

## TRENDS IN DRUG PRICE AND USE

### A. INTRODUCTION

This chapter presents data from a number of sources to describe trends in the price and use of powder cocaine and crack cocaine. Data such as these have been used by some to draw conclusions about the effectiveness of drug law enforcement, including the effectiveness of cocaine penalties. In theory, sentencing policies might reduce the *supply* of cocaine through the deterrence of potential traffickers or through the incapacitation of traffickers who are integral to the cocaine market.<sup>134</sup> Sentencing policies also might reduce the *demand* for cocaine through the deterrence, incapacitation, or court-ordered treatment of users.

In practice, however, the available data are too limited and the legal and market forces at work too numerous to reach firm conclusions about the effectiveness of current cocaine sentencing policy. One problem concerns how to measure effectiveness reliably. Changes in the price of cocaine are one widely-recognized measure of the effectiveness of supply reduction strategies. Reductions in supply due to deterrence or incapacitation of traffickers should lead to increases in price, all other things remaining equal. The effectiveness of demand reduction strategies might be measured by changes in the rate of drug use in the general population or in the frequency of use. But as discussed below, the available measures of both price and use have limited validity, which complicates any analysis.

These data limitations led the National Research Council, in a recent review of the data and research available for drug policy making, to conclude that:

[e]fforts to connect specific enforcement activities to particular price fluctuations must inevitably confront the basic fact that enforcement activities are not the only notable events that may affect drug prices. . . . One obvious source of price fluctuations is time-series variation in drug demand. For example, the demand for cocaine may fluctuate as a result of changing attitudes toward cocaine consumption, a changing mix of light and heavy users, and changing patterns of enforcement and penalties for cocaine possession. Another source of price fluctuations may be variation in the supply of drugs due to changing source country conditions, from weather to political stability.<sup>135</sup>

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<sup>134</sup> Interest in the deterrent effects of cocaine penalties remains high, and this chapter is meant to be responsive to questions posed to the Commission by Senators Leahy and Hatch.

<sup>135</sup> NATIONAL RESEARCH COUNCIL [NRC], *INFORMING AMERICA'S POLICY ON ILLEGAL DRUGS: WHAT WE DON'T KNOW KEEPS HURTING US* (Charles F. Manski et al. eds., 2001), at 146.

Attempts to isolate the effects of federal penalties are further complicated by the relatively minor role that federal prosecution plays in national drug control efforts. Federal drug trafficking offenses account for only about ten percent of drug trafficking offenses prosecuted in the United States. In 1998 (the most recently available data), 195,183 offenders were convicted of drug trafficking in state courts,<sup>136</sup> compared to 19,438 offenders sentenced under the federal drug trafficking guideline that same year.

Given these complications, quick conclusions should not be reached from the data presented in this chapter. But in the interest of promoting further thought on the subject, this chapter presents the available data and discusses possible explanations for the observable trends.

## **B. COCAINE PRICES AND PENALTIES**

Federal drug prosecution is targeted largely at importers, manufacturers, distributors and sellers – not simple drug users – and therefore this analysis begins with data on trends in cocaine prices, which is the most widely used measure of supply reduction effectiveness.<sup>137</sup> Figure 22 gives the average price of powder cocaine from 1981 through 2000 at the retail and wholesale dealer levels. The prices shown are standardized per gram of pure cocaine to control for fluctuations in purity. These data were obtained through the National Office of Drug Control Policy and are derived from the STRIDE data collection system administered by the Drug Enforcement Administration. The STRIDE data have several known limitations but are the best available measures of changes in cocaine prices.<sup>138</sup>

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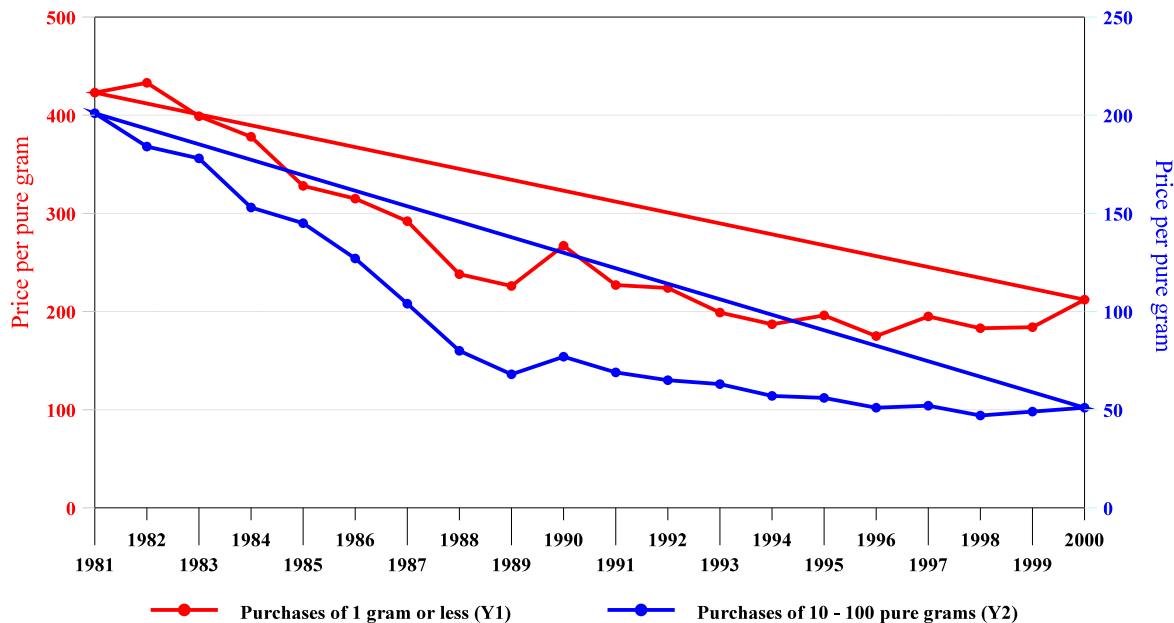
<sup>136</sup> U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics Bulletin, *Felony Sentences in State Courts, 1992* (Jan. 1995); U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics Bulletin, *Felony Sentences in State Courts, 1998* (Oct. 2001).

<sup>137</sup> The Office of National Drug Control Policy has developed additional performance measures of the effectiveness of drug control strategies. See ONCDP, 1998 NATIONAL DRUG CONTROL STRATEGY: 2002 FINAL REPORT (Feb. 2002). Many of these measures, however, are available only for recent years. Because assessing the effects of cocaine penalties requires comparing data before and after the penalty changes instituted by the 1986 Act, this analysis is restricted to measures that are available throughout this longer period.

<sup>138</sup> The STRIDE data are not randomly collected and thus are not necessarily representative of cocaine prices nationwide. (“Existing price information is collected by DEA . . . for operational purposes and does not provide reliable indicators of retail price movements in actual drug markets. Nor does it provide an adequate foundation for analysis of the causes and consequences of price changes.”) NRC, *supra* note 135, at 4.

## Figure 22 Average Powder Cocaine Prices

Office of National Drug Control Policy 1981-2000



SOURCE: Office of National Drug Control Policy, *The Price of Illicit Drugs, 1981 - 2000* (in press).

As can be seen from Figure 22, wholesale and retail prices move largely in tandem. Average retail prices have varied from a high of \$433 per pure gram in 1982 to a low of \$175 per pure gram in 1996. Most strikingly, prices continued a downward trend begun in 1982 and continuing throughout the late 1980s, a period when federal penalties for cocaine offenses were steadily increasing. Between 1986 (when mandatory minimum penalties were instituted by the 1986 Act) and 1992 (when over three-quarters of federal offenders were first sentenced under the new federal sentencing guidelines) average sentences imposed for powder cocaine offenses more than doubled to 99 months, and average sentences for crack cocaine offenses increased to 124 months. With the abolition of parole, actual prison time served by cocaine offenders was 300 to 400 percent longer in 1992 than it had been in 1986. Yet, over this period, the average retail price per pure gram decreased by 29 percent, from \$315 in 1986 to \$224 in 1992, and subsequently has stabilized at slightly below this level.

As described in previous chapters, crack cocaine is trafficked principally at the retail level and is usually converted from powder cocaine near the point of retail sale. The available data on retail prices, from the Department of Justice, Drug Enforcement Administration, Office of Domestic Intelligence (2001), show that the price of crack cocaine remained relatively stable between 1988 and 2000, at \$88 per gram and \$83 per gram, respectively.

The declining prices for powder cocaine during the period of increasing penalties appear inconsistent with a deterrent effect of federal cocaine penalties. Federal penalties and law enforcement in general, however, are only some of the factors that determine cocaine prices. Increasing crop yields, competition among growers and refiners, proliferation of importation channels, reduction of labor or transaction costs, and many other factors could serve to reduce prices, even if increasing penalties exerted upward price pressure. In addition, a decrease in demand would depress prices, so the following analysis examines data on crack cocaine and powder cocaine use.

### C. CRACK AND POWDER COCAINE USE

The total demand for cocaine in the United States in a given year is determined by the number of active users and the amount that they consume. Reliable data on cocaine consumption is lacking,<sup>139</sup> but proxies are available that can serve as rough approximates of actual trends in demand. One such proxy is the absolute number of drug users.

The most widely used estimates of the number of active users and their frequency of use come from surveys of households and high school students. The National Household Survey on Drug Abuse (NHSDA) was begun in 1979.<sup>140</sup> It was conducted every few years throughout the 1980s and now is conducted annually. The Monitoring the Future (MTF) survey of high school students is available from 1975 and is conducted annually.<sup>141</sup> Both surveys measure crack cocaine and powder cocaine use separately beginning in the late 1980s.

The NHSDA and MTF, like all surveys, have known limitations. Some persons are not available to be included in the survey sample. Indeed, the subpopulations believed to be among the heaviest drug users – high school dropouts, the homeless, the imprisoned, and the hospitalized – are particularly under represented in these surveys. Persons who are available may nonetheless refuse to respond or may under report their actual drug use.<sup>142</sup> Thus, data from self-

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<sup>139</sup> See the discussion in NRC, *supra* note 135, at 86-87.

<sup>140</sup> Department of Health and Human Services, Substance Abuse and Mental Health Services, Office of Applied Studies, *Summary of Findings from the 2000 National Household Survey on Drug Abuse*. <http://www.samhsa.gov/publications/publications.html>.

<sup>141</sup> The University of Michigan Institute for Social Research, *Monitoring the Future, National Survey Results on Drug Use, 1975-2000*, (2001). Monitoring the Future (MTF) is a nationwide annual survey of a representative sample of eighth, tenth, and twelfth grade students. [http://www.monitoringthefuture.org/pubs/monographs/vol1\\_2000.pdf](http://www.monitoringthefuture.org/pubs/monographs/vol1_2000.pdf).

<sup>142</sup> See NRC, *supra* note 135, at 96 indicating that about 25 percent of persons who are contacted for participation in the household survey fail to respond. (“The Committee is not aware of empirical evidence that supports the view that nonresponse is random. . . . [N]onrespondents have higher [drug use] prevalence rates than do respondents.”); see also R. Casper, *Followup of nonrespondents in 1990*, in

report surveys must be considered underestimates of actual drug use. But, because the biases in the surveys appear to be reasonably constant over time, comparisons of the rates of reported use across years can be illuminating, even if the reported rate of use in any given year is an underestimate.<sup>143</sup>

As shown in Figure 23, data from the NHSDA indicate that the number of persons using powder cocaine in the month prior to the survey peaked at about 5.7 million in 1985 and trended largely downward to 1.4 million in 1992.<sup>144</sup> Powder cocaine use as reported by NHSDA has remained fairly stable since then with a slight increase in recent years to 1.7 million in 1998. The number of past-month crack cocaine users has remained fairly stable at a significantly lower level, averaging 569,000 users for the period of 1988 to 1998. Together, these data suggest a decrease in the total number of cocaine users in the late 1980s. This trend roughly parallels the changes in retail price, suggesting that reductions in demand may have contributed to the price reductions noted above.

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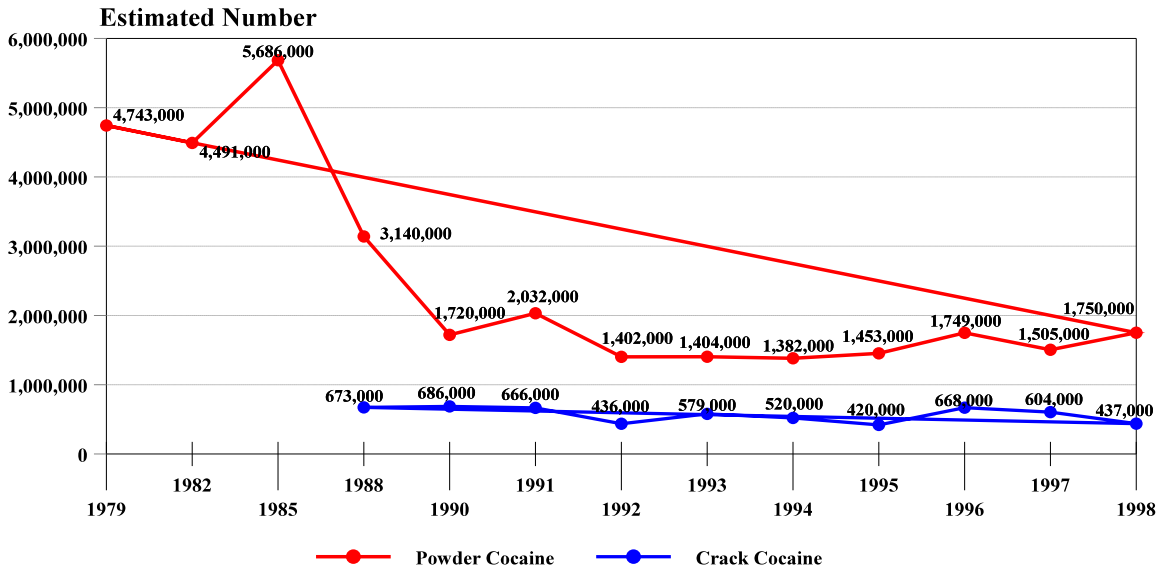
SURVEY OF MEASUREMENT OF DRUG USE: METHODOLOGICAL STUDIES, (C. F. Turner, et al., eds.), U.S. Department of Health and Human Services, Washington, DC (1992). The non-response rate for the MTF is approximately 15 percent.

<sup>143</sup> Data from 1999 and 2000 reflect substantial methodological changes in this survey. Consequently the results for those years cannot be compared to previous years.

<sup>144</sup> Estimates from the DHHS *Summary of NHSDA 1998 Findings*, *supra* note 140, Table 5A. Cocaine use is defined as reported use among persons over 12 years of age during the month prior to the survey.

## Figure 23 Estimated Number of Adults Reporting Cocaine Use In Past 30 Days

National Household Survey of Drug Abuse 1979 - 1998



SOURCE: National Household Survey on Drug Abuse 1996 & 1998.

Trend data on the number of users is an imperfect proxy for demand. If each user consumed the same amount, then demand would closely parallel the number of users. But users vary widely from one time experimenters to addicts requiring multiple doses daily. There is some evidence that the proportion of light to heavy users of cocaine shifted during the 1980s, resulting in a lower total number of users but a higher proportion of heavy users.<sup>145</sup> If so, decreases in the number of users do not necessarily reflect a decrease in demand.

The data on trends in cocaine use raise the question of whether the federal penalty increases of the late 1980s contributed to the decline in the number of cocaine users observed during that period. Although federal prosecution is targeted at traffickers, the penalties associated with a drug are part of the social disapproval symbolized and communicated by the criminal law. Perhaps this deterrent signal registered with the nation's cocaine users.

<sup>145</sup> S. M. S. Everingham, et al., *Cocaine Consumption in the United States: Estimating Past Trends and Future Scenarios*, 29 SOCIO-ECONOMIC PLANNING SCIENCES 305-314 (1995).

To address the question of whether the federal cocaine penalty structure has deterred cocaine use, MTF data is informative.<sup>146</sup> While estimates of the number of users are a proxy for total demand for cocaine in a given year, absolute numbers are not the best measure of possible deterrent effects on users for several reasons. First, the number of users is related to the size of the total population. Using percentages or rates instead of absolute numbers controls for changes in the population size. Second, because drug use decreases with age, the number of users is related to the age distribution of the population. As subpopulations like the baby boomers age, drug use patterns may change apart from any deterrent effect from penalties or any other factor affecting drug use. Thus, the trends in the *rates* of use among a single age group should be examined.

Figure 24 presents data from the MTF survey of self-reported drug use by high school seniors during the month prior to the survey for the years 1976 to 2000. During the late 1970s use of all types of drugs increased. Then, throughout the 1980s, drug use declined sharply before starting to increase again in 1993. This latest increase appears to have plateaued in recent years.

Cocaine use historically has been relatively rare among high school seniors. Powder cocaine use peaked in 1985, when 6.7 percent of high school seniors reported use, and decreased to its lowest point (1.3%) in 1992. Crack cocaine use (on which data is available only from 1987) peaked in 1988, when 1.6 percent of high school seniors reported use, and decreased to its lowest level, also in 1992, at 0.6 percent.<sup>147</sup>

As discussed above, the decline in cocaine prices in the late 1980s does not prove that federal penalties failed to exert an upward pressure on price. Similarly, the decrease in use during the 1980s does not prove that federal penalties succeeded in deterring use because federal prosecution remains targeted on drug trafficking – not simple drug possession.<sup>148</sup> Some have noted that the same social and cultural factors that led to the penalty increases – growing public intolerance of the harms caused by drugs, increasing awareness of the negative health consequences of drugs, etc. – also may have contributed to decreasing rates of drug use, apart

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<sup>146</sup> MTF, *supra* note 141.

[http://www.monitoringthefuture.org/pubs/monographs/vol1\\_2000.pdf](http://www.monitoringthefuture.org/pubs/monographs/vol1_2000.pdf).

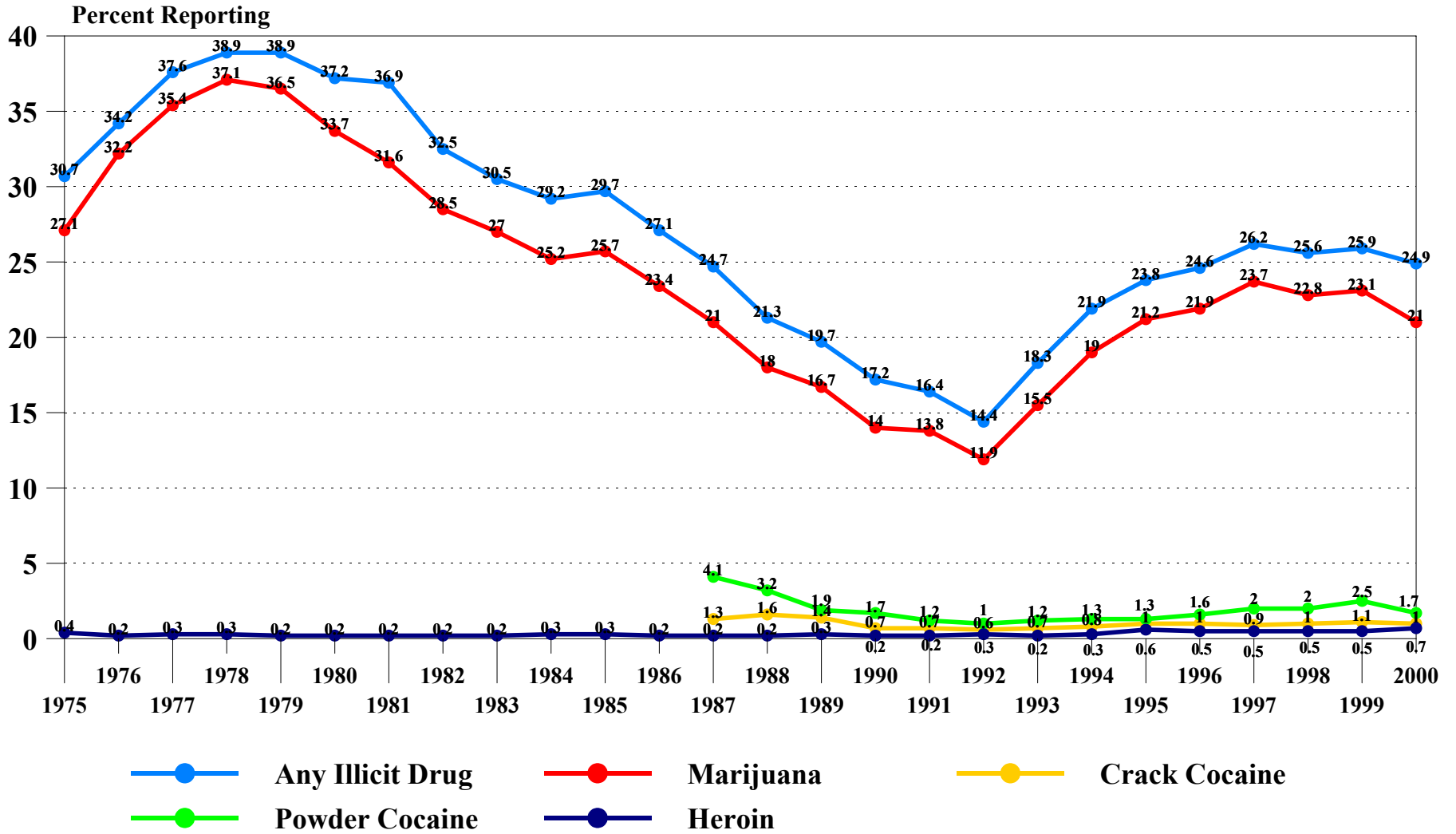
<sup>147</sup> Data from the NHSDA suggest that crack cocaine use among 18- to 25-year old adults is even more rare than among high school seniors, and has shown a similar plateau in recent years. Between 1994 and 1998, on average less than 0.4 percent of those young adults reported using crack cocaine within the last 30 days, and in 1998 powder cocaine was used by seven times as many young adults as crack.. *Supra* note 140, *Summary from 1999 NHSDA Findings*.

<http://www.samhsa.gov/oas/nhsda/1999/TitlePage.html>.

<sup>148</sup> Although simple possession of five or more grams of crack cocaine requires a mandatory minimum sentence of five years imprisonment, federal prosecutions for simple possession of crack cocaine are rare (only 69 total between 1998 and 2000).

# Figure 24 Trends in Reported Drug Use in Past 30 Days Among High School Seniors

1975 - 2000



SOURCE: Monitoring the Future A Continuing Study of American Youth at <http://monitoringthefuture.org/index.html>.



from any change in penalties.<sup>149</sup> Growing concern over the drug problem led to significant expansion of drug treatment, education, and prevention programs during this period. Disentangling the effects of these various interventions is impossible with current data.

Recent research has not found a relationship between the length of prison terms prescribed in various states and the rates of cocaine or marijuana use by high school seniors in the state.<sup>150</sup> The National Research Council recently concluded that:

existing research seems to indicate that there is little apparent relationship between severity of sanctions prescribed for drug use and prevalence or frequency of use, and that perceived legal risk explains very little in the variance of individual drug use. However, there are many gaps in current knowledge . . . .<sup>151</sup>

#### **D. CONCLUSION**

The analysis of cocaine price trends presented above appears inconsistent with a finding that the federal cocaine penalties established under the 1986 Act and incorporated into the guidelines have had a deterrent effect on cocaine trafficking. Specifically, declining prices for powder cocaine during a period of increased federal cocaine penalties appear inconsistent with a reduction in the supply of cocaine. However, declining prices alone do not necessarily indicate a lack of deterrence because a number of other factors not taken into account in this analysis could explain the decrease in cocaine prices observed during that period.

On the other hand, evidence indicates that cocaine use declined during the late 1980s and early 1990s. But, because federal law enforcement is targeted at cocaine traffickers and not users, it is unlikely that the federal cocaine sentencing policy had a significant deterrent effect on users. Rather, it is more likely that many of the factors that led Congress to increase the penalties for cocaine trafficking (*e.g.*, perceptions about the harmfulness of the drug) also contributed to the decrease in cocaine use during that time. In fact, the decline in cocaine use began prior to the establishment of the current federal cocaine sentencing structure. In any event, to the extent that federal cocaine sentencing policy contributed to the decline in cocaine use, that contribution may have abated in the mid to late-1990s, when powder cocaine use increased.

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<sup>149</sup> See *e.g.*, DAVID F. MUSTO, *THE AMERICAN DISEASE: ORIGINS OF NARCOTIC CONTROL* (3rd ed., 1999). Musto describes a historic dynamic of cycles of tolerance and intolerance of drugs. Penalty increases, such as the 1986 Act, often occur after the pendulum already has begun swinging from high levels of tolerance (reflected, for example, in the high rates of use in the late 1970s) to widespread social disapproval of drug use and users.

<sup>150</sup> F. J. M. Chaloupa, et al., *The Demand for Cocaine and Marijuana on Youth*, Working Paper No. 6411, National Bureau of Economic Research (1998).

<sup>151</sup> NRC, *supra* note 135, at 193.