

ESCALLATING THE WAR ON DRUGS:
CAUSES AND UNINTENDED CONSEQUENCES

By

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I. Introduction

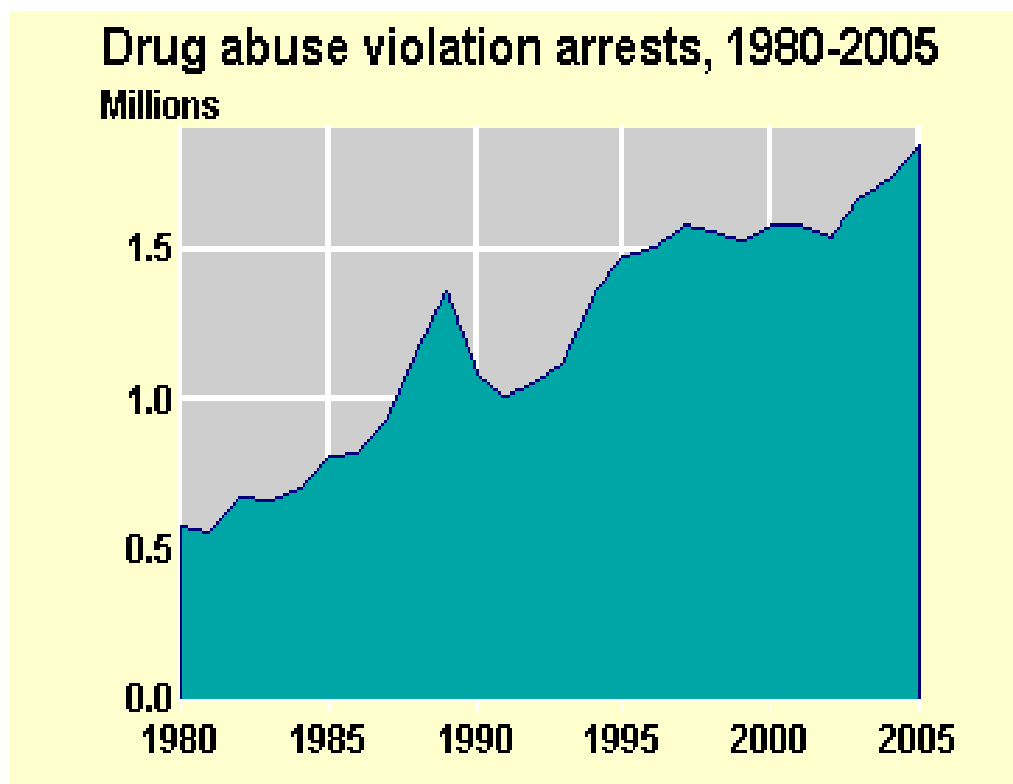
Involvement in markets for some types of drugs has been illegal for over a century in the United States, and marijuana was added to the illicit drug category over seven decades ago. Police efforts to control drug production, sales and consumption have never been as intensive as they are now, however, 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. Drug arrests were falling in the early 1980s (and late 1970s),¹ rose in 1982 and fell slightly in 1983. These arrests rose continuously from 1984 to 1989, however, when they reached a level almost two and a half times the total eight years early. This 1989 peak was higher than any year in the history of drug criminalization, but arrests then declined for two years. The 1991 level was still almost twice what it had been a decade earlier, however, and arrests began rising rapidly again in 1992, surpassing the 1989 peak in 1995, and reaching another temporary peak in 1997. After that, drug arrests fluctuated some from year to year through 2002 (another temporary peak was reached in 2001), but rapid increases set in again in 2003 and this latest escalation has continued through 2006 (the latest data available). The following presentation addresses two aspects of this virtually continuous escalation in drug enforcement. First, it offers an explanation for its beginning and continuation, as well for the most significant departure from this trend in 1991-92. Second, it examines significant unanticipated negative consequences of the escalation.

The explanation of both the trend in enforcement and its consequence involves the application of a few very basic principles that underlie all of economics. Economic analysis has, at its foundation, a model of an individual making decisions in the face of constraints. Constraints arise because of scarcity: there are too few resources to satisfy all of the desires that individuals in aggregate want to fulfill.

Therefore, scarcity implies that choices must be made. Every scarce resource has alternative uses, so

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

choosing to allocate it for one purpose means that the alternatives must be sacrificed or forgone. This in turn implies competition as individuals attempt to influence the allocation of scarce resources in an effort to support the pursuit of their personal objectives. Competition over the use of resources inevitably arises and each individual's decisions are constrained because of this competition. That is, constraints reflect the interdependent decisions and actions of many other individuals. Each individual must decide how to allocate his time and effort in competing to direct the use of scarce resources and/or the goods and services produce by them, with constraints or tradeoffs determined by the competitive actions of other individuals. Much of economics is about competition in markets that determine market prices, but the competition that arises from scarcity can take many forms, including violence, political competition between interest groups, bureaucratic competition for budgets, and competition between thieves and their potential victims.



Source: Bureau of Justice Statistics, Drugs and Crime Facts,
<http://www.ojp.usdoj.gov/bjs/dcf/enforce.htm>

The economics model of decision making assumes that individuals rationally pursue their objectives. Rationality simply mean that individuals respond to incentives and constraints in predictable ways, not that their preferences are “rational” or “normal” in that they can be understood by others (e.g., the preferences that underlie the choices of a rapist or a drug user may not be understood by many people, but the rationality assumption is that if there are changes in the constraints facing such individuals the direction of their responses can be predicted). The model leads to predictions that can be tested by observing actual behavior. For instance, if the price of marijuana goes up, economics predict that, for the most part, individuals who consume this drug will buy less marijuana. Furthermore, if the price rises relative to the price of beer, individuals who consume the drug and consider beer to be a substitute for marijuana are expected to consume more beer as they consume less marijuana.²

The following analysis stems from the fundamental facts of scarcity and the choices that must inevitably follow, and involves tests of the assumption that individuals, including criminals, police, and legislators, rationally respond to incentives and constraints. In this regard, Criminal justice resources like police and prison space are scarce. Therefore, the rapid increase in drug arrests has involved a reallocation of resources away from alternative uses. This is suggested by the third column in Table 1 which shows the trends in drug arrests as a portion of total arrests (the second column lists the total arrest numbers that underlie Figure 1). Before elaborating on this fact and examining its consequences, however, let us ask what might have caused such a reallocation.

² See DiNardo and Lemieux (1992), Chaloupka and Laixuthai (1997), and Model (1993) for evidence that beer and marijuana are substitutes.

Table 1
Estimated drug arrests in the United States, 1980-2006

Year	Estimated Total Drug Arrests	Estimated Drug Arrests as a % 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%

Source: FBI, Uniform Crime Reports, Crime in the United States, annual

II. Explaining the Escalation in Drug Enforcement³

President Reagan sounded a new battle cry in the war on drugs in October 1982 (Wisotsky, 1991). 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

³ Parts of this section draw from Benson and Rasmussen (1996), and Rasmussen and Benson (2003).

generally did not significantly increase their efforts against drugs until late 1984. There are a number of alleged explanations for the state and local upsurge in drug enforcement that began at that time. Many law enforcement people point to the introduction of crack cocaine and its consequences as the factor that motivated their increased efforts against drugs, for instance. However, statistics suggest that drug enforcement efforts started to increase sometime in late 1984 and according to Johnson (1987, 36), 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.⁴ Instead, perhaps local elected officials, representing median voter preferences across the nation, coincidentally demanded that their police departments escalate the War on Drugs. There are strong indications that this explanation does not hold, however (Rasmussen and Benson 1994, 122-127). For example, in 1985, "public opinion" surveys suggested that drug use was not considered to be an especially significant problem. Another explanation is that powerful interest groups demanded the war. It would, in fact, be surprising if this were not the case, since as Chambliss and Seidman (1971, 73) explain, "every detailed study of the emergence of legal norms has consistently shown the immense importance of interest-group activity, not the public interest, as the critical variable." Similarly, Rhodes (1977, 13) points out that "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." 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 (e.g., Berk, et al. 1977; Benson 1990, 105-126; Rasmussen and Benson 1994, 119-173).⁵ So what did interest

4 In fact, crack may actually have been introduced when it was because of early 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 (Kleiman 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. See note 22 for additional discussion.

5 Bureaucrats often try to influence the demand side of the political process (Berk, et al. 1977; Breton and Wintrobe

groups demand that created incentives for the significant reallocation of policing resources suggested by the third column in documented in Table 1? The answer: The Comprehensive Crime Act of 1984 requires the Justice Department to share drug-related property seizures with state and local agencies participating in the investigations, creating incentives for these agencies to shift resources toward drug enforcement.

II.1. Asset Seizures 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 enforcement as early as the ninth century (Benson, 1990), 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 have been using property seizures as a tool for combating drug market activity. They confiscated over \$100 million in 1983, for instance. Perhaps as a result of the cooperation arising after the seizure-sharing requirement was passed, federal forfeitures reached \$285 million in 1989. These seizures fluctuated between \$281 million and \$597 million from 1990 to 2005, before jumping to over \$703 million in 2006.⁶

The 1984 federal asset forfeiture law was a bureaucratically-demanded legislative action propagated as a means to expand inter-bureau cooperation. For instance, in hearings on the Comprehensive Drug Penalty Act 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 confiscations and forfeitures issue (Subcommittee on Crime, 1985). 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

1982; Benson 1990). 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 (Breton and Wintrobe 1982, 41-42), and they are naturally called upon, due to their expertise. This is clearly the case with law enforcement bureaucracies (Glaser 1978, 22). Additional discussion of the role of bureaucrats as demanders of legislative action appears below.

⁶ 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 Table 4.45.2006 from the Sourcebook of Criminal Justice Statistic Online, <http://www.albany.edu/sourcebook/pdf/t4452006.pdf>, which also is the source of the data reported above.

Florida, and the U.S. Drug Enforcement Administration. There was no representation of local government oversight authorities (mayors, city councils, county commissions) either supporting or opposing such legislation. Furthermore, when the innovation was first introduced it appears that most non-law enforcement bureaucrats 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 was the Criminal Justice Section of the American Bar Association. Two groups involved in drug therapy (The Therapy Committees of America, and the Alcohol and Drug Problems Association) also supported forfeitures sharing, but proposed that a share also go to therapy programs. Law enforcement lobbies prevailed as the statute mandated that shared assets go directly to law enforcement agencies rather into general funds, education funds, or other depositories that were mandated by many state forfeiture laws.

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, so dedication of forfeiture to law enforcement was said to be 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" -- was emphasized in a manual designed to help jurisdictions develop a forfeiture capability (National Criminal Justice Association 1988, 40). While suggesting that less tangible law enforcement effects (such as deterrence) should be counted as benefits, the manual emphasized that the determining factor for pursuit of forfeitures is "the *jurisdiction's* best interest" (emphasis added). This interest is viewed from the perspective of law enforcement agencies, a view that might put somewhat more weight on benefits for bureaucrats and somewhat less weight on community wide (and uncertain) deterrence effects. After all, as Stumpf (1988, 316; also see Blumberg 1979; Benson 1990; Rasmussen and Benson 1994) note, 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." Indeed, if forfeitures are in the "public interest" because of their deterrent impacts, and if police are exclusively motivated to serve the public interest, then they should willingly cooperate in forfeiture 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 bureaucratic managers' to expand their discretionary budgets, however, thereby enhancing their own well being directly and indirectly by rewarding supporters in the managers' networks with various "perks" (Breton and Wintrobe 1982, 137). Furthermore, while not mandated by the federal legislation, the Department of Justice (DOJ) decided 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, thereby allowing the agency to circumvent state laws requiring that seizures go to some specific use (e.g., education) or into general revenues.). For example, North Carolina law required that all proceeds from the sale of confiscated assets go to the County School Fund. Law enforcement agencies in North Carolina began routinely using the 1984 federal legislation and DOJ adoption program to circumvent the restrictions so the seized assets could be repatriated to law enforcement agencies rather than going to schools. The same occurred in many other states. Adoptions occurred for other reasons too. For instance, Florida law at the time did not allow seizures of real property but federal law did. The adoption program could be used to make such seizures.

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 of 1988 (passed on November 18, 1988) changed the asset forfeitures provisions that had been established in 1984. Section 6077 of the 1988 Statute stated 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 was designated to go into effect on October 1, 1989, and the Department of Justice interpreted it to mandate an end to all adoptive forfeitures (Subcommittee on Crime 1990, 166). State and local law enforcement officials immediately began advocating repeal of Section 6077, however. For example, the Subcommittee on Crime heard testimony on April 24, 1989 advocating repeal of Section 6077 from 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 (Subcommittee on Crime 1990, 20-28), 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 transfer 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....

This 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 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.

This statement clearly suggests that law enforcement agencies were focusing more resources on enforcement of drug laws because of the financial gains for the agencies arising from forfeitures. In fact, a statement by the U.S. Attorney for the Eastern District of North Carolina, in support of repealing Section 6077, actually implied that law enforcement agencies were focusing on confiscations as opposed to criminal convictions (Subcommittee on Crime 1990, 26): "Drug agents would have much less incentive to follow through on the asset 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." 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 was hidden in the 1990 Defense Appropriations bill, and it applied retroactively to October 1, 1989.

Many law enforcement agencies have been actively pursuing asset seizure. Over 90 percent of the police departments with jurisdictions containing populations of 50,000 or more and over 90 percent of the sheriffs' departments serving populations of 250,000 or more received money or goods from drug asset forfeiture programs in 1990, for instance (Reaves 1992, 1). Indeed, 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 owners' rights are tenuous since most states prohibit suits claiming that the property was wrongfully taken. This prohibition, coupled with the fact that property owners must bring their claims in civil forfeiture hearings, diminishes their capacity to defend themselves. 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 (National Criminal Justice Association 1988, 41). Not only must the owners prove that they are innocent of the alleged crime, but that they lacked 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. After all, one alleged purpose of asset forfeitures is to make drug enforcement efforts to a degree self-financing. Furthermore, Becker and Lindsay (1994) have demonstrated that government can "free ride" by reducing budget allocations when an agency obtains funding from some other source. Thus, police budgets may be reduced to offset expected confiscations. Counteracting the incentive to reduce police budgets by the full amount of asset seizures 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 this the production of this output, their incentives to do so are reduced. Therefore, it can be hypothesized that police will be allowed to retain some portion of the increase in budget that their seizure efforts produce.

II.2. Do Local Governments Reduce Police Budgets to Offset Seizures? The extent to which police agencies can increase their budgets through forfeiture activity is explored in Benson, et al. (1995) and Baicker and Jacobson (2007). Using data from Florida's local policing jurisdictions, Benson, et al. (1995) find that confiscations have a positive and significant impact on police agencies' budgets after accounting for demand and local government budget constraint factors. The estimated elasticity of non-capital expenditures with respect to confiscations is .04 for all jurisdictions and .07 for large jurisdictions. 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 elasticity of discretionary spending with respect to confiscations can be approximated as the estimated elasticity divided by the proportion of all non-capital expenditures that are discretionary. Thus, for instance, if 10 percent of non-capital expenditures are discretionary, the relevant elasticity lies in the 0.4 to 0.7 range. 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 (2007) obtain county level data from parts of Florida, California, Pennsylvania, Arizona and New York to test the same hypothesis, and include a number of additional control variables that were unavailable for Benson, et al. (1995). They conclude that counties reduce police budgets by an average of 82 cents for each dollar seized during the previous year, so police retain about 18 cents per dollar of seizures. These studies make it clear that local governments do react to successful seizures, but they do not reduce budgets by the full value of the seizures. Therefore, local police increase their discretionary budgets by pursuing seizures.

Given the lag in budget reductions found by Baicker and Jacobson (2007), police could actually have incentives to pursue seizures even if local governments were to 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 the budget shortfall. As this cycle of seizures and budget reductions repeats, the local government decision makers may begin to assume that seizures will continue and permanently reallocate a portion of what was police budgets to other uses. As a result, the police become dependent on seizures just to maintain their expenditure levels. This is consistent with Worrall's (2001) findings. 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, and Worrall (2001, 171) concludes that "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." 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.

II.3. Testing the Hypothesis that Police Respond to Incentives. The asset forfeiture provisions of the 1984 federal statute represented an exogenous change in state and local law enforcement agencies' bureaucratic benefit-cost calculus, and this change is hypothesized to have induced them to join in the federally declared war on drugs. The observed changes in drug enforcement since 1984 are consistent with this hypothesis, but unfortunately, this hypothesis cannot be supported by direct statistical tests since the 1984 crime bill was a one-time change in incentives, and other factors may have also changed at around the same time. Therefore, an indirect means of testing this hypothesis is developed by Mast, et al. (2000). This test relies on the fact that the increased effort against drugs has been far from the same everywhere, as

demonstrated in Table 2. In fact, some states actually reduced their relative efforts against drugs during this period, and by 1989 drug arrest rates ranged from 1,060/100,000 population in California to 88/100,000 population in West Virginia.

Table 2
Drug Arrests per 100,000 Population, by State, 1984 and 1989

State	Rank	1989	1984	% Change	State	Rank	1989	1984	% Change
Alabama	21	392	190	106.3	Montana	27	332	130	155.4
Alaska	44	162	120	35.0	Nebraska	32	283	150	88.7
Arizona	11	519	380	36.6	Nevada	42	170	110	54.5
Arkansas	30	311	230	35.2	New Hampshire	35	265	138	92.0
California	1	1,060	590	79.7	New Jersey	2	895	460	94.6
Colorado	33	279	230	21.3	New Mexico	13	454	300	51.3
Connecticut	8	647	270	139.6	New York	3	799	510	56.7
Delaware	28	329	230	43.0	North Carolina	20	411	261	57.5
Florida	6	675	360	87.5	North Dakota	49	107	160	- 33.1
Georgia	7	661	344	92.1	Ohio	17	426	190	124.2
Hawaii	25	355	420	- 15.5	Oklahoma	29	327	270	21.1
Idaho	39	221	140	57.9	Oregon	15	438	240	82.5
Illinois	14	446	120	271.7	Pennsylvania	34	274	130	110.8
Indiana	41	189	130	45.4	Rhode Island	19	422	380	11.1
Iowa	46	119	90	32.2	South Carolina	12	470	300	56.7
Kansas	37	233	140	66.4	South Dakota	47	118	190	- 37.9
Kentucky	9	528	300	76.0	Tennessee	36	263	160	64.4
Louisiana	10	526	270	94.8	Texas	16	433	360	20.3
Maine	38	229	130	76.1	Utah	31	291	320	- 9.1
Maryland	4	776	420	84.8	Vermont	48	109	n.a.	n.a.
Massachusetts	5	689	310	122.3	Virginia	26	341	200	70.5
Michigan	23	374	170	120.0	Washington	24	369	170	117.1
Minnesota	45	161	130	23.8	West Virginia	50	88	100	- 12.0
Mississippi	22	375	190	97.4	Wisconsin	40	207	200	3.5
Missouri	18	422	240	75.8	Wyoming	43	169	180	- 6.1
					United States		538	312	72.4

Source: U.S. Department of Justice, Bureau of Justice Statistics (1984/1989).

In this context, note 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 (Baicker and Jacobson 2007, 3). In several states, law enforcement agencies get to keep assets they seize under state law so they do not have call upon the DOJ adopt their seizures. Since the DOJ charged 20 % to handle adoptions, 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.⁷ In addition, the DOJ is only willing to adopt relatively large seizures. For instance, real property must be worth \$20,000 and a vehicle must be worth \$5,000 before the DOJ will adopt the seizure. This means that the state laws rule for small seizures, and importantly, the vast majority 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.

Some states allowed police to retain seizure proceeds in 1984, while others mandated that they go into the general fund or be used for specific purposes, such as education. Many states allowed police agencies to keep only a portion of the proceeds, and several states did not permit police to keep any of the proceeds from assets seized (many state laws have changed since 1984, as noted above). Thus, in some states police could only gain revenues through seizures through the DOJ adoption process, with the processing charges and size limitations noted above, while police in other states could retain seizures without relying on the DOJ. Not surprisingly, drug arrests per 100,000 population in states with significant limits on police retention of seizure proceeds averaged 363 during 1989, while states where police kept seizure proceeds averaged 606 drug arrests per 100,000. This 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 stimulated an increase in drug enforcement by many state and local police agencies. Of course, other factors, such as the level of drug use and/or property crime could explain these interstate differences. Therefore, strong support for the hypothesis requires an empirical analysis that controls for other factors affecting the level of drug enforcement.

⁷ Many state laws now allow seizures of property arising from investigations of non-drug crimes (federal law does too). However, 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 assets that are attractive targets for property seizures (e.g., cars, boats, airplanes, land used to grow marijuana). Most other crimes do not generate opportunities for large 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. Drug markets are virtually ubiquitous, and seizures through drug enforcement efforts are relatively easy to make.

Mast, et al. (2000) model local drug enforcement efforts and provide an empirical test of the hypothesis that enforcement is higher when police can keep assets seized. Two different samples of cities were employed to test the model. The use of two samples was 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. Use of this sample carries a high price in terms of degrees of freedom, 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 such a direct measure of drug use.

Mast, et al. (2000) also control for the level of police resources available in a community and 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. State Legislation permitting police to keep a portion of seized assets raises drug arrests as a portion of total arrests by about 20 percent and drug arrest per capita by about 18 percent. This provides evidence that local police respond to incentives created by state laws, and indirect support for our contention that the upsurge in drug enforcement that started in 1984 is a result of the Federal law.⁸

⁸ Baicker and Jacobson (2007) 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 a 0.1 percent 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). However, some of these estimates may be problematic because of their use of this sharing rate. This variable implies an assumption that police fully anticipate the reductions in budget, but perhaps more importantly, it rules out the dependency

II.4. Why does This Matter? Some might respond to this question by contending that this is a good thing since now criminals are paying for law enforcement. Not necessarily! For instance, the Volusia County, Florida, Sheriff's Department had a drug squad which 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 1992.⁹ These seizures were "justified" as part of the war on drugs. Actually, however, 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. Furthermore, no criminal charges were filed in over 75 percent of the county's seizure cases. More significantly, a substantial amount of money was apparently seized from innocent victims. Money is not returned, however, even when the seizure was challenged, no proof of wrongdoing or criminal record could be found, and the victim presented proof that the money was legitimately earned. Three-fourths (199) of Volusia County's seizures did not include an arrest, and were contested. The sheriff employed a forfeiture attorney to handle settlement negotiations. Victims of seizures had to hire attorneys to represent them. Only four people got all of their money back, and the rest settled for 50 to 90 percent of their money after promising not to sue the sheriff's department.¹⁰

implications of seizures suggested by Worrall's (2001) findings. 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.

⁹ 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. For a few other examples of apparent misuse of seizure laws, see Dennis Cauchon and Gary Fields' series of articles on "Abusing Forfeiture Laws" in USA Today, May 1992; Jim Henderson, "Big Numbers Don't Add up to Success in Texas War on Drugs," Houston Chronicle, December 24, 2000, State 1; and "Turning Drug Busts into a Profit Center," Washington Post Weekly Edition (April 19, 1991,

¹⁰ A twenty-one-year-old naval reservist had \$3,989 seized 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 have been 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.

Some may reply, well even so, increased drug enforcement has tremendous benefits. After all, drugs cause crime, so the increase in drug enforcement will 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. In fact, studies of the temporal sequencing of drug abuse and crime also suggest that criminal activities often precede drug use. For example, a Bureau of Justice Statistics survey of prison inmates found that approximately half of the inmates who had ever used a major drug, and roughly three-fifths of those who used 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” (Innes 1988, 1-2). Similarly, a large scale survey of jail inmates found that more than half who reported regular drug use said that their first arrest for a crime occurred an average of two years before their first use of drugs (Harlow 1991, 7).

Once an individual has decided 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. Thus, crime can lead to drug use. Indeed, Chen, et al. (1965, 64-65) 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 drug use.” Similarly, Chaiken and Chaiken (1990, 10) review the relevant research and conclude that “There appears to be no general relation between high rates of drug use and high rates of crime.” Successful property crime certainly generates income that can buy drugs, of course, 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.). Of course, 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 (1994, 60-62) examine 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.

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 those 45,906 persons, 76 % had no prior arrest for a violent crime. Furthermore, 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 was 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 drug arrests in their past. 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. Furthermore, many of the non-violent felony arrests are for drug offenses, of course. Persons arrested for possession, for example, had a history of 84,588 previous non-violent felony arrests, but 75,500 of these were misdemeanor or felony arrests for possession and 6,784 were arrests for drug sale, leaving 2,304 possible property crime arrests. And again, a small portion of these possession arrestees accounted for a very large portion of the property crime: 34.1 % of the prior property arrests were concentrated in 2.3 % of this population. The implication is that a very substantial portion of the drug using population does not regularly engage in non-drug crime (unless huge numbers are never caught), and that among the portion that have done so, only a small portion actively (repeatedly) engage in non-drug crime.

Persons engaged in the supply side of drug markets were more inclined to property crime than persons arrested for possession: only 61.9 % had no previous arrest for a property crime. Furthermore, property-crime arrests are less concentrated for suppliers than they are for users (the 2.3 % concentration index for different categories of supply-side arrestees were: sale, 18 %; smuggling, 19.0 %, production, 23.7 %; trafficking, 22.5; delivery and distribution, 20.4 %; and possession of drug equipment, 18.8 %). 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. Among the six supply side categories, the portion of the arrestees with no history of arrest for violent crime varies from 65.5 % for sale to 86.5 % for production. The concentrations indices for violent crimes are 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. Thus, among the drug supplying population, a substantial majority apparently does not actively engage in non-drug crime, although they are more crime-prone than drug consumers.

A statistical study of recidivism by drug offenders (Kim, et al. 1993) reinforces the implications of the Rasmussen-Benson (1994) examination of arrest history data. Using data provided by the Florida Department of Corrections, they create a large sample of individuals incarcerated in Florida prisons between 1983 and April 2, 1990 for drug offenses. A subset of 4,398 observations from this sample who were released before May 29, 1989 was extracted from the larger sample. About 50.7 % of this sample returned 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 was 7,161. Kim, et al. (1993) use this sample in a duration model, controlling for a number of other socio-economic and law enforcement factors that might influence the probability of individuals recidivating. The data includes information about the crimes that led to readmission to prison. An examination of the crime for which an initial drug offender was readmitted led Kim, et al. (1993,180) to conclude that “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.”

Yet another answer to the question about why the increase in drug enforcement matters requires recognition 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 Section III, but the scarcity of criminal justice resources also provides an explanation of the temporary de-escalation of drug enforcement

in the early 1990s (see Table 1 and Figure 1).

II.5. Scarcity and The Temporary Downturn in Drug Arrests. As a result of the rapid increase in drug arrests, many states were facing significant increases in prison crowding by the late 1980s. For instance, Florida was building prisons during the 1980s, but criminals being sentenced to imprisonment were increasing much faster than prison capacity was expanding. 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 were 36.4 percent of the 43,387 total (non-drug admissions increased too, but by a comparatively small 153 %, from 10,896 to 27,585). At the same time, the legislature passed an array of longer minimum mandatory sentences for drug criminals. It turned 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 percent of their sentences or more; by the end of 1989 the average prisoner served only 33 percent 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 percent of their sentences; in fact, about 37 percent of the prisoners released in December 1989 had served less than 25 percent of their sentences, and some served less than 15 percent. Some prisoners with short sentences actually began processing for early release the day after they arrived. As a result, there were numerous examples of individuals accused of crimes who plea bargained to be convicted of relatively more severe crimes in order to get a prison sentence, rather than a less serious crime that would warrant a sentence to serve time in local jails. They recognized that they would actually serve less time with a prison sentence than with a jail sentence.

This early-release program meant that Florida citizens were exposed to more and more convicted criminals who were being released earlier and earlier. Similar problems were occurring in many other states. Indeed, some states, like North Carolina and Oklahoma, were releasing criminals who, on average, had served even smaller portions of their sentences than those in Florida. A series of highly publicized crimes by violent criminals who were released early across 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 15-year sentence for attempted murder. As Stephenson (1994, 9) explains, "Florida's beleaguered Department 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." On November 28, Street killed both officers. Stephenson (1994, 11) 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 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."

Frank Potts was also released from the Florida prison system in 1988, after serving six years of a 15-year sentence for molesting an 11-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 11-year old girl, but in addition, an intense investigation was underway regarding allegations that he killed as many as 13 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."¹¹

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.¹² An important source of such criticism was law enforcement interests. They joined with other interests to demand expansion of the prison system in order to accommodate criminals for much larger portions of their sentences.

On top of this increasing backlash, the Florida legislature was forced to hold a special session in 1993 in order to deal with the "gridlock" in the prison system that was anticipated later that year when no criminals eligible for early release would remain in the system. The legislature reconsidered some of its mandatory sentences during the session and allocated additional funding to 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 percent. Again, Florida's experience is not unique. Many states are allocating more funds for prison construction. Indeed, several states apparently started accelerating the rate of increase in expenditures on prisons and prison construction in the mid-1980s, as suggested in Table 3.

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 did decline 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 increase their discretionary budgets through seizures, giving them incentives to allocate more resources to drug enforcement.

11 Associated Press, "Probe: Potts Granted Early Release," Tallahassee Democrat (May 10, 1994): 5B.

12 Criticisms of drug policy also began to appear in the press. For example, the Tallahassee Democrat has picked up a number of stories from other newspapers and news services with themes such as those in the following sampling: (1) from Knight-Rider's Washington Bureau: Epstein, Aaron, "Tide of Opinion Turns Against Harsh Sentencing for Drug Offenders" (May 7, 1993): p. 4A; (2) from the Associated Press: White, Michael, "Cases Indicate the War on Drugs May be Overdoing It" (November 2, 1992): p. 3A; (3) from the Chicago Tribune: Margolis, Jon, "Punishment Should Fit Drug Crime" (July 5, 1991): p. 15A; and (4) from the Miami Herald: Greene, Ronnie, "Skip Town, Judge Tells Drug Suspect" (October 8, 1992): p. 4C. Furthermore, significant negative coverage arose in regard to asset seizure policies (e.g., Brazil and Berry 1992; Cauchon and Fields 1992 in note 9). Law enforcement interests lobbied against changes in either drug policy or asset seizure laws, of course, while joining other groups in the demand for more prisons.

Table 3
Direct Expenditures for State Government Correctional Activities, 1980 - 2004
Institutions

Fiscal Year	Total Corrections Direct Expenditures	Capital Outlays			
		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	1,724,021	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

Source: Sourcebook of Criminal Justice Statistics Online, <http://www.albany.edu/sourcebook/pdf/t1924.pdf>

Rank-and-file police officers actually make most arrests, of course, and they do not necessarily capture the benefits of assets they seizure. These officers were also witnessing the consequences of prison crowding and early release. They saw violent criminals (as well property criminals and drug-law violators) that they had 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 uncovered a significant level of frustration on the part of the rank-and-file. They were asking themselves, “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?”¹³ While the police apparently reduced drug-

13 In one discussion at a state-organized conference on drug policy issues, two high ranking officers from a North Florida county Sheriff’s Department were asked “if you had to choose between focusing on an investigation, one of

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 was not, from the police perspective, a long-term reduction in drug enforcement. Instead, it was a demand for more prisons to accommodate the increasing flow of convicted criminals for longer periods.

The backlash against early release programs clearly influenced legislatures, as suggested above, as prison construction accelerated. The new construction was sufficient to reduce early releases some, as the portion of sentences served began to increase. See Table 4 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 portion of sentences served for all violent crimes was over 50 % (note that none were in 1990), virtually all property and drug criminals were still serving less than half their sentences, on average. Also note that there are two reasons for the increase in the portion of sentences served. One is an increase in average time spent in prison for all crimes, including drug crimes, but the other has been a reduction in the length of sentences in every crime category except drug trafficking and manslaughter. Some states reconsidered some of their “get-tough” laws (e.g., minimum mandatory sentences) in order to reduce sentences. Another factor in reducing sentences may be that when judges hand down sentences they know that criminals are not likely to serve a substantial part of the sentence. Therefore, they adjust the sentence to reflect the likely portion that will be served in an effort to produce what they think is an appropriate period of incarceration for the crime. Thus, as more prisons are built, increasing the portion of sentence served, some judges may reduce sentences. During a period of rapid prison construction and increasing arrest rates for at least some crimes, making such predictions will be difficult, of course, and judges also face pressures to be tough on crime, so the importance of this judicial

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, the two officers 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.”

behavior is not clear.

Table 4
Portion of Sentences Served in State Prisons, 1990 and 1999

	Mean Sentence in Months		Mean Months Served		Percent 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

Source: Sourcebook of Criminal Justice Statistics, 2003, Table 6.4

Note: The sentences for murder exclude sentences of life, life without parole, life plus additional years, and death.

III. Tradeoffs in Law Enforcement: Drug Control Versus Enforcement of Non-Drug Crime

The increase in drug enforcement in the face of the scarcity of criminal justice resources had 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.¹⁴ With the growing emphasis on drug enforcement, relatively fewer criminal justice resources will be available to control other kinds of crime. Apparently, the first suggestion of a potential tradeoff between drug enforcement and the control of other crimes appeared in 1991 (Benson and Rasmussen 1991). This study presented an empirical model of the probability of arrest for property crimes (proxied by the clearance rate) that includes controls for the relative drug enforcement effort, and concludes that as drug enforcement increases, the probability of arrest for property crime decreases. Therefore, if expected punishment (probability of arrest and

¹⁴ Since state government budgets are also limited (tax revenues are relatively scarce), another implication not examined here is that expenditures available for some other state programs will be relatively low when states allocate more spending to prisons.

punishment times expected sentence) serves as a deterrent, property crime should increase. Since then, the actual tradeoff hypothesis for police resources has been 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 has been extended 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. Let us consider this empirical literature.

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

The first study of the determinants of property crime that directly tested the tradeoff hypothesis was published in 1992 (Benson, et al. 1992). This study employs 1986 and 1987 data from Florida's 67 Counties. The property crime rate in a county is hypothesized to be a function of the expected punishment for property crime (probability of arrest and conviction), the expected income from property crime, the opportunity costs of alternative legal activities, the size of the local drug market, and other socio-economic factors characterizing the county. In addition, the probability of arrest for property crime in the county is hypothesized to be a function of the number of police, crime rates, drug enforcement efforts, and other community characteristics in the county. Finally, the number of police officers (i.e., the county demand for police services) is expected to be a function of county crime rates for both property and non-property offenses, drug market size, county wealth, and other relevant community characteristics. Simultaneous estimation procedures are used to test this three-equation model. 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 enforcement 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. On-the-other-hand, if the drugs-cause-crime

hypothesis holds, property crime should be positively related to the size of the drug market (however, as noted below, another hypothesis also can explain such a relationship, so it cannot be concluded with any degree of certainty that one of the two hypotheses dominates). Both hypotheses may hold, of course.

Naturally, various proxies had to be employed for several of the variables. The two of most interest here are the proxies for drug enforcement efforts, and the size of the local drug market. 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 methods used to estimate wildlife populations.¹⁵ The coefficient estimates in Benson, et al. (1992, 687) 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. Together, these coefficient estimates suggest that a 1 % increase in drug enforcement relative to total enforcement increases property crime by .164 percent.¹⁶

Drug market size has two impacts on the level of property crimes in Benson, et al. (1992). First, the direct effect implies that a 1 % increase drug market size results in a .183 percent increase in property crime. In addition to the direct effect, a 1 % increase in drug market size apparently leads to an increase in the

15 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 (Scheaffer, et al 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 for any individual model, so an estimate of the total population is obtained by dividing the number captured in the second period divided by the fraction that was previously tagged. Benson, et al. (1992, 685) analogously estimated the population of drug market participants by observing 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 very crude estimate it was assumed to provide a reasonable method of estimating at least the size of that segment of the drug population that local citizens are aware of and the criminal justice system tends to focus on.

16 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 also causes property crime to increase. A 1 % increase in the crime rate for non-property offenses reduces the probability of arrest for property crime by .693 percent 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 an increase in property crime by .138 %. Levitt (1998) also finds that an increase in the portion of arrests for one type of Index I crime (property and violent crimes reported to police: murder and manslaughter, rape and other sexual crimes, assault, robbery, burglary, larceny/theft, automobile theft, and arson) is associated with an increase in other index I crime rates.

number of police officers in the jurisdiction, and a 1 % 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, 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 %. These estimates appear to support the drug-cause-crime hypothesis, but as noted above, there also is an alternative hypothesis that can explain the relationship. Benson, et al. (1992, 689) note that this result is consistent with the Florida data cited above 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.” The estimates cannot distinguish between these two hypotheses (indeed, both may be relevant).

Sollars, et al. (1994) replicate Benson, et al. (1992) using a cross-section study using 1987 data from 296 local policing jurisdictions in Florida. They do not employ a measure of drug market size, as the recidivism data used in Kim, et al. (1993) provides the county from which convicted criminals came, but not the local jurisdiction within the county. The estimated impacts of drug enforcement on property crime are very similar in the two studies, however. The coefficient estimates in Sollars, et al. (1994, 37) imply that a 1 % increase in drug enforcement’s share of total enforcement results in a .137 % reduction in the probability of arrest for property crime, and a 1 % reduction in the probability of property crime arrest in turn causes a .759 % reduction in property crime. Together, these coefficient estimates suggest that a 1 % increase in drug enforcement relative to total enforcement increases property crime by .104 percent.¹⁷

¹⁷The tradeoff hypothesis is, once again (see note 16), supported by the 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 also causes property crime to increase. A 1 % increase in the crime rate for non-property offenses reduces the probability of arrest for property crime by .140 percent 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.

Mendes (2000) expands upon and replicates Sollars, et al. (1994) using 1996 data from 274 municipalities in Portugal. Her estimates imply that a 1 % increase in drug enforcement reduces the probability of arrest for property crime by .107 % and a 1% increase in the lagged probability of arrest reduces property crime rate by an estimated.144 %, so once again, the combined effect implies that increased drug enforcement causes an increases in the property crime rate. This is a particularly valuable contribution to the literature as it employs data that is not from the U.S..

Another important development in the literature involved the recognition that the cross section studies reported in Benson, et al. (1992), Sollars, et al. (1994) and Mendes (2000) 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 (explaining the change in crime rates with changes in the relevant variables) or by using jurisdiction and time dummies to control for fixed effects. Benson, et al. (1998) report the results of such a panel study using change-form models. They consider the impact of changes in drug control enforcement on changes in the total Index I crime rate in Florida Counties (note that property crimes dominate the Index I crime rate, so the results do not necessarily demonstrate an impact of drug enforcement on all reported crimes) over the five year period from 1983 through 1987, controlling for other socio-economic and criminal justice factors that should influence crime. The results once again support the tradeoff hypothesis. The coefficient estimates suggest that the resources needed to make one more drug arrests a year results in about 0.7 are Index I crimes per year (Benson, et al. 1998, 96).

Caulkins, et al. (2000) reacted to the growing evidence of a tradeoff by contending 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. This is clearly true.¹⁸ The exact nature of the tradeoff requires empirical analysis, and the empirical studies cited above support the hypothesis that police in

¹⁸ Actually, Benson and Rasmussen (1992) made this point when they found that as police in Illinois increased drug enforcement during the 1984-89 period, there was a dramatic reduction in traffic control in the state and a sharp increase in traffic fatalities. They did not perform statistical analysis of the tradeoff hypothesis, either for property crime or traffic enforcement, however, so this observation is only suggestive.

Florida and Portugal sacrifice control of property crime. They also note that legislatures could choose to raise taxes or sacrifice other unrelated programs in order to increase police funding and maintain efforts against property crime. Rasmussen and Benson (1994) addressed this point, however, noting that in theory, the increase in drug enforcement that has occurred could 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 has occurred. In this regard, Table 5 provides data on state and local police employment.

Table 5
State and Local Sworn Police Full-Time Equivalent Employment, 1980-2003

One-Month Payroll Period	Total State & Local Sworn Police Employees		Local		
	State	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

Source: [Sourcebook of Criminal Justice Statistics Online](http://www.albany.edu/sourcebook/pdf/t1252003.pdf), Table 1.25.2003, <http://www.albany.edu/sourcebook/pdf/t1252003.pdf>

There clearly has been an increase in state and local police employment over the period examined by the studies cited above (and those discussed below). 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 over four times as fast, by approximately 189 %, over the same period. While this does not prove that police resources were not increased by enough to retain the same level of property crime enforcement while simultaneously increasing 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 resources¹⁹), it certainly suggests that it this may be the case. And this suggestion is supported by the empirical studies discussed above and below.

Caulkins, et al. (2000) also suggest that the research using Florida data from the 1980s may not generalize, and they present aggregate national data that does not reveal a tradeoff. It is true that a simple comparison of trends in drug arrests and crime rates certainly 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 2 and 3 below, for instance. This simple comparison of national data on drug enforcement and crime rates is not sufficient to support the Caulkins, et al. (2000) claim, however, because they fail to control for all of the other factors that changed over the period of their data (also recall that Mendes (2000) use a nationwide sample from Portugal).

Figure 2

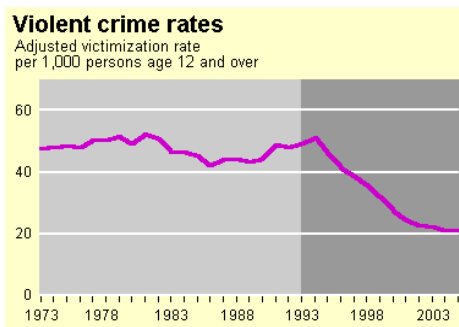
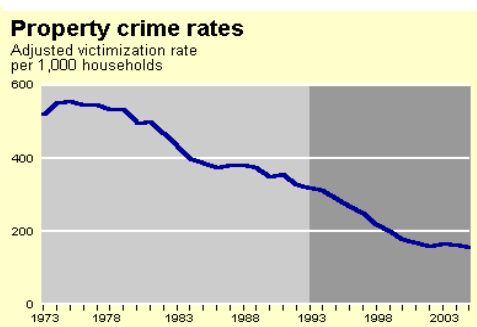


Figure 3



Source: U.S. Department of Justice, Bureau of Justice Statistics, “Key Crime & Justice Facts at a Glance,” <http://www.ojp.usdoj.gov/bjs/glance.htm>

¹⁹ A small portion of the drug arrests are also made by federal police, of course, and there has been increasing police employment at the federal level. However, adding this employment to the state and 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, Table 1.76.2007), but this is still a very small number relative to state and local police.

Benson, et al. (2001) consider the Caulkins, et al. (2000) point about generalization, however, in part because both crime rates and drug enforcement were rising in Florida during the 1984-89 period, while drug enforcement fell and then rose again in the 1990s, and crime rates fell during much of the 1990s. Therefore, they revisit the empirical relationship between drug enforcement and Index I crimes using data from the 1994-97 period from 67 Florida Counties, using a fixed effects model. Drug arrests actually fell in Florida during this period, but arrests for non-drug crimes and Index 1 crime rates also fell, so simply looking at the data without statistically controlling for other relevant determinants of crime, suggests that there was no tradeoff. By controlling for fixed effects and other determinants of property crime, however, 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. In other words, even though crime rates were falling and drug enforcement was declining, the statistical analysis suggests that crime rates would have fallen further if drug enforcement had been reduced even more.

Importantly, the tradeoff hypothesis is also supported by several recent studies using non-Florida data. For instance, while Corman and Mocan (2000) do not set out to test the tradeoff hypothesis, their findings suggest that it holds. They use a 30-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 drug-use proxies in the models. They consider three proxies for drug market activity: (1) the number of deaths in New York City due to drug poisoning, (2) the number of releases from New York City hospitals where the reason for admission was drug dependency or drug poisoning, and (3) felony drug arrests. Each is assumed to be positively correlated with the size of the drug market, and the three measures “appear to move together” (Corman and Mocan, 2000, 387). All three variables performed similarly in separate model estimations. Murder and assault apparently are not significantly related to the variables, to the authors’ surprise, but their measures were positively associated with robberies and burglaries. While the authors assume that the three measures are

highly correlated with the size of the drug market they do recognize that drug arrests may be problematic 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” (Corman and Mocan 2000, 387). In other words, they recognize that the drug arrest variable may actually be picking up a tradeoff effect rather than a drug market effect. The fact that all three proxy variables appear to move together might imply that the arrest data is picking up the drug market effect rather than the tradeoff effect, assuming that the other two measures are good proxies for the size of the drug market. However, that assumption appears to be problematic. As drug enforcement increases, particularly over long time periods as in this study, the potency of drugs increases (Thornton 1991, 105-108; Rasmussen and Benson 1994, 83-88). This can lead to more overdoses even if the size of the market declines, in turn increasing both deaths from drug poisoning and hospital admissions. Similarly, as enforcement efforts are increased, markets are disrupted and users may lose the regular suppliers that they trust. If they turn to other suppliers, there is an increasing chance of obtaining and consuming drugs of unknown potency, and drugs cut with toxic adulterants (Moore 1973), again suggesting increased deaths and hospital admissions even if the drug market is smaller. Therefore, none of the three variables are likely to be good proxies of drug market size, particularly in a long time series of data, but instead, they probably reflect enforcement levels.

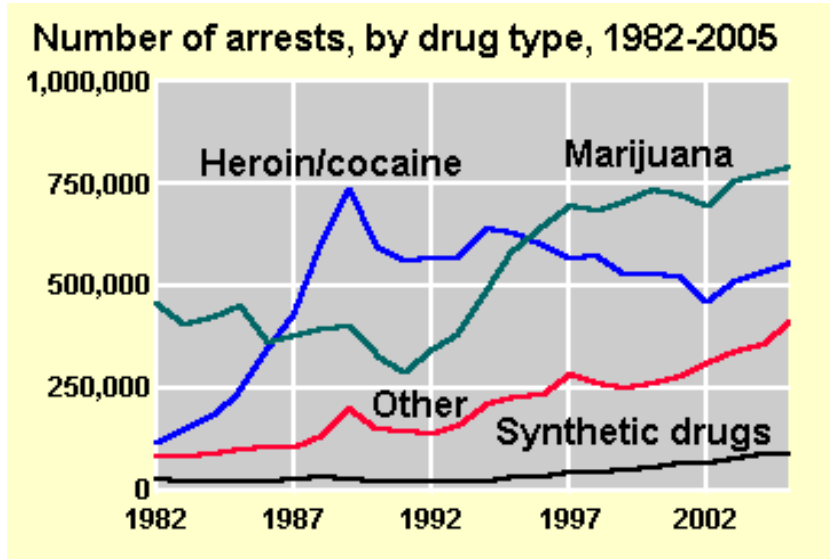
Shepard and Blackley (2005) use 1996-2000 data from 62 counties in New York in order to directly estimate fixed-effects models to evaluate the effect of drug arrests on rates of assault, robbery, burglary, and larceny. They consider four different drug arrest variables: total drug arrests, as well as arrests for hard drug sales, hard drug possession, and marijuana sales. Total drug arrests are positively related with all of the crime rates except assault. They estimate that a 10 percent increase in the mean of total drug arrests per 1000 people (2.14 to 2.35) results in 248 additional robberies, 910 additional burglaries, and 4,333 additional larcenies in the state. Arrests for hard-drug sales are positively related to all of the crime rates. In this case, an increase of 10 percent in these arrests per 1000 population (from 0.66 to 0.73) is associated

with 442 more assaults, 114 additional robberies, 346 more burglaries, and 1,275 additional larcenies for New York state. Arrests for hard drug possession are similarly related to all crime rates except assault: a 10 percent increase in the mean of these arrests is associated with increases in robberies, burglaries and larcenies of 212, 576 and 2,965 respectively. Marijuana sales only has a significant impact on larceny, with a 10 percent increase in the mean arrests per 1000 (0.28 to 0.31) estimated to add 880 more larcenies for the state. Shepard and Blackley (2005, 324) 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 crime control measure and suggest that significant social costs may arise from existing approaches to drug control.”

Shepard and Blackley (2007) deal with another claim made by Caulkins, et al. (2000) as they develop a model to test the tradeoff hypothesis with a national cross-section time-series pool of data from over 1300 counties in the U.S. over the 1994-2001 time period. They focus on marijuana enforcement in this study, rather than drug enforcement in general. This is an important contribution to the literature. 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 1991. See Figure 3 and Table 6 below in this regard.²⁰

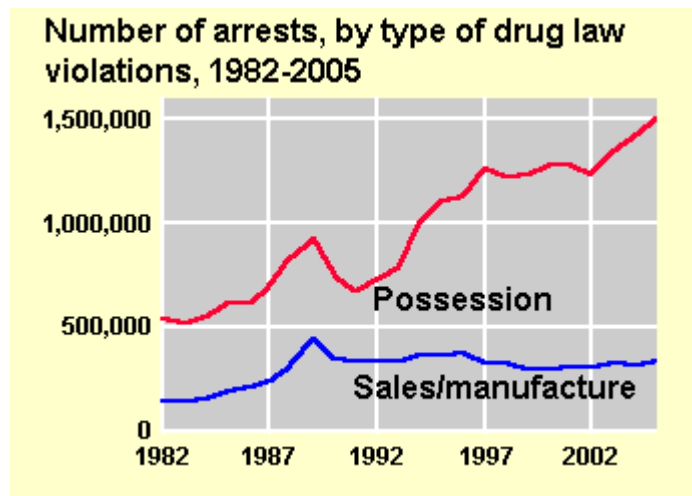
²⁰ Most of the upsurge also has been directed at drug possession rather than drug trafficking, as illustrated by the following Figure. Of course, the distinction between possession and trafficking is problematic because it is based on the weight of the drugs that a person possesses. Actual trafficking (sale or efforts to sell) does not have to be proven if a person possesses a sufficient quantity of drugs. He is per se guilty of trafficking.

Figure 3



Source: Bureau of Justice Statistics, Drugs and Crime Facts, <http://www.ojp.usdoj.gov/bjs/dcf/enforce.htm>

Shepard and Blackley (2007) again employ a fixed-effects model to examine the impact of marijuana arrests, both for sales and for possession, on four crime rates: burglary, larceny, motor vehicle theft and homicide. They conclude that an increase in arrests for marijuana possession is significantly related to larceny and motor vehicle theft rates, while an increase in arrests for marijuana sales is

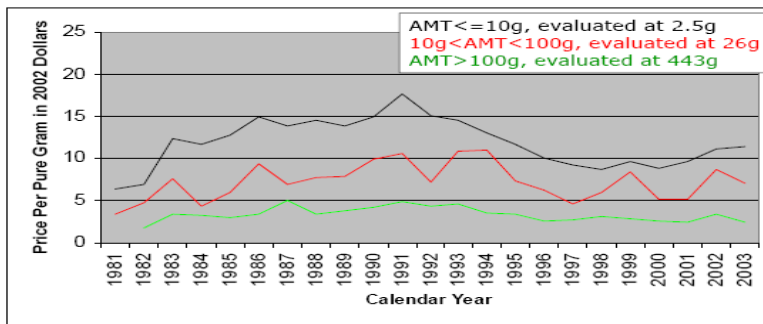


Source: Bureau of Justice Statistics, Drugs and Crime Facts, <http://www.ojp.usdoj.gov/bjs/dcf/enforce.htm>

significantly related to burglary and homicide rates. In this case, they report that a one-standard deviation increase in the rate of marijuana possession arrests per 1,000 population is associated with 52 additional larcenies and 5 additional motor vehicle thefts in a county with a population of 100,000. The tradeoff hypothesis is, once again, supported.²¹ Similarly, a one-standard deviation increase in the rate marijuana sales arrests per 1,000 population is associated with 7 more burglaries and 0.35 more homicides in a county with 100,000 residents. Clearly, as Shepard and Blackley (2007, 403) conclude, “these results raise significant questions about the merits of policies that focus on criminal justice approaches to marijuana control.”²²

21 Shepard and Blackley (2007) note that there are alternative explanations for this relationship. One is that marijuana may harm the employment opportunities or educational status of arrestees, leading to an increased likelihood of property crime. However, it seems that this impact would be lagged rather than simultaneous, and Shepard and Blackley include both current year marijuana arrests and a one year lag in these arrests. The lagged variables are not significantly different from zero. Another explanation they mention is that increases in possession arrests could lead to price increases in the marijuana market, inducing marijuana users to engage in more theft to pay these prices. Again, however, such an impact is not likely to be immediate. Furthermore, evidence suggests that marijuana prices were actually falling during the study period (1994-2001), as indicated by the following figure from the Office of National Drug Control Policy, The Price of Illicit Drugs: 1981 Through the Second Quarter of 2003, November 2004, page 53.

Figure 34. Price of One Bulk Gram of Marijuana



53

22 Shepard and Blackley (2007) also consider the impact of marijuana arrests on arrests for hard drug possession. They find that a one year lag of marijuana sales is positively associated with arrests for hard drug possession. Their explanation is that when enforcement efforts against marijuana markets increases relative to enforcement of hard drug markets, buyers and/or sellers of marijuana tend to substitute hard drugs for marijuana. This certainly is plausible. The implication should be troubling to those who argue that marijuana is a “gateway” drug in that consumption of marijuana leads to consumption of harder drugs. It appears that it may actually be marijuana

Table 6
Number of Arrests, by Drug Type, 1982-2004

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
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

Source: Bureau of Justice Statistics, Drugs and Crime Facts, <http://www.ojp.usdoj.gov/bjs/DCF/enforce.htm>

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

Shepard and Blackley (2005, 2007) consider one violent crime (assault or homicide) rate in each of their studies and find positive relationships between these crime rates and at least one measure of drug enforcement. In contrast, Corman and Mocan (2000) are surprised to find no relationship between these private crime rates and drug arrests. They are appropriately surprised, since there are several potential reasons to expect a positive relationship, as well as substantial empirical support for the expectation.

In this context, it is appropriate to begin with Goldstein's (1987, 1989) widely cited work. He conducts several studies in an effort to track and separate the causes of so-called "drug-related" homicides into three categories using data from New York City. He notes that there are three hypothesized

enforcement that leads to consumption of harder drugs. Also see note 4 in this regard.

relationships between drugs and violence. One is a psychopharmacologic affect of drug use. It may be that drug use leads to violent behavior. Another involves economic compulsion wherein violence occurs when “drug users engage in economically oriented violent crime, e.g. robbery, in order to support costly drug use” (Goldstein 1987, 15). His 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” (also see Miron 1999). Violence tends to be prevalent in black markets for a number of reasons. Goldstein’s (1987, 19) suggestions include disputes with rival drug dealers (e.g., turf wars), assaults and homicides committed within dealing hierarchies as a means of enforcing normative codes, robberies of drug dealers/buyers and violent retaliation for robberies (e.g., by dealers or their bosses), elimination of informers, disputes over drugs and/or drug paraphernalia, punishments for selling adulterated or phony drugs, and punishment for failing to pay debts. As Rasmussen and Benson (1994) just as in legal markets, drug dealers must attempt to enforce contracts and secure property rights to the residuals produced by their business. In legal markets, however, governments may help enforce contracts and protect property rights, disputes can be settled in public courts or professional arbitrators, and these adjudication decisions can be enforced by governmental authorities. However, governments do not protect property rights and enforce contracts in an illegal market, so the participants themselves must perform these functions, often through the use and/or threat of violence. In order to do so, they invest in tools that enhance their ability to use violence, including guns. In a similar vein, Rasmussen and Benson (1994) suggest that Goldstein’s (1987) point about robbery is particularly important because drug users and dealers are relatively attractive targets since they are likely to be carrying drugs and/or cash, and they are not likely to report the crimes committed against them. All these factors lead to an environment characterized by violence or the continuing threats of violence. While victims of this violence often are drug users or dealers, spillovers can claim non-participating victims such as law enforcement officers and bystanders (Goldstein, 1987).

Goldstein’s (1987) uses police reports to categories drug-related homicides, and finds that in New

York City the psychopharmacological effects of illegal drugs are relatively unimportant. He concludes, in one study, that out of the 414 drug related homicides examined, 31 (7.5%) may be psychopharmacological. However, out of these 31, 21 are attributed to the use of alcohol rather than illicit drugs, leaving only 10 (2.5%) of the drug-related homicides potentially attributed to psychopharmacological effects of illegal drugs. Economic compulsive violence also does not appear widespread, as Goldstein (1989) only identifies its potential relevance in 8 (3.6%) out of 218 drug-related homicides he examines in a subsequent study. However, Goldstein (1989) finds that out of 218 drug-related homicides, 161 (74%) appear to be due to systemic factors. Thus, most of the violence associated with illicit drug markets appears to be due to the fact that drugs are illegal, rather than to drug use itself.

Recent literature suggests that not only is prohibition-caused systemic factors the primary cause of violence in drug markets, but that increases in drug enforcement further increases the violence. As Miron (2001, 619) notes, “probations are unlikely to create violence unless there is substantial enforcement, and the amount of violence caused will increase with the degree of enforcement.” This statement applies for systemic violence, but Miron (2001, 621) also explains that since law enforcement resources are scarce, if more resources are focused towards drug crime there are fewer resources focused on controlling other types of crime, including violent crime.

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 involve increases in violence. 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, buyers may lose their regular, trusted sources of drugs, so they have to search for new suppliers in other locations (or the intensity of enforcement may generate a local deterrence effect of buyers, inducing them to search elsewhere for drugs). They are likely to be even more vulnerable to attack by robbers in these less familiar circumstances. Rasmussen, et al. (1993) offer an empirical test of this hypothesis. They develop a model of violent crime using a cross

section sample of 279 police jurisdictions in Florida. They find, after controlling for other determinants of violent crime, that the violent crime rate in one jurisdiction is positively and significantly related to the drug arrest rate in adjacent jurisdictions. Furthermore, the elasticity of violent crime with respect to these enforcement differentials is much larger than the spillover effects commonly reported in studies of inter-jurisdictional effects on property crime. They also find potential evidence of a direct tradeoff hypothesis, as violent crime in a community is also positively related to the drug arrest rate in that community.

Brumm and Cloninger (1995) cite Benson, et al. (1992) to motivate the tradeoff hypothesis and then test the hypothesis for homicide rates using 1985 data from 59 cities in 32 states. They use 2-stage and 3-stage least square models to estimate the impact of drug arrests divided by total arrests (controlling for other factors) 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 the drug-arrest variable is negative and significant in the homicide arrest rate equation and the homicide arrest rate is significantly negative in the homicide rate equation. The coefficients imply that a 1 % increase in drug arrests over total arrests produces a 0.105% (in the 3-stage model) to 0.17 % (in the 2-stage model) increase in the homicide rate.

Similar findings arise in studies using international cross-country data (Fajnzylber, et al. 1998; Miron 2001). Fajnzylber, et al. (1998) develop models of various measures of homicide using 1970-94 country-level data. They control for a number of potential determinants of violence, including two drug market variables: a drug possession arrest rate, and a dummy variable indicating whether the country produces drugs or not. They find, over a broad ranges of specifications, that high drug possession arrest rates and being a drug producing country are both positively associated with homicide rates. In addition, they use panel regressions of five-year average homicide rates, and again find a positive relationship between both drug-related variables and homicides. Miron (2001) also uses cross-county data for the 1993-96 period to test a model of homicide rates. 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 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) did not produce significant relationships, probably because only very small quantities of seizures occurred (the other category, Cannabis plants, involves large seizures, however). He concludes that “Although 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” (Miron 2001, 629).

Resignato (2000) provides what may be the most important study of the drugs and violence hypotheses. He employs data from the 24 drug use forecasting (DUF) SMSAs over the 1987-1995 period to build a model of violent crime (he tests two models, one using the total violent crime rate as a dependent variable and one using the murder rate).²³ This allows him to control for drug use as well as drug enforcement effort, so he can directly test the systemic-factors/tradeoff hypotheses since they are associated with drug enforcement efforts, and he can also consider the psychopharmacological/economic-compulsive hypotheses because they both imply a relationship between the level of drug use and violence. Both OLS and fixed-effects models are estimated, 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 4 regressions (both OLS and Fixed-effects models for both murder and total violent crime rates). Thus, when the allocation of police resources to drug enforcement is relatively high there is a higher murder rate and violent crime rate, supporting the expectation that violence is caused by systemic factors and/or tradeoff effects. The drug use variable is positive in three regressions, but it is only statistically significant in one regression: the fixed-effects model for murder. This may support the theory that there is some psychopharmacological and/or economic compulsive effect of drug use on murder, but not on violent crime in general.²⁴

23 Recall the discussion of these data above, as Mast, et al. (2000) also used a sample of DUF cities.

24 Further doubt on potential psychopharmacological and/or economic compulsive effect of drug use on crime is supplied by Martin, et al. (2004). They also use the DUF data to examine the impact of alcohol and cocaine use on

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 (2004) provide what appears to be the only test of a tradeoff in the allocation of prison resources. 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, perhaps because of psychopharmacological and/or economic-compulsive effects of drug use, or perhaps because the personal characteristics of some individuals, such as risk preferences, can stimulate both drug use and non-drug crime. Recall that the Florida arrest data discussed by Rasmussen and Benson (1994), the recidivism study reported by Kim, et al. (1993), and the empirical results in Benson, et al. (1992) all suggest an overlap between these two sets in the 18 to 25% range for individuals arrested for possession, and perhaps 30 to 40 percent for drug sellers. Kuziemko and Levitt (2004) note that 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. The second relationship they discuss is 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 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 impact²⁵).

Kuziemko and Levitt (2004) first models estimate the impact of incapacitating drug offenders,

violent and property crime. In a multivariate statistical analysis, cocaine use is not closely associated with either property or violent crime, although alcohol use is related to both.

²⁵ Kim, et al. (1993) 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 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).

violent offenders, property offenders, and other offenders on crime rates without controlling for crowding. The estimates are very imprecise due to correlations between the four types of crime convictions, 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, however, so this implies 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 deterrence effect of the size of the prison population, no matter what kind of prisoner are incapacitated. In fact, Levitt (1996) uses total prison population as a general deterrent/incapacitation variable in crime models. In that paper he also contends that “Simultaneity between prison populations and crime rates makes it difficult to isolate the causal effects of prison population on crime.” Therefore he employs an instrumental variable to break the simultaneity. The estimates in Kuziemko and Levitt (2004) 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,²⁶ so their estimates must be treated with considerable caution.

The next step in Kuziemko and Levitt (2004) is an examination of the crowding effect of drug crime imprisonment by estimating the impact of the drug crime share of the prison population on the median percent 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 (-1 implies a one-for-one crowding out), however, and the point estimates for property crimes

26 The coefficients in Levitt (1996) rose substantially after treating for simultaneity, so that clearly could happen in this case as well, although it might be that the violent and property crime coefficients would rise while the drug crime variable does not.

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 existing prisoner is released early” (Kuziemko and Levitt 2004, 2055). Therefore, they conclude that the crowding effect of drug admissions roughly halves the incapacitation impact that they estimated in the first step of their analysis, 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, as they depend on the questionable estimates of the incapacitation impact of the portion of prison population convicted of drug offenses. Furthermore, as the authors note, “If an increase in new commitments 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 crowding” (Kuziemko and Levitt 2004, 2066). As noted above, a large number of studies have found evidence of a significant crowding effect arising from the increased focus of policing resources on drug control. Finally, even if the estimates in Kuziemko and Levitt are accurate, they conclude that “it is unlikely that the dramatic increase in drug imprisonment was cost-effective” (2004, 2043).

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. Issues of civil and economic liberties are undeniably important in this debate, for instance.²⁷ This presentation has focuses on a relatively narrow issue that lends itself 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

²⁷ There is a large literature addressing this issue, of course. For instance, see Husak (1992).

private activities produce externalities:²⁸ from an economic perspective, public policy should intervene only if private-sector actions have adverse impacts on other people.²⁹

In this context, drug prohibition and resulting enforcement are often claimed 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.³⁰ Despite drug use among persons arrested for other criminal activity, however, most research suggests that there is only a loose connection between drug use and criminal activity (e.g., Chaiken and Chaiken 1990). In addition, research has demonstrated that much (most) of the so-called drug-related

28 An externality is a cost (or a benefit) that is imposed on (captured by) someone other than the decision maker so it is not taken into account by that decision maker. This so-called “market failure” does not necessarily justify public intervention, however, because government may also fail. Indeed, intervention can make the situation even worse if its actions generate externalities (e.g., as a result of unintended consequences) 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 are not the only factors that should or do influence policy decisions, of course, but they are costs and benefits that deserve consideration.

29 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 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 (Glaeser, et al. 1996; Akerlof, 1997; Starmer, 2000; Frederick, et al. 2002). 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. That is, some individuals must be saved from themselves. In the context of drug policy, 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. However, this approach provides little insight into how drug policy should be implemented. After all, 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. Indeed, the 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, those who are not discouraged and then arrested and prosecuted can be destroyed by this policy. Indeed, given the tremendous costs that the criminal justice system imposes on drug users who are arrested and convicted (and on society as a whole, as noted below), this paternalistic approach would appear 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 consistent with this approach.

30 See for example, Gropper (1985), Johnson, et al. (1985), and Bell, et al. (1983).

violence actually results from the systemic factors arising because of prohibition. This presentation has gone beyond this counter-argument to point out that there is growing (and now, perhaps substantial) evidence that drug enforcement also causes property crime as scarce criminal justice resources are diverted into crime control. Furthermore, violent crime due to prohibition also appears to increase with enforcement due to the same reallocation effects. In other words, drug prohibition and enforcement causes externalities. These external costs are born by the victims of the additional property and violent crimes that arise due to drug enforcement, and they are not being taken into account by drug policy decision makers.³¹ 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 a dramatic increase in drug enforcement detailed in Section 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. . Unfortunately, if these externalities

³¹ There are many other external costs as well. Impacts on civil liberties and property rights are mentioned above, for instance. Corruption of domestic and foreign police, and indeed, of substantial segments of several foreign governments also could be cited (Rasmussen and Benson 1994). Reduced budgets for education and other state and local government services also result as more funds are directed into prison construction. And so on.

were to be pointed out to the relevant decision makers, they would probably deny that such costs arise, or at most, they might admit that there is, unfortunately, some “collateral damage,” but not enough to warrant rolling back drug enforcement efforts, let alone consider decriminalization.

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