/Total-arrests) leads to an increase in the homicide rate of between .164% and .205%
9. Corman & Mocan (2000)	1970-96 monthly New York City	Robbery Crime Rate (TS) Burglary Crime Rate (TS) Murder Crime Rate; Assault Crime Rate; Auto-Theft Crime Rate (TS)	Deaths Due to Drug Poisoning	1% increase in Deaths due to Drug Poisoning leads to an increase in Robbery crime rate of between .18and .28% 1% increase in Deaths due to Drug Poisoning leads to an increase in the Burglary crime rate of between .04 and .06% The relationship between Deaths due to Drug Poisoning and Murder, Assault & Auto-theft are not statistically significant

Authors	**Data Period and Area**	**Dependent Variable (Method)**	**Drug Enforcement Measure**	**Findings**
10. Miron (1999)	1993-96 Country Level International Data	Homicide Rates (OLS)	9 Types of Drug Seizures (Cannabis herb, Cocaine base, Cannabis, Coca, Pills, Opium plants, Heroin, Opiates & Cannabis Plants)	Marginally to Strongly Significant positive increases in the Homicide rate arise with increases in 6 drug-enforcement Measures (Cannabis herb, Cocaine base, Cannabis, Coca, Pills, & Opium plants seizures); Insignificant relationship With 3 Measures (Seizures of Heroin, Opiates & Cannabis Plants)
11. Benson, et al. (2001)	1994-97 Florida Counties	Total Crime Rate (FED)	Drug Arrests/ Total Arrests	1% increase in (Drug-arrests/Total-arrests) leads to a .18% increase in the total crime rate
12. Kuziemko & Levitt (2004)	1980-2000 State Level Prison Data	Median Prison Time Served (OLS)	Drug Prisoners as a Portion of Total Prisoners	2 Drug-Offender Prison Admissions → Early Release of 1 Prisoner On Average

Authors	**Data Period and Area**	**Dependent Variable (Method)**	**Drug Enforcement Measure**	**Findings**
13. Shepard & Blackley (2005)	1996-2000 New York Counties	Assault, Robbery, Burglary & Larceny (FED)	Total Drug Arrests per 1000 Population	A 10% increase in the Mean (2.14 to 2.35) of Total Drug Arrests per 1000 Population leads to 243 more Robberies, 910 more Burglaries and 4,333 more Larcenies for the State. The relationship between drug arrests per 1000 population and Assault is statistically insignificant.
			Arrests for Hard Drug Sales Per 1000 population	A 10% increase in the Mean (0.66 to 0.73) of Arrests for Hard Drug Sales per 1000 population implies 442 More Assaults, 114 more Robberies, 346 more Burglaries, and 1,275 more Larcenies for the State.
			Arrests for Hard Drug Possession per 1000 population	A 10% increase in Mean of Arrests for Hard Drug Possession per 1000 population leads to 212 more Robberies, 576 more Burglaries, and 2,965 more Larcenies for the State. The relationship between Arrests for Hard Drug Possession per 1000 population and Assault is statistically insignificant
			Arrests for Marijuana Sales Per 1000 population	A 10% increase in the Mean (0.28 to 0.31) of Arrests for Marijuana Sales per 1000 population implies 880 more Larcenies for the State. The relationships between Arrests for Hard Drug Possession per 1000 population and Assault, Robbery and Burglary are statistically insignificant

Authors	Data Period and Area	Dependent Variable (Method)	Drug Enforcement Measure	Findings
14. Shepard & Blackley (2007)	1994-2001 1300 U.S. Counties	Burglary, Larceny, Motor Vehicle Theft, Homicide (FED)	Arrests for Marijuana Sales per 1000 population	A 1 S.D. increase (0.36 to 0.94) in Arrests for Marijuana Sales per 1000 population .07 more Burglaries per 1000 pop and .0035 more homicides per 1000 population; The relationships between Arrests for Marijuana Sales per 1000 population and both Larceny & Motor Vehicle Theft are statistically insignificant.
			Arrests for Marijuana Possession per 1000 population	A 1 S.D. increase (2.43 to 6.01) Arrests for Marijuana Possession per 1000 population implies 5.2 more Larcenies per 1000 pop and .05 more Motor Vehicle Theft per 1000 pop. The relationships between Arrests for Marijuana Possession per 1000 population and both Burglary & Homicide are statistically insignificant.
15. Entorf &Winker (2008)	1976-1995 German States	Murder Rate (FED)	Drug Offences Reported by the Police	The relationship between Drug Offences Reported by the Police and the Murder rate is statistically insignificant
		Rape Crime Rate (FED)		A 1% increase in Drug Offenses reported by the Police leads to an increase in the Rape rate of between .16 and .19%
		Assault Crime Rate (FED)		A 1% increase in Drug Offenses reported by the Police leads to a .08% increase in the Assault rate
		Robbery Crime Rate (FED)		A 1% increase in Drug Offenses reported by the Police leads to an increase in the Robbery rate of between .07 and .08%
		Theft Crime Rate (FED)		A 1% increase in Drug Offenses reported by the Police leads to a .07% increase in the Theft rate